ALAMEDA COUNTY
PLANNING DEPARTMENT

OASIS FUND LIVERMORE GROW FACILITY
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

PLN: 2018-00258

December 2019

RANEY PLANNING & MANAGEMENT, INC.
20 years
1501 SPORTS DRIVE, SUITE A, SACRAMENTO, CA 95834

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INITIAL STUDY

December 2019

A. BACKGROUND

1.	Project Title:	Oasis Fund Livermore Grow Facility
2.	Lead Agency Name and Address:	Alameda County Planning Department 224 West Winton Avenue Suite 111 Hayward, CA 94544
3.	Contact Person and Phone Number:	Rodrigo Orduña Assistant Planning Director (510) 670-6503
4.	Project Location:	7033 Morgan Territory Road Livermore, CA 94551
5.	Project Sponsor's Name and Address:	Felix Kukushkin Oasis Fund Livermore Grow Facility 7033 Morgan Territory Road Livermore, CA 94551
6.	General Plan Designation:	Resource Management
7.	Zoning:	Agricultural
8.	Required Approvals from Other Public Agencies:	California Department of Food and Agriculture CalCannabis License

9. Project Description Summary:

The Oasis Fund Livermore Grow Facility (proposed project) would consist of growth and cultivation of cannabis on a 98.11-acre property identified by the Alameda County Assessor as Assessor's Parcel Number (APN) 903-0007-001-01. The proposed project would include development of a 32,000 square foot (sf) greenhouse building, a 5,040-sf processing building, and a 26-stall parking lot.

10. Surrounding Land Uses and Setting:

    With the exception of single-family residences to the north, the project site and surrounding area is predominately undeveloped and vacant. A creek borders the project site to the west. Land uses in the vicinity consist of agricultural operations and sparse rural residences.

11. Status of Native American Consultation Pursuant to Public Resources Code Section 21080.3.1.

    In compliance with Assembly Bill (AB) 52 (Public Resources Code Section 21080.3.1), notification letters were distributed to the Amah Mutsun Tribal Band, the Amah Mutsun Tribal Band of Mission San Juan Bautista, the Costanoan Rumsen Carmel Tribe, the Indian Canyon Mutsun Band of Costanoan, the Muwekma Ohlone Indian Tribe of the SF Bay Area, the North Valley Yokuts Tribe, and the Ohlone Indian Tribe.

B. SOURCES

All of the technical reports and modeling results used for the project analysis, including the Biological Evaluation and Traffic Impact Analysis are available upon request at the Alameda County Community Development Agency, located at 224 West Winton Avenue Suite 111, Hayward, CA 94544. Office hours are Monday through Friday, 8:30 AM to 5:00 PM. The following documents are referenced information sources used for the purposes of this Initial Study:

1. Alameda County Community Development Agency. *Alameda County General Ordinance Code*. October 9, 2018.
2. Alameda County Community Development Agency. *Safety Element of the Alameda County General Plan*. February 4, 2014.
3. Alameda County Planning Department. *Alameda County General Plan Annual Report for 2014*. 2014.
4. Alameda County Transportation Commission. *2017 Congestion Management Program* [pg. 85]. December 2017.
5. Alameda County. *Alameda County Emergency Operations Plan.* December 2012.
6. Alameda County. *Community Climate Action Plan*. Adopted February 4, 2014.
7. Alameda County. *East County Area Plan.* Revised by Initiative November 2000.
8. Alameda Countywide Clean Water Program. *State Construction Permit.* Available at: https://www.cleanwaterprogram.org/index.php/businesses/construction.html. Accessed December, 2018.
9. Association of Bay Area Governments. *Resilience Program.* Available at: http://gis.abag.ca.gov/website/Hazards/?hlyr=liqSusceptibility. Accessed December 2018.
10. Balance Hydrologics, Inc. *Conceptual Water-Supply and Wastewater Plan, Oasis Fund Livermore Grow Facility, Alameda County, CA.* August 2019.
11. Bay Area Air Quality Management District. *Final 2017 Clean Air Plan*. April 19, 2017.
12. California Department of Conservation. *Alameda County Important Farmland Map 2014.* December 2016.
13. California Department of Conservation. *State of California, Special Studies Zones, Tassajara Quadrangle, Official Map.* Effective January 1, 1982.

14. California Department of Transportation. *Transportation and Construction Vibration, Guidance Manual.* September 2013.
15. California Department of Transportation. *Transportation and Construction Vibration Guidance Manual*. [pg. 37]. September 2013.
16. California Division of Mines and Geology. *Mineral Resource Zones and Resource Sectors, Alameda County.* 1983.
17. Department of Toxic Substances Control. *EnviroStor.* Available at: http://www.envirostor.dtsc.ca.gov/public/. Accessed December 2018.
18. Federal Emergency Management Agency. *FEMA Flood Map Service Center*. Available at: https://msc.fema.gov/portal/home. Accessed December 2018.
19. Federal Highway Administration. *Construction Noise Handbook.* August 2006.
20. Live Oak Associates, Inc. *Oasis Grow Facility Property Biological Evaluation Alameda County, California*. October 24, 2018.
21. Natural Resources Conservation Service. *Calculated Coefficients of Linear Extensibility.* Available at: https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/office/ssr10/tr/?cid=nrcs144p2_074840. Accessed July 2018.
22. Northwest Information Center. *Record search Results for the proposed Oasis Fund Livermore Grow Facility*. November 16, 2018.
23. State Water Resources Control Board. *General Waste Discharge Requirements and Waiver of Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities.* October 17, 2017.
24. TJKM. *Traffic Impact Analysis for the Proposed Cannabis Cultivation Facility at 7033 Morgan Territory Road, Alameda County.* December 2018.
25. United States Department of Agriculture Natural Resources Conservation Service. *Web Soil Survey*. Available at: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed December 2018.
26. Waste Management. *Altamont Landfill and Resource Recovery Facility*. Available at: https://www.wmsolutions.com/pdf/factsheet/Altamont_Landfill.pdf. Accessed January 2019.

C. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ **Aesthetics**	☐ **Agriculture and Forest Resources**	✖ **Air Quality**
✖ **Biological Resources**	✖ **Cultural Resources**	☐ **Energy**
✖ **Geology and Soils**	☐ **Greenhouse Gas Emissions**	☐ **Hazards and Hazardous Materials**
✖ **Hydrology and Water Quality**	☐ **Land Use and Planning**	☐ **Mineral Resources**
☐ **Noise**	☐ **Population and Housing**	☐ **Public Services**
☐ **Recreation**	☐ **Transportation**	✖ **Tribal Cultural Resources**
☐ **Utilities and Service Systems**	☐ **Wildfire**	☐ **Mandatory Findings of Significance**

D. DETERMINATION

On the basis of this initial study:

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

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

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

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

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

Signature	Date
Rodrigo Orduña	Alameda County Planning Department
Printed Name	For

E. INTRODUCTION AND BACKGROUND

This Initial Study/Mitigated Negative Declaration (IS/MND) identifies and analyzes the potential environmental impacts of the proposed project. The information and analysis presented in this document are organized in accordance with the order of the California Environmental Quality Act (CEQA) checklist in Appendix G of the CEQA Guidelines. If the analysis provided in this document identifies potentially significant environmental effects of the project, mitigation measures that shall be applied to the project are prescribed.

The mitigation measures prescribed for environmental effects described in this IS/MND will be implemented in conjunction with the project, as required by CEQA. The mitigation measures will be incorporated into the project through project conditions of approval. The County of Alameda will adopt findings and a Mitigation Monitoring and Reporting Program for the project in conjunction with approval of the project.

The East County Area Plan (ECAP) was adopted by the Alameda County Board of Supervisors in 1994. In the year 2000, Alameda County Voters approved Measure D, which was an initiative that amended the County's General Plan to establish an Urban Growth Boundary.[1] The Urban Growth Boundary established by Measure D restricts the areas outside the boundary to agricultural, natural resource, and rural uses, and prevents the construction of infrastructure to support any urban development. The proposed project site is identified in the ECAP as an area outside of protected land under Measure D. The project would be consistent with the provisions of Measure D.

This IS/MND will rely, in part, on information contained within the ECAP, as well as site-specific technical studies.

Cannabis Cultivation

In 1996, the voters of the State of California approved Proposition 215, titled "Compassionate Use Act of 1996," and permitted the growth and cultivation of cannabis for medical purposes. On November 8, 2016, the voters of the State of California approved Proposition 65, which decriminalized the adult-use of cannabis for non-medical purposes and established a regulatory scheme at a state level. The Alameda County Ordinance Code was updated in 2018 to allow permitted cannabis cultivation operations in the unincorporated area of Alameda County to grow both medical and adult use cannabis. Cannabis cultivation, as defined by Chapter 6.106 of the Alameda County General Ordinance Code, means any activity involving the planting, growing, harvesting, drying, curing, grading, or trimming of cannabis.[2]

F. PROJECT DESCRIPTION

The proposed project location, existing site conditions, and proposed components are described below.

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1 Alameda County. *East County Area Plan.* Revised by Initiative November 2000.

2 Alameda County Community Development Agency. *Alameda County General Ordinance Code*. August 7, 2018.

Project Location and Existing Site Conditions

The project site is on a 98.11-acre property located at 7033 Morgan Territory Road in the City of Livermore in Alameda County, CA (APN: 903-0007-001-01) (see Figure 1). The project site is located approximately six miles from downtown Livermore, in a rural area. A private residence exists within the property containing the project site. With the exception of rural single-family residences to the north, west, and east, the project site and surrounding area is predominately undeveloped and vacant (see Figure 2). Cayetano Creek borders the project site to the west. Land uses in the vicinity consist of agricultural and sparse rural residences. The site is designated Resource Management under the ECAP and zoned Agricultural.

The project site, as defined throughout this IS/MND, consists of the development area shown in Figure 3. The project site is a portion of the larger 98.11-acre property identified as APN 903-0007-001-01. The remaining area within the subject property includes a private residence and undeveloped land. The proposed project would not include any work outside of the portion of the project site depicted in Figure 2 and Figure 3.

Project Components

The proposed project would include development of a 32,000-sf greenhouse building containing approximately 22,000-sf of a cannabis canopy, as well as a 5,040-sf processing building and 26 parking stalls (see Figure 3). As noted above, development activity related to the proposed project would be limited to the portion of the property identified as the project site.

Building Improvements

The 5,040-sf processing building would be located on the western side of the project area, closer to the main road. The 32,000-sf greenhouse would be constructed to the rear of the processing building and would include the cultivation of the cannabis.

The processing building would house product processing facilities such as dry rooms, trim room, storage room, office, maintenance and the employee areas. The greenhouse would be comprised of a gutter connectable greenhouse made of four-inch by four-inch square galvanized structural steel columns. Trusses are fabricated with two-inch by two-inch square galvanized structural steel. Gutters are 12-gauge steel at a 12-foot gutter height.

Landscaping

New landscaping would be installed around the project perimeter of the site to provide aesthetic enhancements to the project and to provide visual screening of the facilities. The landscape screening elements are meant to blend into the natural hillside using endemic oaks from the surrounding hillsides. Native blue oak clusters are mixed with native live oaks along with other California native and drought tolerant plants. The landscaping would be water conscious and are considered low water use. Additionally, the proposed landscaping conforms to the County's Water Efficiency Landscape Ordinance (WELO).

Figure 1
Regional Project Location

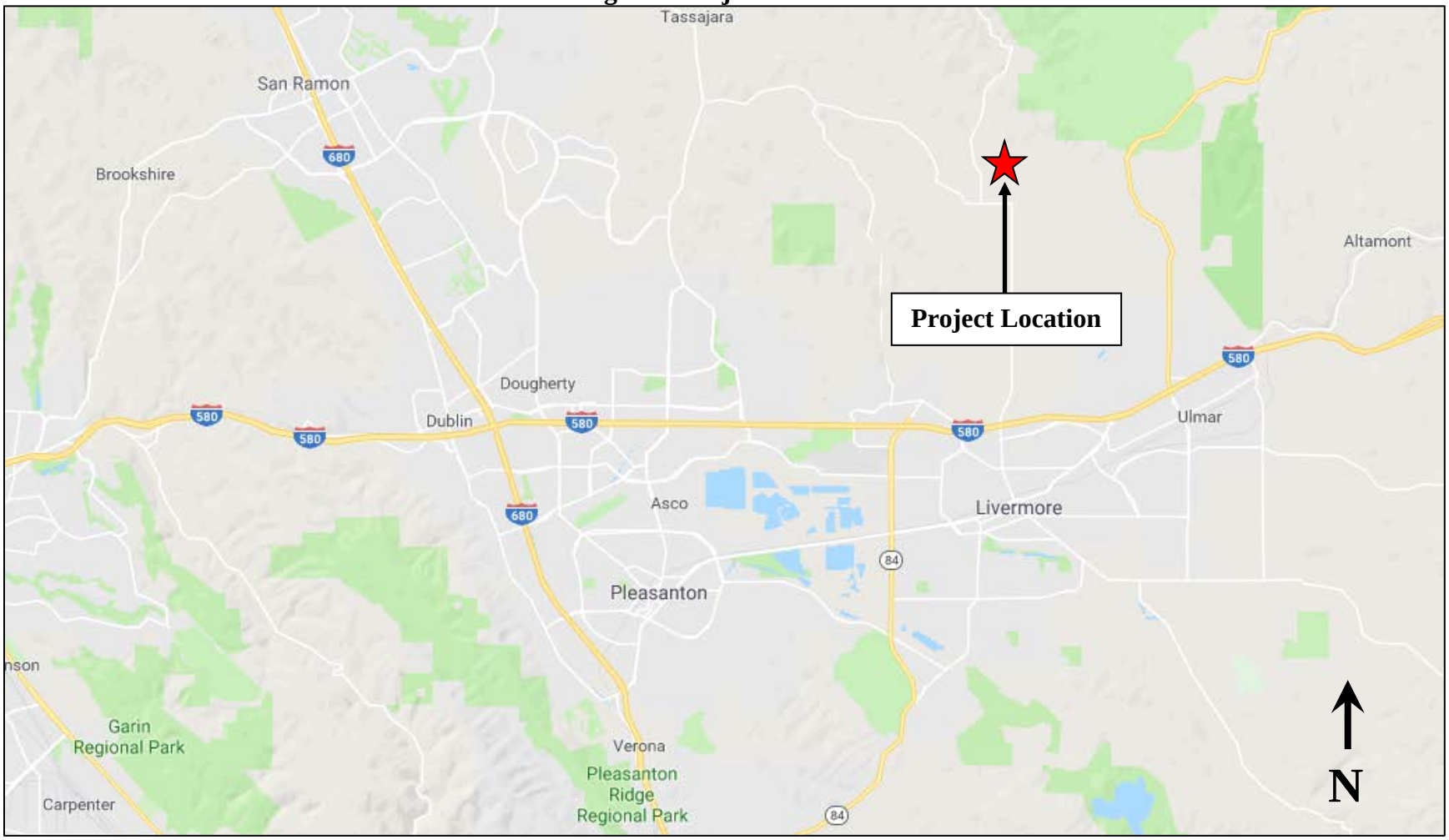


Figure 2
Project Vicinity Map

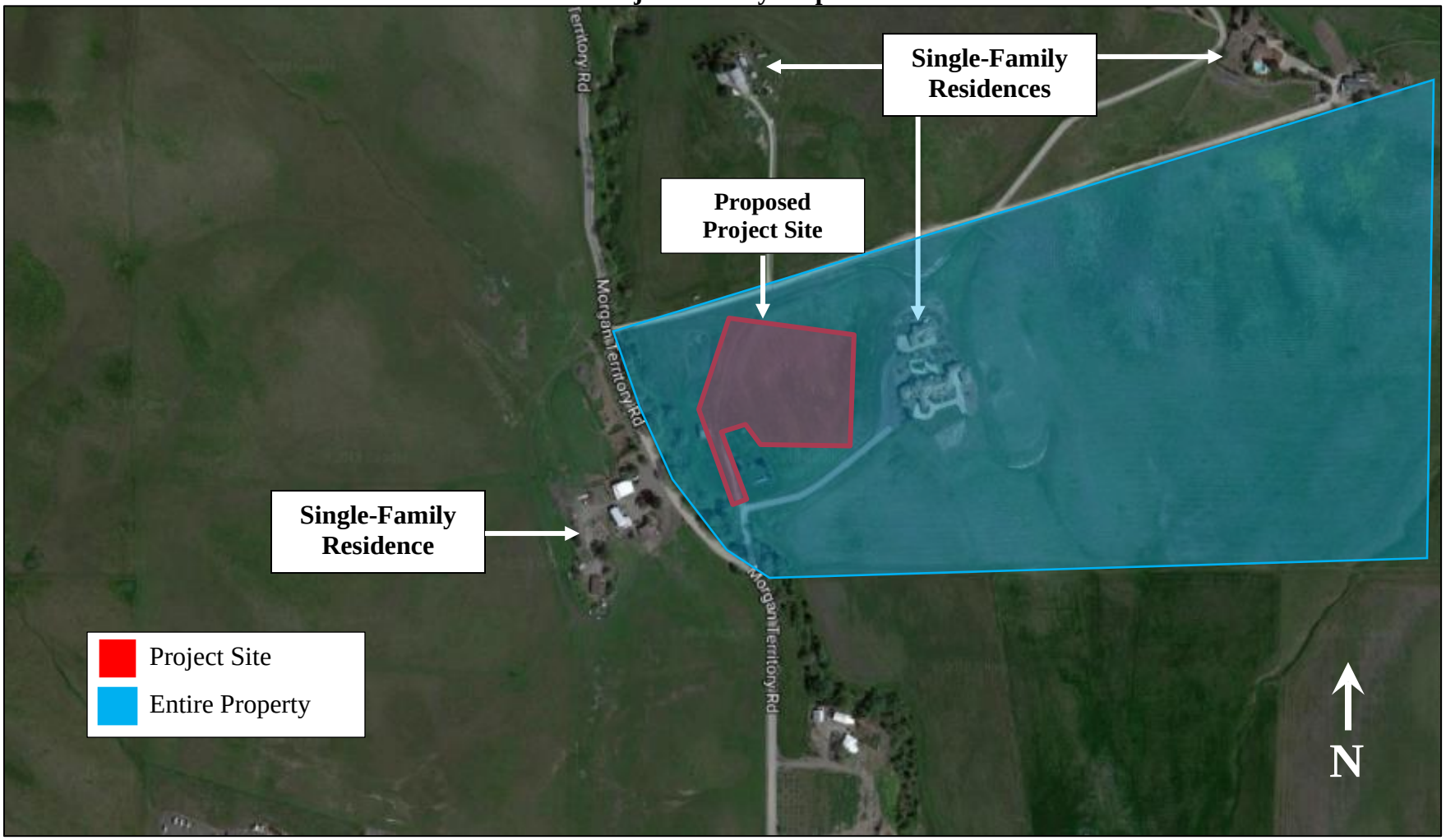
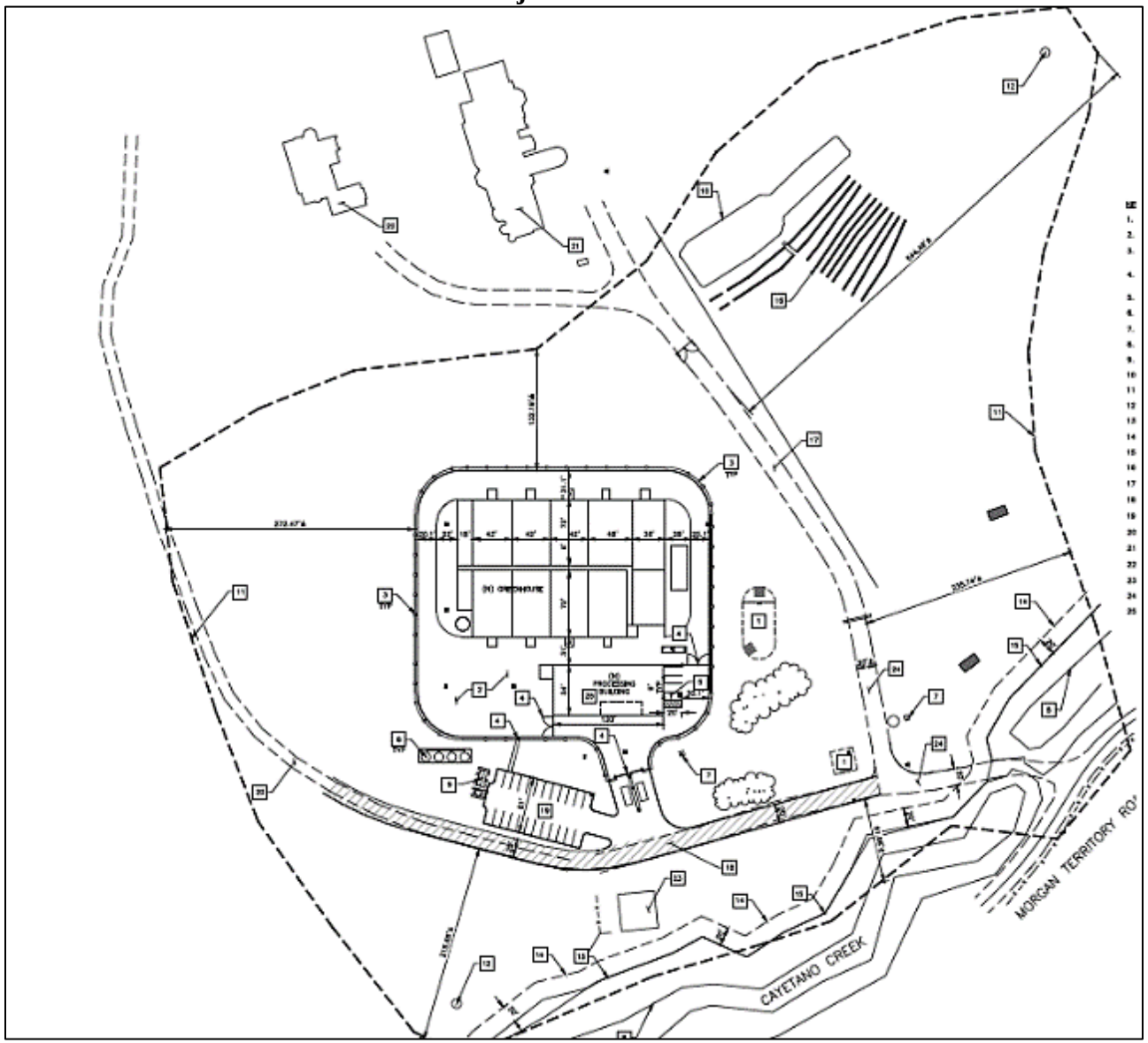


Figure 3
Project Site Plan



Safety Plan

The project applicant has created a detailed security plan in accordance with Alameda County Ordinance Code 6.106.080. After the initial build out, the facility would implement controlled access to the property, an eight-foot security fence surrounding the cultivation facility, and at least one security guard during all operating hours. Entrance into the cannabis storage areas would be strictly controlled. Members of the public would not be provided access to the facility.
All employees would undergo background checks, be trained in safety procedures on-site, and use the rear entrance to access the facility with keycards. Additionally, video surveillance would be installed on the exterior of the building in all areas of possible ingress and egress.

All cannabis would be stored in high-security, fire-proof safes. Inventory would be removed from the storage safes only for immediate transport or sale. The storage area would have a volumetric intrusion detection device installed and connected to the facility intrusion detection system.

Staffing

The proposed project's cannabis cultivation facility is anticipated to employ 20 to 30 employees; however, not all of the employees would be on-site concurrently. Employees would only be present during the proposed hours of operation which would be from 8:00 AM to 6:00 PM, daily.

Site Access and Parking

Access to the project site would be provided from Morgan Territory Road by an existing paved private road. The project area is set back approximately 400 feet (ft) from Morgan Territory Road. Entrance to the facility would be secured and limited to essential persons only. The facility would include 26 paved parking spaces, including ADA compliant spaces, in a designated, protected parking area. The parking area would be surrounded by a secure fence and monitored by a security guard during hours of operation.

Lighting

The proposed project would include installation of security lighting, consistent with Section 6.106.070 of the County Ordinance Code, in order to reduce the potential for criminal activity. The main objectives of the security lighting system would be to illuminate dark areas and detect movement in the protected area. The lighting system would be supplemented with instant-on lighting triggered by motion detectors. The facility and all walkways would be well-illuminated.

Odor Mitigation and Cooling System

The project would utilize highly efficient electronic air purification systems to mitigate odors. Specifically, the project would utilize the "urban-gro" air treatment systems for the greenhouse. The technology in the equipment reduces bacterial and microbial contaminants by approximately 99 percent.

Climate control in the greenhouse and processing building would provide optimal growing conditions for the plants. The project would utilize an indirect evaporative cooling system, operating on a recirculation mode. The system design is similar to a water-cooled chiller, but uses

water as a cooling medium instead of a refrigerant. However, being non-essential for general cultivation, water for climate control would be provided on a residual basis after meeting irrigation, processing and cleaning needs. Water, circulating in a closed loop system, is cooled in a cooling tower by a liquid-to-air heat exchanger during a process of auxiliary water evaporation. Cold water is supplied to air handling units where it sensibly cools the processed air in another liquid-to-air heat exchanger.

The proposed project would install and utilize a wet-wall system. A wet-wall system creates an air inlet into the greenhouse which draws air in such volumes that due to the air speed through the wet-wall, the water is picked up and evaporated in the greenhouse to provide cooling. Systems are installed with fans at one end of the building, and the wet-wall at the other. Water usage for the cooling system would be up to 10,000 gallons per day (gpd) or 1,000,000 gallons per year (gpy).

Utilities

The following is a discussion of the proposed utility sources associated with the proposed project.

Water Supply

Water for the proposed project would be supplied by four existing on-site wells. Cumulatively, the four wells would produce seven gallons of water per minute. The new wells would be situated to the east of the driveway and south of the proposed leach field. Each well would provide water connections to the overall water system. Additionally, the proposed project would include rain harvesting facilities which would be expected to harvest 400,000 gpy. The proposed project is anticipated to use 2,800 gpd of water for cannabis irrigation, as well as up to 10,000 gpd for a cooling system and approximately 1,000 gpd for sanitary and processing uses. The proposed project would include a 500,000-gallon storage tank reservoir.

Wastewater

The project would include construction of a new septic tank system on the project site. The septic system would include a pump vault connecting to a two-inch force main which would lead to a leach field located approximately 300-ft from the project site. A 5,000-gallon capacity sludge tank would be constructed and sludge would be hauled off-site once a week.

Stormwater

Overland flow and runoff from the project site currently flow into a small drainage ditch, located on the north side of the project site, and drains into Cayetano Creek. Generally, the direction of water flow within the project site is north to south.

The proposed project would include construction of a berm that would wrap around the northern, western, and eastern boundaries of the greenhouse. The berm would serve to route runoff that originates upslope around the outside of the project site, into the existing ditch and eventually into Cayetano Creek.

Most of the stormwater that falls on roof areas within the project site would be captured using a rainwater harvesting system consisting of an underground vault and connections to the overall

water system. Stormwater that falls outside of the area served by the rainwater harvesting system would be directed to a proposed bioretention basin. The bioretention basin would be properly sized to treat and mitigate the flow volumes for water quality, hydromodification, and flood control requirements. The bioretention area would be located on the southern edge of the project site, between the proposed greenhouse and the driveway (see Figure 3). Outflow from the area would be routed into the drainage ditch along the driveway through a flow spreader in order to join the off-site flows and discharge into Cayetano Creek.

Discretionary Actions

The proposed project would require the following discretionary actions by Alameda County:

- Adoption of the IS/MND;
- Approval of a Mitigation Monitoring and Reporting Program;
- Approval of a CalCannabis Permit; and
- Approval of a Conditional Use Permit.

G. ENVIRONMENTAL CHECKLIST

The following Checklist contains the environmental checklist form presented in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the proposed project. A discussion follows each environmental issue identified in the checklist. Included in each discussion are project-specific mitigation measures recommended as appropriate as part of the Proposed Project.

For this checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which mitigation has not been identified. If any potentially significant impacts are identified, an EIR must be prepared.

Less-Than-Significant With Mitigation Incorporated: An impact that requires mitigation to reduce the impact to a less-than-significant level.

Less-Than-Significant Impact: Any impact that would not be considered significant under CEQA relative to existing standards.

No Impact: The project would not have any impact.

I. AESTHETICS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	☐	☐	✖	☐
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	☐	☐	✖	☐
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	✖	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	✖	☐

Discussion

a-b. Examples of typical scenic vistas include mountain ranges, ridgelines, or bodies of water as viewed from a highway, public space, or other areas designated for the express purpose of viewing and sightseeing. In general, a project's impact to a scenic vista would occur if development of the project would substantially change or remove a scenic vista. Scenic vistas do not exist in the proximity of the project site, as the project site is located in a flat, rural area of the County. The site is not located near any major highway or body of water.

According to the California Scenic Highway Mapping System, the proposed project site is not located near an officially designated State scenic highway.[3] Route 680 in Alameda County is designated as a Scenic Highway, but the project site is out of view of Route 680.

c. The project site is surrounded by predominately agricultural and vacant land, removed at least 0.6-mile from Morgan Territory Road. Most of the site is hidden by trees lining Morgan Territory Road. Figure 4 through Figure 6 show the current views of the project site from the most exposed portion of Morgan Territory Road, and the current, vacant portion of the project site. The proposed structure would not alter the existing visual character or quality of the site, as the building would not be developed to a size visible from surrounding roads. As seen in Figure 7 and Figure 8, the proposed project would develop a relatively small area of land and would be kept to a height which would not obstruct any current views. Additionally, the structures would remain sheltered by vegetation along Morgan Territory Road. Consequently, the proposed project would not result in a substantial degradation of the existing visual character or quality of the site as the proposed structures would be partially screened by vegetation and would be limited in size.

[3] California Department of Transportation. *California Scenic Highway Mapping System, Alameda County*. Available at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/. Accessed November 2018.

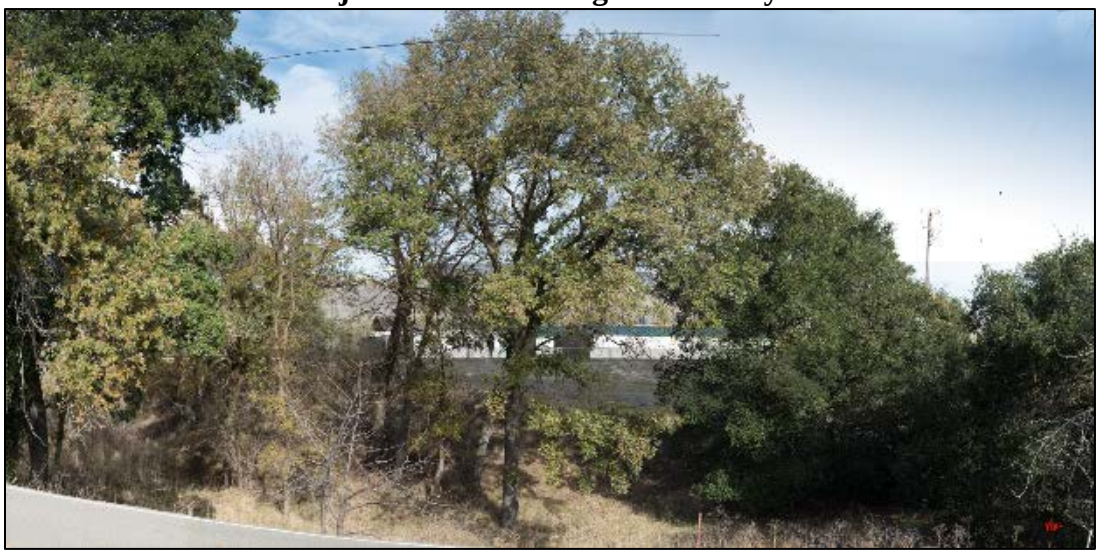
Figure 4
View of Project Site Entrance from Morgan Territory Road

Figure 5
View of Project Site from Morgan Territory Road looking East

Figure 6
Current View of Project Site from Northern Vantage Looking South

Figure 7
Simulation Photo of the Proposed Project Buildout

Figure 8
Simulated View of Project Site from Morgan Territory Road After Buildout



Because the proposed project would not have an adverse effect on a scenic vista and would not damage scenic resources or existing visual character, a ***less-than-significant*** impact would occur.

d. Pursuant to Section 6.106.080 of the Alameda County Ordinance Code, the proposed project would install safety lighting around the outside perimeter of the building, creating a new source of light glare where none currently exists. The objective of the lighting system is to illuminate dark areas within the project site. The lighting system would only be triggered by motion detectors, which would limit the amount of time when such systems are activated. Due to the setback from the nearest public roadway and residences, as well as existing vegetation sheltering the structure from view of the public roadway, the proposed project would not create a substantial light source that would affect the day or nighttime views, and a ***less-than-significant*** impact would occur.

II. AGRICULTURE AND FOREST RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	✖	☐
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	✖
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	✖
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	✖
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	✖	☐

Discussion

a,e. According to the California Department of Conservation Important Farmland Map, the project site is classified as Grazing Land and does not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.[4] Because the project site is not considered Prime or Unique Farmland, or Farmland of Statewide Importance, the proposed project would not convert such land to a non-agricultural use.

The proposed project would involve cultivation of cannabis in an on-site greenhouse. Section 17.06.040 of the County Ordinance Code permits cannabis cultivation as a conditional use in Agricultural districts upon approval of a Conditional Use Permit. The proposed project would not result in the loss of Farmland, nor the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use; therefore, a ***less-than-significant*** impact would occur.

b. The proposed project is zoned Agricultural, which allows cannabis cultivation as a conditional use upon approval of a Conditional Use Permit by the Board of Zoning Adjustments. The project site is located on land not enrolled in a Williamson Act contract. Thus, the project would result in ***no impact*** related to a conflict with existing zoning for agricultural use or a Williamson Act contract.

c-d. The proposed project is zoned Agricultural and classified as Grazing Land by the California Department of Conservation. The project site is not classified as forest land, timberland, or

[4] California Department of Conservation. *Alameda County Important Farmland Map 2014.* December 2016.

Timberland Production. Alameda County permits cannabis cultivation in Agricultural zones of unincorporated parts of the County. Thus, the project would not conflict with existing zoning for forest land, timberland, or timberland zoned Timberland Production. Because the proposed project would not result in rezoning or loss of forest land for non-forest use, the project would result in ***no impact*** related to such.

III. AIR QUALITY. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	✖	☐	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	✖	☐	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	✖	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	✖	☐

Discussion

a,b. Alameda County is located in the San Francisco Bay Area Air Basin (SFBAAB), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD), who regulates air quality in the San Francisco Bay Area. The SFBAAB area is currently designated as a nonattainment area for the State and federal ozone, State and federal particulate matter 2.5 microns in diameter ($PM_{2.5}$), and State particulate matter 10 microns in diameter (PM_{10}) ambient air quality standards (AAQS). The SFBAAB is designated attainment or unclassified for all other AAQS. It should be noted that on January 9, 2013, the U.S. Environmental Protection Agency (USEPA) issued a final rule to determine that the Bay Area has attained the 24-hour $PM_{2.5}$ federal AAQS. Nonetheless, the Bay Area must continue to be designated as nonattainment for the federal $PM_{2.5}$ AAQS until such time as the BAAQMD submits a redesignation request and a maintenance plan to the USEPA, and the USEPA approves the proposed redesignation.

In compliance with regulations, due to the nonattainment designations of the area, the BAAQMD periodically prepares and updates air quality plans that provide emission reduction strategies to achieve attainment of the AAQS, including control strategies to reduce air pollutant emissions through regulations, incentive programs, public education, and partnerships with other agencies. The current air quality plans are prepared in cooperation with the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG).

The most recent federal ozone plan is the 2001 Ozone Attainment Plan, which was adopted on October 24, 2001 and approved by the California Air Resources Board (CARB) on November 1, 2001. The plan was submitted to the USEPA on November 30, 2001 for review and approval. The most recent State ozone plan is the 2017 Clean Air Plan (CAP), adopted on April 19, 2017.[5] The 2017 CAP was developed as a multi-pollutant plan that provides an integrated control strategy to reduce ozone, particulate matter (PM), toxic air contaminants (TACs), and GHG. The control strategies included in the 2017 CAP serve as the backbone of the 2017 CAP, and build upon existing regional, state, and national programs for emissions reductions. The 2017 CAP includes 85 control measures, which provide an integrative approach to reducing ozone, PM, TACs, and GHG emissions.

[5] Bay Area Air Quality Management District. *Final 2017 Clean Air Plan*. April 19, 2017.

The aforementioned air quality plans contain mobile source controls, stationary source controls, and transportation control measures to be implemented in the region to attain the State and federal AAQS within the SFBAAB. To ensure continued attainment of AAQS, and to work towards attainment of AAQS for which the area is currently designated as nonattainment, the BAAQMD has adopted rules and regulations as well as thresholds of significance for project emissions, which are consistent with applicable air quality plans. The BAAQMD's significance thresholds associated with development projects for emissions of the ozone precursors reactive organic gases (ROG) and oxides of nitrogen (NO_X), as well as for PM_{10} and $PM_{2.5}$, expressed in pounds per day (lbs/day) and tons per year (tons/yr), are listed in Table 1. By exceeding the BAAQMD's mass emission thresholds for emissions of ROG, NO_X, PM_{10}, or $PM_{2.5}$, a project would be considered to conflict with or obstruct implementation of the BAAQMD's air quality planning efforts.

Table 1
BAAQMD Thresholds of Significance

	Construction	Operational	
Pollutant	**Average Daily Emissions (lbs/day)**	**Average Daily Emissions (lbs/day)**	**Maximum Annual Emissions (tons/year)**
ROG	54	54	10
NO_X	54	54	10
PM_{10} (exhaust)	82	82	15
$PM_{2.5}$ (exhaust)	54	54	10

Source: BAAQMD, CEQA Guidelines, May 2017.

The proposed project's construction emissions were quantified using the California Emissions Estimator Model (CalEEMod) software version 2016.3.2 – a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify air quality emissions, including GHG emissions, from land use projects. The model applies inherent default values for various land uses, including construction data, trip generation rates, vehicle mix, trip length, average speed, etc. Where project-specific information is available, such information should be applied in the model. As such, project-specific trip generation information provided by TJKM Traffic Consultants was applied to the modeling. Furthermore, based on project site plans, the proposed project was assumed to include the export of 165 cubic yards of material during project construction and site grading. Operation of the proposed project would include installation of two emergency generators within the project site. The project applicant has not yet determined whether the emergency generators would be propane or diesel powered; however, in order to provide a conservative assumption for operational emissions, both generators were applied as diesel-powered in the modeling.

The proposed project's estimated emissions associated with construction and operation are presented and discussed in further detail below. A discussion of the proposed project's contribution to cumulative air quality conditions is provided below as well. All modeling results are included as the Appendix to this IS/MND.

Construction Emissions

According to the CalEEMod results, the proposed project would result in maximum unmitigated construction criteria air pollutant emissions as shown in Table 2.

Table 2
Maximum Unmitigated Construction Emissions (lbs/day)

Pollutant	Proposed Project Emissions	Threshold of Significance	Exceeds Threshold?
ROG	4.83	54	**NO**
NO_X	54.80	54	**YES**
PM_{10} (exhaust)	2.39	82	**NO**
PM_{10} (fugitive)	18.21	None	**N/A**
$PM_{2.5}$ (exhaust)	2.20	54	**NO**
$PM_{2.5}$ (fugitive)	9.97	None	**N/A**

Source: CalEEMod, December2018 (see Appendix).

As shown in the table, the proposed project's construction emissions would be below the applicable thresholds of significance for ROG, PM_{10}, and $PM_{2.5}$. However, NO_X emissions related to construction of the proposed project would slightly exceed the applicable BAAQMD threshold of significance.

Although thresholds of significance for mass emissions of fugitive dust PM_{10} and $PM_{2.5}$ have not been identified by the County or BAAQMD, the proposed project's estimated fugitive dust emissions have been included for informational purposes. All projects under the jurisdiction of the BAAQMD are required to implement all of the BAAQMD's Basic Construction Mitigation Measures, which include the following:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
8. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take

corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

The proposed project's required implementation of the BAAQMD's Basic Construction Mitigation Measures listed above would reduce the construction-related emissions from the levels estimated and presented in Table 2. However, the proposed project could still result in emissions above the applicable threshold of significance for construction NO_X. Therefore, the project would be considered to result in a potentially significant air quality impact during construction.

Operational Emissions

According to the CalEEMod results, the proposed project would result in maximum operational criteria air pollutant emissions as shown in Table 3. As shown in the table, the proposed project's operational emissions would be well below the applicable thresholds of significance. As such, the proposed project would not result in a significant air quality impact during operations.

Table 3
Unmitigated Maximum Operational Emissions

Pollutant	Proposed Project Emissions		Threshold of Significance		Exceeds Threshold?
	lbs/day	tons/yr	lbs/day	tons/yr	
ROG	1.22	0.22	54	10	**NO**
NO_X	1.58	0.28	54	10	**NO**
PM_{10} (exhaust)	0.04	0.01	82	15	**NO**
PM_{10} (fugitive)	0.90	0.16	None	None	**N/A**
$PM_{2.5}$ (exhaust)	0.24	0.01	54	10	**NO**
$PM_{2.5}$ (fugitive)	0.04	0.04	None	None	**N/A**

Source: CalEEMod, December 2018 (see Appendix).

Cumulative Emissions

Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By nature, air pollution is largely a cumulative impact. A single project is not sufficient in size to, by itself, result in nonattainment of AAQS. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant. In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. The thresholds of significance presented in Table 1 represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the SFBAAB's existing air quality conditions. If a project exceeds the significance thresholds presented in Table 1, the proposed project's emissions would be cumulatively considerable, resulting in significant adverse cumulative air quality impacts to the region's existing air quality conditions. Because the proposed project would result in emissions above the applicable threshold of significance for construction-related emissions of NO_X, the project could result in a cumulatively considerable contribution to the region's existing air quality conditions.

Conclusion

As stated previously, the applicable regional air quality plans include the 2001 Ozone Attainment Plan and the 2017 CAP. According to BAAQMD, if a project would not result in significant and unavoidable air quality impacts, after the application of all feasible mitigation, the project may be considered consistent with the air quality plans. Because the proposed project would result in short-term construction emissions of NO_X, an ozone precursor, above the applicable threshold of significance, the project could conflict with or obstruct implementation of regional air quality plans. Therefore, the proposed project could contribute to the region's nonattainment status of ozone, thus, contributing to the violation of an air quality standard. However, with mitigation incorporated, a ***less-than-significant*** impact associated with construction-related emissions of NO_X would result.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the construction-related emissions of NO_X from 54.80 lbs/day to 51.52 lbs/day, which would be below the BAAQMD's threshold of significance of 54 lbs/day. Thus, implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

III-1. *Prior to approval of any grading plans, the project applicant shall show on the plans via notation that the contractor shall ensure that all heavy-duty diesel-powered equipment (e.g., rubber-tired dozers, scrapers, cranes, etc.) to be used in the construction of the project (including owned, leased, and subcontractor vehicles) shall, at a minimum, meet U.S. Environmental Protection Agency emissions standards for Tier 2 engines or equivalent. The plans shall be submitted to the Planning Department for review and approval.*

c. Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Sensitive receptors are typically defined as facilities where sensitive receptor population groups (i.e., children, the elderly, the acutely ill, and the chronically ill) are likely to be located. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. Given that the proposed project would not include the placement of housing or other habitable structures, the project would not be considered a sensitive receptor. The nearest existing sensitive receptor would be the existing residence within the project site and the residence located to the west of the project site, across Morgan Territory Road.

The major pollutant concentrations of concern are localized carbon monoxide (CO) emissions and toxic air contaminants (TAC) emissions, which are addressed in further detail below.

Localized CO Emissions

Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. High levels of localized CO concentrations are only expected where background levels are high, and traffic volumes and congestion levels are high. Emissions of CO are of potential concern, as the pollutant is a toxic gas that results from the incomplete combustion of carbon-containing fuels such as gasoline or wood.

In order to provide a conservative indication of whether a project would result in localized CO emissions that would exceed the applicable threshold of significance, the BAAQMD has established screening criteria for localized CO emissions. According to BAAQMD, a proposed project would result in a less-than-significant impact related to localized CO emission concentrations if the following screening criteria is met:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans;
- The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; and
- The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, underpass, etc.).

As discussed in Section XVI, Transportation and Circulation, of this IS/MND, the proposed project would generate approximately 110 total daily vehicle trips, with 11 trips occurring during the AM peak hour and 11 trips occurring during the PM peak hour. Given that the project would generate fewer than 100 peak hour trips and would be consistent with the site's current land use designation, the project would not conflict with the Alameda County Transportation Commission Congestion Management Program (CMP). Additionally, traffic counts completed for the proposed project as part of a Traffic Impact Analysis[6] showed that the nearest major intersection, Morgan Territory Road/Manning Road, experiences traffic volumes of 2,229 vehicles per day, which is far below BAAQMD's threshold of 44,000 vehicle per hour. Thus, the proposed project would not increase traffic volumes at an affected intersection to more than 44,000 vehicles per hour. Furthermore, areas where vertical and/or horizontal mixing is limited due to tunnels, underpasses, or similar features do not exist in the project area. As such, the proposed project would not be expected to result in substantial levels of localized CO that would expose sensitive receptors to substantial levels of pollutants.

TAC Emissions

Another category of environmental concern is TACs. The CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook) provides recommended setback distances for sensitive land uses from major sources of TACs, including, but not

[6] TJKM. *Traffic Impact Analysis for the Proposed Cannabis Cultivation Facility at 7033 Morgan Territory Road, Alameda County.* December 2018.

limited to, freeways and high traffic roads, distribution centers, rail yards, and stationary diesel engines. The CARB has identified diesel particulate matter (DPM) from diesel-fueled engines as a TAC; thus, high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Health risks associated with TACs are a function of both the concentration of emissions and the duration of exposure, where the higher the concentration and/or the longer the period of time that a sensitive receptor is exposed to pollutant concentrations would correlate to a higher health risk.

The CARB's Handbook includes facilities (distribution centers) associated with 100 or more heavy-duty diesel trucks per day as a source of substantial DPM emissions. Operation of the proposed development would involve approximately 20 to 30 employees driving personal vehicles to and from the site during operational days, but is not expected to involve frequent heavy-duty diesel truck trips. Furthermore, the movement of goods to and from the project site may include some diesel-fueled vehicles; however, such movement of goods is anticipated to constitute a small fraction of the 110 anticipated daily trips related to project operations. Because operation of the proposed project would not include diesel truck trips in excess of 100 trips per day, the proposed project would not expose existing sensitive receptors to substantial amounts of DPM emissions or concentrations associated with such during project operations.

Project operations would include installation of two emergency back-up generators within the project site. Although the project applicant has not finalized the fuel type to be used for the two emergency back-up generators, for the purposes of this environmental analysis, both generators have been assumed to be diesel-fueled, as diesel-fueled generators would emit DPM. The two generators would only be used to provide back-up power to the proposed facilities and during required testing. Thus, the generators would only operate intermittently or in emergency situations. Although finalized locations for the generators have not been determined, the generators would likely be placed in close proximity to the proposed structures that would be provided power by the generators. Consequently, both proposed generators would likely be over 200 ft away from the nearest existing residences. DPM is a highly dispersive gas; thus, during the limited occasions when the generators are used, any DPM emitted by the generators would disperse prior to reaching the existing residences. Installation, maintenance, and operation of the generator would be regulated by BAAQMD through Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants. Rule 5 would require that the generator meets health risk limits and requirements for Toxics Best Available Control Technology. Considering the distance of the proposed generators to the nearest sensitive receptors, the limited use of the generator, and the existing BAAQMD regulations for such generators, the potential future generators would not be anticipated to generate substantial amounts of TACs that could affect existing sensitive receptors near the project site.

In addition to the limited amount of DPM emissions resulting from potential operation of diesel-fueled vehicles and stationary generators on-site during operations, short-term, construction-related activities could result in the generation of TACs, specifically DPM, from on-road haul trucks and off-road equipment exhaust. Construction is temporary and occurs over a relatively short duration in comparison to the operational lifetime of the proposed project. Specifically, construction would occur over an approximately 23-month

period. Mass grading of the project site, when emissions would be most intensive, would occur over the period of approximately nine days. Health risks are typically associated with exposure to high concentrations of TACs over extended periods of time (e.g., 30 years or greater), whereas the construction period associated with the proposed project would be limited in duration.

All construction equipment and operation thereof would be regulated per the In-Use Off-Road Diesel Vehicle Regulation, which is intended to help reduce emissions associated with off-road diesel vehicles and equipment, including DPM. Project construction would also be required to comply with all applicable BAAQMD rules and regulations, particularly associated with permitting of air pollutant sources. In addition, construction equipment would operate intermittently throughout the day and only on portions of the site at a time, and construction activity would likely only occur during normal working hours, in compliance with Section 6.60.070 of the County Ordinance Code. Because construction equipment on-site would not operate for long periods of time and would be used at varying locations within the site, associated emissions of DPM would not occur at the same location (or be evenly spread throughout the entire project site) for long periods of time. Due to the temporary nature of construction and the relatively short duration of potential exposure to associated emissions, the potential for any one sensitive receptor in the area to be exposed to concentrations of pollutants for a permanent or substantially extended period of time would be low. Therefore, construction of the proposed project would not be expected to expose nearby sensitive receptors to substantial pollutant concentrations.

Conclusion

Based on the above discussion, the proposed project would not expose any sensitive receptors to substantial concentrations of localized CO or TACs during construction or operation. Therefore, the proposed project would result in a ***less-than-significant*** impact related to the exposure of sensitive receptors to substantial pollutant concentrations.

d. Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, a quantitative analysis is difficult. Certain land uses such as wastewater treatment facilities, landfills, confined animal facilities, composting operations, food manufacturing plants, refineries, and chemical plants have the potential to generate considerable odors. The proposed project does not include operation of any of the foregoing sources of odors; however, the cultivation and processing of cannabis would have the potential to create objectionable odors.

Although the cultivation and processing of cannabis could be considered to create objectionable odors, Section 6.106 of the County Ordinance Code requires that cannabis cultivation sites be designed to include odor control devices sufficient to ensure that odors are not detected outside of the lot on which the operation is located. Provision of such odor control devices would be ensured during County review of the cannabis cultivation permit required for operation of the proposed project. Considering the requirements of Section 6.106 of the County Ordinance Code, operation of the proposed project would not be permitted to result in the emission of objectionable odors detectable outside of the lot within which the project is operating.

Furthermore, Section 6.106 of the County Ordinance Code specifies that any condition resulting in violation of the cultivation permit conditions, which would include the emission of odors detectable outside of the subject lot, would be deemed a public nuisance, subject to enforcement by the County. County enforcement activity would ensure that the condition causing the emission of odors detectable outside of the lot within which the project is operating would be rectified.

It should be noted that BAAQMD also regulates objectionable odors through BAAQMD Regulation 7, Odorous Substances, which does not become applicable until the Air Pollution Control Officer (APCO) receives odor complaints from ten or more complainants within a 90-day period. Once effective, Regulation 7 places general limitation on odorous substances and specific emission limitations on certain odorous compounds, which remain effective until such time that citizen complaints have not been received by the APCO for one year. The limits of Regulation 7 become applicable again when the APCO receives odor complaints from five or more complainants within a 90-day period. Thus, if odor complaints are made after the proposed project is developed, the BAAQMD would ensure that such odors are addressed and any potential odor effects are reduced.

For the aforementioned reasons, operation of the proposed project would not create objectionable odors affecting a substantial number of people, and a ***less-than-significant*** impact related to objectionable odors would result.

IV. BIOLOGICAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	✖	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☐	✖	☐
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	✖	☐
d. Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of 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 Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	✖	☐

Discussion

a. The following discussion is based on a Biological Evaluation performed by the ecological consulting firm Live Oak Associates, Inc. for the proposed project[7] (see Appendix B).

Several species of plants and animals within the State of California have low populations, limited distributions, or both. Such species may be considered "rare" and are vulnerable to extirpation. State and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the State. A sizable number of native plants and animals have been formally designated as threatened, or endangered under State and federal endangered species legislation and/or have been

[7] Live Oak Associates, Inc. *Oasis Grow Facility Property Biological Evaluation Alameda County, California*. October 24, 2018.

designated as "species of special concern" or "Fully Protected species" by the CDFW. The California Native Plant Society (CNPS) has developed lists of native plants considered rare, threatened, or endangered. Collectively, such plants and animals are referred to as "special-status species."

A site specific survey was performed by Live Oak Associates in October 2018. During the survey, all habitat types in and adjacent to the project site were surveyed and classified, and plant and animal species observed were recorded. In addition, the California Natural Diversity Database (CNDDB) was queried for special-status species known to occur within the Tassajara U.S. Geological Survey 7.5-minute quadrangle and the eight surrounding quadrangles (Clayton, Antioch South, Brentwood, Diablo, Byron Hot Springs, Dublin, Livermore, and Altamont). Thus, because the study includes the entire project area, a conservative analysis is provided. Because the proposed project would only disturb approximately three acres of the 98.11-acre property, the likelihood of special-status species occurring on the project site is lower than the estimates provided.

Habitat located on the project site includes primarily California annual grassland, which is mowed and vegetated to generally less than four inches in height. Mixed riparian woodland exists along Cayetano Creek on the western boundary of the area. The dominant trees present in the project area include valley oak, coast live oak, black walnut, blue gum, blue elderberry, and Monterey cypress. In addition, sparse herbaceous understory is present.

Based on information from CDFW, USFWS, CNDDB, and CNPS, as well as observations during the site survey, 43 special-status plant species and 29 special-status wildlife species have the potential to occur within the vicinity of the site. A number of plant and animal species were dismissed from further analysis by Live Oak Associates because the species in question occurs in either serpentine or alkaline soils, which are absent from the site. Further details regarding the special-status species that were deemed to have the potential to occur within the vicinity of the site are provided below.

Special-Status Plants

Most special status plant species that occur, or once occurred, within the project region are considered absent from the project site or unlikely to occur because their essential habitat is absent or marginal on the site, the species is not known to occur in the immediate project vicinity, the species was ruled out as occurring on the site during the October 2018 survey, and/or the species has not been observed in the region in many decades. However, according to Live Oak Associates, two special-status plant species have the potential to occur within the annual grasslands of the site: the large-flowered fiddleneck and the bent-flowered fiddleneck. Although the species were not identified on the project site during the October survey, a focused survey conducted during the March to June blooming period would be required to rule out the occurrence of either species on the project site.

Special-Status Wildlife Species

According to the Biological Evaluations performed for the proposed project, 29 special-status animal species occur, or once occurred, regionally. Of the 29 species, 10 would be absent from or unlikely to occur on the project site due to unsuitable conditions.

The remaining 19 species may occur more frequently as regular foragers or may be resident on the site. Project buildout would have a minimal effect on the breeding success of the species and would, at most, result in a relatively small reduction of foraging and/or nesting habitat that is abundantly available regionally. Impacts related to each special-status species with potential to occur on the project site are discussed below.

Amphibians and Reptiles

The Biological Evaluation identified the following amphibians and reptiles as having potential to occur on the project site:

- Foothill yellow-legged frog (*Rana boylii*);
- California red-legged frog (*Rana draytonii*);
- Western pond turtle (*Actinemys marmorata*); and
- Alameda whipsnake (*Masticophis lateralis euryxanthus*).

The project site consists of habitats that may be suitable to the foothill yellow-legged frog and California red-legged frog, both of which are listed as species of special concern by the CDFW. Cayetano Creek is expected to be the highest quality habitat for both species and is expected to act only as a movement corridor. The proposed project would not disturb the riparian corridor, and thus, the likelihood of migrating frogs occurring on the project site is low. However, if a migrating frog were to occur on the project site, construction could disturb the frog. The project area is located within critical habitat designated by the USFWS for the California red-legged frog.

The western pond turtle is found in ponds, lakes, streams, and quiet waters. Suitable habitat exists in Cayetano Creek when water is present; however, the suitable habitat is of very low quality for turtles. The proposed project would not disturb the creek, but development of the project would result in the loss of a small amount of potential suitable habitat. Additionally, while unlikely, the possibility exists that a turtle could move into the construction zone during feeding or movement, which may result in injury.

Alameda whipsnake is a State and federally listed threatened species. Alameda whipsnakes are typically found in chaparral and coastal sage scrub communities (i.e., communities dominated by chamise or coastal sage plants). Telemetry data indicate that, although home ranges of Alameda whipsnakes are centered on shrub communities, they venture up to 500 ft into adjacent habitats, including grassland, oak savanna, and occasionally oak-bay woodland. Riparian woodland adjacent to the development area provides suitable habitat for the whipsnake, and the adjacent grasslands may be used for feeding and dispersal habitat. Therefore, while unlikely, Alameda whipsnakes could move into the construction zone, which would result in a potentially significant impact.

Migratory Birds and Nesting Raptors

The Biological Evaluation identified the following migratory birds and nesting raptors as having the potential to occur in the project area:

- Grasshopper sparrow (*Ammodramus svannarum*);

- Loggerhead shrike (*Lanius ludoviciamus*);
- Swainson's hawk (*Buteo swainsonii*);
- White-tailed kite (*Elamus leurcurus*);
- Northern harrier (*Circus cyaneus*);
- American peregrine falcon (*Falco peregrines anatum*); and
- Golden eagle (*Aquila chyrsaetos*).

Both grasshopper sparrow and loggerhead shrike are listed as California species of special concern. The area supports suitable breeding and foraging habitat for both special-status species, and thus, ground disturbance could have an impact on individual grasshopper sparrows or loggerhead shrikes.

Raptors include species of birds that primarily hunt and feed on vertebrates, including mice, shrews, and gophers. Raptors typically nest in trees and breed during spring or summer. The project area provides potentially suitable breeding or foraging habitat for the raptors listed above. The nearest recorded raptor is the Golden eagle, which is known to occur nearly two miles northwest of the site.

The Federal Migratory Bird Treaty Act (MBTA) prohibits killing, possessing, or trading of migratory birds, including grasshopper sparrow, loggerhead shrike, and raptors, except in accordance with regulations prescribed by the Secretary of the Interior. The MBTA encompasses whole birds, parts of birds, and bird nests and eggs. In addition, birds of prey, or raptors, are protected in California under provisions of the State Fish and Wildlife Code, Section 3503.5, which prohibits the unlawful take, possession, or destruction of any birds of prey or nests of birds of prey. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFW.

While trees would not be removed as part of the proposed project, foraging habitat could be disturbed by construction of the project area. If a migratory bird or raptor should nest on or adjacent to the site prior to or during proposed construction activities, such activities could result in the abandonment of active nests or direct mortality to special-status birds.

Burrowing Owls

The Biological Evaluation identified the burrowing owl as having the potential to occur in the project area.

- Burrowing owl (*Athene cunicularia*)

While the ground-dwelling burrowing owl was not observed on the site during the 2018 site visit, suitable habitat for burrowing owls is present on-site in the form of small mammal burrows. Listed as a California species of special concern, if a burrowing owl were to nest or occupy a burrow in the proposed project area, construction activities could result in the abandonment of active nests or direct mortality of the birds. Given the small size of the project site, occurrence of the burrowing owl is unlikely, but construction activities that adversely affect the nesting success of the burrowing owl constitute a violation of State

and federal laws. Additionally, should burrowing owls occur in the development area during the breeding season, project buildout would result in the permanent loss of burrowing owl habitat.

Special-Status Bats

The Biological Evaluation identified the following special-status bats as having the potential to occur in the project area:

- Pallid bat (*Antrozous pallidus*);
- Townsend's big-eared bat (*Plecotus townsendii*); and
- Western red bat (*Lasirurus blossevillii*).

All bats listed above are classified as California Species of Special Concern. All three special-special-status bats roost in rocky outcrops, caves, and grasslands. The riparian habitat and tree foliage in the project area provide potential foraging and roosting habitat. The nearest documented occurrence of all three species is more than three miles from the site.

Mammals

The Biological Evaluation identified the following mammals as having the potential to occur in the project area:

- Ringtail (*Bassariscus astutus*);
- American badger (*Taxidea taxus*);
- San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*); and
- San Joaquin kit fox (*Vulpes macrotis mutica*).

Many special-status mammal species have the potential to occur on the project site. Ringtail is a California protected species that resides in rocky or tails slopes in riparian habitats. Suitable habitat is restricted to the riparian woodlands in the project area. Ringtails have not been documented within three miles of the site, but could be impacted if an individual ringtail appears on the project site. American badger, a California species of special concern, is found in drier open stages of most shrub, forest, and herbaceous habitats. The project site provides suitable habitat for badgers, although the nearest documented occurrence is just over two miles to the east. The San Francisco dusky-footed woodrat and the San Joaquin kit fox frequent oak riparian, shrub habitats, and annual grasslands. While loss of habitat would not impact either species, harm could occur if an individual enters the project site.

Conclusion

As discussed above, the proposed project site contains special-status plants which could be impacted as a result of the project site. The project site also contains suitable habitat or foraging environment for 19 special-status species with the potential to appear on the property.

Following project implementation, the special-status plant and animals with potential to occur on site would continue to be able to use the site, as the riparian habitat would not be disturbed during operation of the proposed project, and most of the grassland would not be developed at all. While special-status plants and animals could be disturbed during construction activities, with implementation of mitigation, the project would have a ***less-than-significant*** impact on special-status plants and animals.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level.

Large-flowered and bent-flowered fiddleneck

IV-1 *Prior to commencement of ground-disturbing activities, the project applicant shall have a botanical survey conducted during the appropriate blooming season for the large-flowered and bent-flowered fiddleneck to determine whether the species are present on the project site. The results of the survey shall be submitted to the Planning Department. If populations of the species are found to occur on the project site and in the event the project cannot avoid significant impacts to the special-status plants, the on-site open area shall be surveyed to determine if the area adequately compensates for lost populations on the project site. If the open area is not adequate for compensation, then a Site Restoration Plan shall be designed by a qualified botanist. The Restoration Plan shall include identification of appropriate locations to restore lost populations on-site, a description of the planning techniques and restoration effort, a timetable for restoration, a monitoring plan for performance criteria, and a description of site maintenance activities to follow restoration activities. If special-status plants are not found on the project site, additional mitigation would not be necessary.*

Special-Status Amphibians: Foothill yellow-legged frog, California red-legged frog, western pond turtle, and Alameda whipsnake

IV-2 *Prior to the start of construction, a pre-construction survey shall be performed by a qualified biologist to determine presence of special-status amphibians, including foothill yellow-legged frog, California red-legged frog, western pond turtle, and Alameda whipsnake, and submitted to the Planning Department. If any special-status amphibians are present, they shall be relocated by a qualified biologist.*

All construction personnel shall be trained on identification of special-status amphibians and required practices. The construction zone shall be cleared and silt fencing shall be erected and maintained around the construction zone. A qualified biologist possessing a valid permit or approved under an active biological opinion shall be contracted to trap and move amphibians to nearby suitable habitat if amphibians are found inside fenced area.

A qualified biologist shall be on-site during initial ground disturbance in portions of the project area that contain suitable habitat for special-status amphibians.

If special-status amphibians are not found on site during the survey or construction, additional mitigation would not be necessary.

Nesting Raptors and Migratory Birds and Special-Status Bats

IV-3(a) *To the maximum extent practicable, trees planned for removal shall be removed during the non-breeding season (September 1 through January 31). If avoidance is not possible, a qualified biologist shall conduct a pre-construction survey for tree-nesting raptors and special-status bats. The survey shall be conducted no more than 14 days prior to the initiation of demolition and submitted to the Planning Department. If nesting raptors or migratory birds are detected on-site, a suitable construction buffer of 250 feet shall remain in place for the duration of the breeding season or until a biologist gives confirmation that all chicks have fledged.*

Should any active nests be discovered in or near the construction zone, the qualified biologist shall establish a suitable construction-free buffer around the nest. The buffer shall be identified on the ground with flagging or fencing and shall remain in place until the biologist has determined the young have fledged.

If tree removal is not required or special-status bats and migratory birds are not present based on the survey, additional mitigation is not required.

IV-3(b) *Should work be required within the riparian corridor, a bat assessment shall be conducted outside of maternity season and outside of overwintering season when human conviction can occur (March 1-April 15 or August 15-October 15). The assessment shall be submitted to the Planning Department. If avoidance of trees, including hollow or dead trees, is not feasible, any roosting pallid bats, Townsend's big-eared bats, and Western red bat identified in the pre-construction survey shall be passively relocated by a biologist or professional pest control specialist during the non-breeding season (September 1 to April 14).*

If work does not take place within the riparian corridor or special-status bats are not present based on the survey, additional mitigation is not required.

Burrowing Owl

IV-4 *A qualified biologist shall conduct a pre-construction survey for burrowing owls within the construction zone and within 250 feet of the zone no more than 14 days prior to the onset of ground disturbance, and submit the results to the Planning Department. If burrowing owls are present in the work zone,*

a no-activity zone shall be established by a qualified biologist to be large enough to avoid nest abandonment and be a minimum of 250 feet from the nest. If an effective no-activity zone cannot be established in either case, an experienced burrowing owl biologist will develop a site-specific plan (i.e., a plan that considers the type and extent of the proposed activity, the duration and timing of the activity, the sensitivity and habituation of the owls, and the dissimilarity of the proposed activity with background activities) to minimize the potential to affect the reproductive success of the owls.

If burrowing owl is not found as part of the survey conducted, additional mitigation is not required.

American badger and San Joaquin kit fox

IV-5 *Prior to ground-disturbing activity, a pre-construction survey shall be conducted to determine the presence or absence of badgers and San Joaquin kit foxes and the results submitted to the Planning Department.*

If an active badger or San Joaquin kit fox den is identified during a pre-construction survey, a construction buffer of up to 300 feet shall be established around the den. If potential dens cannot be avoided during construction, a qualified biologist shall determine if the dens are occupied. If unoccupied, the qualified biologist shall collapse the dens by hand in accordance with USFWS procedures. If occupied, a qualified biologist shall create an exclusion zone with a radius of 50-100 feet.

If active dens are not found during the pre-construction survey, additional mitigation is not required.

San Francisco dusky-footed woodrats and Ringtails

IV-6 *Prior to ground-disturbing activities, a qualified biologist shall conduct a preconstruction survey for San Francisco dusky-footed woodrats and ringtail. The survey shall be submitted to the Planning Department. If ringtails are located in the project area, construction shall halt until they leave the area on their own. Should a woodrat nest be located, and found in a development area, a qualified biologist shall dismantle the woodrat nest, while providing temporary shelter in the meantime. If ringtails or San Francisco dusky-footed woodrats are not present, additional mitigation is not required.*

b,c. According to the Biological Evaluation, wetlands were not observed on the project site during the October 2018 survey. Potentially jurisdictional waters are present in the project area in the form of Cayetano Creek. The Creek is regulated by the U.S. Army Corp of Engineers (USACE), the Regional Water Quality Control Board (RWQCB), and the CDFW. However, the proposed project would be constructed on the project site, which is dominated by California annual grassland and would not disturb or alter the creek. Should

the project require the placement of fill within the bed and bank of Cayetano Creek or result in the removal of woody riparian vegetation, then the project would be subject to the regulatory authority of the USACE, RWQCB, and CDFW.

Because the project would not disturb the Creek, mitigation at this time is not necessary. However, if any work were to occur within the Creek, including improvements to the culvert bridge, then the project would comply with all State and federal regulations related to construction work that would impact riparian habitats. The applicant may be required to obtain a Section 404 Clean Water Act permit, a Section 401 Water Quality Certification from the RWQCB, or a Section 1600 Streambed Alteration Agreement from the CDFW. Thus, because the proposed project would not have a substantial adverse effect on a riparian habitat or other sensitive natural community or on federally protected wetlands through direct removal or filling, a ***less-than-significant*** impact would occur.

d. Wildlife movement corridors are areas where regional wildlife populations regularly and predictably move during dispersal or migration. Movement corridors in California are typically associated with valleys, rivers, and creeks supporting riparian vegetation, and ridgelines. The project site is located near an existing residence with the remainder of the surrounding area being open space interspersed with sparse residential development. Within the site, wildlife uses the upland non-native grassland as part of their home and dispersal movements; the creek is likely used as a movement corridor and for dispersal. The proposed development would be set back from the creek. Following project buildout, wildlife species presently using the site are expected to continue moving through the open areas of the property and within the riparian corridor associated with the creek after buildout. Therefore, impacts to wildlife movement would be considered ***less-than-significant***.

e. The proposed project would encourage preservation of riparian and seasonal wetlands, consistent with Policy 126 of the ECAP, as well as encourage preservation of areas known to support special-status species, as stated in Policy 125. Thus, the proposed project would be consistent with the goals of the ECAP. The project site is located on a cleared area, and tree removal would not be necessary. Thus, the proposed project would have a ***less-than-significant*** impact related to conflict with any local policies or ordinances protecting biological resources.

f. The project site is located within the Livermore Watershed of Conservation Zone 4 of the East Alameda County Conservation Strategy (EACCS). The EACCS identifies the Foothill yellow-legged frog, California red-legged frog, western pond turtle, Alameda whipsnake, golden eagle, western burrowing owl, American badger, and San Joaquin kit fox as focal species that are protected under federal and state laws. Mitigation Measures IV-1 through IV-6 follow the guidelines of the EACCS in order to adequately mitigate impacts related to the foregoing species, as well as any other special-status species with potential to occur on-site. The mitigation measures identified in this IS/MND help achieve the goals and objectives defined in Section 3.5 and Tables 3-2 and 3-3 of the EACCS. Therefore, upon implementation of mitigation, the proposed project would not conflict with the provisions of the adopted EACCS, or other approved local, regional, or State habitat conservation plan, and a ***less-than-significant*** impact would occur.

V. CULTURAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☐	✖	☐
b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5?	☐	✖	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries.	☐	✖	☐	☐

Discussion

a. Historical resources are typically items that are associated with the lives of historically important persons and/or historically significant events, or that embody the distinctive characteristics of a type, period, region or method of construction. Examples of typical historical resources include, but are not limited to, buildings, farmsteads, rail lines, bridges, and trash scatters containing objects such as colored glass and ceramics. The proposed project site does not contain any existing permanent structures or any other resources that could be considered historic. Additionally, the project site does not contain any historic resources listed on the California Historical Resources Information System, which includes resources listed on the California Register of Historical Resources.[8] Therefore, the project would not cause a substantial adverse change in the significance of a historical resource, and a ***less-than-significant*** impact would occur.

b,c. Cultural resources have not been discovered in or adjacent to the proposed project area. An evaluation of the environmental setting and features associated with known sites was performed by the Northwest Information Center (NWIC).[9] The results determined that Native American resources, including archaeological resources, in the project vicinity have been found in Holocene alluvial deposits, at the foothill to valley floor interface, and near intermittent or perennial watercourses. The project area contains Holocene alluvial fan deposits and is situated adjacent to Cayetano Creek. Given the similarity of the environmental factors, a possibility exists for unrecorded archaeological resources, including human remains, to appear in the project area. Therefore, the proposed project could cause a substantial adverse change in the significance of a unique archaeological resource pursuant to CEQA Guidelines Section 15064.5 and/or disturb human remains, including those interred outside of formal cemeteries. However, with implementation of mitigation, a ***less-than-significant*** impact would occur.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level.

[8] Northwest Information Center. *Record search Results for the proposed Oasis Fund Livermore Grow Facility*. November 16, 2018.
[9] *Ibid*.

V-1 *Prior to the initiation of ground-disturbing activities, the developer or contractor shall inform all supervisory personnel and all contractors whose activities may have subsurface soil impacts of the potential for discovering archaeological resources, paleontological resources, or tribal cultural resources.*

In the event that paleontological or archaeological resources are encountered during grading or other site work, all such work shall be halted immediately within 100 feet of the find(s) and the project applicant shall immediately notify the Planning Department of the discovery. The notation shall also reflect that, in the case that paleontological or archaeological resources are encountered, the project applicant shall be required, at their own expense, to retain the services of a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist for the purpose of recording, protecting, or curating the discovery as appropriate. Further site work within the area of discovery would not be allowed until the preceding work has occurred. Review and approval of the grading plan shall be the responsibility of the Alameda County Public Works Agency.

V-2 *If human remains, or remains that are potentially human, are found during construction, all work shall be halted immediately within 100 feet of the discovery, and a professional archeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance. The archaeologist shall notify the Alameda County Coroner (per §7050.5 of the State Health and Safety Code). If the Coroner determines the remains are Native American and not the result of a crime scene, then the Coroner shall notify the Native American Heritage Commission (NAHC), which then will designate a Native American Most Likely Descendant (MLD) for the project (§5097.98 of the Public Resources Code). The designated MLD shall have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the applicant does not agree with the recommendations of the MLD, the NAHC can mediate (§5097.94 of the Public Resources Code). If an agreement is not reached, the applicant must rebury the remains where they will not be further disturbed (§5097.98 of the Public Resources Code). This shall also include either recording the site with the NAHC or the appropriate Information Center, using an open space or conservation zoning designation or easement, or recording a reinternment document with the county in which the property is located (AB 2641). Work shall not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.*

VI. ENERGY. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	✖	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	✖	☐

Discussion

a,b. The main forms of available energy supply are electricity, natural gas, and oil. A description of the California Green Building Standards Code and the Building Energy Efficiency Standards, with which the proposed project would be required to comply, as well as discussions regarding the proposed project's potential effects related to energy demand during construction and operations are provided below.

California Green Building Standards Code

The California Green Building Standards Code, otherwise known as the CALGreen Code (CCR Title 24, Part 11), is a portion of the California Building Standards Code (CBSC), which became effective with the rest of the CBSC on January 1, 2017. The purpose of the CALGreen Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices. The provisions of the code apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure throughout California. Requirements of the CALGreen Code include, but are not limited to, the following measures:

- Compliance with relevant regulations related to future installation of Electric Vehicle charging infrastructure in residential and non-residential structures;
- Indoor water use consumption is reduced through the establishment of maximum fixture water use rates;
- Outdoor landscaping must comply with the California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), or a local ordinance, whichever is more stringent, to reduce outdoor water use;
- Diversion of 65 percent of construction and demolition waste from landfills;
- Mandatory periodic inspections of energy systems (i.e., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies; and
- Mandatory use of low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particle board.

Building Energy Efficiency Standards

The 2016 Building Energy Efficiency Standards is a portion of the CBSC, which expands upon energy-efficiency measures from the 2013 Building Energy Efficiency Standards resulting in a five percent reduction in energy consumption from the 2013 standards for commercial structures. Energy reductions relative to previous Building Energy Efficiency Standards are achieved through various regulations including requirements for the use of high efficacy lighting, improved water heating system efficiency, and high-performance attics and walls.

It should be noted that the 2019 Building Energy Efficiency Standards will go into effect for building permit applications submitted on or after January 1, 2020. The 2019 standards will provide for additional efficiency improvements beyond the current 2016 standards. Non-residential buildings built in compliance with the 2019 standards are anticipated to use approximately 30 percent less energy compared to the 2016 standards, primarily due to lighting upgrades.[10]

Construction Energy Use

Construction of the proposed project would involve on-site energy demand and consumption related to use of oil in the form of gasoline and diesel fuel for construction worker vehicle trips, hauling and materials delivery truck trips, and operation of off-road construction equipment. In addition, diesel-fueled portable generators may be necessary to provide additional electricity demands for temporary on-site lighting, welding, and for supplying energy to areas of the site where energy supply cannot be met via a hookup to the existing electricity grid. Project construction would not involve the use of natural gas appliances or equipment.

Even during the most intense period of construction, due to the different types of construction activities (e.g., site preparation, grading, building construction), only portions of the project site would be disturbed at a time, with operation of construction equipment occurring at different locations on the project site, rather than a single location. In addition, all construction equipment and operation thereof would be regulated by the CARB In-Use Off-Road Diesel Vehicle Regulation. The In-Use Off-Road Diesel Vehicle Regulation is intended to reduce emissions from in-use, off-road, heavy-duty diesel vehicles in California by imposing limits on idling, requiring all vehicles to be reported to CARB, restricting the addition of older vehicles into fleets, and requiring fleets to reduce emissions by retiring, replacing, or repowering older engines, or installing exhaust retrofits. The In-Use Off-Road Diesel Vehicle Regulation would subsequently help to improve fuel efficiency and reduce GHG emissions. Technological innovations and more stringent standards are being researched, such as multi-function equipment, hybrid equipment, or other design changes, which could help to reduce demand on oil and emissions associated with construction.

The CARB has recently prepared the *2017 Climate Change Scoping Plan Update* (2017 Scoping Plan),[11] which builds upon previous efforts to reduce GHG emissions and is designed to continue to shift the California economy away from dependence on fossil fuels.

[10] California Energy Commission. *Title 24 2019 Building Energy Efficiency Standards FAQ*. November 2018.
[11] California Air Resources Board. *The 2017 Climate Change Scoping Plan Update.* January 20, 2017.

Appendix B of the 2017 Scoping Plan includes examples of local actions (municipal code changes, zoning changes, policy directions, and mitigation measures) that would support the State's climate goals. The examples provided include, but are not limited to, enforcing idling time restrictions for construction vehicles, utilizing existing grid power for electric energy rather than operating temporary gasoline/diesel-powered generators, and increasing use of electric and renewable fuel-powered construction equipment. The In-Use Off-Road Diesel Vehicle Regulation described above, with which the proposed project must comply, would be consistent with the intention of the 2017 Scoping Plan and the recommended actions included in Appendix B of the 2017 Scoping Plan.

Based on the above, the temporary increase in energy use occurring during construction of the proposed project would not result in a significant increase in peak or base demands or require additional capacity from local or regional energy supplies. In addition, the proposed project would be required to comply with all applicable regulations related to energy conservation and fuel efficiency, which would help to reduce the temporary increase in demand.

Operational Energy Use

Following implementation of the proposed project, PG&E would provide electricity and natural gas to the project site. Energy use associated with operation of the proposed project would be typical of grow facility uses, requiring electricity and natural gas for interior and exterior building lighting, heating, ventilation, and air conditioning (HVAC), electronic equipment, appliances, security systems, and more. It should be noted that the cannabis would be grown in a greenhouse, which would reduce the required amount of interior lighting, as compared to a typical indoor grow operation. Supplemental lighting would be included and distributed throughout the grow area; however, the required lighting would be typical of commercial uses. Additionally, project operations would include installation of two emergency back-up generators within the project site. The two generators would only be used to provide back-up power to the proposed facilities and during required testing. Thus, the generators would only operate intermittently or in emergency situations. The use of the generators was included in evaluation of the air quality impacts and energy use on-site. In addition to on-site energy use, the proposed project would result in transportation energy use associated with vehicle trips generated by employee commutes.

The proposed project would be subject to all relevant provisions of the most recent update of the CBSC, including the Building Energy Efficiency Standards. Adherence to the most recent CALGreen Code and the Building Energy Efficiency Standards would ensure that the proposed structure would consume energy efficiently through the incorporation of such features as door and window interlocks, direct digital controls for HVAC systems, and high efficiency outdoor lighting. Required compliance with the CBSC would ensure that the building energy use associated with the proposed project would not be wasteful, inefficient, or unnecessary. In addition, electricity supplied to the project by PG&E would comply with the State's Renewable Portfolio Standard (RPS), which requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020 and to 60 percent by 2030. Thus, a portion of the energy consumed during project operations would originate from renewable sources.

With regard to transportation energy use, the proposed project would comply with all applicable regulations associated with vehicle efficiency and fuel economy.

Conclusion

Based on the context above, construction and operation of the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Thus, a ***less-than-significant*** impact would occur.

VII. GEOLOGY AND SOILS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of a known fault?	☐	☐	✖	☐
ii. Strong seismic ground shaking?	☐	☐	✖	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	✖	☐
iv. Landslides?	☐	☐	✖	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	✖	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	✖	☐
d. Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	✖	☐	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	✖	☐
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	✖	☐	☐

Discussion

ai-aiv. The project site is located in an area of moderate seismicity. Active faults do not cross the site and the site is not mapped within an Alquist-Priolo Earthquake Fault Zone;[12] however, the San Francisco Bay Area is an area of high seismic risk. The nearest active faults are the Greenville Fault, located approximately 2.5 miles from the project site, and the Calaveras Fault, located approximately 9 miles from the project site.

Ground Rupture

The proposed project is not underlain by any known faults and as a result, the proposed project would not be subject to risks related to fault rupture.

[12] California Department of Conservation. *State of California, Special Studies Zones, Tassajara Quadrangle, Official Map.* Effective January 1, 1982.

Ground Shaking

Due to the proximity of the site area to nearby active faults, including but not limited to the Greenville and Calaveras fault zones, strong ground shaking could occur at the site as a result of an earthquake on any one of the faults. However, the proposed development would be subject to all applicable regulations within the California Building Standards Code (CBSC) and Chapter 15.08 of the County's General Ordinance Code, which provide standards to protect property and public safety by regulating the design and construction of foundations, building frames, and other building elements. Compliance with such would ensure that a well-designed and well-constructed structure can be reasonably expected to resist collapse, thus reducing loss of life in a major earthquake.

Landslides

The project site is located on relatively flat land, and according to the ABAG, is not at high risk of landslides.[13]

Liquefaction

According to the ABAG Resilience Program's interactive Hazards Map, the project site is located in an area of relatively low liquefaction susceptibility.[14]

Conclusion

The project site is not within an Alquist-Priolo Earthquake Fault Zone. While the San Francisco Bay Area is an area of relatively high seismic risk, the proposed project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, or landslides. Therefore, a ***less-than-significant*** impact would occur.

b. Ground disturbance on the project site would be limited to the project area. Because the area is relatively uniform in elevation, grading would be minimal and soil disturbance would mostly be related to paving and construction. During construction, activities would be subject to the grading, erosion, and sediment control regulations included in Chapter 15.36 of the County Code of Ordinances.[15]

Per the Alameda County Code of Ordinances, new development within the County that disturbs one or more acres of land is required to comply with the National Pollutant Discharge Elimination System (NPDES) General Construction Permit and prepare a Stormwater Pollution Prevention Plan (SWPPP) incorporating Best Management Practices (BMPs) to control sedimentation, erosion, and hazardous materials contamination of runoff during construction. Including the paving of the parking area, the proposed project would disturb approximately 3.5 acres and, thus, would be subject to such requirements. In

[13] Association of Bay Area Governments. *Resilience Program.* Available at: http://gis.abag.ca.gov/website/Hazards/?hlyr=liqSusceptibility. Accessed December 2018.
[14] *Ibid*.
[15] Alameda County. *Alameda County Code of Ordinances.* October 9, 2018.

addition, per Chapter 15.36.240 of the County Code of Ordinances, the project applicant would be required to submit a grading plan to Alameda County Public Works Department prior to the approval of improvement plans and issuance of building permits, which includes a conceptual plan for erosion and sediment control. The plan shall conform to County standards to prevent significant sediment and soil erosion during construction and include the standards and guidelines found in the California Stormwater Quality Association, Stormwater Best Management Practice Handbook. Compliance with such would ensure that the proposed project would not in substantial soil erosion or the loss of topsoil, and a ***less-than-significant*** impact would occur.

c. The project site is not located within an Alquist-Priolo Earthquake Faulting Zone, and as noted previously, the ABAG does not deem the site high risk for landslides or liquefaction. In addition, as noted earlier, the CBSC and Chapter 15.08 of the County Code of Ordinances provide standards to protect property and public safety by regulating the design and construction of excavations, foundations, building frames, and other building elements. Compliance with applicable ordinances, coupled with the low risk for landslides and liquefaction in the project area, would ensure that the soil would not become unstable as a result of the project and cause a landslide, lateral spreading, subsidence, liquefaction, or collapse. Thus, a ***less-than-significant*** impact would occur.

d. Per the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey program,[16] two mapped soils exist in the project area. The composition of each soil is listed in Table 4 below.

Table 4
Soils Present on Project Site

Soil Type	Percent Slope	Percent Linear Extensibility	Percent Clay	Shrink-Swell Rating
Clear Lake clay	0-2	8.7	45	1.00
Diablo clay	9-15	7.5	50	1.00

The NRCS classifies soils as having a high expansive potential if the soil has a linear extensibility rating of greater than three percent and a clay content of greater than 25 percent.[17] Based on the above, the project site would be classified as having a high expansion potential by the NRCS. Therefore, the project would be located on expansive soil as defined by Table 18-1b of the Uniform Building Code; however, with implementation of mitigation, the impact would be ***less-than-significant***.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

[16] United States Department of Agriculture Natural Resources Conservation Service. *Web Soil Survey*. Available at: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed December 2018.

[17] Natural Resources Conservation Service. *Calculated Coefficients of Linear Extensibility*. Available at: https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/office/ssr10/tr/?cid=nrcs144p2_074840. Accessed July 2018.

VI-1 *Per the Alameda County Code of Ordinances, Chapter 15.36.320, a geotechnical or geologic investigation report shall be required when the shrink-swell rating of the soil in the area is greater than 0.5 or the County has reason to suspect that highly expansive soils are present.*

All grading and foundation plans for the development shall be approved by the County Public Works Agency. The plans shall ensure that all geotechnical recommendations specified in the geotechnical or geologic investigation report for the proposed project are properly incorporated and utilized in the project design, including recommendations related to expansive soils.

e. The proposed project would include construction of a septic system, septic tank, and leach field. The septic system would connect to a two-inch force main, which would drain to the leach field for purification. The project would be required to submit a Service Request Application for an Onsite Wastewater Treatment Systems (OWTS) permit through the Alameda County Environmental Health Department (ACEHD). The geotechnical report performed for the project site would also be submitted to the ACEHD for review.

Additionally, the project would be subject to Section 15.18.040 of the County Code of Ordinances, which requires that any proposed OWTS follow the standards and guidelines contained in the Alameda County OWTS Manual. Every OWTS must also adhere to all federal, state, and local building, mechanical, electrical, and plumbing codes. Thus, the proposed project would have a ***less-than-significant*** impact related to soils being incapable of adequately supporting the use of a septic system.

f. Paleontological resources or fossils are the remains of prehistoric plant and animal life. Fossil remains such as bones, teeth, shells, and wood are found in the geologic deposits in which they are originally buried. The project site is underlain by Holocene or Pleistocene age Quaternary alluvium and marine deposits. Based on the CHRIS search performed for the proposed project, cultural resources have been found in Holocene alluvial deposits in Alameda County. Given the similar conditions at the project site, ground-disturbing activities could result in the discovery of a paleontological resource. Disturbance of such could result in a *potentially significant* impact; however, the impact would be ***less-than-significant*** with mitigation incorporated.

Mitigation Measure(s)

VI-2 Implement Mitigation Measures V-1 and V-2.

VIII. GREENHOUSE GAS EMISSIONS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	✖	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?	☐	☐	✖	☐

Discussion

a, b. Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on earth. An individual project's GHG emissions are at a micro-scale level relative to global emissions and effects to global climate change; however, an individual project could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. As such, impacts related to emissions of GHG are inherently considered cumulative impacts.

The portion of the project site proposed for development is predominantly vacant; as such, substantial existing sources of GHG emissions do not exist on-site. Accordingly, implementation of the proposed project would cumulatively contribute to increases of GHG emissions. Estimated GHG emissions attributable to future development would be primarily associated with increases of carbon dioxide (CO_2) and, to a lesser extent, other GHG pollutants, such as methane (CH_4) and nitrous oxide (N_2O), associated with area sources, mobile sources or vehicles, utilities (electricity and natural gas), water usage, wastewater generation, and the generation of solid waste. The primary source of GHG emissions for the project would be mobile source emissions. The common unit of measurement for GHG emissions is expressed in terms of annual metric tons of CO_2 equivalents ($MTCO_2e$/yr).

The project site is located within Alameda County and is within the jurisdictional boundaries of the BAAQMD. Both Alameda County and BAAQMD have recommended approaches for analyzing a project's potential impacts related to GHG emissions. The following sections present an analysis of potential impacts related to GHG emissions under Alameda County and BAAQMD approaches separately.

Alameda County

The County has adopted a Community Climate Action Plan (CCAP), which includes measures directed at reducing GHG emissions from existing and future development throughout unincorporated portions of the County.[18] Upon adoption, the CCAP was integrated into the County's General Plan. Successful implementation of the CCAP is

[18] Alameda County. *Community Climate Action Plan*. Adopted February 4, 2014.

intended to reduce GHG emissions to 15 percent below 2005 levels by 2020 and set the County on a path toward reducing emissions to 80 percent below 1990 levels by 2050, as required by statewide GHG emission reduction goals.[19] In order to determine the consistency of a proposed project with the CCAP, the CCAP directs staff to consider the following: the extent to which the project supports or includes applicable strategies and measures, or advances the actions identified in the CCAP; the consistency of the project with population projections adopted by the ABAG; and the extent to which the project would interfere with implementation of CCAP strategies, measures, or actions.

The proposed project would not include development of any new residences, but would involve the employment of between 20 and 30 employees. Given the lack of on-site development of new residential units, the proposed project would not result in direct population growth in excess of ABAG's growth projections. Furthermore, 20 to 30 employees is a relatively small number of employees compared to the existing population of the area. Therefore, the proposed project would not be anticipated to result in a direct on-site or indirect increase in population beyond ABAG's growth assumptions for the region.

The majority of the CCAP's measures concern County actions and provide direction for County staff to develop regulations for future development within the County. To the extent that such CCAP measures have been implemented by the County, the majority of such measures would be incorporated into the County's Green Building Program, which is included as Section 460 of the County Ordinance Code. The proposed project would be required to comply with the applicable regulations included in Section 460 of the County Ordinance Code, and through compliance with Section 460, the proposed project would be constructed in a manner consistent with the CCAP strategies applicable to new development. Furthermore, the proposed project would be required to comply with applicable statewide building codes such as the California Green Building Code (CalGreen) and the California Building Energy Efficiency Standards Code. The foregoing statewide building codes include requirements for construction waste diversion, water use efficiency, energy efficiency, and building system efficiencies. Compliance with such requirements would ensure that the proposed project would not conflict or inhibit implementation of the CCAP, including Waste Strategy 2, which encourages construction waste diversion, Energy Strategy 2, which encourages energy efficiency, and Water Conservation Strategy 3, which encourages water reuse and recycling.

Considering that the proposed project would not conflict with ABAG's population projections for the area, and the project would be designed in compliance with Section 460 of the County Ordinance Code, as well as the State building codes discussed above, the proposed project would be considered to comply with the applicable CCAP strategies. Thus, the proposed project would not be considered to conflict with the CCAP.

[19] Alameda County Planning Department. *Alameda County General Plan Annual Report for 2014*. 2014.

BAAQMD

BAAQMD maintains thresholds of significance for project-level evaluations of GHG emissions. The BAAQMD threshold of significance for project-level operational GHG emissions is 1,100 $MTCO_2e$/yr. BAAQMD's approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions needed to move towards climate stabilization. If a project would generate GHG emissions above the threshold level, the project would be considered to generate significant GHG emissions and conflict with applicable GHG regulations.

The proposed project's GHG emissions were quantified using CalEEMod using the same assumptions as presented in the Air Quality section of this IS/MND, and compared to the 1,100 $MTCO_2e$/yr threshold of significance. The CO_2 intensity factor within the model was adjusted to reflect the Pacific Gas & Electric Company's anticipated progress towards statewide renewable portfolio standard goals. All CalEEMod results are included in the Appendix of this IS/MND.

According to the CalEEMod results, the proposed project would result in unmitigated operational GHG emissions of 298.65 $MTCO_2e$/yr, which is well below the 1,100 $MTCO_2e$/yr threshold of significance. Construction GHG emissions are a one-time release and are, therefore, not typically expected to generate a significant contribution to global climate change. BAAQMD has not adopted a threshold of significance for construction-related GHG emissions. However, even if the proposed project's total construction GHG emissions of 569.97 $MTCO_2e$/yr were to be included with the annual operational GHG emissions, the resultant total GHG emissions of 868.63 $MTCO_2e$/yr would still be below the 1,100 $MTCO_2e$/yr threshold of significance. Therefore, the proposed project would not be expected to result in a significant impact related to GHG emissions, based on BAAQMD's approach to analysis.

Conclusion

Based on the above, the proposed project would not be considered to generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs; and impacts would be considered ***less than significant***.

IX. HAZARDS AND HAZARDOUS MATERIALS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	✖	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	☐	☐	✖	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	✖
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	✖
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	✖
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	✖	☐
g. Expose people or structures, either directly or indirectly, to the risk of loss, injury or death involving wildland fires?	☐	☐	✖	☐

Discussion

a. The proposed project consists of construction of a greenhouse for cannabis cultivation. Cultivation activities would not involve routine transport, use, or disposal of hazardous waste. Cannabis plants and byproducts are organic waste and not hazardous, as defined in Section 42649.8(c) of the Public Resources Code. The proposed project would handle cannabis waste according to California Code of Regulations §8308, Cannabis Waste Management. In accordance with State disposal requirements, the proposed project would compost some organic waste on-site, and any remaining waste would be hauled to a facility that recycles organic material. In transport of any cannabis product, the track and trace system would be used, so as to account for all cannabis product leaving the site.

The proposed project would not employ the use of pesticides and would minimize the use of fertilizer to the extent possible. Additionally, the proposed project would adhere to the County Ordinance Code Chapter 6.106 regulations on handling of pesticides and fertilizers. Because cannabis waste and associated fertilizer products are not considered hazardous,

the project would not create a significant hazard to the public through the routine transport, use, or disposal of hazardous materials and a ***less-than-significant*** impact would occur.

b. Chapter 6.95 of the Alameda County Health and Safety Code requires a Hazardous Materials Business Plan (HMBP) if the project plans to keep hazardous waste above the set thresholds. The thresholds are 55 gallons of a liquid, 500 pounds of a solid, and 200 cubic feet of any compressed gas. Because the project does not plan to use hazardous waste in excess of the set amounts, an HMBP is not required.

Construction activities associated with the proposed project would involve the use of products such as concrete, paints, and adhesives, as well as heavy equipment, which would contain fuels, oils, and hydraulic fluid. However, the project contractor would be required to comply with all California Health and Safety Codes and local ordinances regulating the handling, storage, and transportation of hazardous and toxic materials, as overseen by the California Environmental Protection Agency (CalEPA) and the Department of Toxic Substances Control (DTSC). As such, the proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment, and thus, a ***less-than-significant*** impact would occur.

c. The proposed project site is not located within 0.25-mile of an existing school. The nearest school, Andrew N. Christensen Middle School, is located approximately 3.5 miles south of the site. As noted above, the project would not emit hazardous emissions or involve the routine use, handling, or transport of hazardous materials. Therefore, the proposed project would have ***no impact*** related to the emission of hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within 0.25-mile of an existing or proposed school.

d. According to the list of hazardous materials sites compiled by the California Environmental Protection Agency, pursuant to Government Code Section 65962.5, the proposed project site is not considered a hazardous material site.[20] Therefore, the project would not create a significant hazard to the public or the environment related to such, and ***no impact*** would occur.

e. The project site is not located within an airport land use plan or within two miles of a public or private airport. The Livermore Municipal Airport is the closest airport to the project site and is located approximately seven miles southwest. Therefore, ***no impact*** would occur with respect to airport-related safety hazards

f. The proposed project is consistent with the planned and permitted uses per the zoning designation and would not alter the layout of the existing on-site circulation system. Development of the project would not result in any modifications to roadways currently providing emergency vehicle access along Morgan Territory Road. Consequently, implementation of the proposed project would not impair or physically interfere with the adopted emergency response plan or emergency evacuation plan, and a ***less-than-significant*** impact would occur.

[20] Department of Toxic Substances Control. *EnviroStor*. Available at: http://www.envirostor.dtsc.ca.gov/public/. Accessed December 2018.

g. The proposed project is located in a rural area of the County, and is not adjacent to an urbanized area. According to the Safety Element of the Alameda County General Plan, Figure S-5, the project site is located in a moderate fire hazard severity zone.[21] The Uniform Fire Code, Section 6.04 of the County Ordinance Code, and the CBSC call for the installation, maintenance, and ongoing inspection of fire prevention systems under direction of the local fire chief. Under the Fire Code, Section 903.2.18.1, installation of an automatic sprinkler system would be required for the proposed structures. Policy P2 of the Safety Element would also ensure the project implement careful site design, landscaping, and vegetation management in order to minimize wildland fire hazards. In addition, the project would not involve the placement of housing or other inhabitable buildings on the site. The proposed buildings would be used only during hours of operation, and during times that the proposed buildings are not in use, employees would not be exposed to fire risk at the project site.

Compliance with the Uniform Fire Code and all applicable State and local ordinances would ensure that the proposed project would not expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. Thus, a ***less-than-significant*** impact would occur.

[21] Alameda County Community Development Agency. *Safety Element of the Alameda County General Plan*. February 4, 2014.

X. HYDROLOGY AND WATER QUALITY. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	✖	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	✖	☐	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. Result in substantial erosion or siltation on- or off-site;	☐	☐	✖	☐
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	✖	☐
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	✖	☐
iv. Impede or redirect flood flows?	☐	☐	☐	✖
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	✖
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	✖	☐

Discussion

a. The proposed project is under the jurisdiction of the San Francisco Bay Regional Water Quality Board (SFBRWQB), which operates under the State Water Resources Control Board (SWRCB) to regulate stormwater discharges associated with construction activities and cannabis regulation. Where clearing, grading, or excavation results in a land disturbance of one or more acres, Performance Standard NDCC-13 of the County's National Pollutant Discharge Elimination System (NPDES) permit requires applicants to show proof of coverage under the State's General Construction Permit prior to receipt of any construction permits. Thus, because the project would disturb more than one acre, the project would be required to comply with the County's NPDES permit. The Countywide Clean Water Program requires that all construction projects within the County incorporate construction controls using specific BMPs outlined by the Program.[22]

[22] Alameda Countywide Clean Water Program. *Construction.* Available at: https://www.cleanwaterprogram.org/index.php/businesses/construction.html. Accessed December, 2018.

As stated by the Cannabis Cultivation Policy[23], the State Water Board certifies that cannabis cultivation activities must comply with the conditions of the Policy and General Order.

During operation, the proposed project would adhere to all State and local requirements regarding waste discharge requirements. All commercial cannabis cultivators must enroll and obtain coverage under the Cannabis General Order Waste Discharge Requirements (WDR) program, as well as obtain verification of the project water source by the SWRCB.

Stormwater that falls directly on the project site would be managed through stormwater facilities constructed for the project, including a rip rap dissipator and a ten by ten-foot bioretention area which would include a cobble dissipator to properly treat and mitigate the flow volumes for water quality, hydromodification, and flood control requirements. After being properly treated and dispersed, outflow would then flow into Cayetano Creek. Implementation of BMPs under the NPDES permit and enrollment in the WDR program, would ensure that the project would have a ***less-than-significant*** impact related to water quality standards and waste discharge requirements.

b,e. Water supplies to the project site are serviced by Zone 7 of the Alameda County Flood Control and Water Conservation District, known as the Zone 7 Water Agency (Zone 7). Water resources for Zone 7 include surface water and groundwater. Groundwater is supplied primarily by the Livermore Valley Groundwater Basin. Per the Agency's 2015 Urban Water Management Plan (UWMP), groundwater levels are routinely monitored within the Basin. Zone 7 groundwater recharge supplies 3,900 acre-feet of raw water to customers and retailers. The UWMP expects groundwater recharge and artificial recharge to meet the projected demands through 2035.

The proposed project would obtain water for cannabis cultivation through four wells on the project site that cumulatively produce four gallons per minute (gpm) or 5,800 gallons per day (gpd). Additionally, the proposed project would harvest rain water through underground vaults which would connect to the water system. Rain harvesting would be anticipated to harvest 314,000 gallons per year (gpy). Water storage within the project site would be provided by a 500,000-gallon storage reservoir. Irrigation for cannabis is estimated to require 3,600 gpd year-round, with some expected seasonal variation. Seasonal fluctuations, however, are moderated by the use of grow lights and climate control in the greenhouse. Water for cannabis irrigation would undergo reverse osmosis treatment and be blended with reclaimed water. The water demand for pre-irrigation reverse osmosis treatment is 3,000 gpd. The reclamation system would be a separate treatment that would collect climate-control flush water used for processing and cleaning, concentrate from pre-irrigation reverse osmosis treatment, and irrigation runoff and return water. The project sanitary uses include bathroom and sink use by project employees and visitors. The domestic-grade wastewater from sanitary uses would be discharged to a new commercial OWTS located on the project site. Water demand for sanitary uses would be approximately 550 gpd. Other water demand would include supply to the existing residences on the project site and landscape irrigation. Total yearly water demand for the project is anticipated to be 2.3 million gpy, which is equal to seven acre-feet per year.

[23] State Water Resources Control Board. *General Waste Discharge Requirements and Waiver of Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities.* October 17, 2017.

In order to evaluate groundwater supply for the proposed project and potential drawdown effects from pumping the wells on the project site, a Conceptual Water-Supply and Wastewater Plan was created for the proposed project.[24] The study took in to account the geologic framework at the project site and in the vicinity, estimated areal recharge to groundwater at the property, conducted a 24-hour pumping and recovery test at each of the four wells on the project site, calculated the area of influence estimates of pumping from the wells, and characterized the ionic composition of groundwater collected at each well. Based on the results of the study, groundwater recharge from rainfall on the project site is estimated to result in eight acre-feet of recharge on average per year, which is approximately equivalent to continuous pumping of five gpm or 7,200 gpd.

With continued pumping from an aquifer, the hydraulic pressures and water levels in the vicinity of the wells are lowered and the effect propagates outward from the well, which can be conceptually represented as a "cone of depression." A recharge boundary results in reduced drawdown after the cone of depression encounters a stream, lake, or other recharge source, while a no-flow or low-permeability boundary results in increased drawdown after the cone of depressions encounters a zone of low permeability due to change in lithology or a fault. Neither a recharge boundary from Cayetano Creek, nor a bedrock boundary was apparent from the 24-hour pumping data. Additionally, the Conceptual Water-Supply and Wastewater Plan estimated the radius of influence of the proposed wells based on a maximum daily demand of four gpm sustained for 24 hours and an average dry-season demand of four gpm for 184 days. The analysis for both cases did not indicate drawdown effects at the nearest neighbor's well.

The proposed project would be required to adhere to the "Water Wells Ordinance" in the County Code of Ordinances, as well as to standards for construction of water wells as set forth in Chapter II of the Department of Water Resources Bulletin No. 74-81, "Water Well Standards: State of California." Any new well must be permitted by Zone 7 before commencement of work.

Overall, the four wells on the project site would supply sufficient water for operations and maintenance of the project without decreasing groundwater supplies or interfering with groundwater recharge. The rain water harvesting and reclamation system would reduce water use directly from the wells. Additionally, based on the Conceptual Water-Supply and Wastewater Plan, the groundwater recharge on the project site would be sufficient to replenish the use on the site. The Plan also determined that the wells would not impact the groundwater table or nearby wells in the vicinity of the project site. Therefore, the proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that a net deficit in aquifer volume or lowering of the local groundwater table level would occur. Because the proposed project would include development of a new well, the proper permitting would be required by the Zone 7 Water Agency. Thus, with mitigation requiring permitting, the project would result in a ***less-than-significant*** impact.

[24] Balance Hydrologics, Inc. *Conceptual Water-Supply and Wastewater Plan, Oasis Fund Livermore Grow Facility, Alameda County, CA.* August 2019.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

IX-1 *Prior to commencement of construction of a new well, the applicant shall apply for and receive a permit as provided in Section 6.88.045 of the County Code of Ordinances, giving permission to proceed. The applicant shall complete a written application and provide all applicable fees at the time of submittal, to be reviewed by the Board of Supervisors of Zone 7 Water Agency.*

The permittee shall begin the work authorized by a permit issued pursuant to Chapter 6.88 of the County Code of Ordinances within 90 days from the date of issuance unless stated otherwise in the permit. The permittee shall notify the administering agency five working days in advance of beginning the permitted work of the date of said beginning work. A permit shall be valid for a term of one year from date of issuance. All construction, reconstruction, or destruction work on wells shall be performed by a person who possesses an active C-57 Water Well Drilling Contractor's License.

ci-ciii. The proposed project would include construction of rainwater harvesting system which would be used to capture rainwater falling directly on the project site through construction of underground vaults and connection to the water system. Additionally, stormwater and runoff from impervious surfaces and adjacent landscaping would be directed to a bioretention area that would properly treat and mitigate the flow volumes for water quality, hydromodification, and flood control requirements. The bioretention area would be located at the southern edge of the project site, between the greenhouse and the driveway. Outflow from the bioretention area would be routed into the drainage ditch along the driveway through a flow spreader in order to join the off-site flows and discharge into Cayetano Creek. Although the project site is not subject to flooding under existing conditions, the drainage improvements would ensure that flooding would not occur on the project site.

All municipalities within Alameda County (and the County itself) are required to develop more restrictive surface water control standards for new development projects as part of the renewal of the Countywide National Pollutant Discharge Elimination System (NPDES) permit. Known as the "C.3 Standards", new development and redevelopment projects that create or replace 10,000 or more square feet of impervious surface area must contain and treat stormwater runoff from the site. The proposed project would adhere to applicable standards through routing runoff to the proposed bioretention area and properly treating the runoff prior to discharge into Cayetano Creek.

The proposed project would not alter the existing drainage pattern such that would alter the course of a stream or river. Consequently, the proposed project would not substantially alter the drainage pattern of the site, including through the alteration of the course of a stream or river, or result in substantial erosion or siltation, increase the rate of surface runoff, or create runoff water which would exceed the capacity of existing or planned stormwater drainage systems, and a ***less-than-significant*** impact would occur.

civ. According to the Federal Emergency Management Agency (FEMA), the proposed project is located within an Area of Minimal Flood Hazard (Zone X).[25] Dams built in the Bay Area over the last 150 years were constructed using then-current construction techniques and seismic knowledge of the time. In the 1970s, State law required dam owners to develop maps depicting areas that might be inundated by dam failure. The Alameda County Emergency Operations Plan does not map the project site in an area which would be impacted by dam failure.[26] Additionally, the project would not involve construction or placement of housing. For the reasons listed above, the project would have ***no impact*** related to exposure of people or structures to risk of loss, injury or death involving flooding, including dam failure.

d. A tsunami is a series of waves generated in a body of water by an impulsive disturbance along the seafloor that vertically displaces the water. A seiche can be considered very similar to a tsunami, with the difference being that the water waves are generated in a closed or restricted body of water such as a lake or within a harbor. The project site is located over 20 miles from the coastline and over 3.5 miles from closest reservoir. The project site is not considered at risk of inundation by the Alameda County Emergency Operations Plan. Additionally, mudflows typically affect areas where wildfires or human modification of the land have destroyed vegetation and on steep slopes that have been altered for construction of buildings. Because the area has not experienced a wildfire and is considered at moderate risk, and the area is not located on a steep slope or in areas where slopes have been modified, the mudflow risk would not be high. Therefore, a ***less-than-significant*** associated with inundation by seiche or tsunami would occur.

[25] Federal Emergency Management Agency. *FEMA Flood Map Service Center*. Accessed December 2018. Available at: https://msc.fema.gov/portal/home.

[26] Alameda County. *Alameda County Emergency Operations Plan.* December 2012.

XI. LAND USE AND PLANNING *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Physically divide an established community?	☐	☐	☐	✖
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	✖	☐

Discussion

a. A project risks dividing an established community if the project would introduce infrastructure or alter land uses so as to change the land use conditions in the surrounding community or isolate an existing land use. The proposed project would develop a greenhouse and a processing building for the purpose of cultivating cannabis, which is a permitted use under the Agricultural zoning designation. The project site is located on privately owned agricultural land and would be consistent with the land use and zoning designations of the County. Thus, the proposed project would not physically divide an established community, and ***no impact*** would occur.

b. The proposed project site is zoned Agricultural and designated Resource Management in the ECAP. The site is also located in an area outside of the urban growth boundary as established by Measure D. Measure D restricts areas outside of the urban growth boundary to agricultural, natural resource, and rural uses, and prevents the construction of infrastructure to support any urban development. The Alameda County Zoning Ordinance states that cultivation of cannabis may be an appropriate conditionally permitted use in the agricultural districts and outside of the urban growth boundary established by Measure D. Additionally, the project would adhere to Policy 79 of the ECAP, which requires areas designated Resource Management do not require the extension of public sewer or water, detract from agricultural production in the area, or create a concentration of commercial uses in the area. Finally, the proposed project would comply with Chapters 17.52.585 and 6.106 of the Ordinance Code which regulates the cultivation of cannabis in the unincorporated areas of Alameda County. Because the proposed project would be consistent with all applicable land use plans, policies, and regulations with jurisdiction over the project, a ***less-than-significant*** impact would occur related to significant environmental impacts due to a conflict with any land use plan, policy, or regulation adopted for the purpose of mitigating an environmental effect.

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

Discussion

a,b. The California Division of Mines and Geology (CDMG) has produced Mineral Land Classification (MLC) Studies as specified by the Surface Mining and Reclamation Act of 1974. According to CDMG mapping, the proposed project site is not located within a specified Mineral Resource Zone (MRZ).[27] In addition, the ECAP does not specify mineral resource recovery sites within the vicinity of the proposed project site. Therefore, the proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State or result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Thus, ***no impact*** regarding mineral resources would result.

[27] California Division of Mines and Geology. *Mineral Resource Zones and Resource Sectors, Alameda County*. 1983.

XIII. NOISE. *Would the project result in:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	✖	☐
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	✖	☐
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	✖

Discussion

a. The existing noise environment in the project vicinity is defined primarily by vehicle noise from Morgan Territory Road and Manning Road. However, Morgan Territory Road is not a frequented road, and, thus, the current noise environment is not substantial. The nearest sensitive receptors to the project site would be the existing single-family residence located on the property and a single-family residence located approximately 600 feet west of the site.

Construction Noise

Potential future construction within the project site would result in temporarily increased noise levels from grading, and other construction activities on the project site. Construction noise from potential future site development would include mechanical equipment such as earthmovers, dump trucks, and similar equipment during grading, the delivery of construction materials, construction of foundations, framing, roofing, and similar operations. Because noise levels dissipate with distance from the source, noise levels received by the surrounding sensitive receptors would fluctuate depending on the distance of the noise source on the project site from the fixed location of the receptor.

Construction activities would temporarily increase the level of noise produced on the project site. Based on the Federal Highway Administration's Construction Noise Handbook, activities related to construction would generate maximum noise levels ranging from 76 to 80 dB at a distance of 50 feet.[28] The noise levels from construction operations decrease at a rate of approximately 6 dB per doubling of distance from the noise source. Therefore, construction noise levels at the nearest off-site sensitive receptor would be approximately 60 dB at most. According to the Noise Element of the Alameda County General Plan, residences surrounded by agricultural land should not be exposed to noise levels above 65 dB. Considering that construction-related noise is not anticipated to exceed

[28] Federal Highway Administration. *Construction Noise Handbook*. August 2006.

60 dB at the nearest residence, the construction activity would not exceed the Alameda County General Plan Noise Standard.

In addition, construction noise would only occur during the approximately three-month construction period. Chapter 6.60 of the Alameda County Code of Ordinances includes various regulations and standards for noise levels and vibration within the County. Section 6.60.070 of the Code exempts all noise sources associated with construction, provided construction activities are restricted to the hours of 7:00 AM to 7:00 PM, Monday through Friday, and 8:00 AM to 5:00 PM on Saturday and Sunday. The proposed construction activities would be limited to such hours in compliance with the County Code.

Project Operational Noise

The proposed project includes development of a greenhouse and processing building for cannabis cultivation, as well as an associated parking area. Typical noise-generating equipment associated with cannabis cultivation would include ventilation fans, truck loading/unloading, and water pumps. The proposed project would implement a wet-wall evaporative cooling system, which uses the natural cooling process of water evaporation in conjunction with exhaust fans to provide cooling for large volume buildings. The use of the wet-wall system would reduce noise typically associated with HVAC systems. The proposed project would use state-of the-art technology in order to increase the efficiency of a ventilation fan, and reduce operational noise levels.

Project operations would include two backup generators on-site. Use of the generators would be limited to occasional testing and emergency situations. While the location of the generators has not yet been determined, they would likely be close to the proposed greenhouse structure, and more than 200 feet from the nearest sensitive receptor. Considering the distance between the proposed generators and nearest sensitive receptors, the noise produced by the generators would not be anticipated to disturb any nearby residents.

Traffic to the project site would be limited to employees and authorized personnel, as operation is not open to the public. The project is expected to produce at most 110 trips per day, which is well below the current 576 trips along Morgan Territory Road and 2,229 trips along Manning Road. Given the small addition of trips, the proposed project would not result in substantial amounts of additional traffic noise.

Conclusion

Overall, the temporary nature of construction activities on the project site, as well as adherence to the City's General Plan noise standards, would ensure that the project would not generate any substantial temporary increase in ambient noise levels. Additionally, the distance of the project site to any nearby sensitive receptors, as well as the limited trip generation resulting from project operations, would ensure that the proposed project would not generate a substantial permanent increase in ambient noise levels in excess of standards established in the local general plan or noise ordinance. Thus, the proposed project would have a ***less-than-significant*** impact related to such.

b. Heavy-duty construction equipment would be used during construction of the proposed project (e.g., tractors, pavers, excavators). Such equipment has the potential to generate groundborne vibration. Levels of vibration include imperceptible vibrations at low levels, low rumbling and minor vibration at moderate levels, and structural or architectural damage at high levels. For structural damage, the California Department of Transportation (Caltrans) uses a vibration limit of 0.5 inches/second, peak particle velocity (in/sec, PPV), for buildings structurally sound and designed to modern engineering standards and 0.2 in/sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern. The threshold of 0.2 in/sec PPV is also used by Caltrans as the threshold for human annoyance caused by vibration. Although all surrounding structures are assumed to be structurally sound, the 0.2 in/sec PPV threshold offers a conservative value with regards to structural damage and is used as the threshold of significance for the analysis. Table 5 presents typical vibration levels that could be expected from construction equipment at a distance of 25 feet.

Table 5
Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 ft (in/sec)
Vibratory Roller	0.210
Large Bulldozer	0.089
Caisson drilling	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003

Source: Caltrans, Transportation and Construction Vibration: Guidance Manual, September 2013.

The most substantial source of vibration during construction activities would be operation of vibratory rollers, which, as shown above, would generate vibrations of approximately 0.21 inches per second peak particle velocity (PPV) at a distance of 25 feet.[29]

The nearest sensitive receptor is the single-family residence on the property of the project site, located approximately 200 feet away. Because the closest residence is at least 200 feet away, the PPV experienced at the nearest residence would be reduced from the PPV's reported in Table 5. The Caltrans *Transportation and Construction Vibration Guidance Manual* provides a formula for estimating maximum vibration dissipation with distance.[30] Calculations were completed to determine the maximum vibration caused by the construction activities using the Caltrans formula. Because the vibratory roller would be the most intense possible source of vibrations, the reference PPV of 0.210 in/sec was used for the calculations. At a distance of 200 from the project site any sensitive receptors would receive 0.021 in/sec PPV from the use of a vibratory roller, which is well below the 0.2 in/sec PPV significance threshold used for this analysis. Furthermore, construction is temporary and would be restricted to daytime hours per the County Ordinance Code

[29] California Department of Transportation. *Transportation and Construction Vibration, Guidance Manual.* September 2013.

[30] $PPV_{Equipment}=PPV_{Reference}(25/D)^{1.1}$
Where: D = distance from equipment to the receiver in feet (assumed to be 200 feet)
PPV_{Ref} = reference PPV at 25 feet (from Table 5)
Source: Caltrans. *Transportation and Construction Vibration Guidance Manual*. [pg. 37]. September 2013.

Section 6.60.070. Consequently, the project would not result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels, resulting in a ***less-than-significant*** impact.

c. As noted previously, the proposed project site is not located within the vicinity of a public airport or a private airstrip, nor is the site addressed by an airport land use plan. Therefore, the proposed project would not expose people residing or working in the project area to excessive noise levels associated with airports, and ***no impact*** would occur.

XIV. POPULATION AND HOUSING. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure)?	☐	☐	☐	✖
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	✖

Discussion

a,b. The nature of the improvements included in the proposed project is such that the project would not induce population growth in the project area either directly or indirectly. In addition, the proposed project does not involve the demolition of existing housing, the creation of new housing, or the extension of major infrastructure. As such, the project would not displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere. Thus, the proposed project would result in ***no impact*** with regard to population and housing.

XV. PUBLIC SERVICES. *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Fire protection?	☐	☐	✖	☐
b. Police protection?	☐	☐	✖	☐
c. Schools?	☐	☐	☐	✖
d. Parks?	☐	☐	☐	✖
e. Other Public Facilities?	☐	☐	☐	✖

Discussion

a,b. Fire protection is currently provided to the project site by the Alameda County Fire Department. The Fire Department currently serves a population of approximately 394,000 people over 508 square miles. The Department has 30 fire stations, 26 engine companies, and sufficient equipment and firefighters to provide a wide variety of services to the unincorporated areas, as well as many cities, of Alameda County. The proposed project is consistent with land use and zoning designations and thus, has been accounted for in the County's necessary supply of fire protection. Additionally, the proposed project would adhere to Chapter 6.04 of Title 6 of the Ordinance Code relating to the prevention of fires. The Code requires the proposed project pay fire fees required by the County and install an automatic sprinkler system where a possible fire area exceeds 5,000 square feet. Thus, because the project would be in compliance with the County Fire Department regulations, consistent with the land use designation for the project site, and would not directly induce any population growth, fire services currently provided by the County would be adequate to serve the proposed project without the need for new or expanded facilities.

The Alameda County Sheriff's Office provides policing to the project site and other unincorporated areas of the County. The Sheriff's Office has over 1,500 authorized positions and a sufficient budget to provide policing services to the County. Each employee of the proposed project would be required to submit fingerprints and photo identification for background checks and verification by the Sheriff's Office. Additionally, the security plan created for the proposed project would undergo review and approval by the Sheriff's Office. During operations of the proposed project, security video would be maintained for 30 days and made available to the Sheriff's Office upon request. In accordance with Section 6.106.020 of Ordinance Code, the project would adhere to all requirements by the Sheriff's Office.

The proposed project would be consistent with land use and zoning designations and would not involve construction of housing which would induce population growth in the area. Additionally, because the project would adhere to all applicable regulations regarding fire and police services, the proposed project would not create additional demand for fire and police protection services. Therefore, the proposed project would result in a ***less-than-***

significant impact related to the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts.

c-e. The proposed project would not directly result in the development of housing or increase the population of the area. Thus, the proposed project would not create an increased need for schools or parks in the vicinity. Thus, the proposed project would not directly or indirectly result in an increase in demand for schools, parks, or other public facilities. Therefore, ***no impact*** would occur.

XVI. RECREATION. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	✖
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	✖

Discussion

a,b. The proposed project would not involve the placement of housing or other development that would create a demand for recreational services or facilities. Consequently, the proposed project would not result in the physical deterioration of existing neighborhood or regional parks or other recreational facilities, nor would the project require construction or expansion of recreation facilities, and ***no impact*** would occur.

XVII. TRANSPORTATION. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	✖	☐
b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	✖	☐
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	✖	☐
e. Result in inadequate emergency access?	☐	☐	✖	☐

Discussion

a. A Traffic Impact Analysis (TIA) was conducted for the proposed project by TJKM in December 2018[31] (see Appendix C). The purpose of the TIA was to study existing and future conditions of traffic at the project site.

The TIA evaluated the following study intersections, also shown in Figure 9 below, during the peak periods of 7:00-9:00 AM and 4:00-6:00 PM:

1. Morgan Territory Road/Manning Road; and
2. Proposed project driveway/Morgan Territory Road

The operations of roadway facilities are described with the term Level of Service (LOS). LOS is a qualitative measure that describes operational conditions as they relate to the traffic stream and perceptions by motorists and passengers. The operational LOS are given letter designations from A to F, with A representing the best operating conditions (free-flow and F the worst (severely congested flow with high delays).

According to the 2012 Alameda Countywide Transportation Plan, the LOS standard for highway systems is LOS D. The ECAP Policy 193 requires traffic volumes on intercity arterials in the project vicinity do not exceed LOS D within unincorporated areas. Table 6 below summarizes the relationship between LOS and delay for unsignalized intersections.

Study Scenarios

The study addressed the following traffic scenarios:

- Existing Conditions – Evaluates the study intersections based on existing traffic volumes, lane geometry, and traffic controls; and
- Existing Plus Project Condition – Identical to Existing Conditions, but includes the addition of traffic from the proposed project.

[31] TJKM. *Traffic Impact Analysis for the Proposed Cannabis Cultivation Facility at 7033 Morgan Territory Road, Alameda County.* December 2018.

Figure 9
Regional Location of Study Intersections

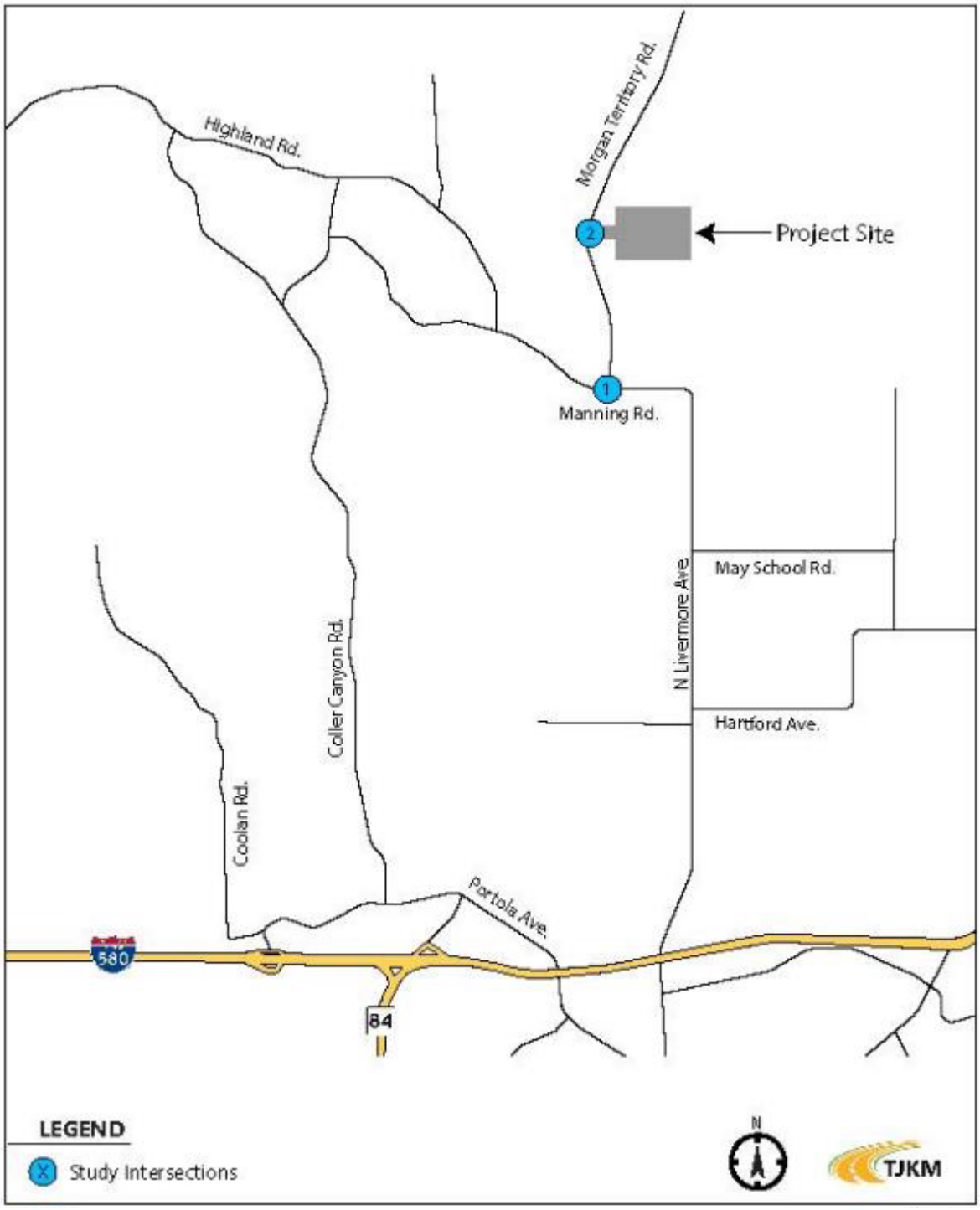


Table 6
Unsignalized Intersection LOS Criteria

LOS	Description	Average Delay (seconds per vehicle)
A	No delay for stop-controlled approaches.	0 to 10
B	Operations with minor delays.	> 10 to 15
C	Operations with moderate delays.	> 15 to 25
D	Operations with some delays.	> 25 to 35
E	Operations with high delays and long queues.	> 35 to 50
F	Operation with extreme congestion, with very high delays and long queues unacceptable to most drivers.	> 50

Source: TJKM. December 2018.

Proposed Project

The proposed project would operate on a continuous spanning of three shifts, seven days per week, with five to six cars per shift. Table 7 shows the expected trip generation for the proposed project. Trip distribution assumptions were developed based on existing travel patterns and are expected to be as follows: 70 percent to/from Livermore Avenue and 30 percent to/from Manning Avenue.

Table 7
Project Trip Generation Estimates

Land Use Type	Size	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Cannabis Cultivation Center	92.53 Acres	11	0	11	0	11	11

Source: TJKM. December 2018.

As shown in the table above, the proposed project would produce 11 peak hour trips and 110 total daily trips.

Existing Plus Project Conditions

The existing operations of the study intersections were evaluated for the highest on-hour volumes during weekday morning and evening peak periods (7:00-9:00 AM and 4:00-6:00 PM, respectively). In addition, seven day average daily traffic (ADT) counts were conducted at both Morgan Territory Road north of Manning Road and Manning Road west of North Livermore Avenue. For Existing Plus Project conditions, project traffic was added to the existing volumes at the study intersections. The Existing versus Existing Plus Project conditions are shown in Table 8 below.

As shown in the table, the study intersections would operate at an acceptable LOS under both Existing and Existing Plus Project conditions. The proposed project would not increase delays at major intersections in the vicinity by more than 0.2 seconds.

Table 8
Intersection LOS – Existing Plus Project Conditions

Intersection	Control	Peak Hour	Existing		Existing Plus Project	
			Delay	LOS	Delay	LOS
1. Morgan Territory Road/Manning Road	Two-Way Stop	AM	10.5	B	10.6	B
		PM	11.7	B	11.8	B
2. Morgan Territory Road/Project Driveway	One-Way Stop	AM	9.0	A	9.0	A
		PM	9.0	A	9.2	A

Source: TJKM. December 2018.

The proposed project would increase vehicle traffic from 576 vehicles to 686 vehicles per day on Morgan Territory Road north of Manning Road. Traffic on Manning Road west of North Livermore Avenue would increase from 2,229 vehicles to 2,339 vehicles per day.

Alternative Transportation

The expected trips to the proposed project would primarily include single passenger vehicles. Based on the TIA counts conducted, pedestrian and bicycle activity along Morgan Territory Road does not exist. The nearest transit stop is approximately seven miles from the project site. While alternative transportation would not likely be used, the proposed project would not create a hazard or otherwise decrease the performance of any forms of alternative transportation. Additionally, because the proposed project is consistent with the site's current land use designation, the proposed project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities.

Conclusion

Per the Alameda County Transportation Commission CMP, projects that are consistent with an applicable General Plan and would result in fewer than 100 peak hour trips are not subject to review by the Commission.[32] Given that the project would generate a maximum of 11 peak hour trips and would be consistent with the site's current General Plan land use and zoning designations, the project would not conflict with the CMP.

In addition, the TIA analyzed the potential impacts on the LOS of nearby intersections and determined that operation of the proposed project would not result in any impacts related to degradation of the LOS of nearby intersections. Therefore, the project would not result in any conflicts with adopted County LOS standards, or plans to maintain such standards.

Because the project is consistent with the site's current land use designation, traffic associated with development of the project site has been accounted for in the County's planning efforts. Furthermore, as discussed above, the TIA showed that implementation of the proposed project would not result in impacts related to the degradation of the LOS at any studied intersections, and thus, the proposed project would not conflict with any

[32] Alameda County Transportation Commission. *2017 Congestion Management Program* [pg. 85]. December 2017.

program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, and pedestrian facilities. Therefore, a ***less-than-significant*** impact would occur related to traffic management.

b. Section 15064.3 of the CEQA Guidelines provides specific considerations for evaluating a project's transportation impacts. Pursuant to Section 15064.3, analysis of vehicle miles traveled (VMT) attributable to a project is the most appropriate measure of transportation impacts. Other relevant considerations may include the effects of the project on transit and non-motorized travel. It should be noted that currently, the provisions of Section 15064.3 apply only prospectively; determination of impacts based on VMT is not required Statewide until July 1, 2020. Thus, evaluation of VMT has not been included.

Nonetheless, the proposed project is consistent with the General Plan land use and would not generate more than 100 peak-hour trips. Thus, the project is consistent with the Alameda County Transportation Commission CMP, which evaluates VMT and has incorporated programs to reduce VMT within the County.

While the incorporation of alternative transportation would not be feasible at the project site, the project is consistent with the County's CMP. Furthermore, VMT analysis is not yet required. Based on the above, the proposed project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b), and a ***less-than-significant*** impact would occur.

c,d. Primary access to the project site would be provided by the existing driveway on Morgan Territory Road. The driveway currently provides access to the existing residence on the site. The internal circulation would include a parking area and two-way driveway. The TIA evaluated any hazards associated with access to the project site.

Site Distance Analysis

The TIA for the proposed project determined that the line of sight between vehicles exiting the driveway and vehicles travelling northbound along Morgan Territory Road is clear and visible. The line of sight of vehicles exiting the driveway and traveling southbound is affected by existing vegetation and a horizontal curve just north of the driveway. Because the foregoing conditions are existing, the TIA recommends to the County that trees in the public right of way be kept trimmed to a minimum of eight feet from the ground and ground cover be kept trimmed to a maximum height of three feet. Additionally, the TIA recommends that the County install a stop sign at the project driveway, as well as blind driveway signs for southbound travelling vehicles. Given that the proposed project would not modify the existing driveway at Morgan Territory Road and would not substantially increase the volume of traffic travelling to and from the project site through the driveway, the proposed project would not substantially increase hazards due to a geometric feature.

Emergency Access

Emergency access to the proposed project would continue to be provided by the full access driveway on Morgan Territory Road. The internal circulation for the proposed project was reviewed as part of the TIA for issues related to safety and parking. Based on the TIA, the access roadway is expected to be adequate for passenger vehicles, as well as emergency vehicles.

Conclusion

Based on the above, the proposed project driveway at Morgan Territory Road would provide adequate site distance for vehicles exiting the project driveway. In addition, adequate emergency vehicle access would be provided to the project site. Therefore, a ***less-than-significant*** impact could occur related to substantially increasing hazards due to design features or introduction of incompatible uses.

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

Discussion

a,b. Tribal cultural resources are generally defined by Public Resources Code 21074 as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe.

As discussed in Section V, Cultural Resources, of this IS/MND, the proposed project site does not contain any existing permanent structures or any other resources that could be considered historic, and Native American resources have not been identified within the vicinity of the site. Furthermore, a search of the Sacred Lands File maintained by the Native American Heritage Commission (NAHC) returned negative results for the presence of known tribal resources in the project area. Thus, the proposed project would not be expected to cause a substantial adverse change in the significance of a listed tribal cultural resource.

As discussed in Section V of this IS/MND, Native American resources in the project vicinity have been found in Holocene alluvial deposits, at the foothill to the valley floor interface, and near intermittent or perennial watersheds. Similar circumstances exist in the project area. As such, while the discovery of underlying resources considered significant to a California Native American Tribe is not expected, the possibility exists that construction of the proposed project could result in a substantial adverse change in the significance of a tribal cultural resource if previously unknown tribal cultural resources are uncovered during grading or other ground-disturbing activities. However, with implementation of mitigation, a ***less-than-significant*** impact would occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

XVII. Implement Mitigation Measures V-1 and V-2.

XIX. UTILITIES AND SERVICE SYSTEMS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	✖	☐
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	✖	☐
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	✖	☐
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	✖	☐
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	✖	☐

Discussion

a-c. Brief discussions of the wastewater, stormwater drainage, water, electrical, natural gas, and telecommunications facilities that would serve the proposed project are included below.

Wastewater

Wastewater treatment for the proposed project would be provided by construction of an on-site septic tank and leach field. The septic system would serve the processing building for use by employees only. According to Chapter 15.18 of the County Code of Ordinances, if the amount of wastewater received by an OWTS exceeds 10,000 gpd, the method of treatment must be submitted for review and approval by the San Francisco RWQCB. Wastewater produced by the project would not exceed 700 gpd, and thus, would not require review by the San Francisco RWQCB.

The proposed project includes construction of a leach field, which would remove contaminants and impurities from the liquid that emerges after anaerobic digestion in a septic tank. The septic system would be subject to the Alameda County Septic System Ordinance per the ACEHD, and would require review by the department prior to approval of the permit. Wastewater would be directed to a leach field, which would filter and purify water. Any additional sludge would be kept in a 5,000-gallon sludge tank which would be hauled off-site every 10 days.

Given the relatively small production of wastewater by the proposed project, implementation of a new septic system would not be anticipated to cause significant environmental effects. Furthermore, the proposed septic system would be subject to review and approval by the ACEHD, which would ensure that the system would be adequately designed to avoid any potential impacts. It should be noted that other potential impacts related to the construction of the proposed septic systems, such as impacts to cultural resources related to ground disturbing activity, are analyzed throughout this IS/MND.

Stormwater

The proposed project includes stormwater improvements to the existing project area, including construction of an underground vault for rain harvesting, as well as construction of a new bioretention. The bioretention area would be properly sized to treat and mitigate the flow volumes for water quality, hydromodification, and flood control requirements. Outflow from the bioretention are would be routed into the drainage ditch along the driveway through a flow spreader in order to join the off-site flows and discharge in to Cayetano Creek, and, thus, would not involve expansion of the County's existing stormwater drainage facilities.

Water

The proposed project includes use of four wells, which would provide water to the project site. Construction of the wells would adhere to Chapter 6.88 of the County Code of Ordinances. Based on the latest flow tests performed on the project site, the wells would produce water at seven gpm. Additionally, the project site would harvest rain water through underground vaults which would connect to the water system. Water storage would be provided by a 500,000-gallon storage reservoir. As such, the project site would be expected to generate and store enough water to supply the 2,800 gallons per day necessary for cannabis irrigation, as well as other associated uses, including cooling systems, sanitary use, fire emergencies, and processing and cleaning operations.

Based on the UWMP, Zone 7 is expected to supply 9,200 acre-feet of groundwater extraction from 2020 to 2035, which is a 46 percent increase from 2015 production. The expected increase in groundwater supply through both groundwater extraction and artificial recharge would sufficiently meet the groundwater needs of the proposed project.

Electricity, Natural Gas, and Telecommunications

Electricity and natural gas service for the proposed project would be provided by PG&E by way of new electrical and gas infrastructure in the project vicinity. Any upgrades to, or extension of, existing infrastructure would be performed by PG&E. Because the analysis throughout this IS/MND has conservatively included the entire property, any improvements associated with the project have been taken into consideration.

Because the proposed project would grow cannabis using a greenhouse, electricity would not be used on the same scale that indoor operations would. While lighting would be installed in the greenhouse as supplemental, the use would be consistent with what would

be expected from an agricultural operation. Thus, impacts to electricity, natural gas, and telecommunications infrastructure would be less than significant.

Conclusion

Based on the above, the proposed project would include the necessary installation or improvements to infrastructure in order to supply water, wastewater treatment, stormwater treatment, and electrical power to the project site. The construction of such would ensure that the site is adequately served by water, as well has sufficient wastewater treatment facilities. Sufficient water supplies would be available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. Thus, a ***less-than-significant*** impact would occur.

d,e. As discussed in Section VIII, Hazards and Hazardous Materials, of this IS/MND, the proposed project would dispose of solid waste in accordance with California Code of Regulations Section 8308, Cannabis Waste Management. The proposed project would compost some organic solid waste on-site, and any remaining waste would be hauled to a facility that recycles organic material, in compliance with all applicable local and State regulations. The Altamont Landfill serves Alameda County and accepts solid waste, in accordance with the Cannabis Waste Management regulations. The Altamont Landfill had a remaining capacity of 42.4 million tons in 2014 and processes 1.5 million tons of waste, annually.[33] The proposed project would produce waste associated with cannabis production and some incidental waste associated with employee presence.

During construction of the proposed project, solid waste is not anticipated to be generated as demolition would not occur. Should any construction waste be generated, the waste would be temporary, and would be disposed of appropriately in compliance with all applicable regulations related to solid waste, including Section 5.408 of the 2016 CalGreen, which requires that at least 65 percent of nonhazardous construction waste (not including soil and land-clearing debris) is recycled or salvaged for reuse.

Considering the remaining capacity at the Altamont Landfill, the project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs, and would comply with federal, State, and local statutes and regulations related to solid waste result. Thus, a ***less-than-significant*** impact would occur.

[33] Waste Management. *Altamont Landfill and Resource Recovery Facility*. Available at: https://www.wmsolutions.com/pdf/factsheet/Altamont_Landfill.pdf. Accessed January 2019.

XX. WILDFIRE. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	✖	☐
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	✖	☐
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	✖	☐
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	✖	☐

Discussion

a-d. According to the California Department of Forestry and Fire Protection (CAL FIRE) Fire and Resource Assessment Program, the project site is not located within or near a Very High Fire Hazard Severity Zone or State Responsibility Area.[34] While the site is located in a moderate fire hazard severity zone, the Uniform Fire Code, Section 6.04 of the County Ordinance Code, and the CBSC call for the installation, maintenance, and ongoing inspection of fire prevention systems under direction of the local fire chief. Under the Fire Code, Section 903.2.18.1, installation of an automatic sprinkler system would be required for the proposed structures. Policy P2 of the Safety Element would also ensure the project implement careful site design, landscaping, and vegetation management in order to minimize wildland fire hazards. In addition, the project would not involve the placement of housing or other inhabitable buildings on the site.

Alameda County developed a Community Wildfire Protection Plan in 2012, and based on the plan, the project would adhere to all applicable recommendations and requirements. Additionally, as noted in Section IX, implementation of the proposed project would not interfere with any emergency operations plan or evacuation route.

Compliance with the Uniform Fire Code and all applicable State and local ordinances would ensure that the proposed project would not expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. Thus, a ***less-than-significant*** impact would occur.

[34] CAL FIRE. *Fire Hazard Severity Zones in SRA*. Adopted November 7, 2007.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE.	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	✖	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	✖	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	✖	☐

Discussion

a. As discussed in Section IV, Biological Resources, of this IS/MND, a small number of special-status wildlife species could potentially occupy the project site. Such species, if present, could be negatively affected by project construction. However, this IS/MND includes mitigation measures that would reduce any potential impacts to less-than-significant levels. Additionally, the proposed project would not require demolition of or alteration of structures or resources in a way that would eliminate important examples of major periods of California history. Therefore, with implementation of the mitigation measures set forth in this IS/MND, the proposed project would have ***less-than-significant*** impacts related to degradation of the quality of the environment, effects on plant or wildlife species, and elimination of a plant or animal community.

b,c. The proposed project involves the development of a greenhouse and processing building for the purposes of cannabis cultivation. The proposed project would develop the site in a manner consistent with existing land use and zoning designations. As discussed throughout this IS/MND, substantial adverse effects on human beings are not anticipated with implementation of the proposed project. As discussed in Section III, Air Quality, of this IS/MND, impacts related to air quality would be mitigated to a level which would not create any adverse effects on the surrounding area. The proposed project would not include the placement of housing and would not result in any adverse effects to nearby sensitive receptors. Because all potential impacts would be mitigated to less-than-significant levels with implementation of the mitigation measures required within this IS/MND, the proposed project is not expected to have individually or cumulatively significant impacts. Therefore, impacts related to environmental effects that could cause adverse effects on human beings

or that would be individually limited, but cumulatively significant would be ***less than significant***.

APPENDIX A

AIR QUALITY MODELING AND GHG EMISSIONS

Oasis Grow Facility

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	32.00	1000sqft	14.69	32,000.00	0
General Light Industry	4.00	1000sqft	0.09	4,000.00	0
Parking Lot	25.00	Space	0.22	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	281.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor updated based on PG&E progress towards RPS

Land Use - Calculated disturbance area

Construction Phase - *

Grading - PRoject Info

Vehicle Trips - Based on Information from TJKM

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	300.00
tblGrading	AcresOfGrading	75.00	15.00
tblGrading	MaterialExported	0.00	165.00
tblLandUse	LotAcreage	0.73	14.69
tblProjectCharacteristics	CO2IntensityFactor	641.35	281.31
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	202.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.13
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	2.00
tblVehicleTrips	ST_TR	1.32	3.06
tblVehicleTrips	SU_TR	0.68	3.06
tblVehicleTrips	WD_TR	6.97	3.06

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.3326	2.5702	1.9066	3.3200e-003	0.2061	0.1373	0.3434	0.1049	0.1284	0.2333	0.0000	294.8689	294.8689	0.0734	0.0000	296.7045
2020	0.3529	2.0255	1.8103	3.1300e-003	0.0214	0.1146	0.1360	5.7800e-003	0.1084	0.1142	0.0000	271.8814	271.8814	0.0555	0.0000	273.2693
Maximum	**0.3529**	**2.5702**	**1.9066**	**3.3200e-003**	**0.2061**	**0.1373**	**0.3434**	**0.1049**	**0.1284**	**0.2333**	**0.0000**	**294.8689**	**294.8689**	**0.0734**	**0.0000**	**296.7045**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.3326	2.5702	1.9066	3.3200e-003	0.2061	0.1373	0.3434	0.1049	0.1284	0.2333	0.0000	294.8686	294.8686	0.0734	0.0000	296.7042
2020	0.3529	2.0255	1.8103	3.1300e-003	0.0214	0.1146	0.1360	5.7800e-003	0.1084	0.1142	0.0000	271.8811	271.8811	0.0555	0.0000	273.2691
Maximum	**0.3529**	**2.5702**	**1.9066**	**3.3200e-003**	**0.2061**	**0.1373**	**0.3434**	**0.1049**	**0.1284**	**0.2333**	**0.0000**	**294.8686**	**294.8686**	**0.0734**	**0.0000**	**296.7042**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	5-1-2019	7-31-2019	1.3825	1.3825
2	8-1-2019	10-31-2019	0.9110	0.9110
3	11-1-2019	1-31-2020	0.8922	0.8922
4	2-1-2020	4-30-2020	0.8210	0.8210
5	5-1-2020	7-31-2020	0.8387	0.8387
6	8-1-2020	9-30-2020	0.4354	0.4354
		Highest	1.3825	1.3825

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	0.1603	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0900e-003	1.0900e-003	0.0000	0.0000	1.1600e-003
Energy	4.8000e-003	0.0437	0.0367	2.6000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003	0.0000	82.7214	82.7214	4.5400e-003	1.6200e-003	83.3182
Mobile	0.0364	0.1945	0.4935	1.8300e-003	0.1584	1.6800e-003	0.1601	0.0425	1.5700e-003	0.0441	0.0000	167.8901	167.8901	5.7800e-003	0.0000	168.0347
Stationary	0.0166	0.0463	0.0423	8.0000e-005		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003	0.0000	7.6921	7.6921	1.0800e-003	0.0000	7.7191
Waste						0.0000	0.0000		0.0000	0.0000	9.0615	0.0000	9.0615	0.5355	0.0000	22.4495
Water						0.0000	0.0000		0.0000	0.0000	2.6411	5.7480	8.3891	0.2719	6.5300e-003	17.1310
Total	**0.2181**	**0.2845**	**0.5730**	**2.1700e-003**	**0.1584**	**7.4400e-003**	**0.1658**	**0.0425**	**7.3300e-003**	**0.0499**	**11.7027**	**264.0527**	**275.7553**	**0.8188**	**8.1500e-003**	**298.6535**

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	0.1603	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0900e-003	1.0900e-003	0.0000	0.0000	1.1600e-003
Energy	4.8000e-003	0.0437	0.0367	2.6000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003	0.0000	82.7214	82.7214	4.5400e-003	1.6200e-003	83.3182
Mobile	0.0364	0.1945	0.4935	1.8300e-003	0.1584	1.6800e-003	0.1601	0.0425	1.5700e-003	0.0441	0.0000	167.8901	167.8901	5.7800e-003	0.0000	168.0347
Stationary	0.0166	0.0463	0.0423	8.0000e-005		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003	0.0000	7.6921	7.6921	1.0800e-003	0.0000	7.7191
Waste						0.0000	0.0000		0.0000	0.0000	9.0615	0.0000	9.0615	0.5355	0.0000	22.4495
Water						0.0000	0.0000		0.0000	0.0000	2.6411	5.7480	8.3891	0.2719	6.5300e-003	17.1310
Total	**0.2181**	**0.2845**	**0.5730**	**2.1700e-003**	**0.1584**	**7.4400e-003**	**0.1658**	**0.0425**	**7.3300e-003**	**0.0499**	**11.7027**	**264.0527**	**275.7553**	**0.8188**	**8.1500e-003**	**298.6535**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/1/2019	5/14/2019	5	10	
2	Grading	Grading	5/15/2019	6/25/2019	5	30	
3	Paving	Paving	6/26/2019	7/23/2019	5	20	
4	Building Construction	Building Construction	7/24/2019	9/15/2020	5	300	
5	Architectural Coating	Architectural Coating	8/7/2019	9/29/2020	5	300	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 15

Acres of Paving: 0.22

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 54,000; Non-Residential Outdoor: 18,000; Striped Parking Area: 600 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

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 Preparation	7	18.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	21.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	19.00	8.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 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					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.2279	0.1103	1.9000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195
Total	**0.0217**	**0.2279**	**0.1103**	**1.9000e-004**	**0.0903**	**0.0120**	**0.1023**	**0.0497**	**0.0110**	**0.0607**	**0.0000**	**17.0843**	**17.0843**	**5.4100e-003**	**0.0000**	**17.2195**

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	3.3000e-004	2.4000e-004	2.4600e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6433	0.6433	2.0000e-005	0.0000	0.6437
Total	**3.3000e-004**	**2.4000e-004**	**2.4600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6433**	**0.6433**	**2.0000e-005**	**0.0000**	**0.6437**

3.2 Site Preparation - 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	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.2279	0.1103	1.9000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195
Total	**0.0217**	**0.2279**	**0.1103**	**1.9000e-004**	**0.0903**	**0.0120**	**0.1023**	**0.0497**	**0.0110**	**0.0607**	**0.0000**	**17.0843**	**17.0843**	**5.4100e-003**	**0.0000**	**17.2195**

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	3.3000e-004	2.4000e-004	2.4600e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6433	0.6433	2.0000e-005	0.0000	0.6437
Total	**3.3000e-004**	**2.4000e-004**	**2.4600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6433**	**0.6433**	**2.0000e-005**	**0.0000**	**0.6437**

3.3 Grading - 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					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0711	0.8178	0.5007	9.3000e-004		0.0357	0.0357		0.0329	0.0329	0.0000	83.5520	83.5520	0.0264	0.0000	84.2129
Total	**0.0711**	**0.8178**	**0.5007**	**9.3000e-004**	**0.0983**	**0.0357**	**0.1340**	**0.0505**	**0.0329**	**0.0834**	**0.0000**	**83.5520**	**83.5520**	**0.0264**	**0.0000**	**84.2129**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-004	3.2900e-003	6.4000e-004	1.0000e-005	1.8000e-004	1.0000e-005	1.9000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.8133	0.8133	4.0000e-005	0.0000	0.8143
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	1.0900e-003	8.1000e-004	8.2200e-003	2.0000e-005	2.3700e-003	2.0000e-005	2.3900e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	2.1443	2.1443	6.0000e-005	0.0000	2.1458
Total	**1.1900e-003**	**4.1000e-003**	**8.8600e-003**	**3.0000e-005**	**2.5500e-003**	**3.0000e-005**	**2.5800e-003**	**6.8000e-004**	**3.0000e-005**	**7.1000e-004**	**0.0000**	**2.9576**	**2.9576**	**1.0000e-004**	**0.0000**	**2.9601**

3.3 Grading - 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	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0711	0.8178	0.5007	9.3000e-004		0.0357	0.0357		0.0329	0.0329	0.0000	83.5519	83.5519	0.0264	0.0000	84.2128
Total	**0.0711**	**0.8178**	**0.5007**	**9.3000e-004**	**0.0983**	**0.0357**	**0.1340**	**0.0505**	**0.0329**	**0.0834**	**0.0000**	**83.5519**	**83.5519**	**0.0264**	**0.0000**	**84.2128**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-004	3.2900e-003	6.4000e-004	1.0000e-005	1.8000e-004	1.0000e-005	1.9000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.8133	0.8133	4.0000e-005	0.0000	0.8143
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	1.0900e-003	8.1000e-004	8.2200e-003	2.0000e-005	2.3700e-003	2.0000e-005	2.3900e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	2.1443	2.1443	6.0000e-005	0.0000	2.1458
Total	**1.1900e-003**	**4.1000e-003**	**8.8600e-003**	**3.0000e-005**	**2.5500e-003**	**3.0000e-005**	**2.5800e-003**	**6.8000e-004**	**3.0000e-005**	**7.1000e-004**	**0.0000**	**2.9576**	**2.9576**	**1.0000e-004**	**0.0000**	**2.9601**

3.4 Paving - 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	0.0145	0.1524	0.1467	2.3000e-004		8.2500e-003	8.2500e-003		7.5900e-003	7.5900e-003	0.0000	20.4752	20.4752	6.4800e-003	0.0000	20.6371
Paving	2.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0148**	**0.1524**	**0.1467**	**2.3000e-004**		**8.2500e-003**	**8.2500e-003**		**7.5900e-003**	**7.5900e-003**	**0.0000**	**20.4752**	**20.4752**	**6.4800e-003**	**0.0000**	**20.6371**

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	5.4000e-004	4.0000e-004	4.1100e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0722	1.0722	3.0000e-005	0.0000	1.0729
Total	**5.4000e-004**	**4.0000e-004**	**4.1100e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0722**	**1.0722**	**3.0000e-005**	**0.0000**	**1.0729**

3.4 Paving - 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	tons/yr										MT/yr					
Off-Road	0.0145	0.1524	0.1467	2.3000e-004		8.2500e-003	8.2500e-003		7.5900e-003	7.5900e-003	0.0000	20.4752	20.4752	6.4800e-003	0.0000	20.6371
Paving	2.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0148**	**0.1524**	**0.1467**	**2.3000e-004**		**8.2500e-003**	**8.2500e-003**		**7.5900e-003**	**7.5900e-003**	**0.0000**	**20.4752**	**20.4752**	**6.4800e-003**	**0.0000**	**20.6371**

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	5.4000e-004	4.0000e-004	4.1100e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0722	1.0722	3.0000e-005	0.0000	1.0729
Total	**5.4000e-004**	**4.0000e-004**	**4.1100e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0722**	**1.0722**	**3.0000e-005**	**0.0000**	**1.0729**

3.5 Building 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	0.1358	1.2120	0.9869	1.5500e-003		0.0742	0.0742		0.0697	0.0697	0.0000	135.1849	135.1849	0.0329	0.0000	136.0082
Total	**0.1358**	**1.2120**	**0.9869**	**1.5500e-003**		**0.0742**	**0.0742**		**0.0697**	**0.0697**	**0.0000**	**135.1849**	**135.1849**	**0.0329**	**0.0000**	**136.0082**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0400e-003	0.0555	0.0143	1.2000e-004	2.7300e-003	3.6000e-004	3.0900e-003	7.9000e-004	3.5000e-004	1.1400e-003	0.0000	11.1850	11.1850	6.5000e-004	0.0000	11.2011
Worker	3.9600e-003	2.9300e-003	0.0299	9.0000e-005	8.6300e-003	6.0000e-005	8.6900e-003	2.3000e-003	5.0000e-005	2.3500e-003	0.0000	7.8089	7.8089	2.1000e-004	0.0000	7.8141
Total	**6.0000e-003**	**0.0584**	**0.0442**	**2.1000e-004**	**0.0114**	**4.2000e-004**	**0.0118**	**3.0900e-003**	**4.0000e-004**	**3.4900e-003**	**0.0000**	**18.9938**	**18.9938**	**8.6000e-004**	**0.0000**	**19.0152**

3.5 Building 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	tons/yr										MT/yr					
Off-Road	0.1358	1.2120	0.9869	1.5500e-003		0.0742	0.0742		0.0697	0.0697	0.0000	135.1848	135.1848	0.0329	0.0000	136.0081
Total	**0.1358**	**1.2120**	**0.9869**	**1.5500e-003**		**0.0742**	**0.0742**		**0.0697**	**0.0697**	**0.0000**	**135.1848**	**135.1848**	**0.0329**	**0.0000**	**136.0081**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0400e-003	0.0555	0.0143	1.2000e-004	2.7300e-003	3.6000e-004	3.0900e-003	7.9000e-004	3.5000e-004	1.1400e-003	0.0000	11.1850	11.1850	6.5000e-004	0.0000	11.2011
Worker	3.9600e-003	2.9300e-003	0.0299	9.0000e-005	8.6300e-003	6.0000e-005	8.6900e-003	2.3000e-003	5.0000e-005	2.3500e-003	0.0000	7.8089	7.8089	2.1000e-004	0.0000	7.8141
Total	**6.0000e-003**	**0.0584**	**0.0442**	**2.1000e-004**	**0.0114**	**4.2000e-004**	**0.0118**	**3.0900e-003**	**4.0000e-004**	**3.4900e-003**	**0.0000**	**18.9938**	**18.9938**	**8.6000e-004**	**0.0000**	**19.0152**

3.5 Building Construction - 2020

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	0.1961	1.7747	1.5585	2.4900e-003		0.1033	0.1033		0.0972	0.0972	0.0000	214.2392	214.2392	0.0523	0.0000	215.5459
Total	**0.1961**	**1.7747**	**1.5585**	**2.4900e-003**		**0.1033**	**0.1033**		**0.0972**	**0.0972**	**0.0000**	**214.2392**	**214.2392**	**0.0523**	**0.0000**	**215.5459**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.7000e-003	0.0815	0.0205	1.9000e-004	4.3900e-003	3.8000e-004	4.7700e-003	1.2700e-003	3.6000e-004	1.6300e-003	0.0000	17.8812	17.8812	9.6000e-004	0.0000	17.9053
Worker	5.8300e-003	4.1700e-003	0.0432	1.3000e-004	0.0139	9.0000e-005	0.0140	3.6900e-003	9.0000e-005	3.7800e-003	0.0000	12.1668	12.1668	2.9000e-004	0.0000	12.1742
Total	**8.5300e-003**	**0.0857**	**0.0637**	**3.2000e-004**	**0.0183**	**4.7000e-004**	**0.0188**	**4.9600e-003**	**4.5000e-004**	**5.4100e-003**	**0.0000**	**30.0481**	**30.0481**	**1.2500e-003**	**0.0000**	**30.0795**

3.5 Building Construction - 2020

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	0.1961	1.7747	1.5585	2.4900e-003		0.1033	0.1033		0.0972	0.0972	0.0000	214.2390	214.2390	0.0523	0.0000	215.5457
Total	**0.1961**	**1.7747**	**1.5585**	**2.4900e-003**		**0.1033**	**0.1033**		**0.0972**	**0.0972**	**0.0000**	**214.2390**	**214.2390**	**0.0523**	**0.0000**	**215.5457**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.7000e-003	0.0815	0.0205	1.9000e-004	4.3900e-003	3.8000e-004	4.7700e-003	1.2700e-003	3.6000e-004	1.6300e-003	0.0000	17.8812	17.8812	9.6000e-004	0.0000	17.9053
Worker	5.8300e-003	4.1700e-003	0.0432	1.3000e-004	0.0139	9.0000e-005	0.0140	3.6900e-003	9.0000e-005	3.7800e-003	0.0000	12.1668	12.1668	2.9000e-004	0.0000	12.1742
Total	**8.5300e-003**	**0.0857**	**0.0637**	**3.2000e-004**	**0.0183**	**4.7000e-004**	**0.0188**	**4.9600e-003**	**4.5000e-004**	**5.4100e-003**	**0.0000**	**30.0481**	**30.0481**	**1.2500e-003**	**0.0000**	**30.0795**

3.6 Architectural Coating - 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					
Archit. Coating	0.0664					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0140	0.0964	0.0967	1.6000e-004		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	0.0000	13.4046	13.4046	1.1300e-003	0.0000	13.4329
Total	**0.0804**	**0.0964**	**0.0967**	**1.6000e-004**		**6.7600e-003**	**6.7600e-003**		**6.7600e-003**	**6.7600e-003**	**0.0000**	**13.4046**	**13.4046**	**1.1300e-003**	**0.0000**	**13.4329**

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	7.6000e-004	5.6000e-004	5.7500e-003	2.0000e-005	1.6600e-003	1.0000e-005	1.6700e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5010	1.5010	4.0000e-005	0.0000	1.5020
Total	**7.6000e-004**	**5.6000e-004**	**5.7500e-003**	**2.0000e-005**	**1.6600e-003**	**1.0000e-005**	**1.6700e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.5010**	**1.5010**	**4.0000e-005**	**0.0000**	**1.5020**

3.6 Architectural Coating - 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	tons/yr										MT/yr					
Archit. Coating	0.0664					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0140	0.0964	0.0967	1.6000e-004		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	0.0000	13.4046	13.4046	1.1300e-003	0.0000	13.4329
Total	**0.0804**	**0.0964**	**0.0967**	**1.6000e-004**		**6.7600e-003**	**6.7600e-003**		**6.7600e-003**	**6.7600e-003**	**0.0000**	**13.4046**	**13.4046**	**1.1300e-003**	**0.0000**	**13.4329**

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	7.6000e-004	5.6000e-004	5.7500e-003	2.0000e-005	1.6600e-003	1.0000e-005	1.6700e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5010	1.5010	4.0000e-005	0.0000	1.5020
Total	**7.6000e-004**	**5.6000e-004**	**5.7500e-003**	**2.0000e-005**	**1.6600e-003**	**1.0000e-005**	**1.6700e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.5010**	**1.5010**	**4.0000e-005**	**0.0000**	**1.5020**

3.6 Architectural Coating - 2020

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					
Archit. Coating	0.1234					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0236	0.1642	0.1786	2.9000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	24.8942	24.8942	1.9300e-003	0.0000	24.9424
Total	**0.1470**	**0.1642**	**0.1786**	**2.9000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**24.8942**	**24.8942**	**1.9300e-003**	**0.0000**	**24.9424**

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	1.2900e-003	9.2000e-004	9.5800e-003	3.0000e-005	3.0800e-003	2.0000e-005	3.1000e-003	8.2000e-004	2.0000e-005	8.4000e-004	0.0000	2.6999	2.6999	7.0000e-005	0.0000	2.7015
Total	**1.2900e-003**	**9.2000e-004**	**9.5800e-003**	**3.0000e-005**	**3.0800e-003**	**2.0000e-005**	**3.1000e-003**	**8.2000e-004**	**2.0000e-005**	**8.4000e-004**	**0.0000**	**2.6999**	**2.6999**	**7.0000e-005**	**0.0000**	**2.7015**

3.6 Architectural Coating - 2020

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					
Archit. Coating	0.1234					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0236	0.1642	0.1786	2.9000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	24.8942	24.8942	1.9300e-003	0.0000	24.9424
Total	**0.1470**	**0.1642**	**0.1786**	**2.9000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**24.8942**	**24.8942**	**1.9300e-003**	**0.0000**	**24.9424**

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	1.2900e-003	9.2000e-004	9.5800e-003	3.0000e-005	3.0800e-003	2.0000e-005	3.1000e-003	8.2000e-004	2.0000e-005	8.4000e-004	0.0000	2.6999	2.6999	7.0000e-005	0.0000	2.7015
Total	**1.2900e-003**	**9.2000e-004**	**9.5800e-003**	**3.0000e-005**	**3.0800e-003**	**2.0000e-005**	**3.1000e-003**	**8.2000e-004**	**2.0000e-005**	**8.4000e-004**	**0.0000**	**2.6999**	**2.6999**	**7.0000e-005**	**0.0000**	**2.7015**

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	tons/yr										MT/yr					
Mitigated	0.0364	0.1945	0.4935	1.8300e-003	0.1584	1.6800e-003	0.1601	0.0425	1.5700e-003	0.0441	0.0000	167.8901	167.8901	5.7800e-003	0.0000	168.0347
Unmitigated	0.0364	0.1945	0.4935	1.8300e-003	0.1584	1.6800e-003	0.1601	0.0425	1.5700e-003	0.0441	0.0000	167.8901	167.8901	5.7800e-003	0.0000	168.0347

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	97.92	97.92	97.92	378,311	378,311
General Light Industry	12.24	12.24	12.24	47,289	47,289
Parking Lot	0.00	0.00	0.00		
Total	110.16	110.16	110.16	425,599	425,599

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.575198	0.040076	0.193827	0.113296	0.016988	0.005361	0.017552	0.025197	0.002581	0.002349	0.005904	0.000881	0.000789
Parking Lot	0.575198	0.040076	0.193827	0.113296	0.016988	0.005361	0.017552	0.025197	0.002581	0.002349	0.005904	0.000881	0.000789

5.0 Energy Detail

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	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	35.1742	35.1742	3.6300e-003	7.5000e-004	35.4885
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	35.1742	35.1742	3.6300e-003	7.5000e-004	35.4885
NaturalGas Mitigated	4.8000e-003	0.0437	0.0367	2.6000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003	0.0000	47.5472	47.5472	9.1000e-004	8.7000e-004	47.8297
NaturalGas Unmitigated	4.8000e-003	0.0437	0.0367	2.6000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003	0.0000	47.5472	47.5472	9.1000e-004	8.7000e-004	47.8297

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	tons/yr										MT/yr					
General Light Industry	792000	4.2700e-003	0.0388	0.0326	2.3000e-004		2.9500e-003	2.9500e-003		2.9500e-003	2.9500e-003	0.0000	42.2641	42.2641	8.1000e-004	7.7000e-004	42.5153
General Light Industry	99000	5.3000e-004	4.8500e-003	4.0800e-003	3.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	5.2830	5.2830	1.0000e-004	1.0000e-004	5.3144
Parking Lot	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		**4.8000e-003**	**0.0437**	**0.0367**	**2.6000e-004**		**3.3200e-003**	**3.3200e-003**		**3.3200e-003**	**3.3200e-003**	**0.0000**	**47.5472**	**47.5472**	**9.1000e-004**	**8.7000e-004**	**47.8297**

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					
General Light Industry	792000	4.2700e-003	0.0388	0.0326	2.3000e-004		2.9500e-003	2.9500e-003		2.9500e-003	2.9500e-003	0.0000	42.2641	42.2641	8.1000e-004	7.7000e-004	42.5153
General Light Industry	99000	5.3000e-004	4.8500e-003	4.0800e-003	3.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	5.2830	5.2830	1.0000e-004	1.0000e-004	5.3144
Parking Lot	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		**4.8000e-003**	**0.0437**	**0.0367**	**2.6000e-004**		**3.3200e-003**	**3.3200e-003**		**3.3200e-003**	**3.3200e-003**	**0.0000**	**47.5472**	**47.5472**	**9.1000e-004**	**8.7000e-004**	**47.8297**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	241920	30.8690	3.1800e-003	6.6000e-004	31.1448
General Light Industry	30240	3.8586	4.0000e-004	8.0000e-005	3.8931
Parking Lot	3500	0.4466	5.0000e-005	1.0000e-005	0.4506
Total		**35.1742**	**3.6300e-003**	**7.5000e-004**	**35.4885**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	241920	30.8690	3.1800e-003	6.6000e-004	31.1448
General Light Industry	30240	3.8586	4.0000e-004	8.0000e-005	3.8931
Parking Lot	3500	0.4466	5.0000e-005	1.0000e-005	0.4506
Total		**35.1742**	**3.6300e-003**	**7.5000e-004**	**35.4885**

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	0.1603	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0900e-003	1.0900e-003	0.0000	0.0000	1.1600e-003
Unmitigated	0.1603	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0900e-003	1.0900e-003	0.0000	0.0000	1.1600e-003

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	0.0190					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1412					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0900e-003	1.0900e-003	0.0000	0.0000	1.1600e-003
Total	**0.1603**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0900e-003**	**1.0900e-003**	**0.0000**	**0.0000**	**1.1600e-003**

6.2 Area by SubCategory

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	0.0190					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1412					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0900e-003	1.0900e-003	0.0000	0.0000	1.1600e-003
Total	**0.1603**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0900e-003**	**1.0900e-003**	**0.0000**	**0.0000**	**1.1600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	8.3891	0.2719	6.5300e-003	17.1310
Unmitigated	8.3891	0.2719	6.5300e-003	17.1310

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	8.325 / 0	8.3891	0.2719	6.5300e-003	17.1310
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**8.3891**	**0.2719**	**6.5300e-003**	**17.1310**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	8.325 / 0	8.3891	0.2719	6.5300e-003	17.1310
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**8.3891**	**0.2719**	**6.5300e-003**	**17.1310**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	9.0615	0.5355	0.0000	22.4495
Unmitigated	9.0615	0.5355	0.0000	22.4495

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	44.64	9.0615	0.5355	0.0000	22.4495
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**9.0615**	**0.5355**	**0.0000**	**22.4495**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	44.64	9.0615	0.5355	0.0000	22.4495
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**9.0615**	**0.5355**	**0.0000**	**22.4495**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	2	0.13	50	202	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (175 - 300 HP)	0.0166	0.0463	0.0423	8.0000e-005		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003	0.0000	7.6921	7.6921	1.0800e-003	0.0000	7.7191
Total	**0.0166**	**0.0463**	**0.0423**	**8.0000e-005**		**2.4400e-003**	**2.4400e-003**		**2.4400e-003**	**2.4400e-003**	**0.0000**	**7.6921**	**7.6921**	**1.0800e-003**	**0.0000**	**7.7191**

11.0 Vegetation

Oasis Grow Facility

Bay Area AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	32.00	1000sqft	14.69	32,000.00	0
General Light Industry	4.00	1000sqft	0.09	4,000.00	0
Parking Lot	25.00	Space	0.22	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	281.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor updated based on PG&E progress towards RPS

Land Use - Calculated disturbance area

Construction Phase - *

Grading - PRoject Info

Vehicle Trips - Based on Information from TJKM

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	300.00
tblGrading	AcresOfGrading	75.00	15.00
tblGrading	MaterialExported	0.00	165.00
tblLandUse	LotAcreage	0.73	14.69
tblProjectCharacteristics	CO2IntensityFactor	641.35	281.31
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	202.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.13
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	2.00
tblVehicleTrips	ST_TR	1.32	3.06
tblVehicleTrips	SU_TR	0.68	3.06
tblVehicleTrips	WD_TR	6.97	3.06

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.8213	54.7825	34.0145	0.0643	18.2141	2.3913	20.6055	9.9699	2.2000	12.1699	0.0000	6,369.6833	6,369.6833	1.9502	0.0000	6,418.4388
2020	3.7358	21.7900	19.5041	0.0338	0.2379	1.2333	1.4712	0.0642	1.1663	1.2305	0.0000	3,238.8595	3,238.8595	0.6603	0.0000	3,255.3657
Maximum	**4.8213**	**54.7825**	**34.0145**	**0.0643**	**18.2141**	**2.3913**	**20.6055**	**9.9699**	**2.2000**	**12.1699**	**0.0000**	**6,369.6833**	**6,369.6833**	**1.9502**	**0.0000**	**6,418.4388**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.8213	54.7825	34.0145	0.0643	18.2141	2.3913	20.6055	9.9699	2.2000	12.1699	0.0000	6,369.6833	6,369.6833	1.9502	0.0000	6,418.4388
2020	3.7358	21.7900	19.5041	0.0338	0.2379	1.2333	1.4712	0.0642	1.1663	1.2305	0.0000	3,238.8595	3,238.8595	0.6603	0.0000	3,255.3657
Maximum	**4.8213**	**54.7825**	**34.0145**	**0.0643**	**18.2141**	**2.3913**	**20.6055**	**9.9699**	**2.2000**	**12.1699**	**0.0000**	**6,369.6833**	**6,369.6833**	**1.9502**	**0.0000**	**6,418.4388**

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

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	0.8785	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142
Energy	0.0263	0.2393	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182		287.1878	287.1878	5.5000e-003	5.2700e-003	288.8944
Mobile	0.2244	1.0273	2.8925	0.0107	0.9043	9.2000e-003	0.9134	0.2419	8.6200e-003	0.2506		1,077.0364	1,077.0364	0.0357		1,077.9292
Stationary	0.0862	0.2409	0.2198	4.1000e-004		0.0127	0.0127		0.0127	0.0127		44.0913	44.0913	6.1800e-003		44.2458
Total	**1.2154**	**1.5075**	**3.3195**	**0.0125**	**0.9043**	**0.0401**	**0.9443**	**0.2419**	**0.0395**	**0.2815**		**1,408.3288**	**1,408.3288**	**0.0474**	**5.2700e-003**	**1,411.0836**

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	lb/day										lb/day					
Area	0.8785	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142
Energy	0.0263	0.2393	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182		287.1878	287.1878	5.5000e-003	5.2700e-003	288.8944
Mobile	0.2244	1.0273	2.8925	0.0107	0.9043	9.2000e-003	0.9134	0.2419	8.6200e-003	0.2506		1,077.0364	1,077.0364	0.0357		1,077.9292
Stationary	0.0862	0.2409	0.2198	4.1000e-004		0.0127	0.0127		0.0127	0.0127		44.0913	44.0913	6.1800e-003		44.2458
Total	**1.2154**	**1.5075**	**3.3195**	**0.0125**	**0.9043**	**0.0401**	**0.9443**	**0.2419**	**0.0395**	**0.2815**		**1,408.3288**	**1,408.3288**	**0.0474**	**5.2700e-003**	**1,411.0836**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/1/2019	5/14/2019	5	10	
2	Grading	Grading	5/15/2019	6/25/2019	5	30	
3	Paving	Paving	6/26/2019	7/23/2019	5	20	
4	Building Construction	Building Construction	7/24/2019	9/15/2020	5	300	
5	Architectural Coating	Architectural Coating	8/7/2019	9/29/2020	5	300	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 15

Acres of Paving: 0.22

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 54,000; Non-Residential Outdoor: 18,000; Striped Parking Area: 600 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

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 Preparation	7	18.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	21.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	19.00	8.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 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					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**		**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

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	0.0685	0.0429	0.5367	1.5300e-003	0.1479	9.8000e-004	0.1488	0.0392	9.0000e-004	0.0401		152.5352	152.5352	4.0600e-003		152.6366
Total	**0.0685**	**0.0429**	**0.5367**	**1.5300e-003**	**0.1479**	**9.8000e-004**	**0.1488**	**0.0392**	**9.0000e-004**	**0.0401**		**152.5352**	**152.5352**	**4.0600e-003**		**152.6366**

3.2 Site Preparation - 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					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

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	0.0685	0.0429	0.5367	1.5300e-003	0.1479	9.8000e-004	0.1488	0.0392	9.0000e-004	0.0401		152.5352	152.5352	4.0600e-003		152.6366
Total	**0.0685**	**0.0429**	**0.5367**	**1.5300e-003**	**0.1479**	**9.8000e-004**	**0.1488**	**0.0392**	**9.0000e-004**	**0.0401**		**152.5352**	**152.5352**	**4.0600e-003**		**152.6366**

3.3 Grading - 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					
Fugitive Dust					6.5530	0.0000	6.5530	3.3676	0.0000	3.3676			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920		6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**6.5530**	**2.3827**	**8.9356**	**3.3676**	**2.1920**	**5.5596**		**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

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	6.3100e-003	0.2146	0.0414	5.6000e-004	0.0122	8.3000e-004	0.0131	3.3500e-003	7.9000e-004	4.1400e-003		60.1803	60.1803	3.0800e-003		60.2572
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	0.0761	0.0476	0.5964	1.7000e-003	0.1643	1.0900e-003	0.1654	0.0436	1.0000e-003	0.0446		169.4836	169.4836	4.5100e-003		169.5962
Total	**0.0824**	**0.2623**	**0.6378**	**2.2600e-003**	**0.1765**	**1.9200e-003**	**0.1784**	**0.0469**	**1.7900e-003**	**0.0487**		**229.6638**	**229.6638**	**7.5900e-003**		**229.8534**

3.3 Grading - 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					
Fugitive Dust					6.5530	0.0000	6.5530	3.3676	0.0000	3.3676			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920	0.0000	6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**6.5530**	**2.3827**	**8.9356**	**3.3676**	**2.1920**	**5.5596**	**0.0000**	**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

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	6.3100e-003	0.2146	0.0414	5.6000e-004	0.0122	8.3000e-004	0.0131	3.3500e-003	7.9000e-004	4.1400e-003		60.1803	60.1803	3.0800e-003		60.2572
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	0.0761	0.0476	0.5964	1.7000e-003	0.1643	1.0900e-003	0.1654	0.0436	1.0000e-003	0.0446		169.4836	169.4836	4.5100e-003		169.5962
Total	**0.0824**	**0.2623**	**0.6378**	**2.2600e-003**	**0.1765**	**1.9200e-003**	**0.1784**	**0.0469**	**1.7900e-003**	**0.0487**		**229.6638**	**229.6638**	**7.5900e-003**		**229.8534**

3.4 Paving - 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	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586		2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.0288					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4833**	**15.2441**	**14.6648**	**0.0228**		**0.8246**	**0.8246**		**0.7586**	**0.7586**		**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

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	0.0570	0.0357	0.4473	1.2800e-003	0.1232	8.2000e-004	0.1240	0.0327	7.5000e-004	0.0334		127.1127	127.1127	3.3800e-003		127.1972
Total	**0.0570**	**0.0357**	**0.4473**	**1.2800e-003**	**0.1232**	**8.2000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**127.1127**	**127.1127**	**3.3800e-003**		**127.1972**

3.4 Paving - 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	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586	0.0000	2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.0288					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4833**	**15.2441**	**14.6648**	**0.0228**		**0.8246**	**0.8246**		**0.7586**	**0.7586**	**0.0000**	**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

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	0.0570	0.0357	0.4473	1.2800e-003	0.1232	8.2000e-004	0.1240	0.0327	7.5000e-004	0.0334		127.1127	127.1127	3.3800e-003		127.1972
Total	**0.0570**	**0.0357**	**0.4473**	**1.2800e-003**	**0.1232**	**8.2000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**127.1127**	**127.1127**	**3.3800e-003**		**127.1972**

3.5 Building 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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

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	0.0348	0.9522	0.2321	2.0500e-003	0.0490	6.2900e-003	0.0553	0.0141	6.0200e-003	0.0201		216.8778	216.8778	0.0120		217.1766
Worker	0.0723	0.0453	0.5666	1.6200e-003	0.1561	1.0300e-003	0.1571	0.0414	9.5000e-004	0.0424		161.0094	161.0094	4.2800e-003		161.1164
Total	**0.1070**	**0.9975**	**0.7986**	**3.6700e-003**	**0.2051**	**7.3200e-003**	**0.2124**	**0.0555**	**6.9700e-003**	**0.0625**		**377.8871**	**377.8871**	**0.0162**		**378.2930**

3.5 Building 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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

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	0.0348	0.9522	0.2321	2.0500e-003	0.0490	6.2900e-003	0.0553	0.0141	6.0200e-003	0.0201		216.8778	216.8778	0.0120		217.1766
Worker	0.0723	0.0453	0.5666	1.6200e-003	0.1561	1.0300e-003	0.1571	0.0414	9.5000e-004	0.0424		161.0094	161.0094	4.2800e-003		161.1164
Total	**0.1070**	**0.9975**	**0.7986**	**3.6700e-003**	**0.2051**	**7.3200e-003**	**0.2124**	**0.0555**	**6.9700e-003**	**0.0625**		**377.8871**	**377.8871**	**0.0162**		**378.2930**

3.5 Building Construction - 2020

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

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	0.0285	0.8717	0.2071	2.0400e-003	0.0490	4.0700e-003	0.0530	0.0141	3.8900e-003	0.0180		215.5698	215.5698	0.0111		215.8460
Worker	0.0660	0.0400	0.5098	1.5600e-003	0.1561	1.0100e-003	0.1571	0.0414	9.3000e-004	0.0423		155.9476	155.9476	3.7600e-003		156.0415
Total	**0.0946**	**0.9117**	**0.7168**	**3.6000e-003**	**0.2051**	**5.0800e-003**	**0.2101**	**0.0555**	**4.8200e-003**	**0.0603**		**371.5173**	**371.5173**	**0.0148**		**371.8875**

3.5 Building Construction - 2020

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

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	0.0285	0.8717	0.2071	2.0400e-003	0.0490	4.0700e-003	0.0530	0.0141	3.8900e-003	0.0180		215.5698	215.5698	0.0111		215.8460
Worker	0.0660	0.0400	0.5098	1.5600e-003	0.1561	1.0100e-003	0.1571	0.0414	9.3000e-004	0.0423		155.9476	155.9476	3.7600e-003		156.0415
Total	**0.0946**	**0.9117**	**0.7168**	**3.6000e-003**	**0.2051**	**5.0800e-003**	**0.2101**	**0.0555**	**4.8200e-003**	**0.0603**		**371.5173**	**371.5173**	**0.0148**		**371.8875**

3.6 Architectural Coating - 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					
Archit. Coating	1.2654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**1.5318**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

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	0.0152	9.5300e-003	0.1193	3.4000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9200e-003		33.8967	33.8967	9.0000e-004		33.9192
Total	**0.0152**	**9.5300e-003**	**0.1193**	**3.4000e-004**	**0.0329**	**2.2000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9200e-003**		**33.8967**	**33.8967**	**9.0000e-004**		**33.9192**

3.6 Architectural Coating - 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					
Archit. Coating	1.2654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**1.5318**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

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	0.0152	9.5300e-003	0.1193	3.4000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9200e-003		33.8967	33.8967	9.0000e-004		33.9192
Total	**0.0152**	**9.5300e-003**	**0.1193**	**3.4000e-004**	**0.0329**	**2.2000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9200e-003**		**33.8967**	**33.8967**	**9.0000e-004**		**33.9192**

3.6 Architectural Coating - 2020

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					
Archit. Coating	1.2654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**1.5075**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	0.0139	8.4200e-003	0.1073	3.3000e-004	0.0329	2.1000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		32.8311	32.8311	7.9000e-004		32.8508
Total	**0.0139**	**8.4200e-003**	**0.1073**	**3.3000e-004**	**0.0329**	**2.1000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**32.8311**	**32.8311**	**7.9000e-004**		**32.8508**

3.6 Architectural Coating - 2020

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					
Archit. Coating	1.2654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**1.5075**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	0.0139	8.4200e-003	0.1073	3.3000e-004	0.0329	2.1000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		32.8311	32.8311	7.9000e-004		32.8508
Total	**0.0139**	**8.4200e-003**	**0.1073**	**3.3000e-004**	**0.0329**	**2.1000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**32.8311**	**32.8311**	**7.9000e-004**		**32.8508**

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	0.2244	1.0273	2.8925	0.0107	0.9043	9.2000e-003	0.9134	0.2419	8.6200e-003	0.2506		1,077.0364	1,077.0364	0.0357		1,077.9292
Unmitigated	0.2244	1.0273	2.8925	0.0107	0.9043	9.2000e-003	0.9134	0.2419	8.6200e-003	0.2506		1,077.0364	1,077.0364	0.0357		1,077.9292

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	97.92	97.92	97.92	378,311	378,311
General Light Industry	12.24	12.24	12.24	47,289	47,289
Parking Lot	0.00	0.00	0.00		
Total	110.16	110.16	110.16	425,599	425,599

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.575198	0.040076	0.193827	0.113296	0.016988	0.005361	0.017552	0.025197	0.002581	0.002349	0.005904	0.000881	0.000789
Parking Lot	0.575198	0.040076	0.193827	0.113296	0.016988	0.005361	0.017552	0.025197	0.002581	0.002349	0.005904	0.000881	0.000789

5.0 Energy Detail

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	0.0263	0.2393	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182		287.1878	287.1878	5.5000e-003	5.2700e-003	288.8944
NaturalGas Unmitigated	0.0263	0.2393	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182		287.1878	287.1878	5.5000e-003	5.2700e-003	288.8944

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					
General Light Industry	2169.86	0.0234	0.2127	0.1787	1.2800e-003		0.0162	0.0162		0.0162	0.0162		255.2780	255.2780	4.8900e-003	4.6800e-003	256.7950
General Light Industry	271.233	2.9300e-003	0.0266	0.0223	1.6000e-004		2.0200e-003	2.0200e-003		2.0200e-003	2.0200e-003		31.9098	31.9098	6.1000e-004	5.9000e-004	32.0994
Parking Lot	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		**0.0263**	**0.2393**	**0.2010**	**1.4400e-003**		**0.0182**	**0.0182**		**0.0182**	**0.0182**		**287.1878**	**287.1878**	**5.5000e-003**	**5.2700e-003**	**288.8944**

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					
General Light Industry	0.271233	2.9300e-003	0.0266	0.0223	1.6000e-004		2.0200e-003	2.0200e-003		2.0200e-003	2.0200e-003		31.9098	31.9098	6.1000e-004	5.9000e-004	32.0994
General Light Industry	2.16986	0.0234	0.2127	0.1787	1.2800e-003		0.0162	0.0162		0.0162	0.0162		255.2780	255.2780	4.8900e-003	4.6800e-003	256.7950
Parking Lot	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		**0.0263**	**0.2393**	**0.2010**	**1.4400e-003**		**0.0182**	**0.0182**		**0.0182**	**0.0182**		**287.1878**	**287.1878**	**5.5000e-003**	**5.2700e-003**	**288.8944**

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	0.8785	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142
Unmitigated	0.8785	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142

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	0.1040					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7739					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.8000e-004	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142
Total	**0.8785**	**6.0000e-005**	**6.2500e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0134**	**0.0134**	**4.0000e-005**		**0.0142**

6.2 Area by SubCategory

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	0.1040					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7739					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.8000e-004	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142
Total	**0.8785**	**6.0000e-005**	**6.2500e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0134**	**0.0134**	**4.0000e-005**		**0.0142**

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	2	0.13	50	202	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (175 - 300 HP)	0.0862	0.2409	0.2198	4.1000e-004		0.0127	0.0127		0.0127	0.0127		44.0913	44.0913	6.1800e-003		44.2458
Total	**0.0862**	**0.2409**	**0.2198**	**4.1000e-004**		**0.0127**	**0.0127**		**0.0127**	**0.0127**		**44.0913**	**44.0913**	**6.1800e-003**		**44.2458**

11.0 Vegetation

Oasis Grow Facility

Bay Area AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	32.00	1000sqft	14.69	32,000.00	0
General Light Industry	4.00	1000sqft	0.09	4,000.00	0
Parking Lot	25.00	Space	0.22	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	281.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor updated based on PG&E progress towards RPS

Land Use - Calculated disturbance area

Construction Phase - *

Grading - PRoject Info

Vehicle Trips - Based on Information from TJKM

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	300.00
tblGrading	AcresOfGrading	75.00	15.00
tblGrading	MaterialExported	0.00	165.00
tblLandUse	LotAcreage	0.73	14.69
tblProjectCharacteristics	CO2IntensityFactor	641.35	281.31
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	202.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.13
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	2.00
tblVehicleTrips	ST_TR	1.32	3.06
tblVehicleTrips	SU_TR	0.68	3.06
tblVehicleTrips	WD_TR	6.97	3.06

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.8258	54.7992	33.9847	0.0641	18.2141	2.3913	20.6055	9.9699	2.2000	12.1699	0.0000	6,355.3370	6,355.3370	1.9501	0.0000	6,404.0900
2020	3.7420	21.8092	19.4981	0.0336	0.2379	1.2334	1.4713	0.0642	1.1664	1.2306	0.0000	3,218.0713	3,218.0713	0.6609	0.0000	3,234.5936
Maximum	**4.8258**	**54.7992**	**33.9847**	**0.0641**	**18.2141**	**2.3913**	**20.6055**	**9.9699**	**2.2000**	**12.1699**	**0.0000**	**6,355.3370**	**6,355.3370**	**1.9501**	**0.0000**	**6,404.0900**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.8258	54.7992	33.9847	0.0641	18.2141	2.3913	20.6055	9.9699	2.2000	12.1699	0.0000	6,355.3370	6,355.3370	1.9501	0.0000	6,404.0899
2020	3.7420	21.8092	19.4981	0.0336	0.2379	1.2334	1.4713	0.0642	1.1664	1.2306	0.0000	3,218.0713	3,218.0713	0.6609	0.0000	3,234.5936
Maximum	**4.8258**	**54.7992**	**33.9847**	**0.0641**	**18.2141**	**2.3913**	**20.6055**	**9.9699**	**2.2000**	**12.1699**	**0.0000**	**6,355.3370**	**6,355.3370**	**1.9501**	**0.0000**	**6,404.0899**

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

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	0.8785	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142
Energy	0.0263	0.2393	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182		287.1878	287.1878	5.5000e-003	5.2700e-003	288.8944
Mobile	0.1995	1.0948	2.8065	9.9800e-003	0.9043	9.2400e-003	0.9135	0.2419	8.6700e-003	0.2506		1,008.6580	1,008.6580	0.0357		1,009.5492
Stationary	0.0862	0.2409	0.2198	4.1000e-004		0.0127	0.0127		0.0127	0.0127		44.0913	44.0913	6.1800e-003		44.2458
Total	**1.1906**	**1.5751**	**3.2336**	**0.0118**	**0.9043**	**0.0401**	**0.9444**	**0.2419**	**0.0396**	**0.2815**		**1,339.9504**	**1,339.9504**	**0.0474**	**5.2700e-003**	**1,342.7036**

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	lb/day										lb/day					
Area	0.8785	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142
Energy	0.0263	0.2393	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182		287.1878	287.1878	5.5000e-003	5.2700e-003	288.8944
Mobile	0.1995	1.0948	2.8065	9.9800e-003	0.9043	9.2400e-003	0.9135	0.2419	8.6700e-003	0.2506		1,008.6580	1,008.6580	0.0357		1,009.5492
Stationary	0.0862	0.2409	0.2198	4.1000e-004		0.0127	0.0127		0.0127	0.0127		44.0913	44.0913	6.1800e-003		44.2458
Total	**1.1906**	**1.5751**	**3.2336**	**0.0118**	**0.9043**	**0.0401**	**0.9444**	**0.2419**	**0.0396**	**0.2815**		**1,339.9504**	**1,339.9504**	**0.0474**	**5.2700e-003**	**1,342.7036**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/1/2019	5/14/2019	5	10	
2	Grading	Grading	5/15/2019	6/25/2019	5	30	
3	Paving	Paving	6/26/2019	7/23/2019	5	20	
4	Building Construction	Building Construction	7/24/2019	9/15/2020	5	300	
5	Architectural Coating	Architectural Coating	8/7/2019	9/29/2020	5	300	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 15

Acres of Paving: 0.22

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 54,000; Non-Residential Outdoor: 18,000; Striped Parking Area: 600 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

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 Preparation	7	18.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	21.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	19.00	8.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 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					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**		**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

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	0.0724	0.0530	0.5068	1.4100e-003	0.1479	9.8000e-004	0.1488	0.0392	9.0000e-004	0.0401		140.5138	140.5138	3.8200e-003		140.6092
Total	**0.0724**	**0.0530**	**0.5068**	**1.4100e-003**	**0.1479**	**9.8000e-004**	**0.1488**	**0.0392**	**9.0000e-004**	**0.0401**		**140.5138**	**140.5138**	**3.8200e-003**		**140.6092**

3.2 Site Preparation - 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					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

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	0.0724	0.0530	0.5068	1.4100e-003	0.1479	9.8000e-004	0.1488	0.0392	9.0000e-004	0.0401		140.5138	140.5138	3.8200e-003		140.6092
Total	**0.0724**	**0.0530**	**0.5068**	**1.4100e-003**	**0.1479**	**9.8000e-004**	**0.1488**	**0.0392**	**9.0000e-004**	**0.0401**		**140.5138**	**140.5138**	**3.8200e-003**		**140.6092**

3.3 Grading - 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					
Fugitive Dust					6.5530	0.0000	6.5530	3.3676	0.0000	3.3676			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920		6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**6.5530**	**2.3827**	**8.9356**	**3.3676**	**2.1920**	**5.5596**		**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

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	6.4900e-003	0.2201	0.0448	5.5000e-004	0.0122	8.4000e-004	0.0131	3.3500e-003	8.1000e-004	4.1600e-003		59.1911	59.1911	3.2400e-003		59.2722
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	0.0804	0.0589	0.5631	1.5700e-003	0.1643	1.0900e-003	0.1654	0.0436	1.0000e-003	0.0446		156.1264	156.1264	4.2400e-003		156.2324
Total	**0.0869**	**0.2790**	**0.6079**	**2.1200e-003**	**0.1765**	**1.9300e-003**	**0.1785**	**0.0469**	**1.8100e-003**	**0.0487**		**215.3175**	**215.3175**	**7.4800e-003**		**215.5045**

3.3 Grading - 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					
Fugitive Dust					6.5530	0.0000	6.5530	3.3676	0.0000	3.3676			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920	0.0000	6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**6.5530**	**2.3827**	**8.9356**	**3.3676**	**2.1920**	**5.5596**	**0.0000**	**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

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	6.4900e-003	0.2201	0.0448	5.5000e-004	0.0122	8.4000e-004	0.0131	3.3500e-003	8.1000e-004	4.1600e-003		59.1911	59.1911	3.2400e-003		59.2722
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	0.0804	0.0589	0.5631	1.5700e-003	0.1643	1.0900e-003	0.1654	0.0436	1.0000e-003	0.0446		156.1264	156.1264	4.2400e-003		156.2324
Total	**0.0869**	**0.2790**	**0.6079**	**2.1200e-003**	**0.1765**	**1.9300e-003**	**0.1785**	**0.0469**	**1.8100e-003**	**0.0487**		**215.3175**	**215.3175**	**7.4800e-003**		**215.5045**

3.4 Paving - 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	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586		2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.0288					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4833**	**15.2441**	**14.6648**	**0.0228**		**0.8246**	**0.8246**		**0.7586**	**0.7586**		**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

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	0.0603	0.0442	0.4223	1.1800e-003	0.1232	8.2000e-004	0.1240	0.0327	7.5000e-004	0.0334		117.0948	117.0948	3.1800e-003		117.1743
Total	**0.0603**	**0.0442**	**0.4223**	**1.1800e-003**	**0.1232**	**8.2000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**117.0948**	**117.0948**	**3.1800e-003**		**117.1743**

3.4 Paving - 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	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586	0.0000	2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.0288					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4833**	**15.2441**	**14.6648**	**0.0228**		**0.8246**	**0.8246**		**0.7586**	**0.7586**	**0.0000**	**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

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	0.0603	0.0442	0.4223	1.1800e-003	0.1232	8.2000e-004	0.1240	0.0327	7.5000e-004	0.0334		117.0948	117.0948	3.1800e-003		117.1743
Total	**0.0603**	**0.0442**	**0.4223**	**1.1800e-003**	**0.1232**	**8.2000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**117.0948**	**117.0948**	**3.1800e-003**		**117.1743**

3.5 Building 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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

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	0.0365	0.9630	0.2668	2.0000e-003	0.0490	6.4000e-003	0.0554	0.0141	6.1200e-003	0.0202		211.0353	211.0353	0.0130		211.3600
Worker	0.0764	0.0559	0.5349	1.4900e-003	0.1561	1.0300e-003	0.1571	0.0414	9.5000e-004	0.0424		148.3201	148.3201	4.0300e-003		148.4208
Total	**0.1129**	**1.0190**	**0.8018**	**3.4900e-003**	**0.2051**	**7.4300e-003**	**0.2125**	**0.0555**	**7.0700e-003**	**0.0626**		**359.3554**	**359.3554**	**0.0170**		**359.7808**

3.5 Building 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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

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	0.0365	0.9630	0.2668	2.0000e-003	0.0490	6.4000e-003	0.0554	0.0141	6.1200e-003	0.0202		211.0353	211.0353	0.0130		211.3600
Worker	0.0764	0.0559	0.5349	1.4900e-003	0.1561	1.0300e-003	0.1571	0.0414	9.5000e-004	0.0424		148.3201	148.3201	4.0300e-003		148.4208
Total	**0.1129**	**1.0190**	**0.8018**	**3.4900e-003**	**0.2051**	**7.4300e-003**	**0.2125**	**0.0555**	**7.0700e-003**	**0.0626**		**359.3554**	**359.3554**	**0.0170**		**359.7808**

3.5 Building Construction - 2020

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

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	0.0301	0.8796	0.2386	1.9800e-003	0.0490	4.1400e-003	0.0531	0.0141	3.9600e-003	0.0181		209.6651	209.6651	0.0120		209.9649
Worker	0.0699	0.0494	0.4788	1.4400e-003	0.1561	1.0100e-003	0.1571	0.0414	9.3000e-004	0.0423		143.6524	143.6524	3.5100e-003		143.7403
Total	**0.0999**	**0.9290**	**0.7174**	**3.4200e-003**	**0.2051**	**5.1500e-003**	**0.2102**	**0.0555**	**4.8900e-003**	**0.0604**		**353.3175**	**353.3175**	**0.0155**		**353.7052**

3.5 Building Construction - 2020

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

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	0.0301	0.8796	0.2386	1.9800e-003	0.0490	4.1400e-003	0.0531	0.0141	3.9600e-003	0.0181		209.6651	209.6651	0.0120		209.9649
Worker	0.0699	0.0494	0.4788	1.4400e-003	0.1561	1.0100e-003	0.1571	0.0414	9.3000e-004	0.0423		143.6524	143.6524	3.5100e-003		143.7403
Total	**0.0999**	**0.9290**	**0.7174**	**3.4200e-003**	**0.2051**	**5.1500e-003**	**0.2102**	**0.0555**	**4.8900e-003**	**0.0604**		**353.3175**	**353.3175**	**0.0155**		**353.7052**

3.6 Architectural Coating - 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					
Archit. Coating	1.2654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**1.5318**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

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	0.0161	0.0118	0.1126	3.1000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9200e-003		31.2253	31.2253	8.5000e-004		31.2465
Total	**0.0161**	**0.0118**	**0.1126**	**3.1000e-004**	**0.0329**	**2.2000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9200e-003**		**31.2253**	**31.2253**	**8.5000e-004**		**31.2465**

3.6 Architectural Coating - 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					
Archit. Coating	1.2654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**1.5318**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

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	0.0161	0.0118	0.1126	3.1000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9200e-003		31.2253	31.2253	8.5000e-004		31.2465
Total	**0.0161**	**0.0118**	**0.1126**	**3.1000e-004**	**0.0329**	**2.2000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9200e-003**		**31.2253**	**31.2253**	**8.5000e-004**		**31.2465**

3.6 Architectural Coating - 2020

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					
Archit. Coating	1.2654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**1.5075**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	0.0147	0.0104	0.1008	3.0000e-004	0.0329	2.1000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.2426	30.2426	7.4000e-004		30.2611
Total	**0.0147**	**0.0104**	**0.1008**	**3.0000e-004**	**0.0329**	**2.1000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**30.2426**	**30.2426**	**7.4000e-004**		**30.2611**

3.6 Architectural Coating - 2020

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					
Archit. Coating	1.2654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**1.5075**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	0.0147	0.0104	0.1008	3.0000e-004	0.0329	2.1000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.2426	30.2426	7.4000e-004		30.2611
Total	**0.0147**	**0.0104**	**0.1008**	**3.0000e-004**	**0.0329**	**2.1000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**30.2426**	**30.2426**	**7.4000e-004**		**30.2611**

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	0.1995	1.0948	2.8065	9.9800e-003	0.9043	9.2400e-003	0.9135	0.2419	8.6700e-003	0.2506		1,008.6580	1,008.6580	0.0357		1,009.5492
Unmitigated	0.1995	1.0948	2.8065	9.9800e-003	0.9043	9.2400e-003	0.9135	0.2419	8.6700e-003	0.2506		1,008.6580	1,008.6580	0.0357		1,009.5492

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	97.92	97.92	97.92	378,311	378,311
General Light Industry	12.24	12.24	12.24	47,289	47,289
Parking Lot	0.00	0.00	0.00		
Total	110.16	110.16	110.16	425,599	425,599

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.575198	0.040076	0.193827	0.113296	0.016988	0.005361	0.017552	0.025197	0.002581	0.002349	0.005904	0.000881	0.000789
Parking Lot	0.575198	0.040076	0.193827	0.113296	0.016988	0.005361	0.017552	0.025197	0.002581	0.002349	0.005904	0.000881	0.000789

5.0 Energy Detail

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	0.0263	0.2393	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182		287.1878	287.1878	5.5000e-003	5.2700e-003	288.8944
NaturalGas Unmitigated	0.0263	0.2393	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182		287.1878	287.1878	5.5000e-003	5.2700e-003	288.8944

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					
General Light Industry	2169.86	0.0234	0.2127	0.1787	1.2800e-003		0.0162	0.0162		0.0162	0.0162		255.2780	255.2780	4.8900e-003	4.6800e-003	256.7950
General Light Industry	271.233	2.9300e-003	0.0266	0.0223	1.6000e-004		2.0200e-003	2.0200e-003		2.0200e-003	2.0200e-003		31.9098	31.9098	6.1000e-004	5.9000e-004	32.0994
Parking Lot	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		**0.0263**	**0.2393**	**0.2010**	**1.4400e-003**		**0.0182**	**0.0182**		**0.0182**	**0.0182**		**287.1878**	**287.1878**	**5.5000e-003**	**5.2700e-003**	**288.8944**

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					
General Light Industry	0.271233	2.9300e-003	0.0266	0.0223	1.6000e-004		2.0200e-003	2.0200e-003		2.0200e-003	2.0200e-003		31.9098	31.9098	6.1000e-004	5.9000e-004	32.0994
General Light Industry	2.16986	0.0234	0.2127	0.1787	1.2800e-003		0.0162	0.0162		0.0162	0.0162		255.2780	255.2780	4.8900e-003	4.6800e-003	256.7950
Parking Lot	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		**0.0263**	**0.2393**	**0.2010**	**1.4400e-003**		**0.0182**	**0.0182**		**0.0182**	**0.0182**		**287.1878**	**287.1878**	**5.5000e-003**	**5.2700e-003**	**288.8944**

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	0.8785	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142
Unmitigated	0.8785	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142

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	0.1040					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7739					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.8000e-004	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142
Total	**0.8785**	**6.0000e-005**	**6.2500e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0134**	**0.0134**	**4.0000e-005**		**0.0142**

6.2 Area by SubCategory

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	0.1040					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7739					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.8000e-004	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142
Total	**0.8785**	**6.0000e-005**	**6.2500e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0134**	**0.0134**	**4.0000e-005**		**0.0142**

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	2	0.13	50	202	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (175 - 300 HP)	0.0862	0.2409	0.2198	4.1000e-004		0.0127	0.0127		0.0127	0.0127		44.0913	44.0913	6.1800e-003		44.2458
Total	**0.0862**	**0.2409**	**0.2198**	**4.1000e-004**		**0.0127**	**0.0127**		**0.0127**	**0.0127**		**44.0913**	**44.0913**	**6.1800e-003**		**44.2458**

11.0 Vegetation

Oasis Grow Facility

Bay Area AQMD Air District, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	No Change	0	1	No Change	0.00
Cranes	Diesel	No Change	0	1	No Change	0.00
Excavators	Diesel	No Change	0	2	No Change	0.00
Forklifts	Diesel	No Change	0	3	No Change	0.00
Generator Sets	Diesel	No Change	0	1	No Change	0.00
Graders	Diesel	No Change	0	1	No Change	0.00
Pavers	Diesel	No Change	0	2	No Change	0.00
Paving Equipment	Diesel	No Change	0	2	No Change	0.00
Rollers	Diesel	No Change	0	2	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	4	No Change	0.00
Scrapers	Diesel	No Change	0	2	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	9	No Change	0.00
Welders	Diesel	No Change	0	1	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Air Compressors	3.76000E-002	2.60530E-001	2.75230E-001	4.50000E-004	1.75800E-002	1.75800E-002	0.00000E+000	3.82988E+001	3.82988E+001	3.06000E-003	0.00000E+000	3.83753E+001
Cranes	6.20600E-002	7.38600E-001	2.86580E-001	7.60000E-004	3.08000E-002	2.83400E-002	0.00000E+000	6.71009E+001	6.71009E+001	2.15200E-002	0.00000E+000	6.76389E+001
Excavators	7.82000E-003	8.04600E-002	9.79000E-002	1.50000E-004	3.88000E-003	3.57000E-003	0.00000E+000	1.39106E+001	1.39106E+001	4.40000E-003	0.00000E+000	1.40206E+001
Forklifts	6.75500E-002	6.06440E-001	5.33520E-001	6.90000E-004	4.59100E-002	4.22400E-002	0.00000E+000	6.09459E+001	6.09459E+001	1.95400E-002	0.00000E+000	6.14345E+001
Generator Sets	6.24400E-002	5.39000E-001	5.56840E-001	9.90000E-004	3.11400E-002	3.11400E-002	0.00000E+000	8.47811E+001	8.47811E+001	5.00000E-003	0.00000E+000	8.49062E+001
Graders	7.30000E-003	9.86900E-002	2.75700E-002	1.00000E-004	3.17000E-003	2.91000E-003	0.00000E+000	8.94884E+000	8.94884E+000	2.83000E-003	0.00000E+000	9.01962E+000
Pavers	5.75000E-003	6.24900E-002	5.80300E-002	9.00000E-005	3.06000E-003	2.82000E-003	0.00000E+000	8.44586E+000	8.44586E+000	2.67000E-003	0.00000E+000	8.51266E+000
Paving Equipment	4.26000E-003	4.51300E-002	5.04700E-002	8.00000E-005	2.24000E-003	2.06000E-003	0.00000E+000	7.31770E+000	7.31770E+000	2.32000E-003	0.00000E+000	7.37558E+000
Rollers	4.53000E-003	4.48200E-002	3.81500E-002	5.00000E-005	2.95000E-003	2.71000E-003	0.00000E+000	4.71162E+000	4.71162E+000	1.49000E-003	0.00000E+000	4.74889E+000
Rubber Tired Dozers	3.40400E-002	3.62230E-001	1.28520E-001	2.60000E-004	1.76600E-002	1.62500E-002	0.00000E+000	2.30088E+001	2.30088E+001	7.28000E-003	0.00000E+000	2.31908E+001
Scrapers	3.19600E-002	3.87420E-001	2.41840E-001	4.50000E-004	1.51800E-002	1.39700E-002	0.00000E+000	4.08183E+001	4.08183E+001	1.29100E-002	0.00000E+000	4.11411E+001
Tractors/Loaders/ Backhoes	9.76500E-002	9.80820E-001	1.01623E+000	1.38000E-003	6.36800E-002	5.85800E-002	0.00000E+000	1.22313E+002	1.22313E+002	3.91600E-002	0.00000E+000	1.23292E+002
Welders	5.37900E-002	2.38740E-001	2.67360E-001	3.80000E-004	1.37700E-002	1.37700E-002	0.00000E+000	2.82331E+001	2.82331E+001	4.38000E-003	0.00000E+000	2.83427E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	3.76000E-002	2.60530E-001	2.75230E-001	4.50000E-004	1.75800E-002	1.75800E-002	0.00000E+000	3.82988E+001	3.82988E+001	3.06000E-003	0.00000E+000	3.83753E+001
Cranes	6.20600E-002	7.38600E-001	2.86580E-001	7.60000E-004	3.08000E-002	2.83400E-002	0.00000E+000	6.71008E+001	6.71008E+001	2.15200E-002	0.00000E+000	6.76388E+001
Excavators	7.82000E-003	8.04600E-002	9.79000E-002	1.50000E-004	3.88000E-003	3.57000E-003	0.00000E+000	1.39105E+001	1.39105E+001	4.40000E-003	0.00000E+000	1.40206E+001
Forklifts	6.75500E-002	6.06440E-001	5.33520E-001	6.90000E-004	4.59100E-002	4.22400E-002	0.00000E+000	6.09458E+001	6.09458E+001	1.95400E-002	0.00000E+000	6.14344E+001
Generator Sets	6.24400E-002	5.39000E-001	5.56840E-001	9.90000E-004	3.11400E-002	3.11400E-002	0.00000E+000	8.47810E+001	8.47810E+001	5.00000E-003	0.00000E+000	8.49061E+001
Graders	7.30000E-003	9.86900E-002	2.75700E-002	1.00000E-004	3.17000E-003	2.91000E-003	0.00000E+000	8.94883E+000	8.94883E+000	2.83000E-003	0.00000E+000	9.01961E+000
Pavers	5.75000E-003	6.24900E-002	5.80300E-002	9.00000E-005	3.06000E-003	2.82000E-003	0.00000E+000	8.44585E+000	8.44585E+000	2.67000E-003	0.00000E+000	8.51265E+000
Paving Equipment	4.26000E-003	4.51300E-002	5.04700E-002	8.00000E-005	2.24000E-003	2.06000E-003	0.00000E+000	7.31769E+000	7.31769E+000	2.32000E-003	0.00000E+000	7.37557E+000
Rollers	4.53000E-003	4.48200E-002	3.81500E-002	5.00000E-005	2.95000E-003	2.71000E-003	0.00000E+000	4.71162E+000	4.71162E+000	1.49000E-003	0.00000E+000	4.74888E+000
Rubber Tired Dozers	3.40400E-002	3.62230E-001	1.28520E-001	2.60000E-004	1.76600E-002	1.62500E-002	0.00000E+000	2.30088E+001	2.30088E+001	7.28000E-003	0.00000E+000	2.31908E+001
Scrapers	3.19600E-002	3.87410E-001	2.41840E-001	4.50000E-004	1.51800E-002	1.39700E-002	0.00000E+000	4.08182E+001	4.08182E+001	1.29100E-002	0.00000E+000	4.11411E+001
Tractors/Loaders/Backhoes	9.76500E-002	9.80820E-001	1.01623E+000	1.38000E-003	6.36800E-002	5.85800E-002	0.00000E+000	1.22313E+002	1.22313E+002	3.91600E-002	0.00000E+000	1.23292E+002
Welders	5.37900E-002	2.38740E-001	2.67360E-001	3.80000E-004	1.37700E-002	1.37700E-002	0.00000E+000	2.82331E+001	2.82331E+001	4.38000E-003	0.00000E+000	2.83426E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.30552E-006	1.30552E-006	0.00000E+000	0.00000E+000	1.30292E-006
Cranes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.19223E-006	1.19223E-006	0.00000E+000	0.00000E+000	1.18275E-006
Excavators	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.43776E-006	1.43776E-006	0.00000E+000	0.00000E+000	1.42647E-006
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.14856E-006	1.14856E-006	0.00000E+000	0.00000E+000	1.13943E-006
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.17951E-006	1.17951E-006	0.00000E+000	0.00000E+000	1.17777E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.11746E-006	1.11746E-006	0.00000E+000	0.00000E+000	1.10869E-006
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.18401E-006	1.18401E-006	0.00000E+000	0.00000E+000	1.17472E-006
Paving Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.36655E-006	1.36655E-006	0.00000E+000	0.00000E+000	1.35583E-006
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	2.10576E-006
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	8.69233E-007	8.69233E-007	0.00000E+000	0.00000E+000	1.29362E-006
Scrapers	0.00000E+000	2.58118E-005	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	9.79954E-007	9.79954E-007	0.00000E+000	0.00000E+000	1.21533E-006
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.22636E-006	1.22636E-006	0.00000E+000	0.00000E+000	1.21662E-006
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.06258E-006	1.06258E-006	0.00000E+000	0.00000E+000	1.05848E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction		PM2.5 Reduction			
No	Replace Ground Cover of Area Disturbed	PM10 Reduction		PM2.5 Reduction			
No	Water Exposed Area	PM10 Reduction		PM2.5 Reduction		Frequency (per day)	

No	Unpaved Road Mitigation	Moisture Content %		Vehicle Speed (mph)	0.00		
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.03	0.01	0.03	0.01	0.00	0.00
Grading	Fugitive Dust	0.10	0.05	0.10	0.05	0.00	0.00
Grading	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.09	0.05	0.09	0.05	0.00	0.00
Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.05	0.24		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"				
No	Commute	Workplace Parking Charge				
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program				
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
No	Use Low VOC Paint (Residential Exterior)	150.00
No	Use Low VOC Paint (Non-residential Interior)	100.00
No	Use Low VOC Paint (Non-residential Exterior)	150.00
No	Use Low VOC Paint (Parking)	150.00
No	% Electric Lawnmower	
No	% Electric Leafblower	
No	% Electric Chainsaw	

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy		
No	Use Reclaimed Water		
No	Use Grey Water		
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction		
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape		

Solid Waste Mitigation

Mitigation Measures	Input Value

Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

Oasis Grow Facility (Mitigated)

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	32.00	1000sqft	14.69	32,000.00	0
General Light Industry	4.00	1000sqft	0.09	4,000.00	0
Parking Lot	25.00	Space	0.22	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	281.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor updated based on PG&E progress towards RPS

Land Use - Calculated disturbance area

Construction Phase - *

Grading - PRoject Info

Vehicle Trips - Based on Information from TJKM

Stationary Sources - Emergency Generators and Fire Pumps -

Construction Off-road Equipment Mitigation - Engine tier mitigation applied

Oasis Grow Facility (Mitigated) - Bay Area AQMD Air District, Annual

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

tblConstructionPhase	NumDays	20.00	300.00
tblGrading	AcresOfGrading	75.00	15.00
tblGrading	MaterialExported	0.00	165.00
tblLandUse	LotAcreage	0.73	14.69
tblProjectCharacteristics	CO2IntensityFactor	641.35	281.31
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	202.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.13
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	2.00
tblVehicleTrips	ST_TR	1.32	3.06
tblVehicleTrips	SU_TR	0.68	3.06
tblVehicleTrips	WD_TR	6.97	3.06

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.3326	2.5702	1.9066	3.3200e-003	0.2061	0.1373	0.3434	0.1049	0.1284	0.2333	0.0000	294.8689	294.8689	0.0734	0.0000	296.7045
2020	0.3529	2.0255	1.8103	3.1300e-003	0.0214	0.1146	0.1360	5.7800e-003	0.1084	0.1142	0.0000	271.8814	271.8814	0.0555	0.0000	273.2693
Maximum	**0.3529**	**2.5702**	**1.9066**	**3.3200e-003**	**0.2061**	**0.1373**	**0.3434**	**0.1049**	**0.1284**	**0.2333**	**0.0000**	**294.8689**	**294.8689**	**0.0734**	**0.0000**	**296.7045**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1862	2.6799	2.0279	3.3200e-003	0.2061	0.0888	0.2949	0.1049	0.0888	0.1937	0.0000	294.8686	294.8686	0.0734	0.0000	296.7042
2020	0.2443	2.4948	1.9052	3.1300e-003	0.0214	0.0933	0.1147	5.7800e-003	0.0933	0.0991	0.0000	271.8811	271.8811	0.0555	0.0000	273.2691
Maximum	**0.2443**	**2.6799**	**2.0279**	**3.3200e-003**	**0.2061**	**0.0933**	**0.2949**	**0.1049**	**0.0933**	**0.1937**	**0.0000**	**294.8686**	**294.8686**	**0.0734**	**0.0000**	**296.7042**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**37.20**	**-12.60**	**-5.82**	**0.00**	**0.00**	**27.71**	**14.56**	**0.00**	**23.11**	**15.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	5-1-2019	7-31-2019	1.3825	1.2613
2	8-1-2019	10-31-2019	0.9110	0.9614
3	11-1-2019	1-31-2020	0.8922	0.9690
4	2-1-2020	4-30-2020	0.8210	0.9454
5	5-1-2020	7-31-2020	0.8387	0.9659
6	8-1-2020	9-30-2020	0.4354	0.5017
		Highest	1.3825	1.2613

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	0.1603	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0900e-003	1.0900e-003	0.0000	0.0000	1.1600e-003
Energy	4.8000e-003	0.0437	0.0367	2.6000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003	0.0000	82.7214	82.7214	4.5400e-003	1.6200e-003	83.3182
Mobile	0.0364	0.1945	0.4935	1.8300e-003	0.1584	1.6800e-003	0.1601	0.0425	1.5700e-003	0.0441	0.0000	167.8901	167.8901	5.7800e-003	0.0000	168.0347
Stationary	0.0166	0.0463	0.0423	8.0000e-005		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003	0.0000	7.6921	7.6921	1.0800e-003	0.0000	7.7191
Waste						0.0000	0.0000		0.0000	0.0000	9.0615	0.0000	9.0615	0.5355	0.0000	22.4495
Water						0.0000	0.0000		0.0000	0.0000	2.6411	5.7480	8.3891	0.2719	6.5300e-003	17.1310
Total	**0.2181**	**0.2845**	**0.5730**	**2.1700e-003**	**0.1584**	**7.4400e-003**	**0.1658**	**0.0425**	**7.3300e-003**	**0.0499**	**11.7027**	**264.0527**	**275.7553**	**0.8188**	**8.1500e-003**	**298.6535**

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	0.1603	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0900e-003	1.0900e-003	0.0000	0.0000	1.1600e-003
Energy	4.8000e-003	0.0437	0.0367	2.6000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003	0.0000	82.7214	82.7214	4.5400e-003	1.6200e-003	83.3182
Mobile	0.0364	0.1945	0.4935	1.8300e-003	0.1584	1.6800e-003	0.1601	0.0425	1.5700e-003	0.0441	0.0000	167.8901	167.8901	5.7800e-003	0.0000	168.0347
Stationary	0.0166	0.0463	0.0423	8.0000e-005		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003	0.0000	7.6921	7.6921	1.0800e-003	0.0000	7.7191
Waste						0.0000	0.0000		0.0000	0.0000	9.0615	0.0000	9.0615	0.5355	0.0000	22.4495
Water						0.0000	0.0000		0.0000	0.0000	2.6411	5.7480	8.3891	0.2719	6.5300e-003	17.1310
Total	**0.2181**	**0.2845**	**0.5730**	**2.1700e-003**	**0.1584**	**7.4400e-003**	**0.1658**	**0.0425**	**7.3300e-003**	**0.0499**	**11.7027**	**264.0527**	**275.7553**	**0.8188**	**8.1500e-003**	**298.6535**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/1/2019	5/14/2019	5	10	
2	Grading	Grading	5/15/2019	6/25/2019	5	30	
3	Paving	Paving	6/26/2019	7/23/2019	5	20	
4	Building Construction	Building Construction	7/24/2019	9/15/2020	5	300	
5	Architectural Coating	Architectural Coating	8/7/2019	9/29/2020	5	300	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 15

Acres of Paving: 0.22

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 54,000; Non-Residential Outdoor: 18,000; Striped Parking Area: 600 (Architectural Coating – sqft)

OffRoad Equipment

Oasis Grow Facility (Mitigated) - Bay Area AQMD Air District, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

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 Preparation	7	18.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	21.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	19.00	8.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Site Preparation - 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					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.2279	0.1103	1.9000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195
Total	**0.0217**	**0.2279**	**0.1103**	**1.9000e-004**	**0.0903**	**0.0120**	**0.1023**	**0.0497**	**0.0110**	**0.0607**	**0.0000**	**17.0843**	**17.0843**	**5.4100e-003**	**0.0000**	**17.2195**

3.2 Site Preparation - 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	3.3000e-004	2.4000e-004	2.4600e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6433	0.6433	2.0000e-005	0.0000	0.6437
Total	**3.3000e-004**	**2.4000e-004**	**2.4600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6433**	**0.6433**	**2.0000e-005**	**0.0000**	**0.6437**

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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0500e-003	0.1686	0.1148	1.9000e-004		4.7300e-003	4.7300e-003		4.7300e-003	4.7300e-003	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195
Total	**6.0500e-003**	**0.1686**	**0.1148**	**1.9000e-004**	**0.0903**	**4.7300e-003**	**0.0951**	**0.0497**	**4.7300e-003**	**0.0544**	**0.0000**	**17.0843**	**17.0843**	**5.4100e-003**	**0.0000**	**17.2195**

3.2 Site Preparation - 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	0.0000	0.0000	0.0000	0.0000	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	3.3000e-004	2.4000e-004	2.4600e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6433	0.6433	2.0000e-005	0.0000	0.6437
Total	**3.3000e-004**	**2.4000e-004**	**2.4600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6433**	**0.6433**	**2.0000e-005**	**0.0000**	**0.6437**

3.3 Grading - 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					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0711	0.8178	0.5007	9.3000e-004		0.0357	0.0357		0.0329	0.0329	0.0000	83.5520	83.5520	0.0264	0.0000	84.2129
Total	**0.0711**	**0.8178**	**0.5007**	**9.3000e-004**	**0.0983**	**0.0357**	**0.1340**	**0.0505**	**0.0329**	**0.0834**	**0.0000**	**83.5520**	**83.5520**	**0.0264**	**0.0000**	**84.2129**

3.3 Grading - 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	1.0000e-004	3.2900e-003	6.4000e-004	1.0000e-005	1.8000e-004	1.0000e-005	1.9000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.8133	0.8133	4.0000e-005	0.0000	0.8143
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	1.0900e-003	8.1000e-004	8.2200e-003	2.0000e-005	2.3700e-003	2.0000e-005	2.3900e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	2.1443	2.1443	6.0000e-005	0.0000	2.1458
Total	**1.1900e-003**	**4.1000e-003**	**8.8600e-003**	**3.0000e-005**	**2.5500e-003**	**3.0000e-005**	**2.5800e-003**	**6.8000e-004**	**3.0000e-005**	**7.1000e-004**	**0.0000**	**2.9576**	**2.9576**	**1.0000e-004**	**0.0000**	**2.9601**

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					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0272	0.7686	0.5508	9.3000e-004		0.0200	0.0200		0.0200	0.0200	0.0000	83.5519	83.5519	0.0264	0.0000	84.2128
Total	**0.0272**	**0.7686**	**0.5508**	**9.3000e-004**	**0.0983**	**0.0200**	**0.1183**	**0.0505**	**0.0200**	**0.0705**	**0.0000**	**83.5519**	**83.5519**	**0.0264**	**0.0000**	**84.2128**

3.3 Grading - 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	1.0000e-004	3.2900e-003	6.4000e-004	1.0000e-005	1.8000e-004	1.0000e-005	1.9000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.8133	0.8133	4.0000e-005	0.0000	0.8143
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	1.0900e-003	8.1000e-004	8.2200e-003	2.0000e-005	2.3700e-003	2.0000e-005	2.3900e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	2.1443	2.1443	6.0000e-005	0.0000	2.1458
Total	**1.1900e-003**	**4.1000e-003**	**8.8600e-003**	**3.0000e-005**	**2.5500e-003**	**3.0000e-005**	**2.5800e-003**	**6.8000e-004**	**3.0000e-005**	**7.1000e-004**	**0.0000**	**2.9576**	**2.9576**	**1.0000e-004**	**0.0000**	**2.9601**

3.4 Paving - 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	0.0145	0.1524	0.1467	2.3000e-004		8.2500e-003	8.2500e-003		7.5900e-003	7.5900e-003	0.0000	20.4752	20.4752	6.4800e-003	0.0000	20.6371
Paving	2.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0148**	**0.1524**	**0.1467**	**2.3000e-004**		**8.2500e-003**	**8.2500e-003**		**7.5900e-003**	**7.5900e-003**	**0.0000**	**20.4752**	**20.4752**	**6.4800e-003**	**0.0000**	**20.6371**

3.4 Paving - 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	5.4000e-004	4.0000e-004	4.1100e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0722	1.0722	3.0000e-005	0.0000	1.0729
Total	**5.4000e-004**	**4.0000e-004**	**4.1100e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0722**	**1.0722**	**3.0000e-005**	**0.0000**	**1.0729**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.3100e-003	0.2012	0.1730	2.3000e-004		6.6700e-003	6.6700e-003		6.6700e-003	6.6700e-003	0.0000	20.4752	20.4752	6.4800e-003	0.0000	20.6371
Paving	2.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.6000e-003**	**0.2012**	**0.1730**	**2.3000e-004**		**6.6700e-003**	**6.6700e-003**		**6.6700e-003**	**6.6700e-003**	**0.0000**	**20.4752**	**20.4752**	**6.4800e-003**	**0.0000**	**20.6371**

3.4 Paving - 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	0.0000	0.0000	0.0000	0.0000	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	5.4000e-004	4.0000e-004	4.1100e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.0722	1.0722	3.0000e-005	0.0000	1.0729
Total	**5.4000e-004**	**4.0000e-004**	**4.1100e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.1900e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0722**	**1.0722**	**3.0000e-005**	**0.0000**	**1.0729**

3.5 Building 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	0.1358	1.2120	0.9869	1.5500e-003		0.0742	0.0742		0.0697	0.0697	0.0000	135.1849	135.1849	0.0329	0.0000	136.0082
Total	**0.1358**	**1.2120**	**0.9869**	**1.5500e-003**		**0.0742**	**0.0742**		**0.0697**	**0.0697**	**0.0000**	**135.1849**	**135.1849**	**0.0329**	**0.0000**	**136.0082**

3.5 Building 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0400e-003	0.0555	0.0143	1.2000e-004	2.7300e-003	3.6000e-004	3.0900e-003	7.9000e-004	3.5000e-004	1.1400e-003	0.0000	11.1850	11.1850	6.5000e-004	0.0000	11.2011
Worker	3.9600e-003	2.9300e-003	0.0299	9.0000e-005	8.6300e-003	6.0000e-005	8.6900e-003	2.3000e-003	5.0000e-005	2.3500e-003	0.0000	7.8089	7.8089	2.1000e-004	0.0000	7.8141
Total	**6.0000e-003**	**0.0584**	**0.0442**	**2.1000e-004**	**0.0114**	**4.2000e-004**	**0.0118**	**3.0900e-003**	**4.0000e-004**	**3.4900e-003**	**0.0000**	**18.9938**	**18.9938**	**8.6000e-004**	**0.0000**	**19.0152**

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	0.0622	1.3544	1.0277	1.5500e-003		0.0520	0.0520		0.0520	0.0520	0.0000	135.1848	135.1848	0.0329	0.0000	136.0081
Total	**0.0622**	**1.3544**	**1.0277**	**1.5500e-003**		**0.0520**	**0.0520**		**0.0520**	**0.0520**	**0.0000**	**135.1848**	**135.1848**	**0.0329**	**0.0000**	**136.0081**

3.5 Building 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0400e-003	0.0555	0.0143	1.2000e-004	2.7300e-003	3.6000e-004	3.0900e-003	7.9000e-004	3.5000e-004	1.1400e-003	0.0000	11.1850	11.1850	6.5000e-004	0.0000	11.2011
Worker	3.9600e-003	2.9300e-003	0.0299	9.0000e-005	8.6300e-003	6.0000e-005	8.6900e-003	2.3000e-003	5.0000e-005	2.3500e-003	0.0000	7.8089	7.8089	2.1000e-004	0.0000	7.8141
Total	**6.0000e-003**	**0.0584**	**0.0442**	**2.1000e-004**	**0.0114**	**4.2000e-004**	**0.0118**	**3.0900e-003**	**4.0000e-004**	**3.4900e-003**	**0.0000**	**18.9938**	**18.9938**	**8.6000e-004**	**0.0000**	**19.0152**

3.5 Building Construction - 2020

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	0.1961	1.7747	1.5585	2.4900e-003		0.1033	0.1033		0.0972	0.0972	0.0000	214.2392	214.2392	0.0523	0.0000	215.5459
Total	**0.1961**	**1.7747**	**1.5585**	**2.4900e-003**		**0.1033**	**0.1033**		**0.0972**	**0.0972**	**0.0000**	**214.2392**	**214.2392**	**0.0523**	**0.0000**	**215.5459**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.7000e-003	0.0815	0.0205	1.9000e-004	4.3900e-003	3.8000e-004	4.7700e-003	1.2700e-003	3.6000e-004	1.6300e-003	0.0000	17.8812	17.8812	9.6000e-004	0.0000	17.9053
Worker	5.8300e-003	4.1700e-003	0.0432	1.3000e-004	0.0139	9.0000e-005	0.0140	3.6900e-003	9.0000e-005	3.7800e-003	0.0000	12.1668	12.1668	2.9000e-004	0.0000	12.1742
Total	**8.5300e-003**	**0.0857**	**0.0637**	**3.2000e-004**	**0.0183**	**4.7000e-004**	**0.0188**	**4.9600e-003**	**4.5000e-004**	**5.4100e-003**	**0.0000**	**30.0481**	**30.0481**	**1.2500e-003**	**0.0000**	**30.0795**

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	0.1000	2.1788	1.6533	2.4900e-003		0.0836	0.0836		0.0836	0.0836	0.0000	214.2390	214.2390	0.0523	0.0000	215.5457
Total	**0.1000**	**2.1788**	**1.6533**	**2.4900e-003**		**0.0836**	**0.0836**		**0.0836**	**0.0836**	**0.0000**	**214.2390**	**214.2390**	**0.0523**	**0.0000**	**215.5457**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.7000e-003	0.0815	0.0205	1.9000e-004	4.3900e-003	3.8000e-004	4.7700e-003	1.2700e-003	3.6000e-004	1.6300e-003	0.0000	17.8812	17.8812	9.6000e-004	0.0000	17.9053
Worker	5.8300e-003	4.1700e-003	0.0432	1.3000e-004	0.0139	9.0000e-005	0.0140	3.6900e-003	9.0000e-005	3.7800e-003	0.0000	12.1668	12.1668	2.9000e-004	0.0000	12.1742
Total	**8.5300e-003**	**0.0857**	**0.0637**	**3.2000e-004**	**0.0183**	**4.7000e-004**	**0.0188**	**4.9600e-003**	**4.5000e-004**	**5.4100e-003**	**0.0000**	**30.0481**	**30.0481**	**1.2500e-003**	**0.0000**	**30.0795**

3.6 Architectural Coating - 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					
Archit. Coating	0.0664					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0140	0.0964	0.0967	1.6000e-004		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	0.0000	13.4046	13.4046	1.1300e-003	0.0000	13.4329
Total	**0.0804**	**0.0964**	**0.0967**	**1.6000e-004**		**6.7600e-003**	**6.7600e-003**		**6.7600e-003**	**6.7600e-003**	**0.0000**	**13.4046**	**13.4046**	**1.1300e-003**	**0.0000**	**13.4329**

3.6 Architectural Coating - 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	7.6000e-004	5.6000e-004	5.7500e-003	2.0000e-005	1.6600e-003	1.0000e-005	1.6700e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5010	1.5010	4.0000e-005	0.0000	1.5020
Total	**7.6000e-004**	**5.6000e-004**	**5.7500e-003**	**2.0000e-005**	**1.6600e-003**	**1.0000e-005**	**1.6700e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.5010**	**1.5010**	**4.0000e-005**	**0.0000**	**1.5020**

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					
Archit. Coating	0.0664					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9800e-003	0.1235	0.0962	1.6000e-004		4.9900e-003	4.9900e-003		4.9900e-003	4.9900e-003	0.0000	13.4046	13.4046	1.1300e-003	0.0000	13.4329
Total	**0.0724**	**0.1235**	**0.0962**	**1.6000e-004**		**4.9900e-003**	**4.9900e-003**		**4.9900e-003**	**4.9900e-003**	**0.0000**	**13.4046**	**13.4046**	**1.1300e-003**	**0.0000**	**13.4329**

3.6 Architectural Coating - 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	0.0000	0.0000	0.0000	0.0000	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	7.6000e-004	5.6000e-004	5.7500e-003	2.0000e-005	1.6600e-003	1.0000e-005	1.6700e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5010	1.5010	4.0000e-005	0.0000	1.5020
Total	**7.6000e-004**	**5.6000e-004**	**5.7500e-003**	**2.0000e-005**	**1.6600e-003**	**1.0000e-005**	**1.6700e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.5010**	**1.5010**	**4.0000e-005**	**0.0000**	**1.5020**

3.6 Architectural Coating - 2020

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					
Archit. Coating	0.1234					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0236	0.1642	0.1786	2.9000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	24.8942	24.8942	1.9300e-003	0.0000	24.9424
Total	**0.1470**	**0.1642**	**0.1786**	**2.9000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**24.8942**	**24.8942**	**1.9300e-003**	**0.0000**	**24.9424**

3.6 Architectural Coating - 2020

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	1.2900e-003	9.2000e-004	9.5800e-003	3.0000e-005	3.0800e-003	2.0000e-005	3.1000e-003	8.2000e-004	2.0000e-005	8.4000e-004	0.0000	2.6999	2.6999	7.0000e-005	0.0000	2.7015
Total	**1.2900e-003**	**9.2000e-004**	**9.5800e-003**	**3.0000e-005**	**3.0800e-003**	**2.0000e-005**	**3.1000e-003**	**8.2000e-004**	**2.0000e-005**	**8.4000e-004**	**0.0000**	**2.6999**	**2.6999**	**7.0000e-005**	**0.0000**	**2.7015**

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					
Archit. Coating	0.1234					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0111	0.2294	0.1787	2.9000e-004		9.2700e-003	9.2700e-003		9.2700e-003	9.2700e-003	0.0000	24.8942	24.8942	1.9300e-003	0.0000	24.9424
Total	**0.1345**	**0.2294**	**0.1787**	**2.9000e-004**		**9.2700e-003**	**9.2700e-003**		**9.2700e-003**	**9.2700e-003**	**0.0000**	**24.8942**	**24.8942**	**1.9300e-003**	**0.0000**	**24.9424**

3.6 Architectural Coating - 2020

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	1.2900e-003	9.2000e-004	9.5800e-003	3.0000e-005	3.0800e-003	2.0000e-005	3.1000e-003	8.2000e-004	2.0000e-005	8.4000e-004	0.0000	2.6999	2.6999	7.0000e-005	0.0000	2.7015
Total	**1.2900e-003**	**9.2000e-004**	**9.5800e-003**	**3.0000e-005**	**3.0800e-003**	**2.0000e-005**	**3.1000e-003**	**8.2000e-004**	**2.0000e-005**	**8.4000e-004**	**0.0000**	**2.6999**	**2.6999**	**7.0000e-005**	**0.0000**	**2.7015**

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	tons/yr										MT/yr					
Mitigated	0.0364	0.1945	0.4935	1.8300e-003	0.1584	1.6800e-003	0.1601	0.0425	1.5700e-003	0.0441	0.0000	167.8901	167.8901	5.7800e-003	0.0000	168.0347
Unmitigated	0.0364	0.1945	0.4935	1.8300e-003	0.1584	1.6800e-003	0.1601	0.0425	1.5700e-003	0.0441	0.0000	167.8901	167.8901	5.7800e-003	0.0000	168.0347

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	97.92	97.92	97.92	378,311	378,311
General Light Industry	12.24	12.24	12.24	47,289	47,289
Parking Lot	0.00	0.00	0.00		
Total	110.16	110.16	110.16	425,599	425,599

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.575198	0.040076	0.193827	0.113296	0.016988	0.005361	0.017552	0.025197	0.002581	0.002349	0.005904	0.000881	0.000789
Parking Lot	0.575198	0.040076	0.193827	0.113296	0.016988	0.005361	0.017552	0.025197	0.002581	0.002349	0.005904	0.000881	0.000789

5.0 Energy Detail

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	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	35.1742	35.1742	3.6300e-003	7.5000e-004	35.4885
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	35.1742	35.1742	3.6300e-003	7.5000e-004	35.4885
NaturalGas Mitigated	4.8000e-003	0.0437	0.0367	2.6000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003	0.0000	47.5472	47.5472	9.1000e-004	8.7000e-004	47.8297
NaturalGas Unmitigated	4.8000e-003	0.0437	0.0367	2.6000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003	0.0000	47.5472	47.5472	9.1000e-004	8.7000e-004	47.8297

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	tons/yr										MT/yr					
General Light Industry	792000	4.2700e-003	0.0388	0.0326	2.3000e-004		2.9500e-003	2.9500e-003		2.9500e-003	2.9500e-003	0.0000	42.2641	42.2641	8.1000e-004	7.7000e-004	42.5153
General Light Industry	99000	5.3000e-004	4.8500e-003	4.0800e-003	3.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	5.2830	5.2830	1.0000e-004	1.0000e-004	5.3144
Parking Lot	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		**4.8000e-003**	**0.0437**	**0.0367**	**2.6000e-004**		**3.3200e-003**	**3.3200e-003**		**3.3200e-003**	**3.3200e-003**	**0.0000**	**47.5472**	**47.5472**	**9.1000e-004**	**8.7000e-004**	**47.8297**

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					
General Light Industry	792000	4.2700e-003	0.0388	0.0326	2.3000e-004		2.9500e-003	2.9500e-003		2.9500e-003	2.9500e-003	0.0000	42.2641	42.2641	8.1000e-004	7.7000e-004	42.5153
General Light Industry	99000	5.3000e-004	4.8500e-003	4.0800e-003	3.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	5.2830	5.2830	1.0000e-004	1.0000e-004	5.3144
Parking Lot	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		**4.8000e-003**	**0.0437**	**0.0367**	**2.6000e-004**		**3.3200e-003**	**3.3200e-003**		**3.3200e-003**	**3.3200e-003**	**0.0000**	**47.5472**	**47.5472**	**9.1000e-004**	**8.7000e-004**	**47.8297**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	241920	30.8690	3.1800e-003	6.6000e-004	31.1448
General Light Industry	30240	3.8586	4.0000e-004	8.0000e-005	3.8931
Parking Lot	3500	0.4466	5.0000e-005	1.0000e-005	0.4506
Total		**35.1742**	**3.6300e-003**	**7.5000e-004**	**35.4885**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	241920	30.8690	3.1800e-003	6.6000e-004	31.1448
General Light Industry	30240	3.8586	4.0000e-004	8.0000e-005	3.8931
Parking Lot	3500	0.4466	5.0000e-005	1.0000e-005	0.4506
Total		**35.1742**	**3.6300e-003**	**7.5000e-004**	**35.4885**

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	0.1603	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0900e-003	1.0900e-003	0.0000	0.0000	1.1600e-003
Unmitigated	0.1603	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0900e-003	1.0900e-003	0.0000	0.0000	1.1600e-003

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	0.0190					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1412					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0900e-003	1.0900e-003	0.0000	0.0000	1.1600e-003
Total	**0.1603**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0900e-003**	**1.0900e-003**	**0.0000**	**0.0000**	**1.1600e-003**

6.2 Area by SubCategory

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	0.0190					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1412					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0900e-003	1.0900e-003	0.0000	0.0000	1.1600e-003
Total	**0.1603**	**1.0000e-005**	**5.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0900e-003**	**1.0900e-003**	**0.0000**	**0.0000**	**1.1600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	8.3891	0.2719	6.5300e-003	17.1310
Unmitigated	8.3891	0.2719	6.5300e-003	17.1310

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	8.325 / 0	8.3891	0.2719	6.5300e-003	17.1310
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**8.3891**	**0.2719**	**6.5300e-003**	**17.1310**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	8.325 / 0	8.3891	0.2719	6.5300e-003	17.1310
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**8.3891**	**0.2719**	**6.5300e-003**	**17.1310**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	9.0615	0.5355	0.0000	22.4495
Unmitigated	9.0615	0.5355	0.0000	22.4495

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	44.64	9.0615	0.5355	0.0000	22.4495
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**9.0615**	**0.5355**	**0.0000**	**22.4495**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	44.64	9.0615	0.5355	0.0000	22.4495
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**9.0615**	**0.5355**	**0.0000**	**22.4495**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	2	0.13	50	202	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (175 - 300 HP)	0.0166	0.0463	0.0423	8.0000e-005		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003	0.0000	7.6921	7.6921	1.0800e-003	0.0000	7.7191
Total	**0.0166**	**0.0463**	**0.0423**	**8.0000e-005**		**2.4400e-003**	**2.4400e-003**		**2.4400e-003**	**2.4400e-003**	**0.0000**	**7.6921**	**7.6921**	**1.0800e-003**	**0.0000**	**7.7191**

11.0 Vegetation

Oasis Grow Facility (Mitigated)

Bay Area AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	32.00	1000sqft	14.69	32,000.00	0
General Light Industry	4.00	1000sqft	0.09	4,000.00	0
Parking Lot	25.00	Space	0.22	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	281.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor updated based on PG&E progress towards RPS

Land Use - Calculated disturbance area

Construction Phase - *

Grading - PRoject Info

Vehicle Trips - Based on Information from TJKM

Stationary Sources - Emergency Generators and Fire Pumps -

Construction Off-road Equipment Mitigation - Engine tier mitigation applied

Oasis Grow Facility (Mitigated) - Bay Area AQMD Air District, Winter

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

tblConstructionPhase	NumDays	20.00	300.00
tblGrading	AcresOfGrading	75.00	15.00
tblGrading	MaterialExported	0.00	165.00
tblLandUse	LotAcreage	0.73	14.69
tblProjectCharacteristics	CO2IntensityFactor	641.35	281.31
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	202.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.13
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	2.00
tblVehicleTrips	ST_TR	1.32	3.06
tblVehicleTrips	SU_TR	0.68	3.06
tblVehicleTrips	WD_TR	6.97	3.06

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.8258	54.7992	33.9847	0.0641	18.2141	2.3913	20.6055	9.9699	2.2000	12.1699	0.0000	6,355.3370	6,355.3370	1.9501	0.0000	6,404.0900
2020	3.7420	21.8092	19.4981	0.0336	0.2379	1.2334	1.4713	0.0642	1.1664	1.2306	0.0000	3,218.0713	3,218.0713	0.6609	0.0000	3,234.5936
Maximum	**4.8258**	**54.7992**	**33.9847**	**0.0641**	**18.2141**	**2.3913**	**20.6055**	**9.9699**	**2.2000**	**12.1699**	**0.0000**	**6,355.3370**	**6,355.3370**	**1.9501**	**0.0000**	**6,404.0900**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	2.5892	51.5176	37.3305	0.0641	18.2141	1.3352	19.1613	9.9699	1.3351	10.9170	0.0000	6,355.3370	6,355.3370	1.9501	0.0000	6,404.0899
2020	2.5748	26.8462	20.5244	0.0336	0.2379	1.0040	1.2419	0.0642	1.0037	1.0679	0.0000	3,218.0713	3,218.0713	0.6609	0.0000	3,234.5936
Maximum	**2.5892**	**51.5176**	**37.3305**	**0.0641**	**18.2141**	**1.3352**	**19.1613**	**9.9699**	**1.3351**	**10.9170**	**0.0000**	**6,355.3370**	**6,355.3370**	**1.9501**	**0.0000**	**6,404.0899**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**39.73**	**-2.29**	**-8.17**	**0.00**	**0.00**	**35.46**	**7.58**	**0.00**	**30.52**	**10.56**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.8785	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142
Energy	0.0263	0.2393	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182		287.1878	287.1878	5.5000e-003	5.2700e-003	288.8944
Mobile	0.1995	1.0948	2.8065	9.9800e-003	0.9043	9.2400e-003	0.9135	0.2419	8.6700e-003	0.2506		1,008.6580	1,008.6580	0.0357		1,009.5492
Stationary	0.0862	0.2409	0.2198	4.1000e-004		0.0127	0.0127		0.0127	0.0127		44.0913	44.0913	6.1800e-003		44.2458
Total	**1.1906**	**1.5751**	**3.2336**	**0.0118**	**0.9043**	**0.0401**	**0.9444**	**0.2419**	**0.0396**	**0.2815**		**1,339.9504**	**1,339.9504**	**0.0474**	**5.2700e-003**	**1,342.7036**

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	lb/day										lb/day					
Area	0.8785	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142
Energy	0.0263	0.2393	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182		287.1878	287.1878	5.5000e-003	5.2700e-003	288.8944
Mobile	0.1995	1.0948	2.8065	9.9800e-003	0.9043	9.2400e-003	0.9135	0.2419	8.6700e-003	0.2506		1,008.6580	1,008.6580	0.0357		1,009.5492
Stationary	0.0862	0.2409	0.2198	4.1000e-004		0.0127	0.0127		0.0127	0.0127		44.0913	44.0913	6.1800e-003		44.2458
Total	**1.1906**	**1.5751**	**3.2336**	**0.0118**	**0.9043**	**0.0401**	**0.9444**	**0.2419**	**0.0396**	**0.2815**		**1,339.9504**	**1,339.9504**	**0.0474**	**5.2700e-003**	**1,342.7036**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/1/2019	5/14/2019	5	10	
2	Grading	Grading	5/15/2019	6/25/2019	5	30	
3	Paving	Paving	6/26/2019	7/23/2019	5	20	
4	Building Construction	Building Construction	7/24/2019	9/15/2020	5	300	
5	Architectural Coating	Architectural Coating	8/7/2019	9/29/2020	5	300	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 15

Acres of Paving: 0.22

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 54,000; Non-Residential Outdoor: 18,000; Striped Parking Area: 600 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

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 Preparation	7	18.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	21.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	19.00	8.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Site Preparation - 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					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**		**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.2 Site Preparation - 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	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	0.0724	0.0530	0.5068	1.4100e-003	0.1479	9.8000e-004	0.1488	0.0392	9.0000e-004	0.0401		140.5138	140.5138	3.8200e-003		140.6092
Total	**0.0724**	**0.0530**	**0.5068**	**1.4100e-003**	**0.1479**	**9.8000e-004**	**0.1488**	**0.0392**	**9.0000e-004**	**0.0401**		**140.5138**	**140.5138**	**3.8200e-003**		**140.6092**

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	1.2097	33.7214	22.9600	0.0380		0.9462	0.9462		0.9462	0.9462	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**1.2097**	**33.7214**	**22.9600**	**0.0380**	**18.0663**	**0.9462**	**19.0124**	**9.9307**	**0.9462**	**10.8769**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.2 Site Preparation - 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	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	0.0724	0.0530	0.5068	1.4100e-003	0.1479	9.8000e-004	0.1488	0.0392	9.0000e-004	0.0401		140.5138	140.5138	3.8200e-003		140.6092
Total	**0.0724**	**0.0530**	**0.5068**	**1.4100e-003**	**0.1479**	**9.8000e-004**	**0.1488**	**0.0392**	**9.0000e-004**	**0.0401**		**140.5138**	**140.5138**	**3.8200e-003**		**140.6092**

3.3 Grading - 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					
Fugitive Dust					6.5530	0.0000	6.5530	3.3676	0.0000	3.3676			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920		6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**6.5530**	**2.3827**	**8.9356**	**3.3676**	**2.1920**	**5.5596**		**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

3.3 Grading - 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	lb/day										lb/day					
Hauling	6.4900e-003	0.2201	0.0448	5.5000e-004	0.0122	8.4000e-004	0.0131	3.3500e-003	8.1000e-004	4.1600e-003		59.1911	59.1911	3.2400e-003		59.2722
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	0.0804	0.0589	0.5631	1.5700e-003	0.1643	1.0900e-003	0.1654	0.0436	1.0000e-003	0.0446		156.1264	156.1264	4.2400e-003		156.2324
Total	**0.0869**	**0.2790**	**0.6079**	**2.1200e-003**	**0.1765**	**1.9300e-003**	**0.1785**	**0.0469**	**1.8100e-003**	**0.0487**		**215.3175**	**215.3175**	**7.4800e-003**		**215.5045**

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					6.5530	0.0000	6.5530	3.3676	0.0000	3.3676			0.0000			0.0000
Off-Road	1.8106	51.2386	36.7226	0.0620		1.3333	1.3333		1.3333	1.3333	0.0000	6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**1.8106**	**51.2386**	**36.7226**	**0.0620**	**6.5530**	**1.3333**	**7.8863**	**3.3676**	**1.3333**	**4.7009**	**0.0000**	**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

3.3 Grading - 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	lb/day										lb/day					
Hauling	6.4900e-003	0.2201	0.0448	5.5000e-004	0.0122	8.4000e-004	0.0131	3.3500e-003	8.1000e-004	4.1600e-003		59.1911	59.1911	3.2400e-003		59.2722
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	0.0804	0.0589	0.5631	1.5700e-003	0.1643	1.0900e-003	0.1654	0.0436	1.0000e-003	0.0446		156.1264	156.1264	4.2400e-003		156.2324
Total	**0.0869**	**0.2790**	**0.6079**	**2.1200e-003**	**0.1765**	**1.9300e-003**	**0.1785**	**0.0469**	**1.8100e-003**	**0.0487**		**215.3175**	**215.3175**	**7.4800e-003**		**215.5045**

3.4 Paving - 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	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586		2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.0288					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4833**	**15.2441**	**14.6648**	**0.0228**		**0.8246**	**0.8246**		**0.7586**	**0.7586**		**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

3.4 Paving - 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	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	0.0603	0.0442	0.4223	1.1800e-003	0.1232	8.2000e-004	0.1240	0.0327	7.5000e-004	0.0334		117.0948	117.0948	3.1800e-003		117.1743
Total	**0.0603**	**0.0442**	**0.4223**	**1.1800e-003**	**0.1232**	**8.2000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**117.0948**	**117.0948**	**3.1800e-003**		**117.1743**

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	0.9311	20.1146	17.2957	0.0228		0.6670	0.6670		0.6670	0.6670	0.0000	2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.0288					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9599**	**20.1146**	**17.2957**	**0.0228**		**0.6670**	**0.6670**		**0.6670**	**0.6670**	**0.0000**	**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

3.4 Paving - 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	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	0.0603	0.0442	0.4223	1.1800e-003	0.1232	8.2000e-004	0.1240	0.0327	7.5000e-004	0.0334		117.0948	117.0948	3.1800e-003		117.1743
Total	**0.0603**	**0.0442**	**0.4223**	**1.1800e-003**	**0.1232**	**8.2000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**117.0948**	**117.0948**	**3.1800e-003**		**117.1743**

3.5 Building 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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.5 Building 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	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	0.0365	0.9630	0.2668	2.0000e-003	0.0490	6.4000e-003	0.0554	0.0141	6.1200e-003	0.0202		211.0353	211.0353	0.0130		211.3600
Worker	0.0764	0.0559	0.5349	1.4900e-003	0.1561	1.0300e-003	0.1571	0.0414	9.5000e-004	0.0424		148.3201	148.3201	4.0300e-003		148.4208
Total	**0.1129**	**1.0190**	**0.8018**	**3.4900e-003**	**0.2051**	**7.4300e-003**	**0.2125**	**0.0555**	**7.0700e-003**	**0.0626**		**359.3554**	**359.3554**	**0.0170**		**359.7808**

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	1.0809	23.5544	17.8738	0.0269		0.9036	0.9036		0.9036	0.9036	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**1.0809**	**23.5544**	**17.8738**	**0.0269**		**0.9036**	**0.9036**		**0.9036**	**0.9036**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.5 Building 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	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	0.0365	0.9630	0.2668	2.0000e-003	0.0490	6.4000e-003	0.0554	0.0141	6.1200e-003	0.0202		211.0353	211.0353	0.0130		211.3600
Worker	0.0764	0.0559	0.5349	1.4900e-003	0.1561	1.0300e-003	0.1571	0.0414	9.5000e-004	0.0424		148.3201	148.3201	4.0300e-003		148.4208
Total	**0.1129**	**1.0190**	**0.8018**	**3.4900e-003**	**0.2051**	**7.4300e-003**	**0.2125**	**0.0555**	**7.0700e-003**	**0.0626**		**359.3554**	**359.3554**	**0.0170**		**359.7808**

3.5 Building Construction - 2020

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.5 Building Construction - 2020

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	0.0301	0.8796	0.2386	1.9800e-003	0.0490	4.1400e-003	0.0531	0.0141	3.9600e-003	0.0181		209.6651	209.6651	0.0120		209.9649
Worker	0.0699	0.0494	0.4788	1.4400e-003	0.1561	1.0100e-003	0.1571	0.0414	9.3000e-004	0.0423		143.6524	143.6524	3.5100e-003		143.7403
Total	**0.0999**	**0.9290**	**0.7174**	**3.4200e-003**	**0.2051**	**5.1500e-003**	**0.2102**	**0.0555**	**4.8900e-003**	**0.0604**		**353.3175**	**353.3175**	**0.0155**		**353.7052**

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	1.0809	23.5544	17.8738	0.0269		0.9036	0.9036		0.9036	0.9036	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**1.0809**	**23.5544**	**17.8738**	**0.0269**		**0.9036**	**0.9036**		**0.9036**	**0.9036**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.5 Building Construction - 2020

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	0.0301	0.8796	0.2386	1.9800e-003	0.0490	4.1400e-003	0.0531	0.0141	3.9600e-003	0.0181		209.6651	209.6651	0.0120		209.9649
Worker	0.0699	0.0494	0.4788	1.4400e-003	0.1561	1.0100e-003	0.1571	0.0414	9.3000e-004	0.0423		143.6524	143.6524	3.5100e-003		143.7403
Total	**0.0999**	**0.9290**	**0.7174**	**3.4200e-003**	**0.2051**	**5.1500e-003**	**0.2102**	**0.0555**	**4.8900e-003**	**0.0604**		**353.3175**	**353.3175**	**0.0155**		**353.7052**

3.6 Architectural Coating - 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					
Archit. Coating	1.2654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**1.5318**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.6 Architectural Coating - 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	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	0.0161	0.0118	0.1126	3.1000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9200e-003		31.2253	31.2253	8.5000e-004		31.2465
Total	**0.0161**	**0.0118**	**0.1126**	**3.1000e-004**	**0.0329**	**2.2000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9200e-003**		**31.2253**	**31.2253**	**8.5000e-004**		**31.2465**

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					
Archit. Coating	1.2654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**1.3793**	**2.3524**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.6 Architectural Coating - 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	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	0.0161	0.0118	0.1126	3.1000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9200e-003		31.2253	31.2253	8.5000e-004		31.2465
Total	**0.0161**	**0.0118**	**0.1126**	**3.1000e-004**	**0.0329**	**2.2000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9200e-003**		**31.2253**	**31.2253**	**8.5000e-004**		**31.2465**

3.6 Architectural Coating - 2020

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					
Archit. Coating	1.2654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**1.5075**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

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	0.0147	0.0104	0.1008	3.0000e-004	0.0329	2.1000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.2426	30.2426	7.4000e-004		30.2611
Total	**0.0147**	**0.0104**	**0.1008**	**3.0000e-004**	**0.0329**	**2.1000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**30.2426**	**30.2426**	**7.4000e-004**		**30.2611**

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					
Archit. Coating	1.2654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**1.3793**	**2.3524**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

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	0.0147	0.0104	0.1008	3.0000e-004	0.0329	2.1000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.2426	30.2426	7.4000e-004		30.2611
Total	**0.0147**	**0.0104**	**0.1008**	**3.0000e-004**	**0.0329**	**2.1000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**30.2426**	**30.2426**	**7.4000e-004**		**30.2611**

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	0.1995	1.0948	2.8065	9.9800e-003	0.9043	9.2400e-003	0.9135	0.2419	8.6700e-003	0.2506		1,008.6580	1,008.6580	0.0357		1,009.5492
Unmitigated	0.1995	1.0948	2.8065	9.9800e-003	0.9043	9.2400e-003	0.9135	0.2419	8.6700e-003	0.2506		1,008.6580	1,008.6580	0.0357		1,009.5492

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	97.92	97.92	97.92	378,311	378,311
General Light Industry	12.24	12.24	12.24	47,289	47,289
Parking Lot	0.00	0.00	0.00		
Total	110.16	110.16	110.16	425,599	425,599

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.575198	0.040076	0.193827	0.113296	0.016988	0.005361	0.017552	0.025197	0.002581	0.002349	0.005904	0.000881	0.000789
Parking Lot	0.575198	0.040076	0.193827	0.113296	0.016988	0.005361	0.017552	0.025197	0.002581	0.002349	0.005904	0.000881	0.000789

5.0 Energy Detail

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	0.0263	0.2393	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182		287.1878	287.1878	5.5000e-003	5.2700e-003	288.8944
NaturalGas Unmitigated	0.0263	0.2393	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182		287.1878	287.1878	5.5000e-003	5.2700e-003	288.8944

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					
General Light Industry	2169.86	0.0234	0.2127	0.1787	1.2800e-003		0.0162	0.0162		0.0162	0.0162		255.2780	255.2780	4.8900e-003	4.6800e-003	256.7950
General Light Industry	271.233	2.9300e-003	0.0266	0.0223	1.6000e-004		2.0200e-003	2.0200e-003		2.0200e-003	2.0200e-003		31.9098	31.9098	6.1000e-004	5.9000e-004	32.0994
Parking Lot	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		**0.0263**	**0.2393**	**0.2010**	**1.4400e-003**		**0.0182**	**0.0182**		**0.0182**	**0.0182**		**287.1878**	**287.1878**	**5.5000e-003**	**5.2700e-003**	**288.8944**

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					
General Light Industry	0.271233	2.9300e-003	0.0266	0.0223	1.6000e-004		2.0200e-003	2.0200e-003		2.0200e-003	2.0200e-003		31.9098	31.9098	6.1000e-004	5.9000e-004	32.0994
General Light Industry	2.16986	0.0234	0.2127	0.1787	1.2800e-003		0.0162	0.0162		0.0162	0.0162		255.2780	255.2780	4.8900e-003	4.6800e-003	256.7950
Parking Lot	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		**0.0263**	**0.2393**	**0.2010**	**1.4400e-003**		**0.0182**	**0.0182**		**0.0182**	**0.0182**		**287.1878**	**287.1878**	**5.5000e-003**	**5.2700e-003**	**288.8944**

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	0.8785	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142
Unmitigated	0.8785	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142

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	0.1040					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7739					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.8000e-004	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142
Total	**0.8785**	**6.0000e-005**	**6.2500e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0134**	**0.0134**	**4.0000e-005**		**0.0142**

6.2 Area by SubCategory

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	0.1040					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7739					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.8000e-004	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142
Total	**0.8785**	**6.0000e-005**	**6.2500e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0134**	**0.0134**	**4.0000e-005**		**0.0142**

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	2	0.13	50	202	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (175 - 300 HP)	0.0862	0.2409	0.2198	4.1000e-004		0.0127	0.0127		0.0127	0.0127		44.0913	44.0913	6.1800e-003		44.2458
Total	**0.0862**	**0.2409**	**0.2198**	**4.1000e-004**		**0.0127**	**0.0127**		**0.0127**	**0.0127**		**44.0913**	**44.0913**	**6.1800e-003**		**44.2458**

11.0 Vegetation

Oasis Grow Facility (Mitigated)

Bay Area AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	32.00	1000sqft	14.69	32,000.00	0
General Light Industry	4.00	1000sqft	0.09	4,000.00	0
Parking Lot	25.00	Space	0.22	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	281.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor updated based on PG&E progress towards RPS

Land Use - Calculated disturbance area

Construction Phase - *

Grading - PRoject Info

Vehicle Trips - Based on Information from TJKM

Stationary Sources - Emergency Generators and Fire Pumps -

Construction Off-road Equipment Mitigation - Engine tier mitigation applied

Oasis Grow Facility (Mitigated) - Bay Area AQMD Air District, Summer

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

tblConstructionPhase	NumDays	20.00	300.00
tblGrading	AcresOfGrading	75.00	15.00
tblGrading	MaterialExported	0.00	165.00
tblLandUse	LotAcreage	0.73	14.69
tblProjectCharacteristics	CO2IntensityFactor	641.35	281.31
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	202.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.13
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	2.00
tblVehicleTrips	ST_TR	1.32	3.06
tblVehicleTrips	SU_TR	0.68	3.06
tblVehicleTrips	WD_TR	6.97	3.06

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.8213	54.7825	34.0145	0.0643	18.2141	2.3913	20.6055	9.9699	2.2000	12.1699	0.0000	6,369.6833	6,369.6833	1.9502	0.0000	6,418.4388
2020	3.7358	21.7900	19.5041	0.0338	0.2379	1.2333	1.4712	0.0642	1.1663	1.2305	0.0000	3,238.8595	3,238.8595	0.6603	0.0000	3,255.3657
Maximum	**4.8213**	**54.7825**	**34.0145**	**0.0643**	**18.2141**	**2.3913**	**20.6055**	**9.9699**	**2.2000**	**12.1699**	**0.0000**	**6,369.6833**	**6,369.6833**	**1.9502**	**0.0000**	**6,418.4388**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	2.5824	51.5009	37.3603	0.0643	18.2141	1.3352	19.1613	9.9699	1.3351	10.9170	0.0000	6,369.6833	6,369.6833	1.9502	0.0000	6,418.4388
2020	2.5686	26.8269	20.5303	0.0338	0.2379	1.0039	1.2418	0.0642	1.0037	1.0679	0.0000	3,238.8595	3,238.8595	0.6603	0.0000	3,255.3657
Maximum	**2.5824**	**51.5009**	**37.3603**	**0.0643**	**18.2141**	**1.3352**	**19.1613**	**9.9699**	**1.3351**	**10.9170**	**0.0000**	**6,369.6833**	**6,369.6833**	**1.9502**	**0.0000**	**6,418.4388**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**39.80**	**-2.29**	**-8.17**	**0.00**	**0.00**	**35.46**	**7.58**	**0.00**	**30.52**	**10.56**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.8785	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142
Energy	0.0263	0.2393	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182		287.1878	287.1878	5.5000e-003	5.2700e-003	288.8944
Mobile	0.2244	1.0273	2.8925	0.0107	0.9043	9.2000e-003	0.9134	0.2419	8.6200e-003	0.2506		1,077.0364	1,077.0364	0.0357		1,077.9292
Stationary	0.0862	0.2409	0.2198	4.1000e-004		0.0127	0.0127		0.0127	0.0127		44.0913	44.0913	6.1800e-003		44.2458
Total	**1.2154**	**1.5075**	**3.3195**	**0.0125**	**0.9043**	**0.0401**	**0.9443**	**0.2419**	**0.0395**	**0.2815**		**1,408.3288**	**1,408.3288**	**0.0474**	**5.2700e-003**	**1,411.0836**

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	lb/day										lb/day					
Area	0.8785	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142
Energy	0.0263	0.2393	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182		287.1878	287.1878	5.5000e-003	5.2700e-003	288.8944
Mobile	0.2244	1.0273	2.8925	0.0107	0.9043	9.2000e-003	0.9134	0.2419	8.6200e-003	0.2506		1,077.0364	1,077.0364	0.0357		1,077.9292
Stationary	0.0862	0.2409	0.2198	4.1000e-004		0.0127	0.0127		0.0127	0.0127		44.0913	44.0913	6.1800e-003		44.2458
Total	**1.2154**	**1.5075**	**3.3195**	**0.0125**	**0.9043**	**0.0401**	**0.9443**	**0.2419**	**0.0395**	**0.2815**		**1,408.3288**	**1,408.3288**	**0.0474**	**5.2700e-003**	**1,411.0836**

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

3.0 Construction Detail

Construction Phase

Oasis Grow Facility (Mitigated) - Bay Area AQMD Air District, Summer

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/1/2019	5/14/2019	5	10	
2	Grading	Grading	5/15/2019	6/25/2019	5	30	
3	Paving	Paving	6/26/2019	7/23/2019	5	20	
4	Building Construction	Building Construction	7/24/2019	9/15/2020	5	300	
5	Architectural Coating	Architectural Coating	8/7/2019	9/29/2020	5	300	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 15

Acres of Paving: 0.22

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 54,000; Non-Residential Outdoor: 18,000; Striped Parking Area: 600 (Architectural Coating – sqft)

OffRoad Equipment

Oasis Grow Facility (Mitigated) - Bay Area AQMD Air District, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

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 Preparation	7	18.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	21.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	19.00	8.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Site Preparation - 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					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**		**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.2 Site Preparation - 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	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	0.0685	0.0429	0.5367	1.5300e-003	0.1479	9.8000e-004	0.1488	0.0392	9.0000e-004	0.0401		152.5352	152.5352	4.0600e-003		152.6366
Total	**0.0685**	**0.0429**	**0.5367**	**1.5300e-003**	**0.1479**	**9.8000e-004**	**0.1488**	**0.0392**	**9.0000e-004**	**0.0401**		**152.5352**	**152.5352**	**4.0600e-003**		**152.6366**

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	1.2097	33.7214	22.9600	0.0380		0.9462	0.9462		0.9462	0.9462	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**1.2097**	**33.7214**	**22.9600**	**0.0380**	**18.0663**	**0.9462**	**19.0124**	**9.9307**	**0.9462**	**10.8769**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.2 Site Preparation - 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	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	0.0685	0.0429	0.5367	1.5300e-003	0.1479	9.8000e-004	0.1488	0.0392	9.0000e-004	0.0401		152.5352	152.5352	4.0600e-003		152.6366
Total	**0.0685**	**0.0429**	**0.5367**	**1.5300e-003**	**0.1479**	**9.8000e-004**	**0.1488**	**0.0392**	**9.0000e-004**	**0.0401**		**152.5352**	**152.5352**	**4.0600e-003**		**152.6366**

3.3 Grading - 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					
Fugitive Dust					6.5530	0.0000	6.5530	3.3676	0.0000	3.3676			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920		6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**6.5530**	**2.3827**	**8.9356**	**3.3676**	**2.1920**	**5.5596**		**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

3.3 Grading - 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	lb/day										lb/day					
Hauling	6.3100e-003	0.2146	0.0414	5.6000e-004	0.0122	8.3000e-004	0.0131	3.3500e-003	7.9000e-004	4.1400e-003		60.1803	60.1803	3.0800e-003		60.2572
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	0.0761	0.0476	0.5964	1.7000e-003	0.1643	1.0900e-003	0.1654	0.0436	1.0000e-003	0.0446		169.4836	169.4836	4.5100e-003		169.5962
Total	**0.0824**	**0.2623**	**0.6378**	**2.2600e-003**	**0.1765**	**1.9200e-003**	**0.1784**	**0.0469**	**1.7900e-003**	**0.0487**		**229.6638**	**229.6638**	**7.5900e-003**		**229.8534**

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					6.5530	0.0000	6.5530	3.3676	0.0000	3.3676			0.0000			0.0000
Off-Road	1.8106	51.2386	36.7226	0.0620		1.3333	1.3333		1.3333	1.3333	0.0000	6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**1.8106**	**51.2386**	**36.7226**	**0.0620**	**6.5530**	**1.3333**	**7.8863**	**3.3676**	**1.3333**	**4.7009**	**0.0000**	**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

3.3 Grading - 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	lb/day										lb/day					
Hauling	6.3100e-003	0.2146	0.0414	5.6000e-004	0.0122	8.3000e-004	0.0131	3.3500e-003	7.9000e-004	4.1400e-003		60.1803	60.1803	3.0800e-003		60.2572
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	0.0761	0.0476	0.5964	1.7000e-003	0.1643	1.0900e-003	0.1654	0.0436	1.0000e-003	0.0446		169.4836	169.4836	4.5100e-003		169.5962
Total	**0.0824**	**0.2623**	**0.6378**	**2.2600e-003**	**0.1765**	**1.9200e-003**	**0.1784**	**0.0469**	**1.7900e-003**	**0.0487**		**229.6638**	**229.6638**	**7.5900e-003**		**229.8534**

3.4 Paving - 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	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586		2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.0288					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4833**	**15.2441**	**14.6648**	**0.0228**		**0.8246**	**0.8246**		**0.7586**	**0.7586**		**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

3.4 Paving - 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	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	0.0570	0.0357	0.4473	1.2800e-003	0.1232	8.2000e-004	0.1240	0.0327	7.5000e-004	0.0334		127.1127	127.1127	3.3800e-003		127.1972
Total	**0.0570**	**0.0357**	**0.4473**	**1.2800e-003**	**0.1232**	**8.2000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**127.1127**	**127.1127**	**3.3800e-003**		**127.1972**

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	0.9311	20.1146	17.2957	0.0228		0.6670	0.6670		0.6670	0.6670	0.0000	2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.0288					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9599**	**20.1146**	**17.2957**	**0.0228**		**0.6670**	**0.6670**		**0.6670**	**0.6670**	**0.0000**	**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

3.4 Paving - 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	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	0.0570	0.0357	0.4473	1.2800e-003	0.1232	8.2000e-004	0.1240	0.0327	7.5000e-004	0.0334		127.1127	127.1127	3.3800e-003		127.1972
Total	**0.0570**	**0.0357**	**0.4473**	**1.2800e-003**	**0.1232**	**8.2000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**127.1127**	**127.1127**	**3.3800e-003**		**127.1972**

3.5 Building 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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.5 Building 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	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	0.0348	0.9522	0.2321	2.0500e-003	0.0490	6.2900e-003	0.0553	0.0141	6.0200e-003	0.0201		216.8778	216.8778	0.0120		217.1766
Worker	0.0723	0.0453	0.5666	1.6200e-003	0.1561	1.0300e-003	0.1571	0.0414	9.5000e-004	0.0424		161.0094	161.0094	4.2800e-003		161.1164
Total	**0.1070**	**0.9975**	**0.7986**	**3.6700e-003**	**0.2051**	**7.3200e-003**	**0.2124**	**0.0555**	**6.9700e-003**	**0.0625**		**377.8871**	**377.8871**	**0.0162**		**378.2930**

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	1.0809	23.5544	17.8738	0.0269		0.9036	0.9036		0.9036	0.9036	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**1.0809**	**23.5544**	**17.8738**	**0.0269**		**0.9036**	**0.9036**		**0.9036**	**0.9036**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.5 Building 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	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	0.0348	0.9522	0.2321	2.0500e-003	0.0490	6.2900e-003	0.0553	0.0141	6.0200e-003	0.0201		216.8778	216.8778	0.0120		217.1766
Worker	0.0723	0.0453	0.5666	1.6200e-003	0.1561	1.0300e-003	0.1571	0.0414	9.5000e-004	0.0424		161.0094	161.0094	4.2800e-003		161.1164
Total	**0.1070**	**0.9975**	**0.7986**	**3.6700e-003**	**0.2051**	**7.3200e-003**	**0.2124**	**0.0555**	**6.9700e-003**	**0.0625**		**377.8871**	**377.8871**	**0.0162**		**378.2930**

3.5 Building Construction - 2020

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.5 Building Construction - 2020

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	0.0285	0.8717	0.2071	2.0400e-003	0.0490	4.0700e-003	0.0530	0.0141	3.8900e-003	0.0180		215.5698	215.5698	0.0111		215.8460
Worker	0.0660	0.0400	0.5098	1.5600e-003	0.1561	1.0100e-003	0.1571	0.0414	9.3000e-004	0.0423		155.9476	155.9476	3.7600e-003		156.0415
Total	**0.0946**	**0.9117**	**0.7168**	**3.6000e-003**	**0.2051**	**5.0800e-003**	**0.2101**	**0.0555**	**4.8200e-003**	**0.0603**		**371.5173**	**371.5173**	**0.0148**		**371.8875**

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	1.0809	23.5544	17.8738	0.0269		0.9036	0.9036		0.9036	0.9036	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**1.0809**	**23.5544**	**17.8738**	**0.0269**		**0.9036**	**0.9036**		**0.9036**	**0.9036**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.5 Building Construction - 2020

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	0.0285	0.8717	0.2071	2.0400e-003	0.0490	4.0700e-003	0.0530	0.0141	3.8900e-003	0.0180		215.5698	215.5698	0.0111		215.8460
Worker	0.0660	0.0400	0.5098	1.5600e-003	0.1561	1.0100e-003	0.1571	0.0414	9.3000e-004	0.0423		155.9476	155.9476	3.7600e-003		156.0415
Total	**0.0946**	**0.9117**	**0.7168**	**3.6000e-003**	**0.2051**	**5.0800e-003**	**0.2101**	**0.0555**	**4.8200e-003**	**0.0603**		**371.5173**	**371.5173**	**0.0148**		**371.8875**

3.6 Architectural Coating - 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					
Archit. Coating	1.2654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**1.5318**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.6 Architectural Coating - 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	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	0.0152	9.5300e-003	0.1193	3.4000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9200e-003		33.8967	33.8967	9.0000e-004		33.9192
Total	**0.0152**	**9.5300e-003**	**0.1193**	**3.4000e-004**	**0.0329**	**2.2000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9200e-003**		**33.8967**	**33.8967**	**9.0000e-004**		**33.9192**

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					
Archit. Coating	1.2654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**1.3793**	**2.3524**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.6 Architectural Coating - 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	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	0.0152	9.5300e-003	0.1193	3.4000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9200e-003		33.8967	33.8967	9.0000e-004		33.9192
Total	**0.0152**	**9.5300e-003**	**0.1193**	**3.4000e-004**	**0.0329**	**2.2000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9200e-003**		**33.8967**	**33.8967**	**9.0000e-004**		**33.9192**

3.6 Architectural Coating - 2020

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					
Archit. Coating	1.2654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**1.5075**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

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	0.0139	8.4200e-003	0.1073	3.3000e-004	0.0329	2.1000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		32.8311	32.8311	7.9000e-004		32.8508
Total	**0.0139**	**8.4200e-003**	**0.1073**	**3.3000e-004**	**0.0329**	**2.1000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**32.8311**	**32.8311**	**7.9000e-004**		**32.8508**

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					
Archit. Coating	1.2654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**1.3793**	**2.3524**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

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	0.0139	8.4200e-003	0.1073	3.3000e-004	0.0329	2.1000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		32.8311	32.8311	7.9000e-004		32.8508
Total	**0.0139**	**8.4200e-003**	**0.1073**	**3.3000e-004**	**0.0329**	**2.1000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**32.8311**	**32.8311**	**7.9000e-004**		**32.8508**

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	0.2244	1.0273	2.8925	0.0107	0.9043	9.2000e-003	0.9134	0.2419	8.6200e-003	0.2506		1,077.0364	1,077.0364	0.0357		1,077.9292
Unmitigated	0.2244	1.0273	2.8925	0.0107	0.9043	9.2000e-003	0.9134	0.2419	8.6200e-003	0.2506		1,077.0364	1,077.0364	0.0357		1,077.9292

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	97.92	97.92	97.92	378,311	378,311
General Light Industry	12.24	12.24	12.24	47,289	47,289
Parking Lot	0.00	0.00	0.00		
Total	110.16	110.16	110.16	425,599	425,599

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.575198	0.040076	0.193827	0.113296	0.016988	0.005361	0.017552	0.025197	0.002581	0.002349	0.005904	0.000881	0.000789
Parking Lot	0.575198	0.040076	0.193827	0.113296	0.016988	0.005361	0.017552	0.025197	0.002581	0.002349	0.005904	0.000881	0.000789

5.0 Energy Detail

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	0.0263	0.2393	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182		287.1878	287.1878	5.5000e-003	5.2700e-003	288.8944
NaturalGas Unmitigated	0.0263	0.2393	0.2010	1.4400e-003		0.0182	0.0182		0.0182	0.0182		287.1878	287.1878	5.5000e-003	5.2700e-003	288.8944

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					
General Light Industry	2169.86	0.0234	0.2127	0.1787	1.2800e-003		0.0162	0.0162		0.0162	0.0162		255.2780	255.2780	4.8900e-003	4.6800e-003	256.7950
General Light Industry	271.233	2.9300e-003	0.0266	0.0223	1.6000e-004		2.0200e-003	2.0200e-003		2.0200e-003	2.0200e-003		31.9098	31.9098	6.1000e-004	5.9000e-004	32.0994
Parking Lot	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		**0.0263**	**0.2393**	**0.2010**	**1.4400e-003**		**0.0182**	**0.0182**		**0.0182**	**0.0182**		**287.1878**	**287.1878**	**5.5000e-003**	**5.2700e-003**	**288.8944**

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					
General Light Industry	0.271233	2.9300e-003	0.0266	0.0223	1.6000e-004		2.0200e-003	2.0200e-003		2.0200e-003	2.0200e-003		31.9098	31.9098	6.1000e-004	5.9000e-004	32.0994
General Light Industry	2.16986	0.0234	0.2127	0.1787	1.2800e-003		0.0162	0.0162		0.0162	0.0162		255.2780	255.2780	4.8900e-003	4.6800e-003	256.7950
Parking Lot	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		**0.0263**	**0.2393**	**0.2010**	**1.4400e-003**		**0.0182**	**0.0182**		**0.0182**	**0.0182**		**287.1878**	**287.1878**	**5.5000e-003**	**5.2700e-003**	**288.8944**

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	0.8785	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142
Unmitigated	0.8785	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142

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	0.1040					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7739					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.8000e-004	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142
Total	**0.8785**	**6.0000e-005**	**6.2500e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0134**	**0.0134**	**4.0000e-005**		**0.0142**

6.2 Area by SubCategory

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	0.1040					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.7739					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.8000e-004	6.0000e-005	6.2500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0134	0.0134	4.0000e-005		0.0142
Total	**0.8785**	**6.0000e-005**	**6.2500e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0134**	**0.0134**	**4.0000e-005**		**0.0142**

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	2	0.13	50	202	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (175 - 300 HP)	0.0862	0.2409	0.2198	4.1000e-004		0.0127	0.0127		0.0127	0.0127		44.0913	44.0913	6.1800e-003		44.2458
Total	**0.0862**	**0.2409**	**0.2198**	**4.1000e-004**		**0.0127**	**0.0127**		**0.0127**	**0.0127**		**44.0913**	**44.0913**	**6.1800e-003**		**44.2458**

11.0 Vegetation

Oasis Grow Facility (Mitigated)

Bay Area AQMD Air District, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.09	-0.35	0.00	0.00	0.19	0.19	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.49	-0.17	-0.05	0.00	0.24	0.19	0.00	0.00	0.00	0.00	0.00	0.00
Grading	0.61	0.06	-0.10	0.00	0.44	0.39	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.34	-0.32	-0.17	0.00	0.19	0.12	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.71	0.26	-0.04	0.00	0.60	0.57	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	Tier 2	1	1	No Change	0.00
Cranes	Diesel	Tier 2	1	1	No Change	0.00
Excavators	Diesel	Tier 2	2	2	No Change	0.00
Forklifts	Diesel	Tier 2	3	3	No Change	0.00
Generator Sets	Diesel	Tier 2	1	1	No Change	0.00
Graders	Diesel	Tier 2	1	1	No Change	0.00
Pavers	Diesel	Tier 2	2	2	No Change	0.00
Paving Equipment	Diesel	Tier 2	2	2	No Change	0.00
Rollers	Diesel	Tier 2	2	2	No Change	0.00
Rubber Tired Dozers	Diesel	Tier 2	4	4	No Change	0.00
Scrapers	Diesel	Tier 2	2	2	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	Tier 2	9	9	No Change	0.00
Welders	Diesel	Tier 2	1	1	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Air Compressors	3.76000E-002	2.60530E-001	2.75230E-001	4.50000E-004	1.75800E-002	1.75800E-002	0.00000E+000	3.82988E+001	3.82988E+001	3.06000E-003	0.00000E+000	3.83753E+001
Cranes	6.20600E-002	7.38600E-001	2.86580E-001	7.60000E-004	3.08000E-002	2.83400E-002	0.00000E+000	6.71009E+001	6.71009E+001	2.15200E-002	0.00000E+000	6.76389E+001
Excavators	7.82000E-003	8.04600E-002	9.79000E-002	1.50000E-004	3.88000E-003	3.57000E-003	0.00000E+000	1.39106E+001	1.39106E+001	4.40000E-003	0.00000E+000	1.40206E+001
Forklifts	6.75500E-002	6.06440E-001	5.33520E-001	6.90000E-004	4.59100E-002	4.22400E-002	0.00000E+000	6.09459E+001	6.09459E+001	1.95400E-002	0.00000E+000	6.14345E+001
Generator Sets	6.24400E-002	5.39000E-001	5.56840E-001	9.90000E-004	3.11400E-002	3.11400E-002	0.00000E+000	8.47811E+001	8.47811E+001	5.00000E-003	0.00000E+000	8.49062E+001
Graders	7.30000E-003	9.86900E-002	2.75700E-002	1.00000E-004	3.17000E-003	2.91000E-003	0.00000E+000	8.94884E+000	8.94884E+000	2.83000E-003	0.00000E+000	9.01962E+000
Pavers	5.75000E-003	6.24900E-002	5.80300E-002	9.00000E-005	3.06000E-003	2.82000E-003	0.00000E+000	8.44586E+000	8.44586E+000	2.67000E-003	0.00000E+000	8.51266E+000
Paving Equipment	4.26000E-003	4.51300E-002	5.04700E-002	8.00000E-005	2.24000E-003	2.06000E-003	0.00000E+000	7.31770E+000	7.31770E+000	2.32000E-003	0.00000E+000	7.37558E+000
Rollers	4.53000E-003	4.48200E-002	3.81500E-002	5.00000E-005	2.95000E-003	2.71000E-003	0.00000E+000	4.71162E+000	4.71162E+000	1.49000E-003	0.00000E+000	4.74889E+000
Rubber Tired Dozers	3.40400E-002	3.62230E-001	1.28520E-001	2.60000E-004	1.76600E-002	1.62500E-002	0.00000E+000	2.30088E+001	2.30088E+001	7.28000E-003	0.00000E+000	2.31908E+001
Scrapers	3.19600E-002	3.87420E-001	2.41840E-001	4.50000E-004	1.51800E-002	1.39700E-002	0.00000E+000	4.08183E+001	4.08183E+001	1.29100E-002	0.00000E+000	4.11411E+001
Tractors/Loaders/ Backhoes	9.76500E-002	9.80820E-001	1.01623E+000	1.38000E-003	6.36800E-002	5.85800E-002	0.00000E+000	1.22313E+002	1.22313E+002	3.91600E-002	0.00000E+000	1.23292E+002
Welders	5.37900E-002	2.38740E-001	2.67360E-001	3.80000E-004	1.37700E-002	1.37700E-002	0.00000E+000	2.82331E+001	2.82331E+001	4.38000E-003	0.00000E+000	2.83427E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	1.70900E-002	3.52860E-001	2.74860E-001	4.50000E-004	1.42600E-002	1.42600E-002	0.00000E+000	3.82988E+001	3.82988E+001	3.06000E-003	0.00000E+000	3.83753E+001
Cranes	1.86100E-002	6.43550E-001	4.03190E-001	7.60000E-004	1.36500E-002	1.36500E-002	0.00000E+000	6.71008E+001	6.71008E+001	2.15200E-002	0.00000E+000	6.76388E+001
Excavators	6.04000E-003	1.32470E-001	1.17540E-001	1.50000E-004	4.07000E-003	4.07000E-003	0.00000E+000	1.39105E+001	1.39105E+001	4.40000E-003	0.00000E+000	1.40206E+001
Forklifts	3.24900E-002	6.71040E-001	5.22710E-001	6.90000E-004	2.71200E-002	2.71200E-002	0.00000E+000	6.09458E+001	6.09458E+001	1.95400E-002	0.00000E+000	6.14344E+001
Generator Sets	3.78200E-002	7.81120E-001	6.08450E-001	9.90000E-004	3.15700E-002	3.15700E-002	0.00000E+000	8.47810E+001	8.47810E+001	5.00000E-003	0.00000E+000	8.49061E+001
Graders	2.43000E-003	8.41800E-002	5.27400E-002	1.00000E-004	1.78000E-003	1.78000E-003	0.00000E+000	8.94883E+000	8.94883E+000	2.83000E-003	0.00000E+000	9.01961E+000
Pavers	3.66000E-003	8.03100E-002	7.12600E-002	9.00000E-005	2.47000E-003	2.47000E-003	0.00000E+000	8.44585E+000	8.44585E+000	2.67000E-003	0.00000E+000	8.51265E+000
Paving Equipment	3.18000E-003	6.99000E-002	6.20200E-002	8.00000E-005	2.15000E-003	2.15000E-003	0.00000E+000	7.31769E+000	7.31769E+000	2.32000E-003	0.00000E+000	7.37557E+000
Rollers	2.47000E-003	5.09400E-002	3.96800E-002	5.00000E-005	2.06000E-003	2.06000E-003	0.00000E+000	4.71162E+000	4.71162E+000	1.49000E-003	0.00000E+000	4.74888E+000
Rubber Tired Dozers	6.27000E-003	2.16950E-001	1.35920E-001	2.60000E-004	4.60000E-003	4.60000E-003	0.00000E+000	2.30088E+001	2.30088E+001	7.28000E-003	0.00000E+000	2.31908E+001
Scrapers	1.11800E-002	3.53260E-001	2.42340E-001	4.50000E-004	8.20000E-003	8.20000E-003	0.00000E+000	4.08182E+001	4.08182E+001	1.29100E-002	0.00000E+000	4.11411E+001
Tractors/Loaders/Backhoes	6.46000E-002	1.33423E+000	1.03929E+000	1.38000E-003	5.39300E-002	5.39300E-002	0.00000E+000	1.22313E+002	1.22313E+002	3.91600E-002	0.00000E+000	1.23292E+002
Welders	1.58800E-002	2.53550E-001	2.24530E-001	3.80000E-004	1.53300E-002	1.53300E-002	0.00000E+000	2.82331E+001	2.82331E+001	4.38000E-003	0.00000E+000	2.83426E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	5.45479E-001	-3.54393E-001	1.34433E-003	0.00000E+000	1.88851E-001	1.88851E-001	0.00000E+000	1.30552E-006	1.30552E-006	0.00000E+000	0.00000E+000	1.30292E-006
Cranes	7.00129E-001	1.28689E-001	-4.06902E-001	0.00000E+000	5.56818E-001	5.18349E-001	0.00000E+000	1.19223E-006	1.19223E-006	0.00000E+000	0.00000E+000	1.18275E-006
Excavators	2.27621E-001	-6.46408E-001	-2.00613E-001	0.00000E+000	-4.89691E-002	-1.40056E-001	0.00000E+000	1.43776E-006	1.43776E-006	0.00000E+000	0.00000E+000	1.42647E-006
Forklifts	5.19023E-001	-1.06523E-001	2.02617E-002	0.00000E+000	4.09279E-001	3.57955E-001	0.00000E+000	1.14856E-006	1.14856E-006	0.00000E+000	0.00000E+000	1.13943E-006
Generator Sets	3.94299E-001	-4.49202E-001	-9.26837E-002	0.00000E+000	-1.38086E-002	-1.38086E-002	0.00000E+000	1.17951E-006	1.17951E-006	0.00000E+000	0.00000E+000	1.17777E-006
Graders	6.67123E-001	1.47026E-001	-9.12949E-001	0.00000E+000	4.38486E-001	3.88316E-001	0.00000E+000	1.11746E-006	1.11746E-006	0.00000E+000	0.00000E+000	1.10869E-006
Pavers	3.63478E-001	-2.85166E-001	-2.27986E-001	0.00000E+000	1.92810E-001	1.24113E-001	0.00000E+000	1.18401E-006	1.18401E-006	0.00000E+000	0.00000E+000	1.17472E-006
Paving Equipment	2.53521E-001	-5.48859E-001	-2.28849E-001	0.00000E+000	4.01786E-002	-4.36893E-002	0.00000E+000	1.36655E-006	1.36655E-006	0.00000E+000	0.00000E+000	1.35583E-006
Rollers	4.54746E-001	-1.36546E-001	-4.01048E-002	0.00000E+000	3.01695E-001	2.39852E-001	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	2.10576E-006
Rubber Tired Dozers	8.15805E-001	4.01071E-001	-5.75786E-002	0.00000E+000	7.39524E-001	7.16923E-001	0.00000E+000	8.69233E-007	8.69233E-007	0.00000E+000	0.00000E+000	1.29362E-006
Scrapers	6.50188E-001	8.81730E-002	-2.06748E-003	0.00000E+000	4.59816E-001	4.13028E-001	0.00000E+000	9.79954E-007	9.79954E-007	0.00000E+000	0.00000E+000	1.21533E-006
Tractors/Loaders/Backhoes	3.38454E-001	-3.60321E-001	-2.26917E-002	0.00000E+000	1.53109E-001	7.93786E-002	0.00000E+000	1.22636E-006	1.22636E-006	0.00000E+000	0.00000E+000	1.21662E-006
Welders	7.04778E-001	-6.20340E-002	1.60196E-001	0.00000E+000	-1.13290E-001	-1.13290E-001	0.00000E+000	1.06258E-006	1.06258E-006	0.00000E+000	0.00000E+000	1.05848E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
No	Water Exposed Area	PM10 Reduction	0.00	PM2.5 Reduction	0.00	Frequency (per day)	

No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	0.00		
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.03	0.01	0.03	0.01	0.00	0.00
Grading	Fugitive Dust	0.10	0.05	0.10	0.05	0.00	0.00
Grading	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.09	0.05	0.09	0.05	0.00	0.00
Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.05	0.24		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"				
No	Commute	Workplace Parking Charge				
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program				
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
No	Use Low VOC Paint (Residential Exterior)	150.00
No	Use Low VOC Paint (Non-residential Interior)	100.00
No	Use Low VOC Paint (Non-residential Exterior)	150.00
No	Use Low VOC Paint (Parking)	150.00
No	% Electric Lawnmower	
No	% Electric Leafblower	
No	% Electric Chainsaw	

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy		
No	Use Reclaimed Water		
No	Use Grey Water		
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction		
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape		

Solid Waste Mitigation

Mitigation Measures	Input Value

Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

APPENDIX B

BIOLOGICAL EVALUATION

LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

OASIS GROW FACILITY PROPERTY
BIOLOGICAL EVALUATION
ALAMEDA COUNTY, CALIFORNIA

Prepared by

LIVE OAK ASSOCIATES, INC.

Rick Hopkins, Ph.D., Principal and Senior Wildlife Ecologist
Katrina Krakow, M.S., Project Manager and Staff Ecologist
Pamela Peterson, Plant and Wetland Ecologist

Prepared for

Raney Management
Attn: Zachary Dahla
1501 Sports Drive, Suite A
Sacramento, CA 95834

October 24, 2018 PN 2305-01

EXECUTIVE SUMMARY

Live Oak Associates, Inc., conducted an investigation of the biological resources of the approximately 92.53-acre property located at site located at 7033 Morgan Territory Road in Livermore, Alameda County, California (APN 903-0007-001-01).

The proposed project includes a cannabis grow house (32,000 square-foot greenhouse building with 22,000 square-feet of canopy) and one processing building with associated security fencing and parking lot. A leach field and well(s) are also planned. The existing barn is not proposed to be part of the cannabis cultivation facility, and is not planned for removal as a part of this project. Although current plans are not impacting the existing creek crossing, this report takes into consideration the potential for plans to change to replace the culvert bridge, should replacement become necessary.

The site consists of California annual grassland with a Cayetano Creek supporting riparian vegetation running through it as well as small developed areas including a barn, pumphouse, shipping container, well, and dumpster area.

The Foothill yellow-legged frog, California red-legged frog, western pond turtle, Alameda whipsnake, white-tailed kite, Swainson's hawk, northern harrier, American peregrine falcon, golden eagle, burrowing owl, loggerhead shrike, grasshopper sparrow, Townsend's big-eared bat, western red bat, pallid bat, San Francisco dusky-footed woodrat, American badger, ringtail, and San Joaquin kit fox have the potential to occur onsite. Rare plant surveys for large-flowered fiddleneck and bent-flowered fiddleneck should be conducted as well.

Jurisdictional waters are present on the site in the form of Cayetano Canyon Creek. This feature is regulated by the U.S. Army Corps of Engineers and the Regional Water Quality Control Board and by the California Department of Fish and Wildlife. Impacts or fill of this feature, including culvert bridge replacement would require permits from all three agencies. Cayetano Creek will not be impacted by the project unless the County requires updates to the culvert bridge. Suitable avoidance, minimization and compensation measures would be required to accommodate any impacts to these jurisdictional features. Acceptable mitigation measures include the creation of replacement habitat, habitat enhancement and/or the preservation of existing habitat via a conservation easement at a replacement-to-disturbance ratio that replaces lost functions and values.

The removal of trees should be mitigated for according to the formula provided in the City's tree ordinance. Trees to be retained onsite should be protected pursuant to tree preservation guidelines.

Impacts to habitat for special status plants, native wildlife, and wildlife movements would be less-than-significant once mitigation measures are in place. as the conservation of approximately 103 acres of high quality habitat offsets any potential loss of habitat for these species or ecological processes including both EBRPD and onsite open space lands. The project would implement standard BMPs during construction and design the project so as not to result in any significant degradation of water quality in seasonal creeks, reservoirs, and downstream waters would be considered less-than-significant.

Impacts to the special status species would be offset by avoidance and minimization measures aimed at reducing or eliminating harm, injury, or death of individuals during construction. The

U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife may require endangered species consultation for authorizing any "take" of federal and/or state listed species.

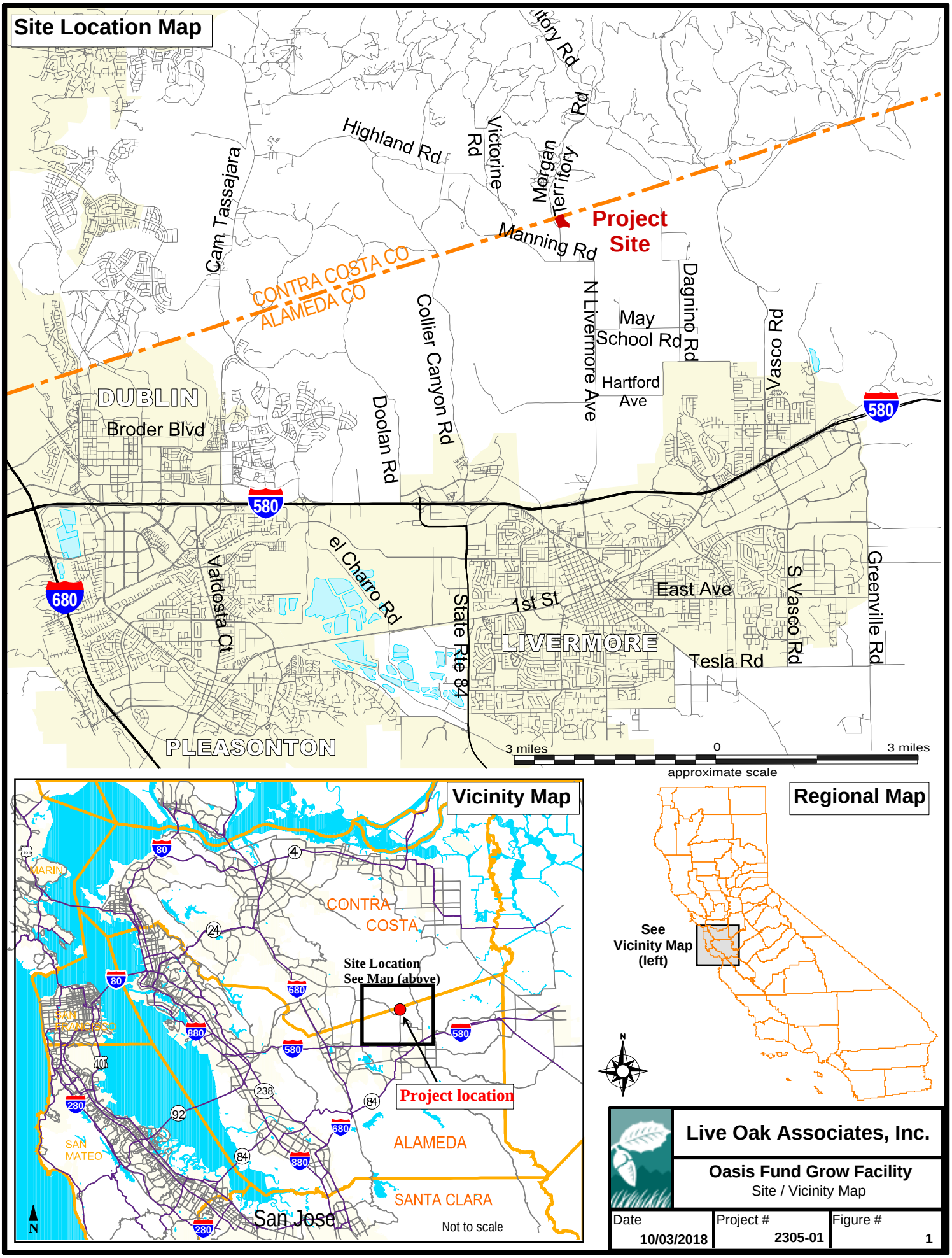
TABLE OF CONTENTS

1 INTRODUCTION

Live Oak Associates, Inc. (LOA), has prepared the following report, which describes the biotic resources of the approximately 92.53-acre property located at 7033 Morgan Territory Road in Livermore, Alameda County, California (APN 903-0007-001-01), and evaluates likely impacts to these resources resulting from site development. The project site is located in the Tassajara 7.5" U.S. Geological Survey (USGS) quadrangle, and is described by the Public Land Survey system as being in Section 7, Township 2 South, Range 2 East.

Development activities can damage or modify biotic habitats used by sensitive plant and wildlife species. In such cases, these activities may be regulated by state or federal agencies, subject to provisions of the California Environmental Quality Act (CEQA), and/or covered by policies and ordinances of the Alameda County. This report addresses issues related to: 1) sensitive biotic resources occurring on the site; 2) the federal, state, and local laws regulating such resources, and 3) mitigation measures which may be required to reduce the magnitude of anticipated impacts. As such, the objectives of this report are to:

- Summarize all site-specific information related to existing biological resources;
- Make reasonable inferences about the biological resources that could occur onsite based on habitat suitability and the proximity of the site to a species' known range;
- Summarize all state and federal natural resource protection laws that may be relevant to possible future site development;
- Identify and discuss project impacts to biological resources likely to occur on the site within the context of CEQA or any state or federal laws; and
- Identify avoidance and mitigation measures that would reduce impacts to a less-than-significant level as identified by CEQA and that are generally consistent with recommendations of the resource agencies for affected biological resources.



	Live Oak Associates, Inc.
	Oasis Fund Grow Facility Site / Vicinity Map

Date	Project #	Figure #
10/03/2018	2305-01	1

The analysis of impacts, as discussed in Section 3.0 of this report, is based on the known and potential biotic resources of the site, discussed in Section 2.0. Sources of information used in the preparation of this analysis included: 1) the *California Natural Diversity Data Base* (CDFW 2018), 2) the *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2018), and 3) the *East Alameda County Conservation Strategy* (EACCS), and 4) manuals and references related to plants and animals of Alameda County. A reconnaissance-level field survey of the study area was conducted on October 15, 2018, by LOA ecologists Katrina Krakow and Pamela Peterson, at which time the principal biotic habitats of the site were identified, and the constituent plants and animals of each were noted.

1.1 PROJECT DESCRIPTION

The proposed project includes a cannabis grow house (32,000 square-foot greenhouse building with 22,000 square-feet of canopy) and one processing building with associated security fencing and parking lot. A leach field and well(s) are also planned. The existing barn is not proposed to be part of the cannabis cultivation facility, and is not planned for removal as a part of this project. Although current plans are not impacting the existing creek crossing, this report takes into consideration the potential for plans to change to replace the culvert bridge, should replacement become necessary. Site plans are included as Appendix C.

2 EXISTING CONDITIONS

The project site is located at 7033 Morgan Territory Road in Livermore, Alameda County, California (APN 903-0007-001-01). The site is surrounded by open space and pasture land with scattered residences and barns. The site is generally level in elevation from approximately 200 feet (60 m) National Geodetic Vertical Datum (NGVD) at the southwest end of the site to approximately 220 feet (67 m) NGVD in the northeast end of the site. The site consists non-native California grassland with a barn and wellhouse with Cayetano Creek running along the western boundary of the site paralleling Morgan Territory Road. Surrounding land uses are primarily open space and rural residential.

Two soil types from two soil series— Clear Lake clay, drained, 0 to 2 percent slopes, MLRA 14 and Diablo clay, 9 to 15 percent slopes—were identified on the project site (NRCS 2018). Both soil types are considered to be hydric. Hydric soils are soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part. Under sufficiently wet conditions, hydric soils support the growth and regeneration of hydrophytic vegetation. Soils of the site are not serpentine soils, therefore, the site would not support special status plant species that are endemic to serpentine soils. Diablo soils are considered to be mildly alkaline, however, other soils of the site are not known to support conditions suitable for special status plant species specifically endemic on alkaline soils.

The East Bay has a Mediterranean climate with warm to hot, dry summers and cool winters. Annual precipitation in the general vicinity of the site is highly variable from year to year. Average annual rainfall is approximately 16 inches, most of which falls between October and April.

Table 1. Soils occurring on the Oasis Grow Facility property (NRCS 2018).

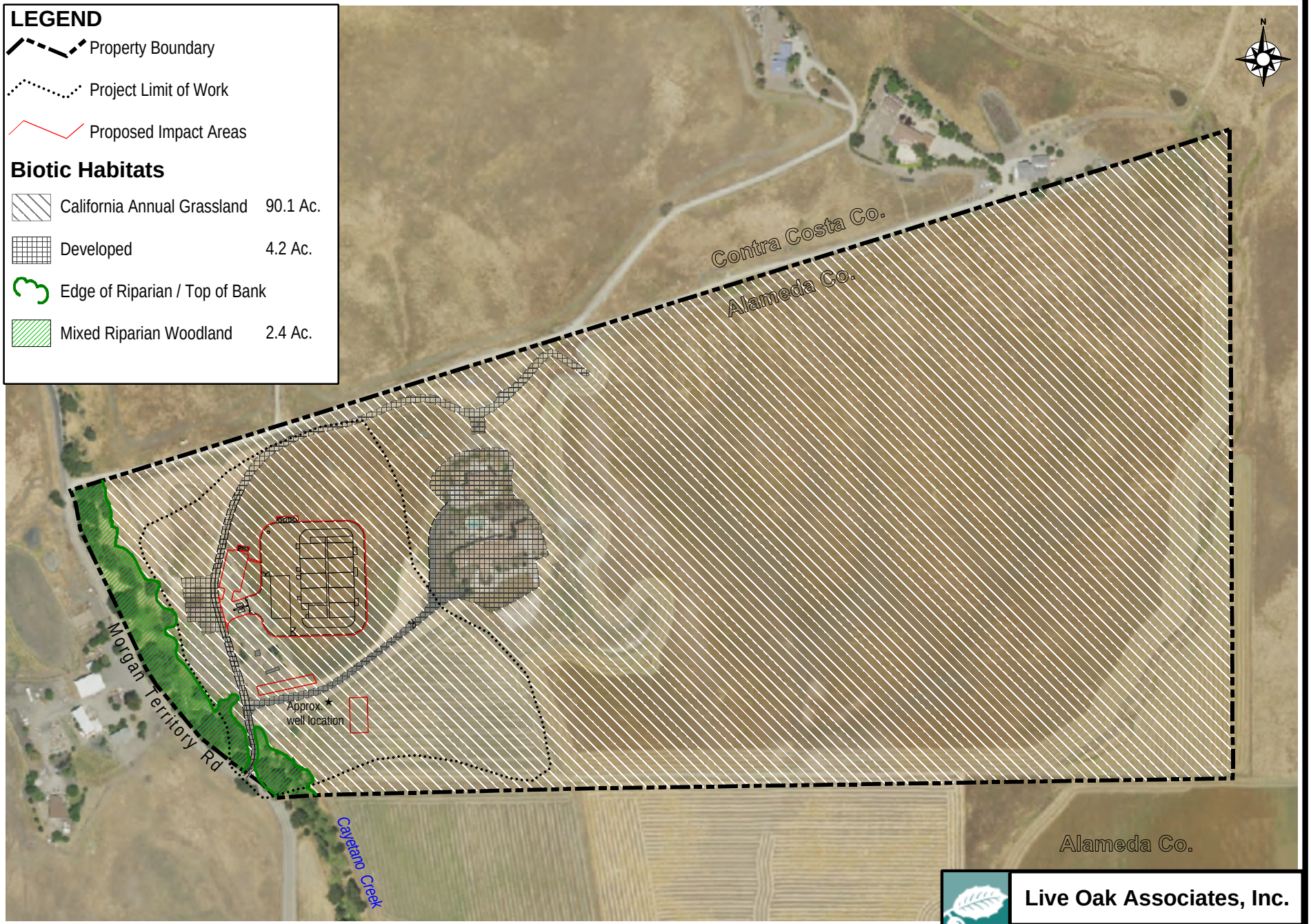
Soil Series/Soil	Map Symbol	Parent Material	Surface Permeability	Hardpan/ Duripan	Hydric
Clear Lake Series Clear Lake clay, drained, 0 to 2 percent slopes, MLRA 14	CdB	Fine textured alluvium derived from sandstone and shale	Slow to very slow	No	Yes
Diablo Series Diablo clay, 9 to 15% slopes	DbD	Alluvium derived from shale and siltstone	Slow	No	Yes

2.1 BIOTIC HABITATS

Two biotic habitats were identified on the project site (Figure 2), and for the purposes of this report, these habitats have been classified as California annual grassland and mixed riparian woodland. Development on the site is limited to a barn, a small stucco structure which is presumed to be an old pumphouse, and a well. A large metal storage container also is present on the site. A list of the vascular plant species observed on the project site and the terrestrial vertebrates using, or potentially using, the site are provided in Appendices A and B, respectively.

2.1.1 California Annual Grassland

The site primarily supports California annual grassland habitat (90.1 acres) dominated by annual grasses and forbs of European origin. At the time of the October 2018 survey, most of the grasslands of the site appeared to have been recently mowed and vegetation height in these mowed areas was generally less than 4 inches in height. A small test pit was also observed within this habitat. Annual grasses within this habitat were mostly senescent. The dominant grass observed within this habitat was wild oats (*Avena* sp.), although other grasses observed included ripgut brome (*Bromus diandrus*), farmer's foxtail (*Hordeum murinum*), soft chess (*Bromus hordeaceous*), and perennial wild-rye (*Festuca perennis*). Forbs observed to be present within the grasslands included, but were not limited to, black mustard (*Brassica nigra*), horehound (*Marrubium vulgare*), Italian thistle (*Carduus pycnocephalus*), bristly oxtongue (*Helminthotheca echioides*), bindweed (*Convolvulus arvensis*), burclover (*Medicago polymorpha*), yellow star thistle (*Centaurea solstitialis*), Russian thistle (*Kali tragus*), and curly dock (*Rumex crispus*). Trees present within this habitat included Monterey cypress (*Cupressus macrocarpa*) and olive (*Olea europaea*).



Sources:
Aerial Photograph Courtesy of USDA FSA APFO Aerial Photography Field Office, 9/28/2016

Live Oak Associates, Inc.

Oasis Fund Grow Facility
Biotic Habitats

Date	Project #	Figure #
10/23/2018	2305-01	2

Several amphibian and reptile species forage in grasslands for insects, birds, and small mammals. These include the Pacific chorus frog (*Pseudacris regilla*), western toad (*Anaxyrus boreas*), western fence lizard (*Sceloporus occidentalis*), which was observed during the October site visit, California alligator lizard (*Elgaria multicarinata*), gopher snake (*Pituophis catenifer*), California kingsnake (*Lampropeltis californiae*), and northern Pacific rattlesnake (*Crotalus oreganus oreganus*). It is possible that the Foothill yellow-legged frog (*Rana boylii*), California red-legged frog (*Rana draytonii*), may use the riparian corridor and upland habitat and that the Alameda whipsnake (*Masticophis lateralis euryxanthus*) may use this habitat, as it may use grasslands of the site for movement from the riparian habitat and for foraging.

Numerous resident and migratory birds breed and forage in grassland habitats. Avian species observed in this habitat during the October 2018 site visit include the turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), wild turkey feathers (*Meleagris gallopavo*), rock pigeon (*Columba livia*), mourning dove (*Zenaida macroura*), Say's phoebe (*Sayornis saya*), song sparrow (*Melospiza melodia*), western meadowlark (*Sturnella neglecta*).

Mammals observed or evidence of their presence (scat, tracks, etc.) during the October 2018 site visit was limited to California ground squirrel (*Otospermophilus beecheyi*) burrows and black-tailed deer (*Odocoileus hemionus columbianus*). Other small mammals that may occur in this habitat (but evidence was not observed) include the western harvest mouse (*Reithrodontomys megalotis*) and California meadow vole (*Microtus californicus*).

The occurrence of small mammals usually attracts predators, including reptiles (e.g., snakes) and birds (e.g., raptors and loggerhead shrike) previously discussed. Medium and larger mammalian predators are also expected to occur due to available prey, including gray foxes (*Urocyon cinereoargenteus*), coyotes (*Canis latrans*), bobcats (*Lynx rufus*), and cougars (*Puma concolor*).

2.1.2 Mixed Riparian Woodland

Mixed riparian woodland habitat (2.4 acres) is associated with Cayetano Creek along the western boundary of the site. Dominant native riparian trees in this habitat included valley oak (*Quercus lobata*) and coast live oak (*Quercus agrifolia*). Other trees and shrubs observed in this habitat included black walnut (*Juglans hindsii*), blue gum (*Eucalyptus globulus*), blue elderberry

(*Sambucus cerulea*), and poison oak (*Toxicodendron diversilobum*). The riparian woodland habitat supported a generally sparse growth of herbaceous understory. Plant species observed in the understory of this habitat included grass species similar to those within the annual grasslands of the site, as well as mugwort (*Baccharis douglasiana*), umbrella sedge (*Cyperus eragrostis*), narrowleaf milkweed (*Asclepias fascicularis*), prickleseed buttercup (*Ranunculus muricatus*), and California fuchsia (*Epilobium canum*).

At the time of the October survey, the creek was completely dry. The width between the top of the banks was estimated at more than 100 feet and the width between the Ordinary High Water marks on opposing banks was estimated between 10 to 12 feet. The access driveway for the property traverses the creek from Morgan Territory Road via a culvert bridge. The width of the culvert was estimated at 6 feet.

Riparian systems serve as dispersal corridors and islands of habitat for a number of wildlife species, particularly for smaller vertebrates such as amphibians and reptiles. This creek conveys water to provide a seasonal source of drinking water for species occurring in the surrounding habitats and, when wet, also provides potential breeding habitat for Pacific chorus frogs, Foothill yellow-legged frogs, and potential movement habitat for the California red-legged frog. The creek may also support suitable habitat for the slender salamander (*Batrachoseps attenuatus*), arboreal salamander (*Aneides lugubris*), California newt (*Taricha torosa*), and yellow-eyed ensatina (*Ensatina eschscholtzii xanthoptica*). Reptiles that may utilize riparian systems include the skilton skink (*Eumeces skiltonianus skiltonianus*), California alligator lizard, gopher snake, and California kingsnake.

Many resident and migratory bird species occur in riparian habitats. Birds observed in the riparian woodland during the October 2018 site visit was limited to the wild turkey (feathers), common raven (*Corvus corax*), western scrub jay (*Aphelocoma californica*), California towhee (*Melozone crissalis*), song sparrow, and European starling (*Sturnus vulgaris*). Other species expected to occur in this habitat include the Cooper's hawk (*Accipiter cooperii*), red-shouldered hawk (*Buteo lineatus*), great horned owl (*Bubo virginianus*), Anna's hummingbird (*Calypte anna*), downy woodpecker (*Picoides pubescens*), Nuttall's woodpecker (*Picoides nuttallii*), and Bullock's oriole, as well as species expected to occur in the surrounding habitats. Suitable

roosting habitat for bats such as the western red bat may occur in the blue gum and oak trees within the riparian habitat.

2.1.3 Developed

As indicated above, developed areas of the site (4.2 acres) were limited to a barn, a small stucco building presumed to be a pumphouse, the access driveway, a well, and a storage area for the dumpster. A large metal cargo container is also present on the site. The barn and pumphouse do not support suitable habitat for roosting bats. As the roof of the barn is metal with open-air sides and the pumphouse appears to have had a fire in the past which severely damaged the roof of the structure.

Wildlife inhabiting the surrounding grasslands and riparian woodlands would also be expected to occur within this habitat.

2.2 MOVEMENT CORRIDORS

Habitat corridors are vital to terrestrial animals for connectivity between core habitat areas (i.e., larger intact habitat areas where species make their living). Connections between two or more core habitat areas help ensure that genetic diversity is maintained, thereby diminishing the probability of inbreeding depression and geographic extinctions. This is especially true in fragmented landscapes and the surrounding urbanized areas as found in the rural/urban matrix along the edges of the Cities of Dublin and Livermore.

The quality of habitat within the corridors is important. "Better" habitat consists of an area with minimal human interference (e.g., roads, homes, etc.) and is more desirable to more species than areas with sparse vegetation and high-density roads. Movement corridors in California are typically associated with valleys, rivers and creeks supporting riparian vegetation, and ridgelines. With increasing encroachment of humans on wildlife habitats, it has become important to establish and maintain linkages, or movement corridors, that allow animals to access locations containing various biotic resources essential to maintaining their life cycles.

Healthy riparian areas that support structural diversity, (i.e., understory species to saplings to mature riparian trees) have a high biological value. They not only support a rich and diverse wildlife community but have also been shown to facilitate regional wildlife movement. Riparian areas can vary from tributaries winding through scrubland to densely vegetated riparian forests.

A riparian zone can be defined as an area that has a source of fresh water (e.g., rill, stream, river), a defined bank, and upland areas consisting of moist soils (e.g., wetter than would be expected from seasonal rainfall). These areas support a characteristic suite of vegetative species, many of which are woody, that are adapted to more moist soils. Such vegetation in the area surrounding Dublin and Livermore include California buckeye (*Aesculus californica*), elderberry (*Sambucus* sp.), walnut (*Juglans* sp.), California laurel (*Umbellularia californica*), toyon (*Heteromeles arbutifolia*), oaks (*Quercus* sp.), and willow (*Salix* sp.).

Five functions of corridors, rather than physical traits, are relevant when analyzing the value of linkages (Beier and Loe, 1992). These five functions used to evaluate the suitability of a given property for use as a habitat corridor are as follows:

1. Wide ranging mammals can migrate and find mates;
2. Plants can propagate within the corridor and beyond;
3. Genetic integrity can be maintained;
4. Animals can use the corridor in response to environmental changes or a catastrophic event;
5. Individuals can recolonize areas where local extinctions have occurred.

A corridor is "wide enough" when it meets these functions for the suite of animals in the area. It is important to note that landscape linkages are used differently by different species. For instance, medium to large mammals (or some bird species) may traverse a corridor in a matter of minutes or hours, while smaller mammals or other species may take a longer period of time to move through the same corridor (e.g., measured in days, weeks and even years). Landscape linkages are not simply highways that animals use to move back and forth. While linkages may serve this purpose, they also allow for slower or more infrequent movement. Width and length must be considered in evaluating the value of a landscape linkage. A long narrow corridor would most likely only be useful to wide ranging animals such as cougars and coyotes when moving between core habitat areas. To the extent practicable, conservation of linkages should address the needs of "passage species" (those species that typically use a corridor for the express purpose of moving from one intact area to another) and "corridor dwellers" (slow moving species such as plants and some amphibians and reptiles that require days or generations to move through the corridor).

Cayetano Creek and its riparian habitat will be avoided by the project and is consistent with habitats typically identified as wildlife corridors. Section 2.4.4 in the EACCS discusses three types of habitat connectivity and wildlife linkages: 1) grassland corridors in east Alameda County; 2) aquatic-upland connectivity throughout the study area; and 3) riparian/stream connectivity throughout the study area.

Grassland Corridors: The EACCS mainly discusses grasslands on the eastern side of the county as being important for wildlife movement, specifically grasslands along I-580. As I-580 acts as a barrier for some species, it is important to maintain connectivity of grasslands in the region for species using this habitat to maintain "populations and genetic integrity" (ICF International 2010). The EACCS (ICF International 2010) identifies species that may use this type of corridor as California red-legged frog (*Rana draytonii*; in some instances), California ground squirrel (*Otospermophilus beecheyi*), American badger (*Taxidea taxus*), San Joaquin kit fox (*Vulpes macrotis*), mule deer (*Odocoileus hemionus columbianus*), and other generalist wildlife species.

Aquatic-Upland Corridors: The EACCS discusses aquatic-upland connectivity mainly as a function of the connectivity of ponds to upland habitat and to each other. The site does not support ponds, however, potential habitat for California red-legged frogs exists within the onsite creek, which holds water intermittently; for any California red-legged frogs occurring in these areas, upland habitat of the site may be an important aspect of their overall habitat use.

Riparian/Stream Corridors: The site is east of Cayetano Creek within the Livermore Watershed as shown in Figure 2-7 of the EACCS (ICF International 2010). The EACCS identifies species that may use riparian/stream corridors for movement and foraging as the Alameda whipsnake, San Joaquin kit fox, and California tiger salamander, and breeding habitat as the California red-legged frog, foothill yellow-legged frog, and Central Coast steelhead.

Although the EACCS does not identify landscape-level linkage corridors in the region, the Conservation Lands Network (accessed September 4, 2018), which provides GIS data regarding critical linkages for wildlife, does not identify the site to be within a Critical Linkage.

Many wildlife linkages are broad areas of regional movement corridors for wildlife that generally includes a wide swath of land used for movement between two or more core areas for multiple regional species.

2.3 SPECIAL STATUS PLANTS AND ANIMALS

Several species of plants and animals within the state of California have low populations and/or limited distributions. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural, urban, and other uses. As described more fully in Section 3.2, state and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as "threatened" or "endangered" under state and federal endangered species legislation. Others have been designated as candidates for such listing. Still others have been designated as "species of special concern" by the CDFW. The CDFW and California Native Plant Society (CNPS) have developed their own set of lists (i.e., California Rare Plant Ranks, or CRPR) of native plants considered rare, threatened, or endangered. Collectively, these plants and animals are referred to as "special status species."

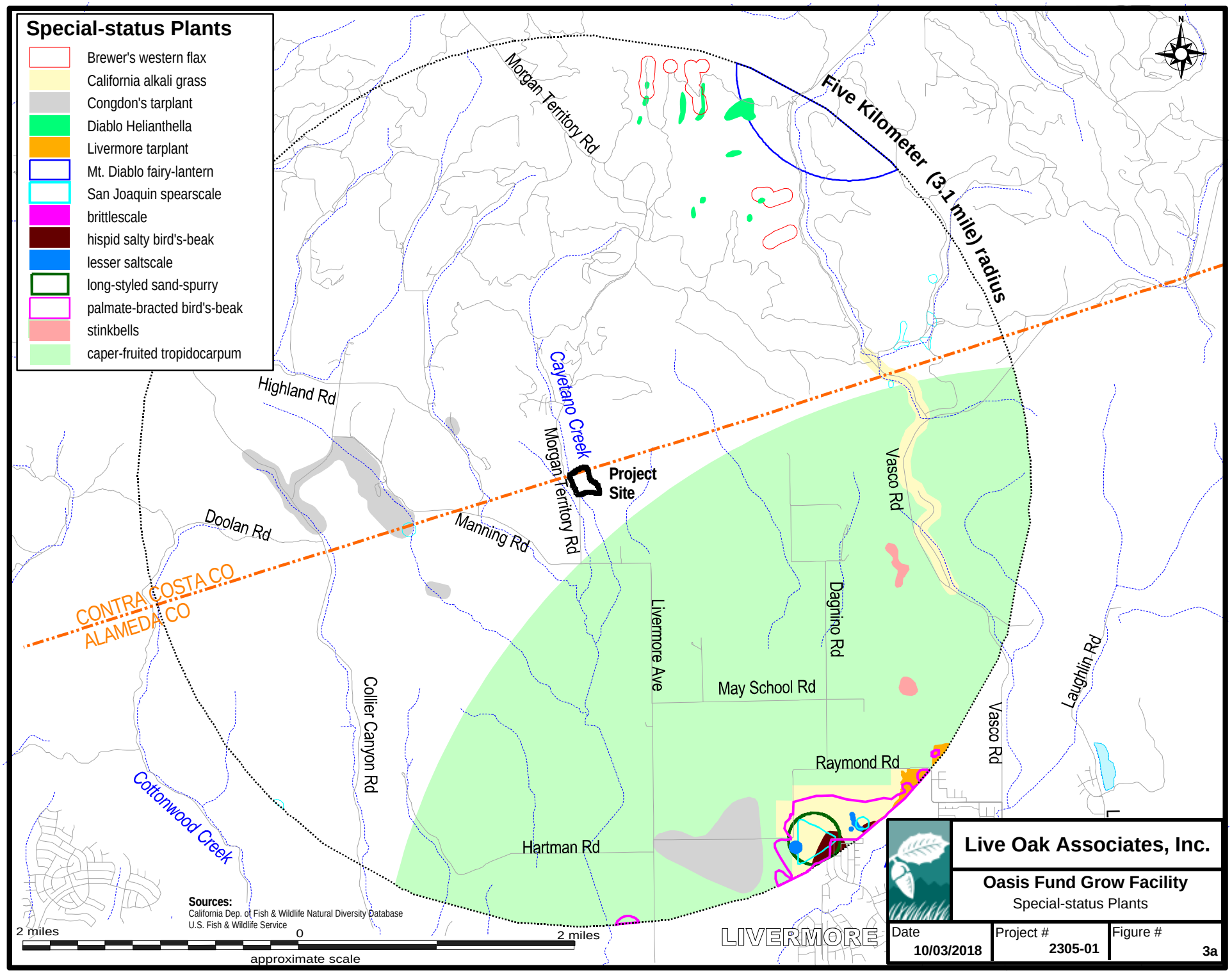
A number of special status plants and animals occur in the site's vicinity (Figure 4). These species and their potential to occur in the study area are listed in Table 2 on the following pages. Sources of information for this table included *California Natural Diversity Data Base* (CDFW 2018), *Listed Plants* and *Listed Animals* (USFWS 2018), *State and Federally Listed Endangered and Threatened Animals of California* (CDFW 2018), *The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2018), *California Bird Species of Special Concern* (Shuford and Gardall 2008), and *California Amphibian and Reptile Species of Special Concern* (Thompson et al. 2016). This information was used to evaluate the potential for special status plant and animal species that occur on the site. Figures 3a, 3b, 3c, and 4 depicts the location of special status species found by the California Natural Diversity Data Base (CNDDB).

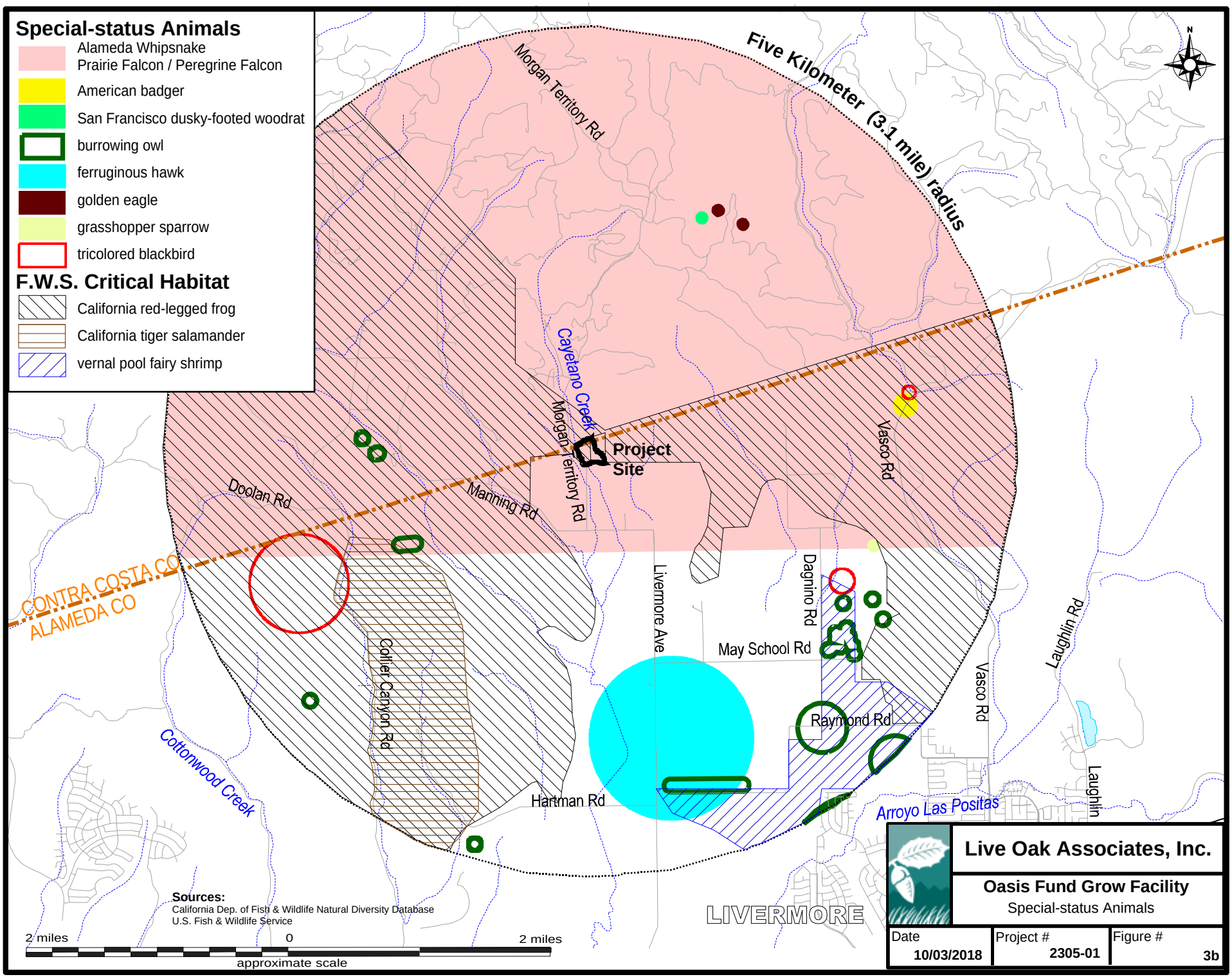
A search of published accounts for all relevant special status plant and animal species was conducted for the Tassajara USGS 7.5" quadrangle in which the project site occurs and for the eight surrounding quadrangles (Clayton, Antioch South, Brentwood, Diablo, Byron Hot Springs, Dublin, Livermore, and Altamont) using the California Natural Diversity Data Base Rarefind5

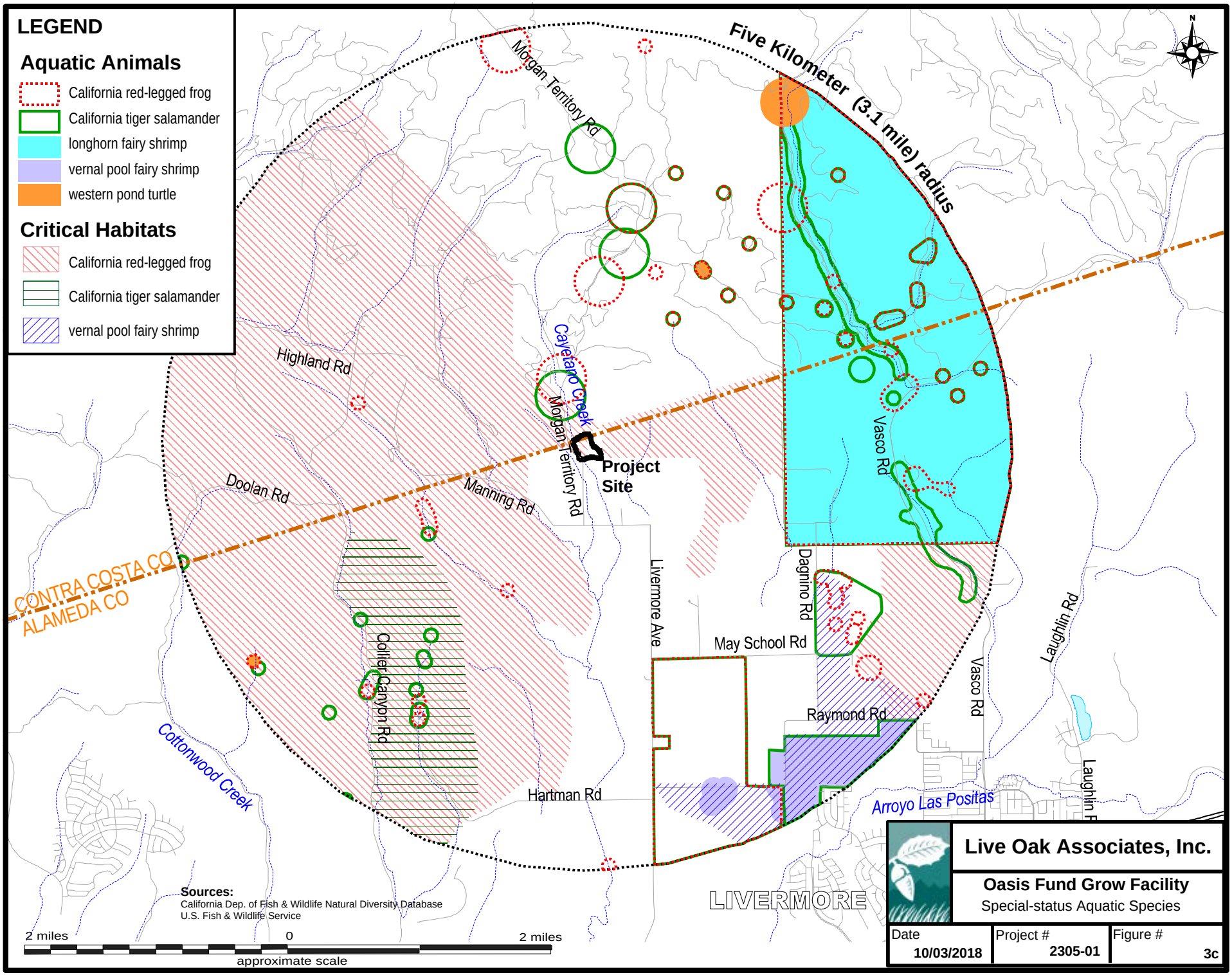
(CDFW 2018). All species listed as occurring in these quadrangles on CRPR Lists 1A, 1B, 2, 3, or 4 were also reviewed.

Because serpentine and alkaline soils are absent from the site, those species that are uniquely adapted to serpentine or alkaline conditions, such as the alkali milk-vetch (*Astragalus tener* var. *tener*), Oakland star-tulip (*Calochortus umbellatus*), chaparral harebell (*Campanula exigua*), serpentine collomia (*Collomia diversifolia*), Mt. Diablo bird's-beak (*Cordylanthus nidularius*), phlox-leaf serpentine bedstraw (*Galium andrewsii ssp. gatense*), woodland woollythreads (*Monolopia gracilens*), most beautiful jewel-flower (*Streptanthus albidus* ssp. *peramoenus*) and caper-fruited tropidocarpum (*Tropidocarpum capparideum*) are considered absent from the site. Other plant species occur in habitats not present in the study area (e.g., brackish and freshwater marshes, coastal scrub, etc.), outside the range of the project site, or significantly above or below elevations of the site (60 to 67 meters), and, therefore, are also considered absent from the site. These species include the California androsace (*Androsace elongata ssp. acuta*), slender silver moss (*Anomobryum julaceum*), coast rockcress (*Arabis blepharophylla*), Mt. Diablo manzanita (*Arctostaphylos auriculata*), Contra Costa manzanita (*Arctostaphylos manzanita* ssp. *laevigata*), Brewer's calandrinia (*Calandrinia breweri*), Bolander's water hemlock (*Cicuta maculate var. bolanderi*), Hospital Canyon larkspur (*Delphinium californicum* ssp. *interius*), Lime Ridge eriastrum (*Eriastrum ertterae*), Toren's grimmia (*Grimmia torenii*), Hall's bush mallow (*Malacothamnus hallii*), Lime Ridge navarretia (*Navarretia gowenii*), Antioch Dunes evening primrose (*Oenothera deltoids ssp. howellii*), Mt. Diablo phacelia (*Phacelia phacelioides*), hairless popcorn-flower (*Plagiobothrys glaber*), Oregon polemonium (*Polemonium carneum*), California alkali grass (*Puccinellia simplex*), rock sanicle (*Sanicula saxatilis*), chaparral ragwort (*Senecio aphanactis*), Mt. Diablo jewel-flower (*Streptanthus hispidus*), slender-leaved pondweed (*Stuckenia filiformis*) Suisun Marsh aster (*Symphyotrichum lentum*), and coastal triquetrella (*Triquetrella californica*).

Animals that would also be absent from the site due to unsuitable habitat conditions include the San Bruno elfin butterfly (*Callophrys mossii bayensis*).


Special-status Plants
Brewer's western flax
California alkali grass
Congdon's tarplant
Diablo Helianthella
Livermore tarplant
Mt. Diablo fairy-lantern
San Joaquin spearscale
brittlescale
hispid salty bird's-beak
lesser saltscale
long-styled sand-spurry
palmate-bracted bird's-beak
stinkbells
caper-fruited tropidocarpum
Five Kilometer (3.1 mile) radius
Morgan Territory Rd
Highland Rd
Cayetano Creek
Morgan Territory Rd
Project Site
Doolan Rd
Manning Rd
CONTRA COSTA CO
ALAMEDA CO
Vasco Rd
Livermore Ave
Dagnino Rd
May School Rd
Collier Canyon Rd
Cottonwood Creek
Hartman Rd
Raymond Rd
Vasco Rd
Laughlin Rd
LIVERMORE
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
U.S. Fish & Wildlife Service
2 miles
0
2 miles
approximate scale
Live Oak Associates, Inc.
Oasis Fund Grow Facility
Special-status Plants
Date
10/03/2018
Project #
2305-01
Figure #
3a


Special-status Animals
Alameda Whipsnake
Prairie Falcon / Peregrine Falcon
American badger
San Francisco dusky-footed woodrat
burrowing owl
ferruginous hawk
golden eagle
grasshopper sparrow
tricolored blackbird
F.W.S. Critical Habitat
California red-legged frog
California tiger salamander
vernal pool fairy shrimp
Five Kilometer (3.1 mile) radius
N
Morgan Territory Rd
Cayetano Creek
Morgan Territory Rd
Project Site
Vasco Rd
Doolan Rd
Manning Rd
CONTRA COSTA CO
ALAMEDA CO
Collier Canyon Rd
Livermore Ave
Dagnino Rd
May School Rd
Vasco Rd
Laughlin Rd
Raymond Rd
Cottonwood Creek
Hartman Rd
Arroyo Las Positas
Laughlin
LIVERMORE
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
U.S. Fish & Wildlife Service
2 miles
0
2 miles
approximate scale
Live Oak Associates, Inc.
Oasis Fund Grow Facility
Special-status Animals
Date
10/03/2018
Project #
2305-01
Figure #
3b


LEGEND
Aquatic Animals
California red-legged frog
California tiger salamander
longhorn fairy shrimp
vernal pool fairy shrimp
western pond turtle
Critical Habitats
California red-legged frog
California tiger salamander
vernal pool fairy shrimp
Five Kilometer (3.1 mile) radius
Morgan Territory Rd
Highland Rd
Cayetano Creek
Project Site
Vasco Rd
Doolan Rd
Manning Rd
CONTRA COSTA CO
ALAMEDA CO
Livermore Ave
Dagnino Rd
May School Rd
Laughlin Rd
Collier Canyon Rd
Raymond Rd
Cottonwood Creek
Hartman Rd
Arroyo Las Positas
LIVERMORE
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
U.S. Fish & Wildlife Service
2 miles
0
2 miles
approximate scale
Live Oak Associates, Inc.
Oasis Fund Grow Facility
Special-status Aquatic Species
Date
10/03/2018
Project #
2305-01
Figure #
3c

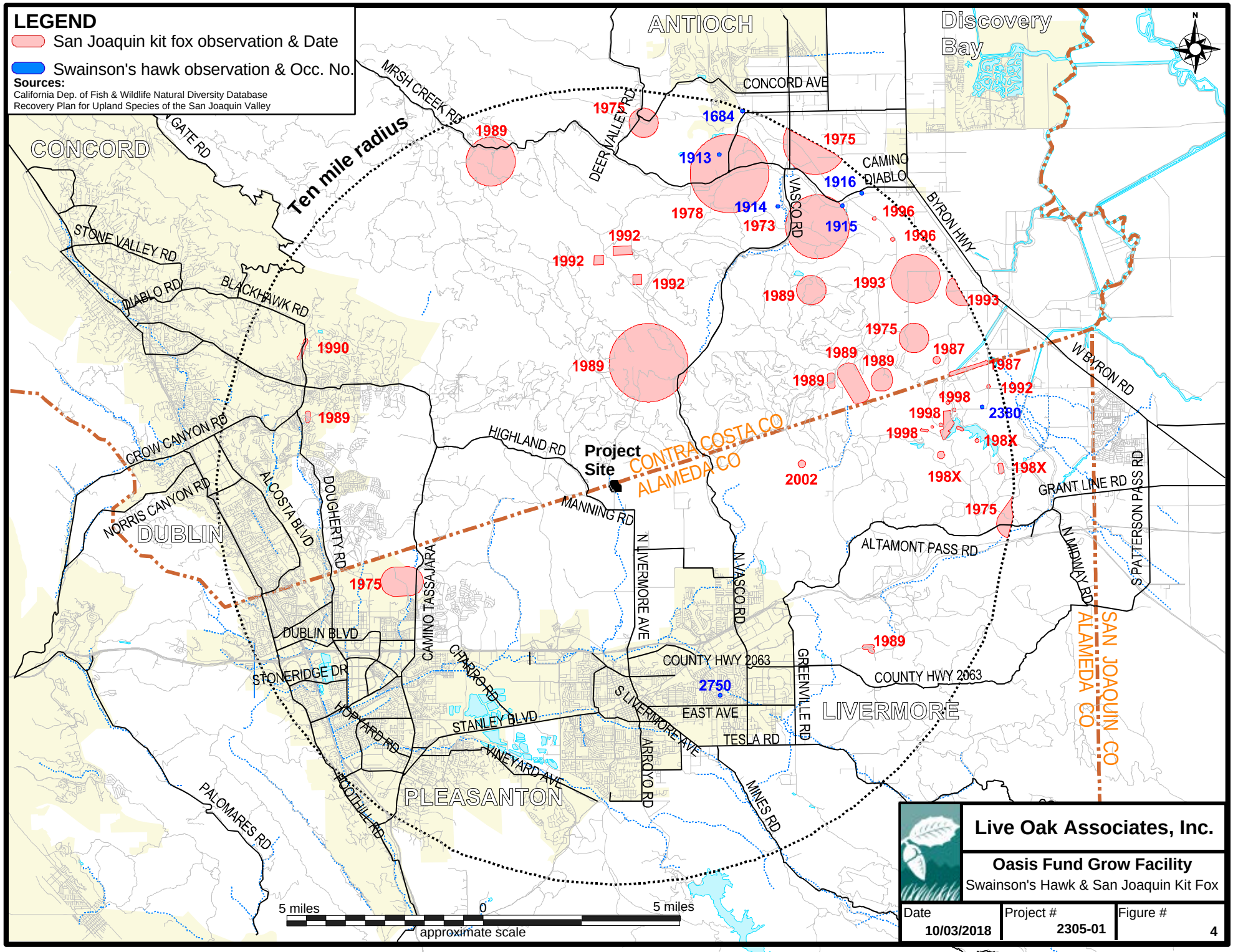

LEGEND
San Joaquin kit fox observation & Date
Swainson's hawk observation & Occ. No.
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
Recovery Plan for Upland Species of the San Joaquin Valley
Ten mile radius
ANTIOCH
Discovery Bay
CONCORD
DUBLIN
PLEASANTON
LIVERMORE
Project Site
CONTRA COSTA CO
ALAMEDA CO
SAN JOAQUIN CO
MARSH CREEK RD
CONCORD AVE
DEER VALLEY RD
CAMINO DIABLO
VASCO RD
BYRON HWY
W BYRON RD
GATE RD
STONE VALLEY RD
DIABLO RD
BLACKHAWK RD
CROW CANYON RD
NORRIS CANYON RD
ALCOSTA BLVD
DOUGHERTY RD
HIGHLAND RD
MANNING RD
GRANT LINE RD
S PATTERSON PASS RD
ALTAMONT PASS RD
N MIDWAY RD
N LIVERMORE AVE
N VASCO RD
DUBLIN BLVD
CAMINO TASSAJARA
CITARRO RD
STONERIDGE DR
COUNTY HWY 2063
GREENVILLE RD
EAST AVE
TESLA RD
S LIVERMORE AVE
ARROYO RD
STANLEY BLVD
HOPYARD RD
VINEYARD AVE
FOOTHILL RD
PALOMARES RD
MINES RD
1975
1989
1684
1913
1975
1916
1914
1915
1978
1973
1996
1992
1993
1987
1998
2380
198X
2002
2750
5 miles
0
5 miles
approximate scale
Live Oak Associates, Inc.
Oasis Fund Grow Facility
Swainson's Hawk & San Joaquin Kit Fox
Date 10/03/2018
Project # 2305-01
Figure # 4

Table 2: Special status species that could occur in the project vicinity.
PLANTS (adapted from CDFW 2018 and CRPR 2018)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Large-flowered fiddleneck *(Amsinckia grandiflora)*	FE, CE, CRPR 1B	Habitat: Cismontane woodland and valley and foothill grasslands. Elevation: 275-550 meters. Blooms: Annual herb; April–May.	**Possible.** Grasslands of the site provide potentially suitable habitat. However, the closest known occurrence of this species is approximately four miles southeast of the site, last observed in 2005 in the Springtown Wetlands Preserve.
Palmate-bracted bird's-beak (*Chloropyron palmatum*)	FE, CE, CRPR 1B	Habitat: Alkaline soils of chenopod scrub and valley and foothill grasslands. Elevation: 5-155 meters. Blooms: Annual herb; May–October.	**Absent.** Habitat for this species is absent from the site.
Livermore tarplant *(Deinandra bacigalupii)*	CE CRPR 1B	Habitats: Occurs in alkaline soils in meadows and seeps. Elevation: 150-185 meters. Blooms: Annual herb; June-October.	**Unlikely.** The grasslands of the site provide marginal habitat for this species due to an absence of highly alkaline and mesic soils. The closest documented population of this species is approximately three miles southeast of the site.
Contra Costa goldfields (*Lasthenia conjugens*)	FE, CRPR 1B	Habitat: Alkaline soils in mesic valley and foothill grasslands and vernal pools. Elevation: 0-470 meters. Blooms: Annual herb; March–June.	**Absent.** Habitat for this species is absent from the site.

Table 2: Special status species that could occur in the project vicinity. (Cont'd.)
PLANTS (adapted from CDFW 2018 and CRPR 2018)
Other special status plants listed by CRPR

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Bent-flowered fiddleneck (*Amsinckia lunaris*)	CRPR 1B	Habitat: Coastal bluff scrub, cismontane woodland, and valley and foothill grasslands. Elevation: 3-500 meters. Blooms: Annual herb; March–June.	**Possible.** Grasslands of the site provide potentially suitable habitat. However, there are no known occurrences of this species within three miles of the site.
Heartscale (*Atriplex cordulata*)	CRPR 1B	Habitat: Occurs in saline or alkaline soils of chenopod scrub, meadows and seeps, and sandy valley and foothill grassland. Elevation: 0-560 meters. Blooms: Annual herb; April-October.	**Absent.** Habitat for this species is absent from the site.

Table 2: Special status species that could occur in the project vicinity. (Cont'd.)
PLANTS (adapted from CDFW 2018 and CRPR 2018)
Other special status plants listed by CRPR

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Crownscale *(Atriplex coronata var. coronata)*	CRPR 4	Habitat: Occurs in alkaline soils, often clay, in chenopod scrub, Valley and foothill grasslands, and vernal pools. Elevation: 1-590 meters. Blooms: Annual herb; March-October.	**Absent.** Habitat for this species is absent from the site.
Brittlescale (*Atriplex depressa*)	CRPR 1B	Habitat: Occurs on alkaline clay soils in chenopod scrub, meadows and seeps, playas, valley and foothill grasslands, and vernal pools. Elevation: 1-320 meters. Blooms: Annual herb; April-October.	**Absent.** Habitat for this species is absent from the site.
Lesser saltscale (*Atriplex minuscula*)	CRPR 1B	Habitat: Occurs in alkaline and sandy soils in chenopod scrub, playas, and valley and foothill grasslands. Elevation: 15-200 meters Blooms: Annual herb; May-October.	**Absent.** Habitat for this species is absent from the site.
Big-scale balsamroot (*Balsamorhiza macrolepis var. macrolepis*)	CRPR 1B	Habitat: Chaparral, cismontane woodland, and valley and foothill grassland, sometimes on serpentine. Elevation: 90-1555 meters. Blooms: Perennial herb; March-June.	**Absent.** Although potentially suitable habitat is present on the site, this perennial species would have been identifiable during the October survey if it was present and it was not observed.
Big tarplant (*Blepharizonia plumosa*)	CNPS 1B	Habitats: Found in Valley and foothill grassland, usually on clay soil. Elevation: 30-505 meters. Blooms: Annual herb; July-October.	**Absent**. Grasslands of the site provide potential habitat for this species, however, the October survey occurred during this species' blooming season, and if present, it would have been identifiable with flower or fruit and no tarplant species were observed.
Mt. Diablo fairy lantern (*Calochortus pulchellus*)	CRPR 1B	Habitat: On woody and brushy slopes within chaparral, cismontane woodland, riparian woodland, and valley and foothill grassland. Elevation: 45-840 meters. Blooms: Bulbiferous herb; April–June.	**Unlikely.** Riparian habitat of the site would provide very marginal habitat for this species. The closest recorded observance of this species is approximately two miles northeast of the site, last observed in 2010.
Congdon's tarplant (*Centromadia parryi ssp. congdonii*)	CRPR 1B	Habitat: Occurs on valley and foothill grasslands on alkaline soils. Elevation: 0-230 meters. Blooms: Annual herb; May-November.	**Absent**. Grasslands of the site provide potential habitat for this species, however, the October survey occurred during this species' blooming season, and if present, it would have been identifiable with flower or fruit and no tarplant species were observed.

Table 2: Special status species that could occur in the project vicinity. (Cont'd.)
PLANTS (adapted from CDFW 2018 and CRPR 2018)
Other special status plants listed by CRPR

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Hispid bird's-beak (*Chloropyron mole ssp. hispidum*)	CRPR 1B	Habitat: Alkaline soils within meadows and seeps, playas, and valley and foothill grasslands. Elevation: 1-155 meters. Blooms: Annual herb; June-September.	**Absent.** Habitat for this species is absent from the site.
Santa Clara red ribbons (*Clarkia concinna ssp. automixa*)	CRPR 4	Habitat: Chaparral and cismontane woodland. Elevation: 90-1500 meters. Blooms: Annual herb; April–July.	**Absent.** Habitat for this species is absent from the site.
Small-flowered morning-glory (*Convolvulus simulans*)	CRPR 4.2	Habitat: Occurs in clay and serpentine seeps in chaparral openings, coastal scrub, and Valley and foothill grasslands. Elevation: 30-740 meters. Blooms: Annual herb; March-July.	**Absent.** Habitat for this species is absent from the site.
Hoover's cryptantha *(Cryptantha hooveri)*	CRPR 1A	Habitat: Occurs in inland dunes and sandy Valley and foothill grasslands. Elevation: 9-150 meters. Blooms: Annual herb; April-May.	**Absent.** Habitat for this species is absent from the site.
Recurved larkspur *(Delphinium recurvatum)*	CRPR 1B	Habitat: Occurs in chenopod scrub, cismontane woodland, and valley and foothill grasslands. Elevation: 3-750 meters. Blooms: Perennial herb; March-June.	**Unlikely**. Although the grassland and riparian woodland of the site would provide marginal habitat for this species, leaves of this perennial species would have been identifiable during the October survey if it were present and it was not observed. The closest occurrence is more than five miles east of the site.
Western leatherwood (*Dirca occidentalis*)	CRPR 1B	Habitat: Found in mesic habitats such as broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, riparian forest, and riparian woodland. Elevation: 30-395 meters. Blooms: Perennial deciduous shrub; January-April.	**Absent.** Although potential habitat occurs in the riparian woodland on the site, this perennial shrub would have been observed if present and it was not observed.
Mt. Diablo buckwheat (*Eriogonum truncatum*)	CRPR 1A	Habitat: Sandy soils of chaparral, coastal scrub, valley and foothill grassland. Elevation: 3-350 meters. Blooms: Annual herb; April–September.	**Absent.** Habitat for this species is absent from the site.

Table 2: Special status species that could occur in the project vicinity. (Cont'd.)
PLANTS (adapted from CDFW 2018 and CRPR 2018)
Other special status plants listed by CRPR

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Jepson's woolly sunflower *(Eriophyllum jepsonii)*	CRPR 4	Habitat: Chaparral, cismontane woodland, coastal scrub, sometimes on serpentine. Elevation: 200-1025 meters. Blooms: Perennial herb; April–June.	**Absent.** Habitat for this species is absent from the site.
Jepson's coyote-thistle *(Eryngium jepsonii)*	CRPR 1B	Habitat: Occurs in valley and foothill grassland and vernal pools on clay soils. Elevation: 3-300 meters. Blooms: Perennial herb; April-August.	**Absent.** Habitat for this species is absent from the site.
Spiny-sepaled button-celery *(Eryngium spinosepalum)*	CRPR 1B	Habitat: Occurs in valley and foothill grasslands and vernal pools. Elevation: 80-975 meters. Blooms: Annual/Perennial herb; April-June.	**Unlikely.** Grasslands of the site provide marginal habitat for this species and there is only one occurrence documented in Alameda County which was in 1972 approximately 10 miles northeast of the site. .
Diamond-petaled California poppy *(Eschscholzia rhombipetala)*	CRPR 1B	Habitat: Occurs in valley and foothill grassland with alkali and clay soils. Elevation: 0-975 meters. Blooms: Annual herb; March-April.	**Absent.** Habitat for this species is absent from the site.
San Joaquin spearscale *(Extriplex joaquinana)*	CRPR 1B	Habitat: Occurs in chenopod scrub, meadows and seeps, playas, and valley and foothill grasslands on alkaline soils. Elevation: 1-835 meters. Blooms: Annual herb; April-October.	**Absent.** Habitat for this species is absent from the site.
Stinkbells *(Fritillaria agrestis)*	CRPR 4	Habitats: Occurs in chaparral, valley grassland, foothill woodland, wetland, and riparian habitats, and can be associated with serpentine soils. Elevation: 10-1555 meters. Blooms: Bulbiferous herb; March-June.	**Unlikely.** Habitats of the site are marginal for this species and serpentine soils are absent. The closest known occurrences of this species are approximately 2 to 2 ½ miles southeast of the site.
Fragrant fritillary (*Fritillaria liliacea*)	CRPR 1B	Habitat: Cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grasslands. Often occurs on serpentinite. Elevation: 3-410 meters. Blooms: Bulbiferous herb; February–April.	**Unlikely.** Habitats of the site are marginal for this species and serpentine soils are absent. The closest known occurrences of this species are approximately 15 miles west of the site.

Table 2: Special status species that could occur in the project vicinity. (Cont'd.)
PLANTS (adapted from CDFW 2018 and CRPR 2018)
Other special status plants listed by CRPR

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Diablo helianthella (*Helianthella castanea*)	CRPR 1B	Habitat: Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Elevation: 60-1300 meters. Blooms: Perennial herb; March–June.	**Absent.** Although potentially suitable habitat is present on the site, this perennial species would have been identifiable during the October survey if it was present and it was not observed.
Hogwallow starfish (*Hesperevax caulescens*)	CRPR 4	Habitat: Mesic/clay soils within valley and foothill grasslands, shallow vernal pools. Sometimes alkaline. Elevation: 0-505 meters. Blooms: Annual herb; March-June.	**Absent.** Habitat for this species is absent from the site.
Brewer's western flax (*Hesperolinon breweri*)	CRPR 1B	Habitat: Usually occurs on serpentine soils of chaparral, cismontane woodland, and valley and foothill grassland. Elevation: 30-900 meters. Blooms: Annual herb; May–July.	**Absent.** Habitats of the site are extremely marginal for this species and serpentine soils are absent from the site. The nearest documented occurrences of this species are more than three miles northwest and northeast of the site.
Woolly rose-mallow *(Hibiscus lasiocarpos var. occidentalis)*	CRPR 1B	Habitat: Freshwater marshes and swamps. Often in rip rap on sides of levees. Elevation: 0-120 meters. Blooms: Perennial herb; June–September.	**Absent.** Habitat for this species is absent from the site.
Bristly leptosiphon *(Leptosiphon acicularis)*	CRPR 4	Habitat: Chaparral, cismontane woodland, valley and foothill grassland. Elevation: 55-1500 meters. Blooms: Annual herb; April–July.	**Unlikely.** Although grasslands of the site provide marginal habitat, the closest known occurrences of this species are more than 10 miles west of the site.
Showy golden madia *(Madia radiata)*	CRPR 1B	Habitat: Occurs in cismontane woodland, valley and foothill grassland Elevation: 25-900 meters. Blooms: Annual herb; March-May.	**Unlikely.** Habitats of the site are extremely marginal for this species and the closest documented occurrences of the species is more than 20 miles southeast of the site.
San Antonio Hills monardella (*Monardella antonina ssp. antonina*)	CRPR 3	Habitat: Chaparral and cismontane woodland. Elevation: 320-1000 meters. Blooms: Perennial rhizomatous herb; June-August.	**Absent.** Although the riparian woodland on the site provides potential habitat for this species, this perennial species would have been identifiable during the October survey if present and it was not observed.
Little mousetail (*Myosurus minimus ssp. apus*)	CRPR 3	Habitat: Alkaline vernal pools in valley and foothill grasslands. Elevation: 20-640 meters. Blooms: Annual herb; March-June.	**Absent.** Habitat for this species is absent from the site.

Table 2: Special status species that could occur in the project vicinity. (Cont'd.)
PLANTS (adapted from CDFW 2018 and CRPR 2018)
Other special status plants listed by CRPR

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Tehama navarretia (*Navarretia heterandra*)	CRPR 4	Habitat: Mesic valley and foothill grasslands and vernal pools. Elevation: 30-1010 meters. Blooms: Annual herb; April–June.	**Absent.** Habitat for this species is absent from the site.
Adobe navarretia (*Navarretia nigelliformis ssp. nigelliformis*)	CRPR 4	Habitat: Clay soils in vernally mesic valley and foothill grassland, sometimes in vernal pools, sometimes on serpentine. Elevation: 100-1000 meters. Blooms: Annual herb; April–June.	**Absent.** Habitat for this species is absent from the site.
Shining navarretia (*Navarretia nigelliformis ssp. radians*)	CRPR 1B	Habitat: Occurs in cismontane woodlands, valley and foothill grasslands, and vernal pools. Elevation: 76-1000 meters. Blooms: Annual herb; April-July.	**Unlikely.** While potentially suitable habitat is present, the nearest documented occurrences of this species are more than ten miles southeast of the site.
Prostrate vernal pool navarretia (*Navarretia prostrata*)	CRPR 1B	Habitat: Occurs in mesic areas within coastal scrub, meadows and seeps, alkaline valley and foothill grasslands, and vernal pools. Elevation: 15-1210 meters. Blooms: Annual herb; April-July.	**Absent.** Habitat for this species is absent from the site.
Lobb's aquatic buttercup (*Ranunculus lobbii*)	CRPR 4	Habitat: Mesic soils within cismontane woodland, North Coast coniferous forest, valley and foothill grasslands and vernal pools. Elevation: 15-470 meters. Blooms: Annual herb; February-May.	**Absent.** Habitat for this species is absent from the site.
Long-styled sand-spurrey (*Spergularia macrotheca var. longistyla*)	CRPR 1B	Habitat: Alkaline meadows, seeps, marshes and swamps. Elevation: 0-255 meters. Blooms: Perennial herb; February-May.	**Absent.** Habitat for this species is absent from the site.
Saline clover (*Trifolium hydrophilum*)	CRPR 1B	Habitat: Marshes and swamps, valley and foothill grasslands on mesic or alkaline soils, and vernal pools. Elevation: 0-300 meters. Blooms: Annual herb; April–June.	**Absent.** Habitat for this species is absent from the site.

Table 2: Special status species that could occur in the project vicinity. (Cont'd.)
PLANTS (adapted from CDFW 2018 and CRPR 2018)
Other special status plants listed by CRPR

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Caper-fruited tropidocarpum (*Tropidocarpum capparideum*)	CRPR 1A	Habitat: Occurs in alkaline soils of valley and foothill grassland. Elevation: 1-455 meters. Blooms: Annual herb; March-April.	**Absent.** Habitat for this species is absent from the site.
Oval-leaved viburnum (*Viburnum ellipticum*)	CRPR 2	Habitat: Chaparral, cismontane woodland, and lower montane coniferous forest. Elevation: 215-1400 meters. Blooms: Perennial deciduous shrub; May–June.	**Absent.** While potentially suitable habitat is present in the riparian woodland of the site, this perennial shrub would have been identifiable if present during the October survey and it was not observed.

Table 2: Special status species that could occur in the project vicinity.
ANIMALS (adapted from CDFW 2018 and USFWS 2018)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Callippe silverspot butterfly (*Speyeria callippe callippe*)	FE	Occurs on grassy hills surrounding the San Francisco Bay that support the host plant *Viola pedunculata*.	**Absent**. Although grasslands exist onsite, the site is not within modeled potential habitat in the East Alameda County Conservation Strategy mitigation zone for this species. Additionally, the nearest recorded observation of this species is more than 3 miles from the site.
Longhorn fairy shrimp *(Branchinecta longiantenna)*	FE	Occurs in ephemeral wetlands and vernal pools of California.	**Absent.** Suitable habitat for longhorn fairy shrimp in the form of vernal pools is absent from the study area. The nearest recorded observation of LHFS is more than 3 miles from the site.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Vernal pools of California's Central Valley.	**Absent**. Vernal pools are absent from the site. The nearest documented occurrences of this species are more than 3 miles from the site.
Vernal pool tadpole shrimp *(Lepidurus packardi)*	FE	Occurs in vernal pools of California. Vernal pools and swales in the Sacramento Valley containing clear to highly turbid water.	**Absent.** Suitable habitat for vernal pool tadpole shrimp in the form of vernal pools is absent from the study area. The nearest recorded observation of VPTS is more than 3 miles from the site.

Table 2: Special status species that could occur in the project vicinity.
ANIMALS (adapted from CDFW 2018 and USFWS 2018)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific names	Status	General habitat description	*Occurrence in the study area
California tiger salamander (*Ambystoma californiense*)	FT, CT	Breeds in vernal pools and stock ponds of central California. Adults aestivate in grassland habitats adjacent to the breeding sites.	**Unlikely**. The site is within or adjacent to modeled potential habitat CTS and the North mitigation area of the East Alameda County Conservation Strategy, and although several small mammal burrows occur onsite which are suitable for estivation, the creek does not likely hold pools suitable for breeding habitat for this species and breeding ponds do not exist onsite or within a mile of the site, therefore, although estivation habitat is present, it is unlikely CTS would occur onsite. The nearest documented observation of this species is more than 3 miles from the site.
Foothill yellow-legged frog (*Rana boylii*)	CSC CCT	Occurs in swiftly flowing streams and rivers with rocky substrate with open, sunny banks in forest, chaparral, and woodland habitats, and can sometimes be found in isolated pools.	**Possible.** The reach of Cayetano Creek onsite is identified as potential breeding and movement habitat of the FYLF by the East Alameda County Conservation Strategy. The nearest documented observation of this species is more than 3 miles from the site.
California red-legged frog (*Rana draytonii*)	FT, CSC	Rivers, creeks and stock ponds of the Sierra foothills and coast range, preferring pools with overhanging vegetation.	**Possible.** The ephemeral creek onsite lacks deep pools of water required for breeding and potential breeding ponds do not exist onsite or within the local vicinity of the site. Cayetano Creek may act as a dispersal corridor for CRLF should CRLF occur nearby. The project is within Critical Habitat designated by the USFWS for the CRLF. The site is within modeled potential habitat/movement habitat CRLF and the North mitigation area of the East Alameda County Conservation Strategy.
Alameda whipsnake (*Masticophis lateralis euryxanthus*)	FT, CT	Ranges from the inner coast range in western and central Contra Costa and Alameda counties. Typically occurs in chaparral and scrub habitats with rock outcrops and talus pilings. Also occurs in scrub communities, grasslands, oak, and oak/bay woodlands.	**Possible.** Suitable habitat exists onsite for all life stages of the whipsnake. The riparian corridor onsite provides suitable habitat, and the grasslands are adjacent to these woodlands, which may be used for feeding and dispersal habitat. The site is located within the southern end of a recovery unit for the Alameda whipsnake.

Table 2: Special status species that could occur in the project vicinity.
ANIMALS (adapted from CDFW 2018 and USFWS 2018)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Swainson's hawk (nesting) (*Buteo swainsonii*)	CT	Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah. Requires adjacent suitable foraging areas such as grasslands or alfalfa fields supporting rodent populations.	**Possible.** Foraging habitat is available throughout the project area and moderate-quality breeding habitat for Swainson's hawk exists within the riparian corridor of the site. There are six documented occurrences of this species within ten miles of the site. The nearest recorded observation of Swainson's hawk is nearly eight miles to the northeast of the site.
Tricolored blackbird (*Agelaius tricolor*)	CCE	Breeds near fresh water, primarily emergent wetlands, with tall thickets. Forages in grassland and cropland habitats.	**Unlikely.** Breeding habitat is absent from the site. Marginal foraging habitat is present on the site and the site is within modeled foraging habitat for the East Alameda County Conservation Strategy. The nearest documented occurrence of this species is approximately two miles to the west of the site.
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, CT	Frequents annual grasslands or grassy open stages with scattered shrubby vegetation. Needs loose-textured sandy soils for burrowing and suitable prey base. Utilizes enlarged (4 to 10 inches in diameter) ground squirrel burrows as denning habitat. May forage in adjacent agricultural habitats.	**Possible.** Although not observed during the 2018 site visit, denning and foraging habitat for the San Joaquin kit fox occurs onsite. There have been thirty-three documented occurrences of this species within ten miles of the site between 1975 and 2002. The nearest observation of this species was documented approximately two and a half miles to the north of the site in 1989. The site is within the North Mitigation Area for San Joaquin kit fox.

Table 2: Special status species that could occur in the project vicinity.
ANIMALS (adapted from CDFW 2018 and USFWS 2018)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Western spadefoot (*Spea hammondii*)	CSC	Primarily occurs in grasslands, but also occurs in valley and foothill hardwood woodlands. Requires vernal pools or other temporary wetlands for breeding.	**Unlikely.** Vernal pools required for breeding are absent from the study area. The nearest record is more than three miles from the site.
San Joaquin whipsnake (*Masticophis flagellum ruddocki*)	CSC	Open, dry habitats with little or no tree cover. Found in valley grasslands and saltbush scrub in the San Joaquin Valley.	**Unlikely.** The nearest documented occurrence of this species is more than three miles from the site.

Table 2: Special status species that could occur in the project vicinity.
ANIMALS (adapted from CDFW 2018 and USFWS 2018)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Northern California legless lizard *(Anniella pulchra)*	CSC	The NCLL (previously called silvery legless lizard) occurs mostly underground in warm moist areas with loose soil and substrate. The NCLL occurs in habitats including sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks.	**Unlikely.** The site does not support sandy substrate. The nearest recorded observation more than three mile from the site.
Coast horned lizard (*Phrynosoma blainvillii*)	CSC	Occur in grasslands, scrublands, oak woodlands, etc. of central California. Common in sandy washes with scattered shrubs.	**Unlikely.** Habitats onsite are of poor quality for coast horned lizards. The nearest documented observation of this species is more than three miles from the site.
Western pond turtle (*Actinemys marmorata*)	CSC	An aquatic turtle of ponds, marshes, slow-moving rivers, streams and irrigation ditches with aquatic vegetation. Needs basking sites and sandy banks or grassy open fields for egg laying.	**Possible.** Suitable habitat exists onsite for the WPT in Cayetano Creek when water is present. This species would not be expected to utilize the site for nesting or hibernation/estivation unless a nearby off-site pond exists. WPT would most likely use the site from time to time for feeding and as a movement corridor when the creek holds water. The nearest documented occurrence of this species is more than three miles from the site.
White-tailed kite (*Elanus leucurus*)	CP	Open grasslands and agricultural areas throughout central California.	**Possible.** Potentially suitable breeding and foraging habitat for this species is present on the site.
Northern harrier (*Circus cyaneus*)	CSC	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands; uncommon in wooded habitats.	**Possible.** Potentially suitable breeding and foraging habitat for this species is present on the site.
American peregrine falcon (nesting) *(Falco peregrines anatum)*	CP	Individuals breed on cliffs in the Sierra or in coastal habitats; occurs in many habitats of the state during migration and winter.	**Possible.** Although potentially suitable breeding habitat is absent from the site, suitable foraging habitat for this species is present onsite and this species is known to occur within the local vicinity of the site.
Golden eagle (*Aquila chrysaetos*)	CP	Typically frequents rolling foothills, mountain areas, woodland areas, sage-juniper flats, and desert habitats.	**Possible.** Although appropriately sized breeding trees and cliffs are absent from the site, the East Alameda County Conservation Strategy identifies the project site as being within modeled foraging habitat for golden eagles. Golden eagles are known to occur nearly 2 miles northwest of the site.

Table 2: Special status species that could occur in the project vicinity.
ANIMALS (adapted from CDFW 2018 and USFWS 2018)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific names	Status	General habitat description	*Occurrence in the study area
Burrowing owl (*Athene cunicularia*)	CSC	Open, dry grasslands, deserts and ruderal areas. Requires suitable burrows. Often associated with California ground squirrels.	**Possible.** Burrowing owls are known to be within the local vicinity with the closest known recorded occurrence being less than two miles to the west of the site. The site provides potentially suitable foraging and breeding habitat for this species. The site is located within modeled potential habitat for burrowing owls in the East Alameda County Conservation Strategy.
Loggerhead shrike (nesting) *(Lanius ludovicianus)*	CSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. Nests in tall shrubs and dense trees. Forages in grasslands, marshes, and ruderal habitats. Can often be found in cropland.	**Possible.** The site supports suitable breeding and foraging habitat for the loggerhead shrike.
Grasshopper sparrow *(Ammodramus savannarum)*	CSC	Occurs in California during spring and summer in open grasslands with scattered shrubs.	**Possible.** The site supports marginal habitat for the grasshopper sparrow, however, it may occur on the site from time to time.
Townsend's big-eared bat (*Plecotus townsendii townsendii*)	CSC	Primarily a cave-dwelling bat that may also roost in buildings. Occurs in a variety of habitats of the state.	**Possible.** Foraging habitat is present on the site; however, roosting habitat is absent from the site for this species. The nearest documented occurrence of this species is more than three miles from the site.
Western red bat *(Lasiurus blossevillii)*	CSC	Roosts in tree or shrub foliage, although will occasionally use caves.	**Possible.** Trees with foliage thick enough for roosting western red bats is present within the riparian corridor of the site. The nearest documented occurrence of this species is more than three miles from the site.
Pallid bat (*Antrozous pallidus*)	CSC	Grasslands, chaparral, woodlands, and forests of California; most common in dry rocky open areas that provide roosting opportunities.	**Possible.** Foraging habitat is present on the site. Suitable roosting habitat is absent. The nearest documented occurrence of this species is more than three miles from the site.
San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)	CSC	Hardwood forests, oak riparian and shrub habitats.	**Possible.** The riparian woodlands provide potentially suitable habitat for this species. However, no woodrat nests were observed during the site visit, and the nearest documented occurrence of this species is more than two and a half miles to the northeast of the site.

Table 2: Special status species that could occur in the project vicinity.
ANIMALS (adapted from CDFW 2018 and USFWS 2018)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts

Common and scientific names	Status	General habitat description	*Occurrence in the study area
American badger (*Taxidea taxus*)	CSC	Found in drier open stages of most shrub, forest and herbaceous habitats with friable soils.	**Possible.** Although no badger sign was observed during the 2018 site visit, suitable habitat exists onsite for badgers. The nearest documented occurrence of this species is just over two miles to the east of the site. The site is located within modeled potential habitat for badgers in the East Alameda County Conservation Strategy.
Ringtail (*Bassariscus astutus*)	CP	Rocky or talus slopes in semi-arid or riparian habitats.	**Possible.** Suitable habitat is restricted to the riparian woodlands onsite. Ringtails have not been documented within three miles of the site.

*Explanation of Occurrence Designations and Status Codes

Present: Species observed on the sites at time of field surveys or during recent past.
Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.
Possible: Species not observed on the sites, but it could occur there from time to time.
Unlikely: Species not observed on the sites, and would not be expected to occur there except, perhaps, as a transient.
Absent: Species not observed on the sites, and precluded from occurring there because habitat requirements not met.

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPE	Federally Endangered (Proposed)	CR	California Rare
FC	Federal Candidate	CP	California Protected
CSC	California Species of Special Concern		

CRPR	California Rare Plant Rank		
1A	Plants Presumed Extinct in California	3	Plants about which we need more information – a review list
1B	Plants Rare, Threatened, or Endangered in California and elsewhere	4	Plants of limited distribution – a watch list
2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere		

2.4 JURISDICTIONAL WATERS

Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and which, at the very least, carry ephemeral flows. Jurisdictional waters also include lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE), the California Department of Fish and Wildlife (CDFW), and the California Regional Water Quality Control Board (RWQCB). See Section 3.2.6 of this report for additional information.

A formal wetland delineation and waters of the U.S. analysis has not been completed for the site. However, jurisdictional waters are presumed to be present on the site in the form of Cayetano Creek, an ephemeral stream which the existing driveway passes over. Current plans do not include impacting the creek, however, the analysis in this report allows for the potential for plans to change to impact the creek by replacing the culvert bridge.

The limit of USACE jurisdiction, as well as that of the RWQCB, over Cayetano Creek determined to be jurisdictional tributary waters is the ordinary high water mark. This creek would also be subject to the jurisdiction of the CDFW which regulates the bed-and-bank of streams, creeks or channels.

No wetlands occur on the site. Wetlands are only considered to be jurisdictional by the USACE if they connect to other Waters of the United States per the U.S Supreme Court decision *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC Decision) and *Rapanos v. United States* and *Carabell v. U.S. Army Corps of Engineers* (referred together as the Rapanos decision).

3 IMPACTS AND MITIGATIONS

3.1 SIGNIFICANCE CRITERIA

Approval of general plans, area plans, and specific projects is subject to the provisions of the California Environmental Quality Act (CEQA). The purpose of CEQA is to assess the impacts of proposed projects on the environment before they are carried out. CEQA is concerned with the significance of a proposed project's impacts. For example, a proposed development project may require the removal of some or all of a site's existing vegetation. Animals associated with this vegetation could be destroyed or displaced. Animals adapted to humans, roads, buildings, pets, etc., may replace those species formerly occurring on the site. Plants and animals that are state and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed.

Whenever possible, public agencies are required to avoid or minimize environmental impacts by implementing practical alternatives or mitigation measures. According to Section 15382 of the CEQA Guidelines, a significant effect on the environment means a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest."

Specific project impacts to biological resources may be considered "significant" if they would:

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

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Furthermore, CEQA Guidelines Section 15065(a) states that a project may trigger the requirement to make a "mandatory findings of significance" if the project has the potential to

> Substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory.

3.2 RELEVANT GOALS, POLICIES, AND LAWS

3.2.1 Threatened and Endangered Species

State and federal "endangered species" legislation has provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Species listed as threatened or endangered under provisions of the state and federal endangered species acts, candidate species for such listing, state species of special concern, and some plants listed as endangered by the California Native Plant Society are collectively referred to as "species of special status." Permits may be required from both the CDFW and USFWS if activities associated with a proposed project will result in the "take" of a listed species. "Take" is defined by the state of California as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86). "Take" is more broadly defined by the federal Endangered Species Act to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). Furthermore, the CDFW and the USFWS are responding agencies under the California Environmental Quality Act (CEQA). Both

agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

3.2.2 Migratory Birds

State and federal laws also protect most birds. The Federal Migratory Bird Treaty Act (16 U.S.C., scc. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

3.2.3 Birds of Prey

Birds of prey are also protected in California under provisions of the State Fish and Game Code, Section 3503.5, which states that it is "unlawful to take, possess, or destroy any birds in the order *Falconiformes* or *Strigiformes* (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFW.

3.2.4 Bats

Sections 2000 and 4150 of the California Fish and Game Code states that it unlawful to take or possess a number of species, including bats, without a license or permit as required by Section 3007. Additionally, Title 14 of the California Code of Regulations states it is unlawful to harass, herd, or drive a number of species, including bats. To harass is defined as "an intentional act which disrupts an animal's normal behavior patterns, which includes, but is not limited to, breeding, feeding or sheltering". In addition, the Townsend's big-eared bat is currently proposed to be listed in the state of California as Endangered. The Townsend's big-eared bat is currently under a 1-year review with CDFW, during which time, it will be afforded full protections as other Endangered species until the Commission has finalized their ruling.

3.2.5 The Bald and Golden Eagle Protection Act

The Bald Eagle Protection Act of 1940 (16 U.S.C. 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as

follows: "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'' (72 FR 31132; 50 CFR 22.3).

3.2.6 Wetlands and Other Jurisdictional Waters

Section 404 of the Federal Clean Water Act

Natural drainage channels and adjacent wetlands may be considered "Waters of the United States" (hereafter referred to as "jurisdictional waters") subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE). The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands:
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;
- All impoundments of waters otherwise defined as waters of the United States under the definition;
- Tributaries of waters identified in paragraphs (a)(1)-(4) (i.e. the bulleted items above).

As determined by the United States Supreme Court in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (the SWANCC decision), channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. However, the U.S Supreme Court decisions *Rapanos v. United States* and *Carabell v. U.S. Army Corps of Engineers* impose a "significant

nexus" test for federal jurisdiction over wetlands. In June 2007, the USACE and Environmental Protection Agency (EPA) established guidelines for applying the significant nexus standard. This standard includes 1) a case-by-case analysis of the flow characteristics and functions of the tributary or wetland to determine if they significantly affect the chemical, physical, and biological integrity of downstream navigable waters and 2) consideration of hydrologic and ecologic factors (EPA and USACE 2007).

The USACE regulates the filling or grading of such waters under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by "ordinary high water marks" on opposing channel banks. Wetlands are habitats with soils that are intermittently or permanently saturated, or inundated. The resulting anaerobic conditions select for plant species known as hydrophytes that show a high degree of fidelity to such soils. Wetlands are identified by the presence of hydrophytic vegetation, hydric soils (soils saturated intermittently or permanently saturated by water), and wetland hydrology according to methodologies outlined in the 1987 Corps of Engineers Wetlands Delineation Manual (USACE 1987).

All activities that involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE (Wetland Training Institute, Inc. 1991). Such permits are typically issued on the condition that the applicant agrees to provide mitigation that results in no net loss of wetland functions or values.

Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Act

Under Section 401 of the CWA, the Regional Water Quality Control Board (RWQCB) issues a certification (or waiver of such certification) that the proposed activity will meet state water quality standards. In addition, the RWQCB regulates the filling of "waters of the state" based on the provisions of the Porter-Colgne Water Quality Control Act. Waters of the State is defined as any surface water or groundwater, including saline waters, within the boundaries of the state. The RWQCB has the discretion to take jurisdiction over areas not federally regulated under Section 401 of the CWA. Therefore, the filling of isolated wetlands, over which the USACE has disclaimed jurisdiction under the SWANCC decision, is regulated by the RWQCB. It is unlawful to fill isolated wetlands without filing a Notice of Intent with the RWQCB. The RWQCB is also responsible for enforcing National Pollution Discharge Elimination System

(NPDES) permits, including the General Construction Activity Storm Water Permit. All projects requiring federal money must also comply with Executive Order 11990 (Protection of Wetlands).

Section 1602 of the California Fish and Game Code (Lake and Streambed Alteration Agreements)

The California Department of Fish and Wildlife has jurisdiction over the bed and bank of natural drainages according to provisions of Section 1601 and 1602 of the California Fish and Game Code (2003). Activities that would disturb these drainages are regulated by the CDFW via a Streambed Alteration Agreement. Such an agreement typically stipulates that certain measures will be implemented which protect the habitat values of the drainage in question.

3.2.7 Local Ordinances, Policies, and Habitat Conservation Plans

3.2.7.1 East Alameda County Conservation Strategy

The East Alameda County Conservation Strategy of 2010 provides "context and guidance to project applicants, local jurisdictions with permit authority, and resource agencies in determining the potential impacts of a project and the level and type of mitigation necessary to offset those impacts". This document suggests a standard mitigation ratio of 3:1, which may vary depending on the type of habitat lost and the type of Conservation Zone the project is within.

3.2.7.2 Alameda County General Plan; East County Area Plan (2000)

The Alameda County has a General Plan which is split into several area plans. The site is within the East County Area Plan. Among other policies, this plan includes policies on riparian corridor buffers. Policy 336 of the East County Area Plan (Revised by Initiative Nov. 2000) identifies an appropriate setback of 100 feet from riparian corridors:

"Policy 336: In all cases, siting of development envelopes and structures shall be controlled so that views from roads, trails and other public places are not substantially blocked and to minimize environmental harm. No structures may be located on ridgelines or hilltops or so that they protrude above ridgelines or hilltops contrary to Policy 106, nor within 100 feet of riparian corridors, in Federal Emergency Management designated floodplains, or where they will have a significant adverse effect on an environmentally sensitive area as defined in Policy 332."

All General Plan policies should be followed.

3.2.7.3 City of Livermore Municipal Code – Tree Preservati

Protected trees are illegal to remove or encroach into the protected zone within the City unless a tree permit has been issued by the City pursuant to the provisions of this article. (Ord. 2065 § 1(A), 2018; Ord. 1830 § 3, 2007). Chapter 12.20 of the City's municipal code defines a Protected tree as:

"…a single-trunked tree, a multi-trunked tree, or a stand of trees dependent upon each other for survival that meets any one or more of the following criteria:

1. Any tree located on private property occupied by single-family residential development that meets the following criteria:

    a. Any tree with a circumference (CBH) of 60 inches or more; or

    b. Any California native tree having a circumference (CBH) of 24 inches or more;

2. Any tree located on private property occupied by commercial, industrial, institutional (i.e., religious, public agency, hospital, care facilities, etc.), mixed-use or multifamily residential (two or more units) development with a circumference (CBH) of 24 inches or more; or
3. Any tree located on an undeveloped or underdeveloped property, regardless of zoning district, use, or development status, for which new development is proposed, with a circumference (CBH) of 18 inches or more; or
4. Any tree located in an open space, riparian, or habitat area with a circumference (CBH) of 18 inches or more; or
5. Any tree approved as part of a site plan approval, or required as a condition of approval for a development project, zoning use permit, use permit or other site development review; or
6. Any tree designated by the City Council as determined to be an ancestral tree; and/or
7. Any tree listed on the City's ancestral tree inventory; or
8. Any tree required to be planted as mitigation for unlawfully removed trees."

3.2.7.4 HCPs/NCCPs

No known habitat conservation plans are in effect for this property. However, the project is within the Livermore Watershed of Conservation Zone 4 of the East Alameda County

Conservation Strategy for which a Programmatic Biological Opinion has been prepared (USFWS 2012) in which the project must follow guidelines for the Congdon's tarplant, California tiger salamander (CTS North), California red-legged frog (CRLF North in Critical Habitat), Alameda whipsnake (Unit 4), golden eagle, western burrowing owl, American badger, and San Joaquin kit fox (SJKF North) as these species have the potential to occur onsite. The site is also within the Livermore Valley Non-listed Species Mitigation Area and Springtown East Bay California Native Plant Society Core Biological Protection Area.

3.3 IMPACTS AND MITIGATIONS SPECIFIC TO THE PROJECT SITE

The proposed project includes a cannabis grow house (32,000 square-foot greenhouse building with 22,000 square-feet of canopy) and one processing building with associated security fencing and parking lot. A leach field and well(s) are also planned. The existing barn is not proposed to be part of the cannabis cultivation facility, and is not planned for removal as a part of this project. Although current plans are not impacting the existing creek crossing, this report takes into consideration the potential for plans to change to replace the culvert bridge, should replacement become necessary.

3.3.1 Loss of Habitat for Special Status Plants

Potential Impacts. Most special status plant species that occur, or once occurred, within the project region are considered absent from the site or unlikely to occur there because habitat is absent or marginal on the site for these species, the species is not known to occur in the immediate project vicinity, the species is a species that could be ruled out as occurring on the site during the October 2018 survey, and/or it has not been observed in the region in many decades (Table 2). The project would be expected to have a less than significant impact on these latter species. There are two special status plant species that have potential to occur within the annual grasslands of the site and these include the large-flowered fiddleneck and bent-flowered fiddleneck. Both of these latter species are annual forbs that bloom in the spring and that would not have been visible/identifiable during the October 2018 survey. A focused survey conducted in April would be sufficient to rule out the occurrence of either of these species on the site. If either species occurs on the site and if the project would impact a population of these species, this may be considered significant under CEQA. Neither of these fiddleneck species is considered a focal species of the EACCS.

Mitigation. Should the botanical surveys confirm that special status plants are absent from the impacted areas of the site, then no mitigation would be required. If populations of these species are present, and if it is determined by a qualified botanist or plant ecologist that project impacts to these species are significant under CEQA, then the following mitigations will be implemented which will reduce impacts to a less-than-significant level.

Avoidance. In consultation with a botanist or plant ecologist, and to the maximum extent feasible, the project will be designed to avoid substantial direct and indirect impacts (e.g. the establishment of an appropriately sized buffer) to these species.

***Compensation*.** If the project cannot be designed to avoid significant impacts to special status plant populations, then the following compensatory measures will be implemented.

***Onsite Preservation*.** The onsite proposed open space area should be surveyed during the appropriate blooming season to determine whether populations of the species being significantly impacted by the project are also present within areas that will be preserved. If populations of the species are present on the preservation area, it should be determined by a qualified botanist or plant ecologist whether these populations to be preserved would adequately compensate, or partially compensate, for lost populations on the project site. If it is determined that preserved populations would completely compensate for impacted populations, then no further compensation would be required. However, if it is determined that populations of the impacted species are absent from the site, or that they are present but their preservation would only partially mitigate for lost populations, then additional mitigation measures described below will be implemented.

Development of a Site Restoration Plan. If the project cannot be designed to avoid significant impacts to special status plants (as discussed above) and the preservation area does not support adequate populations of the impacted species to compensate for project impacts, then a Site Restoration Plan must be developed for the significantly impacted species by a qualified botanist or plant ecologist and approved by the City prior to the start of project development. The objective of this mitigation measure would be to replace the special status plants and habitat lost during project implementation. The proposed restoration program should be monitored for a period of five years from the date of site grading. The restoration plan should contain at a minimum the following:

- Identification of appropriate locations on the conservation area as determined by the botanist or plant ecologist (i.e., areas with suitable soils, aspect, hydrology, etc.) to restore lost plant populations.
- A description of the propagation and planting techniques to be employed in the restoration effort. Perennial plants to be impacted by site grading should be salvaged and raised in a greenhouse for eventual transplanting within the restoration areas. Annual plants can best be established by collecting seeds of onsite plants prior to project implementation and then directly seeding into suitable habitat on the conservation area.
- A timetable for implementation of the restoration plan.
- A monitoring plan and performance criteria.
- A description of remedial measures to be performed in the event that initial restoration measures are unsuccessful in meeting the performance criteria.
- A description of site maintenance activities to follow restoration activities. These may include weed control, irrigation, and control of herbivory by livestock and wildlife.

*Off-site Mitigation***.** If an onsite restoration plan is not feasible, mitigation for impacted special status plant species could be accommodated through restoration or preservation at an off-site location. Any off-site restoration plan would be subject to the same minimum requirements as indicated above for an onsite restoration plan.

If off-site preservation is the mitigation alternative chosen, then the mitigation site must be confirmed to support populations of the impacted species and must be preserved in perpetuity via deed restriction, establishment of a conservation easement, or similar preservation mechanism. A qualified botanist or plant ecologist should prepare a Preservation Plan for the site containing, at a minimum, the following elements:

- A monitoring plan and performance criteria for the preserved plant population.
- A description of remedial measures to be performed in the event that performance criteria are not met.
- A description of maintenance activities to be conducted on the site including weed control, trash removal, irrigation, and control of herbivory by livestock and wildlife.

The project proponent will be responsible for funding the development and implementation of any onsite or off-site Preservation Plan.

3.3.2 Loss of Habitat for Special Status Animals

Potential Impacts. Twenty-nine special status animal species occur, or once occurred, regionally (Table 2). Of these, ten would be absent from or unlikely to occur on the site due to unsuitable habitat conditions, including the Callippe silverspot butterfly, longhorn fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp, California tiger salamander, tricolored blackbird, western spadefoot, San Joaquin whipsnake, northern California legless lizard, and Coast horned lizard.

The remaining 19 species may occur more frequently as regular foragers or may be resident on the site, including Foothill yellow-legged frog, California red-legged frog, western pond turtle, Alameda whipsnake, white-tailed kite, Swainson's hawk, northern harrier, American peregrine falcon, golden eagle, burrowing owl, loggerhead shrike, grasshopper sparrow, Townsend's big-eared bat, western red bat, pallid bat, San Francisco dusky-footed woodrat, American badger, ringtail, and San Joaquin kit fox.

These species either occur on the site incidental to home range and migratory movements, thus using the site infrequently, or may forage on the site year-round or during migration. Project buildout would have a minimal effect on the breeding success of these species and would, at most, result in a relatively small reduction of foraging and/or nesting habitat that is abundantly available regionally. Therefore, the loss of habitat for these species would be considered less than significant.

Construction activities may result in injury of individuals of these species, which would be considered significant.

Mitigation. Mitigation measures for potential impacts to these species are discussed in Sections 3.3.3 through 3.3.13.

3.3.3 Impacts to Foothill Yellow-Legged Frogs

Potential Impacts. Impacts to individual FYLF may occur should FYLF occur in the riparian corridor and if plans change to include work within the riparian corridor. The creek area of the site is expected to be the highest quality habitat for FYLF onsite.

Mitigation. The primary approach to mitigate impacts to FYLF would be based upon 1) avoidance of riparian and aquatic resources to the maximum extent possible and 2) implementation of minimization measures.

Avoidance. Avoidance of a sensitive resource is usually considered the preferred mitigation for any project. Therefore, from a standpoint of avoiding impacts to FYLF, the project is designed in ways that avoids impacts to riparian habitat to the maximum extent practicable. The site currently is planned to be built outside of the riparian corridor except for the existing access road over the creek and, should the County require it, the potential for updating the culvert bridge over the creek.

Minimization. The project should be designed, built, and operated in ways that minimize both direct and indirect impacts to the FYLF (both during and post-buildout). Implementation of the following measures, partially summarized below and described more fully in Appendix D "Minimization Measures for Red-Legged Frogs", should be taken during construction to avoid take of individual FYLF.

- Conduct surveys for FYLF or assume presence onsite within the riparian habitat.
- Prior to the start of construction, an approved qualified biologist should train all construction personnel regarding habitat sensitivity, identification of special status species, and required practices.
- Pre-construction surveys should be conducted to ensure that FYLF are absent from the construction area. If FYLF are present, they should be relocated by a qualified biologist.
- The construction zone should be cleared, and silt fencing should be erected and maintained around construction zones to prevent FYLF from moving into these areas.
- A biological monitor should be present onsite during particular times of construction, such as if changes to the project require culvert bridge replacement, to ensure no FYLF are harmed, injured, or killed during these construction activities.

Specific Avoidance and Minimization Measures for the Foothill yellow-legged frog reported in Table 3-3 of the EACCS include:

- "If aquatic habitat is present, a qualified biologist will stake and flag an exclusion zone prior to activities. The exclusion zone will be fenced with orange construction zone and erosion control fencing (to be installed by construction crew). The exclusion zone will encompass the maximum practicable distance from the work site and at least 500 feet from the aquatic feature wet or dry.
- A qualified biologist will conduct preconstruction surveys prior to activities define a time for the surveys (before ground breaking). If individuals are found, work will not begin until they are moved out of the construction zone to a USFWS/CDFG approved relocation site.
- A Service-approved biologist should be present for initial ground disturbing activities.
- If the work site is within the typical dispersal distance (contact USFWS/CDFG for latest research on this distance for species of interest) of potential breeding habitat, barrier fencing will be constructed around the worksite to prevent amphibians from entering the work area. Barrier fencing will be removed within 72 hours of completion of work.
- No monofilament plastic will be used for erosion control.
- Construction personnel will inspect open trenches in the morning and evening for trapped amphibians.
- A qualified biologist possessing a valid ESA Section 10(a)(1)(A) permit or Service approved under an active biological opinion, will be contracted to trap and to move amphibians to nearby suitable habitat if amphibians are found inside fenced area.
- Work will be avoided within suitable habitat from October 15 (or the first measurable fall rain of 1" or greater, to May 1."

Compensation: upland habitat. Standardized mitigation ratios for the FYLF, according to Table 3-10, is 3:1, as the FYLF was not listed at the time of the EACCS was implemented. To ensure that mitigation habitat meets or exceeds the value of the habitat lost to development, *Focal Species Impact/Mitigation Scoring Sheets* located in Appendix E of the EACCS (ICF International 2010) should be used as part of the assessment for suitability of any proposed mitigation lands for the FYLF.

Should onsite mitigation occur, a Mitigation and Monitoring Plan should be prepared for the explicit purpose managing these lands. This plan should be submitted to the County for review and approval. At a minimum this plan should:

- Identify the approaches to be used and provide evidence that sufficient water budget exists for any proposed enhancement;
- Identify a suitable planting regime for restoring or enhancing riparian habitats;
- Identify success criteria for monitoring both the upland and riparian habitats that are consistent with similar habitats regionally;
- Monitor restored or enhanced riparian habitats for 5 years;
- Define and identify maintenance and management activities to manage the habitats to meet the stated goals of support habitat characteristics suitable for the FYLF. This may include suitable fencing so as to control access, limited cattle grazing or other procedures to manage grass height and forage production at levels that benefit the FYLF, removal of trash.
- Define and provide for a financial mechanism such as a non-wasting endowment or an assessment district that funds the management of the open space into perpetuity.

These measures would reduce impacts to FYLF to a less-than-significant level.

3.3.4 Impacts to California Red-Legged Frogs

Potential Impacts. Impacts to individual CRLF may occur should CRLF occur in upland burrows. The site is within Critical Habitat for the CRLF. The creek area of the site is expected to be the highest quality habitat for CRLF onsite and it is only expected to act as a movement corridor, as breeding is not expected to occur onsite.

Mitigation. The primary approach to mitigate impacts to CRLF would be based upon 1) avoidance of riparian and aquatic resources to the maximum extent possible, 2) implementation of minimization measures.

Avoidance. Avoidance of a sensitive resource is usually considered the preferred mitigation for any project. Therefore, from a standpoint of avoiding impacts to CRLF, the project is designed in

ways that avoids impacts to riparian and upland habitats to the maximum extent practicable. The site currently is planned to be built outside of the riparian corridor except for the existing access road over the creek and, should the County require it, the potential for updating the culvert bridge over the creek.

Minimization. The project should be designed, built, and operated in ways that minimize both direct and indirect impacts to the CRLF (both during and post-buildout). Implementation of the following measures, partially summarized below and described more fully in Appendix D, should be taken during construction to avoid take of individual CRLF.

- Conduct protocol-level CRLF surveys or assume presence onsite.
- Prior to the start of construction, an approved qualified biologist should train all construction personnel regarding habitat sensitivity, identification of special status species, and required practices.
- Pre-construction surveys should be conducted to ensure that CRLF are absent from the construction area. If CRLF are present, they should be relocated by a qualified biologist.
- The construction zone should be cleared, and silt fencing should be erected and maintained around construction zones to prevent CRLF from moving into these areas.
- A biological monitor should be present onsite during particular times of construction, such as if changes to the project require culvert bridge replacement, to ensure no CRLF are harmed, injured, or killed during these construction activities.

Specific Avoidance and Minimization Measures for the California red-legged frog reported in Table 3-3 of the EACCS include:

- "If aquatic habitat is present, a qualified biologist will stake and flag an exclusion zone prior to activities. The exclusion zone will be fenced with orange construction zone and erosion control fencing (to be installed by construction crew). The exclusion zone will encompass the maximum practicable distance from the work site and at least 500 feet from the aquatic feature wet or dry.

- A qualified biologist will conduct preconstruction surveys prior to activities define a time for the surveys (before ground breaking). If individuals are found, work will not begin until they are moved out of the construction zone to a USFWS/CDFG approved relocation site.
- A Service-approved biologist should be present for initial ground disturbing activities.
- If the work site is within the typical dispersal distance (contact USFWS/CDFG for latest research on this distance for species of interest) of potential breeding habitat, barrier fencing will be constructed around the worksite to prevent amphibians from entering the work area. Barrier fencing will be removed within 72 hours of completion of work.
- No monofilament plastic will be used for erosion control.
- Construction personnel will inspect open trenches in the morning and evening for trapped amphibians.
- A qualified biologist possessing a valid ESA Section 10(a)(1)(A) permit or Service approved under an active biological opinion, will be contracted to trap and to move amphibians to nearby suitable habitat if amphibians are found inside fenced area.
- Work will be avoided within suitable habitat from October 15 (or the first measurable fall rain of 1" or greater, to May 1."

In addition, the EACCS specifies that a project should obtain an Incidental Take Permit if occupied habitat is adjacent to the site and suitable habitat is on the project site.

Compensation: upland habitat. Standardized mitigation ratios for the CRLF, according to Table 3-7 in the EACCS, is 3:1 if the development area is within critical habitat and 2.5:1 if the development area is outside of critical habitat. As the development area is within critical habitat, a mitigation ratio of 3:1 should be employed; mitigation lands may be onsite or mitigation credits can be purchased from a mitigation bank. To ensure that mitigation habitat meets or exceeds the value of the habitat lost to development, *Focal Species Impact/Mitigation Scoring Sheets* located in Appendix E of the EACCS (ICF International 2010) should be used as part of the assessment for suitability of any proposed mitigation lands for the CRLF.

Should onsite mitigation occur, a Mitigation and Monitoring Plan should be prepared for the explicit purpose managing these lands. This plan should be submitted to the County for review and approval. At a minimum this plan should:

- Identify the approaches to be used and provide evidence that sufficient water budget exist for any proposed enhancement;
- Identify a suitable planting regime for restoring or enhancing riparian habitats;
- Identify success criteria for monitoring both the upland and riparian habitats that are consistent with similar habitats regionally;
- Monitor restored or enhanced riparian habitats for 5 years;
- Define and identify maintenance and management activities to manage the habitats to meet the stated goals of support habitat characteristics suitable for the CRLF. This may include suitable fencing so as to control access, limited cattle grazing or other procedures to manage grass height and forage production at levels that benefit the CRLF, removal of trash.
- Define and provide for a financial mechanism such as a non-wasting endowment or an assessment district that funds the management of the open space into perpetuity.

These measures would reduce impacts to CRLF to a less-than-significant level.

3.3.5 Impacts to Western Pond Turtles

Potential Impacts. The proposed project would result in the loss of a small amount of potential upland habitat that is of very low quality for western pond turtles. Therefore, impacts to WPT habitat would be considered minimal. However, it is possible, albeit highly unlikely, that WPT would move into the construction zone, which may result in mortality to individual western pond turtles. The loss of these individuals would constitute a significant impact under CEQA.

Mitigation. Implementation of the avoidance, minimization, and compensation measures for the CRLF (see Section 3.3.4 would adequately address impacts to western pond turtles.

The project should implement the following measures (see Appendix D for a more complete set of minimization measures):

- Prior to the start of construction, a qualified biologist should train all construction personnel regarding habitat sensitivity, identification of special status species, and required practices.
- Pre-construction surveys should be conducted to ensure that western pond turtles (WPT) are absent from the construction area. If WPT are present, a qualified biologist possessing all necessary permits should relocate them.
- Immediately following the pre-construction surveys, the construction zone should be cleared, and silt fencing should be erected and maintained around construction zones to prevent WPT from moving into these areas.
- A biological monitor should be present onsite during particular times of construction, such as if changes to the project require culvert bridge replacement, to ensure no WPT are harmed, injured, or killed during project buildout.

3.3.6 Impacts to Alameda Whipsnakes

Potential Impacts. The proposed project would result in the loss of a small amount of upland habitat in the form of grassland habitat adjacent to riparian habitat. Riparian habitat adjacent to the development area provide suitable habitat, and the adjacent grasslands may be used for feeding and dispersal habitat. Therefore, impacts to Alameda whipsnake habitat would be considered less-than-significant. It is possible that Alameda whipsnakes would move into the construction zone, which may result in mortality to individuals. The loss of these individuals would constitute a significant impact under CEQA.

Mitigation. Implementation of the avoidance, minimization, and compensation measures for the CRLF (see Section 3.3.4) would adequately address impacts to Alameda whipsnakes (see Appendix D for a more complete set of minimization measures).

Specific Avoidance and Minimization Measures for the Alameda whipsnake reported in Table 3-3 of the EACCS include:

- "No monofilament plastic will be used for erosion control.
- Barrier fencing may be used to exclude focal reptiles. Barrier fencing will be removed within 72 hours of completion of work.

- Construction crews or on-site biological monitor will inspect open trenches in the morning and evening for trapped reptiles.
- Ground disturbance in suitable habitat will be minimized.
- A USFWS and CDFG-approved biological monitor will be present for all ground disturbing activities in suitable habitat.
- A qualified biologist possessing a valid ESA Section 10(a)(1)(A) permit or Service approved under an active biological opinion, and approved by CDFG will be contracted to trap and to move reptiles to nearby suitable habitat if listed reptiles are found inside fenced area."

Additional applicable goals of the EACCS for the Alameda whipsnake include:

- Conservation Action AWS-6 strives to "implement grazing management plans on all protected lands in Alameda whipsnake Recovery Units that are based on the most up-to-date research findings on grazing levels and whipsnake population response".
- Section 3.5.3.8 states that "…protection of parcels that include parts of important linkages as described in the Draft Recovery Plan for Chaparral and Scrub Community Species East of San Francisco Bay, California, may qualify as mitigation locations for this species".
- "Conduct Alameda whipsnake surveys on private and public lands on both sides of I-580, I-680, and SR 84 to identify linkages between Recovery Unit 3 and units to the north and south. Linkages are important for breeding and genetic diversity among whipsnake populations."
- "Protect suitable habitat, which includes a matrix of chaparral and scrub communities, rock outcrops, annual grasslands, and riparian corridors inside Recovery Units for Alameda whipsnake. If possible, priority for protection should be given to areas that are also designated critical habitat. This will help reach the USFWS draft recovery goals for this species."

To ensure that mitigation habitat meets or exceeds the value of the habitat lost to development, *Focal Species Impact/Mitigation Scoring Sheets* located in Appendix E of the East Alameda

County Conservation Strategy (EACCS; ICF International 2010) should be used as part of the assessment for suitability of mitigation lands for the Alameda whipsnake. The site is outside of critical habitat, but within a recovery unit; mitigation ratios depend on where mitigation lands are located. Standardized mitigation ratios for the Alameda whipsnake, according to Table 3-9 in the EACCS, if the development area is within critical habitat the mitigation area is within critical habitat and the same Recovery Unit the mitigation ratio is 3:1, if the development area is outside of critical habitat but inside a Recovery Unit and the mitigation area is outside critical habitat but inside the same recovery unit the mitigation ratio is 3:1, and it is 2.5:1 if the development area is outside of critical habitat but inside a Recovery Unit and the mitigation area is inside critical habit and the same Recovery Unit. Other types of mitigation requires site-specific agency approval.

3.3.7 Disturbance to Nesting Raptors and Migratory Birds

Potential Impacts. Trees and structures throughout the site provide suitable nesting habitat for both listed and non-listed nesting raptors and migratory birds. If a raptor or other migratory bird, regardless of its federal or state status, were to nest on or adjacent to the site prior to or during proposed construction activities, such activities could result in the abandonment of active nests or direct mortality to these birds. Construction activities that adversely affect the nesting success of raptors or result in mortality of individual birds constitute a violation of state and federal laws and would be considered a significant impact under CEQA.

Mitigation. The below measures would be necessary to reduce the impact to nesting birds and raptors to a less-than-significant impact.

- To the maximum extent practicable, trees planned for removal should be removed during the non-breeding season (September 1 through January 31). If it is not possible to avoid tree removal or other disturbances during the breeding season (February 1 through August 31), a qualified biologist should conduct a pre-construction survey for tree-nesting raptors and other tree- or ground-nesting migratory birds in all trees or other areas of potential nesting habitat within the construction footprint and within 250 feet of the footprint, if such disturbance will occur during the breeding season. This survey should be conducted no more than 14 days prior to the initiation of demolition/construction activities during the breeding season.

- If nesting raptors or migratory birds are detected on the site during the survey, a suitable construction-free buffer should be established around all active nests. The precise dimension of the buffer (up to 250 feet) would be determined at that time and may vary depending on location and species. Buffers should remain in place for the duration of the breeding season or until it has been confirmed by a qualified biologist that all chicks have fledged and are independent of their parents. Pre-construction surveys during the non-breeding season are not necessary, as the birds are expected to abandon their roosts during construction activities. Implementation of the above measures would mitigate impacts to tree-nesting raptors and other migratory birds to a less-than-significant level.
- Surveys for Swainson's hawk nests within a half mile of the site should be conducted within nesting season.
- Should any active nests be discovered in or near proposed construction zones, the qualified biologist shall establish a suitable construction-free buffer around the nest. This buffer shall be identified on the ground with flagging or fencing, and shall be maintained until the biologist has determined that the young have fledged.

3.3.8 Impacts to Burrowing Owls

Potential Impacts. Although no burrowing owls were observed on the site during the 2018 site visit, suitable habitat for burrowing owls is present onsite in the form of small mammal burrows. If a burrowing owl were to nest or occupy a burrow in the proposed development area prior to the start of construction, construction activities could result in the abandonment of active nests or direct mortality to these birds. Construction activities that adversely affect the nesting success or result in mortality of individual owls constitute a violation of state and federal laws and would be considered a significant impact under CEQA.

Additionally, should burrowing owls occur in the development area during the breeding season, project buildout would result in the permanent loss of burrowing owl habitat. This loss of habitat would also be considered a significant adverse impact. The loss of potential foraging habitat for burrowing owls is less than significant due to the small size of the project site.

Mitigation. In order to avoid impacts to active burrowing owl nests, a qualified biologist should conduct pre-construction surveys for burrowing owls within the construction footprint and within

250 feet of the footprint no more than 14 days prior to the onset of ground disturbance. These surveys should be conducted in a manner consistent with accepted burrowing owl survey protocols. Specific Avoidance and Minimization Measures for the burrowing owl reported in Table 3-3 of the EACCS include:

- "If an active nest is identified near a proposed work area work will be conducted outside of the nesting season (March 15 to September 1).
- If an active nest is identified near a proposed work area and work cannot be conducted outside of the nesting season, a no-activity zone will be established by a qualified biologist. The no-activity zone will be large enough to avoid nest abandonment and will at a minimum, be 250-feet radius from the nest.
- If the burrowing owls are present at the site during the non-breeding period, a qualified biologist will establish a no-activity zone of at least 150 feet.
- If an effective no-activity zone cannot be established in either case, an experienced burrowing owl biologist will develop a site-specific plan (i.e., a plan that considers the type and extent of the proposed activity, the duration and timing of the activity, the sensitivity and habituation of the owls, and the dissimilarity of the proposed activity with background activities) to minimize the potential to affect the reproductive success of the owls."

Additional applicable goals of the EACCS for the burrowing owl include:

- "Increase the burrowing owl nesting population (number of nesting pairs) and number of nesting locations in the study area."
- "Objective 19.3. Protect and monitor all burrowing owl nest sites, including surrounding foraging habitat, in the study area."
- "Conservation Action BUOW-1 [and BUOW-2]. Acquire, through fee title purchase or conservation easement, parcels with documented burrowing owl nests…[or] …with a history of burrowing owl occupation and/or nesting activity during the previous three breeding seasons…in the study area."

- "Conservation Action BUOW-3. Mitigate the loss of burrowing owl nesting habitat (suitable habitat within 0.5 mile of documented nest occurrence during previous 3 years)..."
- "Objective 19.4. Enhance suitable burrowing owl habitat on public and private lands in the study area through implementation of species-specific measures in management plans."
- "Conservation Action BUOW-6. Purchase easements on land surrounding burrowing owl nest colonies or potential nest sites to ensure that the parcel will remain in types of grazing land, irrigated pasture, or dryland agriculture that provide foraging habitat for nesting burrowing owls."
- "Conservation Action BUOW-8. Consistent with GRA-10, cease using rodenticides in protected areas and, when possible, outside protected areas. When rodent management is needed to protect the integrity of structures such as levees and stock pond dams or to prevent nuisance populations on adjacent private lands, encourage land managers to use IPM principles."

To ensure that mitigation habitat meets or exceeds the value of the habitat lost to development, *Focal Species Impact/Mitigation Scoring Sheets* located in Appendix E of the EACCS (ICF International 2010) should be used as part of the assessment for suitability of mitigation lands for the burrowing owl. Standardized mitigation ratios for the burrowing owl, according to Table 3-10 in the EACCS, is 3:1 within the Livermore Valley Mitigation Area where the project is sited.

3.3.9 Potential Impacts to Golden Eagles

Potential Impacts. Large trees of suitable size for nesting golden eagles are absent from the site. Therefore, the proposed project is not expected to impact golden eagle nests. Foraging habitat is present on the site. The loss of potential foraging habitat is less than significant due to the small size of the project site.

Mitigation. Although nesting habitat is absent from the development footprint, pre-construction surveys conducted for golden eagles should be conducted to determine the presence or absence of golden eagle nests within 250 feet of the development footprint, surveys for other nesting raptors will also survey for golden eagle nests.

Specific Avoidance and Minimization Measures for the golden eagle reported in Table 3-3 of the EACCS include:

- "If an active nest is identified near a proposed work area work will be conducted outside of the nesting season (February 1 to September 1).
- "If an active nest is identified near a proposed work area and work cannot be conducted outside of the nesting season, a no-activity zone will be established by a qualified biologist. The no-activity zone will be large enough to avoid next abandonment and will at a minimum be 250-feet radius from the nest."
- "If an effective no-activity zone cannot be established in either case, an experienced golden eagle biologist will develop a site-specific plan (i.e., a plan that considers the type and extent of the proposed activity, the duration and timing of the activity, the sensitivity and habituation of the eagles, and the dissimilarity of the proposed activity with background activities) to minimize the potential to affect the reproductive success of the eagles."

Additional applicable goals of the EACCS for the golden eagle include:

- "Maintain the nesting golden eagle population in the study area at a level that allows for long-term viability without human intervention."
- "Objective 17.4. Enhance suitable golden eagle habitat on public and private lands in the study area through implementation of species-specific measures in management plans."
- "Conservation Action GOEA-4. Consistent with Conservation Action GRA-10, cease using rodenticides in protected areas and, when possible, outside protected areas. When rodent management is needed to protect the integrity of structures such as levees or stock pond dams or to prevent nuisance populations on adjacent private lands, encourage land managers to use IPM principles."

To ensure that mitigation habitat meets or exceeds the value of the habitat lost to development, *Focal Species Impact/Mitigation Scoring Sheets* located in Appendix E of the EACCS (ICF International 2010) should be used as part of the assessment for suitability of mitigation lands for

the golden eagle. Standardized mitigation ratios for the golden eagle, according to Table 3-10 in the EACCS, is 3:1 within the Livermore Valley Mitigation Area where the project is sited.

3.3.10 Impacts to American Badgers

Potential Impacts. Impacts to the American badger would be similar to those for the burrowing owl. Development of the project would result in a less-than-significant loss of habitat for the American badger, but may result in harm or injury to individuals of this species, which would constitute a significant adverse impact.

The loss of potential habitat for badgers is less than significant due to the small size of the project site.

Mitigation. Pre-construction surveys conducted for burrowing owls should also be used to determine the presence or absence of badgers in the development footprint. If an active badger den is identified during pre-construction surveys within or immediately adjacent to the construction envelope, a construction-free buffer of up to 300 feet (or distance specified by the resource agencies, i.e., CDFW) should be established around the den. Because badgers are known to use multiple burrows in a breeding burrow complex, a biological monitor should be present onsite during construction activities to ensure the buffer is adequate to avoid direct impact to individuals or nest abandonment. The monitor would be necessary onsite until it is determined that young are of an independent age and construction activities would not harm individual badgers. Once it has been determined that badgers have vacated the site, the burrows can be collapsed or excavated, then ground disturbance can proceed.

Specific Avoidance and Minimization Measures for the badgers reported in Table 3-3 of the EACCS include:

- "If potential dens are present, their disturbance and destruction will be avoided.
- If potential dens are located within the proposed work area and cannot be avoided during construction, qualified biologist will determine if the dens are occupied or were recently occupied using methodology coordinated with the USFWS and CDFG.

- If unoccupied, the qualified biologist will collapse these dens by hand in accordance with USFWS procedures (U.S. Fish and Wildlife Service 1999). Exclusion zones will be implemented following USFWS procedures (U.S. Fish and Wildlife Service 1999) or the latest USFWS procedures available at the time. The radius of these zones will follow current standards or will be as follows: Potential Den–50 feet; Known Den–100 feet; Natal or Pupping Den–to be determined on a case-by-case basis in coordination with USFWS and CDFG.
- Pipes will be capped and trenches will contain exit ramps to avoid direct mortality while construction areas are active".

Additional applicable goals of the EACCS for the badger include:

- "Maintain the American badger population while protecting and enhancing important regional linkages for the species in the study area."
- "Objective 20.2. Maintain the American badger population in the study area at a level that allows for long-term viability of the population."
- "Conservation Action AMB-2. Acquire parcels in the study area with documented American badger populations through fee title purchase or conservation easement."
- "Conservation Action AMB-4. Acquire parcels that protect linkages across I-580 and I-680 through fee title purchase, conservation easement, or agricultural easement."
- "Objective 20.3. Enhance suitable American badger habitat on public and private lands in the study area through implementation of species-specific measures in management plans."
- "Conservation Action AMB-6. Allow the expansion of California ground squirrel colonies on all protected lands except when needed to protect the integrity of structures such as levees or stock pond dams or to prevent nuisance populations on adjacent private lands."

- "Conservation Action AMB-7. Consistent with GRA-10 and BUOW-8, cease using rodenticides in protected areas and, when possible, outside protected areas. When rodent management is needed to protect the integrity of structures such as levees or stock pond dams or to prevent nuisance populations on adjacent private lands, encourage land managers to use IPM principles."

To ensure that mitigation habitat meets or exceeds the value of the habitat lost to development, *Focal Species Impact/Mitigation Scoring Sheets* located in Appendix E of the EACCS (ICF International 2010) should be used as part of the assessment for suitability of mitigation lands for the badger. Standardized mitigation ratios for the badger, according to Table 3-10 in the EACCS, is 3:1 within the Livermore Valley Mitigation Area where the project is sited.

3.3.11 Impacts to Bats

Potential Impacts. Bats may roost onsite in the large eucalyptus and oak trees within the riparian corridor and forage over the site. The structures onsite (barn and pumphouse) are not suitable for roosting bats. Should a change in plans occur and work be conducted in the creek during the maternity or overwintering seasons, this work could cause a significant affect on individual bats or a maternity colony.

Mitigation. Should work be required within the riparian corridor, a bat assessment should be conducted outside of maternity season and outside of overwintering season when humane eviction can occur (March 1-April 15 or August 15-October 15). Should trees be planned for removal within the riparian corridor, this is the season when they should be removed after a bat assessment. Tree removal, and humane eviction, should be done as a two-step removal under the direction of a qualified biologist.

3.3.12 Impacts to San Francisco Dusky-Footed Woodrats and Ringtails

Potential Impacts. San Francisco dusky-footed woodrats and ringtails may occur in the riparian corridor. Should work become necessary within the riparian corridor, injury or mortality of an individual of one of these species would be considered a significant impact.

Mitigation. The following mitigation measures should be followed should work be required within the riparian corridor.

- A qualified biologist will conduct a preconstruction survey for San Francisco dusky-footed woodrats and ringtail shall be conducted.
- If ringtail are located, the project would need to wait until they leave the area on their own prior to starting construction.
- Should a woodrat nest be located, and it is in a development area, a qualified biologist who has safely and successfully dismantled woodrat nests before shall dismantle the woodrat nest, while providing temporary shelter such as an overturned wine barrel in the meantime. Dismantling of woodrat nests will only be conducted outside of the breeding season as to avoid harming young.

3.3.13 Impacts to San Joaquin Kit Fox

Potential Impacts. Impacts to the San Joaquin kit fox would be similar to those for the American badger and burrowing owl. Development of the project would result in a less-than-significant loss of habitat for the San Joaquin kit fox, but may result in harm or injury to individuals of this species, which would constitute a significant adverse impact.

The loss of potential habitat for kit foxes is less than significant due to the small size of the project site.

Mitigation. According to the EACCS, because suitable habitat exists onsite, "The project should either assume presence and avoid impacts on the den site through coordination with CDFG and USFWS, and mitigate the loss of any habitat that cannot be avoided; …or conduct approved protocol-level surveys for kit fox. Those surveys would have to be conducted by a USFWS- and CDFG-approved biologist."

Specific Avoidance and Minimization Measures for the San Joaquin kit fox reported in Table 3-3 of the EACCS include:

- "If potential dens are present, their disturbance and destruction will be avoided.
- If potential dens are located within the proposed work area and cannot be avoided during construction, qualified biologist will determine if the dens are occupied or were recently occupied using methodology coordinated with the USFWS and CDFG.

- If unoccupied, the qualified biologist will collapse these dens by hand in accordance with USFWS procedures (U.S. Fish and Wildlife Service 1999).
- Exclusion zones will be implemented following USFWS procedures (U.S. Fish and Wildlife Service 1999) or the latest USFWS procedures available at the time. The radius of these zones will follow current standards or will be as follows: Potential Den–50 feet; Known Den–100 feet; Natal or Pupping Den–to be determined on a case-by-case basis in coordination with USFWS and CDFG.
- Pipes will be capped and trenches will contain exit ramps to avoid direct mortality while construction areas is active".

Additional applicable goals of the EACCS for the San Joaquin kit fox include:

- "Increase the San Joaquin kit fox population while protecting and enhancing suitable habitat and important regional linkages for the species in the study area."
    - Objective 21.1. Avoid and minimize direct impacts on San Joaquin kit fox (mortality of individuals and loss of den sites) during project construction and indirect impacts that result from postproject activities by implementing avoidance measures outlined in Tables 3-2 and 3-3.
    - Objective 21.2. Increase the San Joaquin kit fox breeding population in the study area."
        - Conservation Action SJKF-1. Mitigate the loss of suitable San Joaquin kit fox habitat by protecting habitat in accordance with the mitigation guidelines outlined in Table 3-11.
        - Conservation Action SJKF-2. Acquire parcels with documented San Joaquin kit fox den sites in the study area that meet the conservation goals and objectives of this strategy through fee title purchase and/ or conservation easement and using funding that comes from non-mitigation sources (e.g., grant funding, local fundraising efforts)."
    - "Objective 21.3. Increase connectivity of suitable habitat across major infrastructure barriers in the study area."

- Conservation Action SJKF-3. Conduct targeted presence/absence surveys, including scat scent surveys with dogs, on private and public lands on both sides of I-580 and along the California Aqueduct to identify linkages between and across these barriers.
- Conservation Action SJKF-4. Acquire parcels and manage vegetation in aras that protect linkages across infrastructure barriers and that meet the conservation goals and objectives of this strategy through fee title purchase or conservation easement.
- Conservation Action SJKF-5. Create new passages (undercrossings or overcrossings) across I-580 between Livermore and the Alameda/San Joaquin County Line and overcrossings at key locations along the California Aqueduct that are large enough to accommodate movement of terrestrial mammals, including San Joaquin kit fox."

o "Objective 21.3. Enhance suitable San Joaquin kit fox habitat on public and private lands in the study area through implementation of species-specific measures in management plans."

- Conservation Action SJKF-5. Create an incentive program that will encourage private landowners to manage ground squirrels on their property using IPM principles and work toward a balance between species needs and the requirements of a working landscape.
- Conservation Action SFJK-6. Allow the expansion of California ground squirrel colonies on all protected lands except when needed to protect the integrity of structures such as levees or stock pond dams or to prevent nuisance populations on adjacent private lands.
- Conservation Action SFJK-7. Consistent with GRA-10, cease using rodenticides in protected areas and, when possible, outside protected areas. When rodent management is needed to protect the integrity of structures such as levees or stock pond dams or to prevent nuisance populations on adjacent private lands, encourage land managers to use IPM principles."

To ensure that mitigation habitat meets or exceeds the value of the habitat lost to development, *Focal Species Impact/Mitigation Scoring Sheets* located in Appendix E of the EACCS (ICF International 2010) should be used as part of the assessment for suitability of mitigation lands for the badger. Standardized mitigation ratios for the San Joaquin kit fox, according to Table 3-11 in the EACCS, is 3:1 within the North Mitigation Area where the project is sited.

3.3.14 Disturbance to Waters of the United States or Riparian Habitats

Potential Impacts. A formal wetland delineation of the site was not conducted as a part of this evaluation. No wetlands were observed on the site during the October 2018 survey, however, potentially jurisdictional waters are present on the site in the form of Cayetano Creek, and intermittent creek, along the site's western boundary. This hydrologic feature would be subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW) and any fill being placed within the creek as a result of the project would require permits from some or all of these agencies. Generally, the jurisdiction of the USACE is the Ordinary High Water mark (OHWM) on opposing banks, in the absence of adjacent wetlands, and the jurisdiction of the RWQCB and CDFW is the top of bank or the dripline of woody riparian vegetation, whichever is greater. Additionally, impacts to the bed, bank or associated woody riparian vegetation may be considered a significant impact under CEQA.

As indicated previously, the access driveway to the project site traverses the creek via a culvert bridge. At this time, it is unknown whether the project will require any work within the creek such as to widen or improve the existing culvert bridge or require the installation of a storm drain outfall.

Mitigation. Should the project not require the placement of fill within the bed and bank of the creek, or result in the removal of woody riparian vegetation, then the project would not require regulatory permits and would not result in a significant impact and require mitigation under CEQA. However, should the project require impacts within the bed and bank of the creek, or disturbance to woody riparian vegetation, the project should implement avoidance, minimization, and/or compensation measures to reduce impacts to jurisdictional waters and riparian habitats to a less-than-significant level.

Avoidance. The preferred method of mitigation would be avoidance of all waters of the U.S. and State by designing the project so that it avoids the placement of fill within potential jurisdictional waters and impacts to riparian habitat.

Minimization. If full avoidance is not possible, actions should be taken to minimize impacts to aquatic and riparian habitats. The project should be designed to the extent possible to minimize impacts to the most sensitive aquatic habitat by not impacting the creek within the Ordinary High Water (OHW) channel and to minimize removal of woody riparian vegetation. Measures taken during construction activities should include placing construction fencing around the riparian areas to be preserved to ensure that construction activities do not inadvertently impact these areas.

As part of project build-out, all proposed lighting should be designed to avoid light and glare impacts to the riparian corridor to be avoided. Light sources should not be visible from riparian areas and should not illuminate riparian areas or cause glare on the opposite side of the channels (e.g., to neighboring properties). Additionally, proposed development activities should be designed and situated to avoid the loss of trees within any riparian areas to the maximum extent practicable.

Compensation. If significant impacts to the riparian corridor cannot be avoided, then an onsite restoration plan should be developed to compensate for impacts. It is expected that all mitigation measures can be accommodated on the site. If the preserved area cannot fully accommodate the mitigation measures, then off-site restoration would be necessary. Mitigation measures would either result in the creation of new habitat as replacement for habitat lost or enhance the quality of existing habitat for native plants and wildlife. Mitigation measures should include replacement of riparian habitat as well as reseeding or replanting of vegetation in temporarily disturbed areas according to a site-specific mitigation plan. At a minimum, this plan should identify mitigation areas, a planting plan, site maintenance activities, success criteria and remedial measures to compensate for lack of success. The mitigation goal should be to create and enhance riparian habitats with habitat functions and values greater than or equal to those existing in the impact zone.

A detailed monitoring plan, including specific success criteria, should be developed and submitted to permitting agencies during the permit process. The mitigation area would be

monitored in accordance with the plan approved by those permitting agencies. The basic components of the monitoring plan consist of final success criteria, performance criteria, monitoring methods, data analysis, as-built plans, monitoring schedule, contingency/remedial measures, and reporting requirements.

A Habitat Mitigation and Monitoring Plan should be prepared that at a minimum:

- Defines the location of all restoration/creation activities;
- Provides evidence of a suitable water budget to support any created wetland and riparian habitats;
- Identifies the species, amount and location of plants to be installed;
- Identifies time of year for planting and method for supplemental watering during the establishment period;
- Identifies the monitoring period which should be not less than 5 years for wetland restoration and not less than 5 years for riparian restoration, defines success criteria that will be required for the wetland restoration to be deemed a success;
- Identifies adaptive management procedures that accommodate the uncertainty that comes with restoration projects. These include (but not limited to) measures to address colonization by invasive species, unexpected lack of water, excessive foraging of installed wetland plants by native wildlife, etc.;
- Defines management and maintenance activities (weeding of invasive, providing for supplemental water, repair of water delivery systems, etc.); and
- Provides for surety in funding the monitoring and ensuring that the created wetland and riparian habitats fall within lands to be preserved and managed into perpetuity.
- The above mitigation measures when implemented would reduce any impacts on waters of the U.S. and state and sensitive riparian habitats to a less-than-significant level. These measures would also be consistent with the EACCS and its objectives and goals for conservation of riparian forest and scrub habitats (Section 3.5.2.5 of the EACCS).

Regulatory issues. The applicant will also need to comply with all state and federal regulations related to construction work that will impact aquatic habitats occurring on the site. The applicant may be required to obtain a Section 404 Clean Water Act permit from the USACE, Section 401 Water Quality Certification from the RWQCB and Section 1600 Streambed Alteration Agreement from the CDFW prior to initiating any construction within these habitats.

3.3.15 Tree Removal Impacts

Potential Impacts. The proposed project may require the removal of trees. The number of trees to be removed will depend on the final project plans. The removal of protected trees would constitute a significant impact. The City of Livermore requires a permit to remove of protected trees as defined in Section 3.2.7. above, however, the site is located outside of the City Limits and Urban Growth Boundary of the City of Livermore. Construction activities that lead to the injury, decline, structural failure, or death of a tree proposed to be retained on the site would also constitute a significant impact.

Mitigation. For trees to be retained, a tree preservation plan should be prepared for the project identifying all protection and mitigation measures to be taken. These measures should remain in place for the duration of construction activities at the project site. Implementation of the above mitigation measures would reduce the loss of trees to a less-than-significant level.

3.3.16 Loss of Habitat for Native Wildlife

Potential Impacts. The habitats of the site are likely to comprise only a portion of most wildlife's entire home range or territory. As such, some species may disperse through the site, but most wildlife presently using the site do so as part of their normal movements for foraging, mating, and caring for young. Wildlife species presently occupying the site would be displaced or lost from the proposed development area.

The proposed development would affect a small area. This development would primarily result in the loss of non-native grassland habitat. But may also impact the creek depending on whether the County requires the project to replace the culvert bridge.

The project is small and is planned outside of and set back from the riparian corridor. This suggests the proposed project, when considered by itself, will neither result in a wildlife population dropping below self-sustaining levels nor threaten to eliminate an animal community.

Furthermore, mitigations have been proposed for a number of species previously discussed to adequately off-set grassland habitat losses.

Therefore, impacts to native wildlife due to the loss of habitat resulting from the proposed project are considered less than significant under CEQA.

Mitigation. Mitigation measures are not warranted.

3.3.17 Interference with the Movement of Native Wildlife

Potential Impacts. The site is located adjacent to a residence with the remainder being open space interspersed with sparse residential development. Within the site itself, wildlife uses the upland non-native grassland of the site as part of their home range and dispersal movements; the creek is likely used as a movement corridor and for dispersal. The proposed development footprint occurs adjacent and set back from the creek. Following project buildout, wildlife species presently using the site are expected to continue moving through the open areas of the property and within the riparian corridor after project build-out. Therefore, impacts to wildlife movements would not be considered significant.

Mitigation. Mitigation measures are not warranted.

3.3.18 Degradation of Water Quality in Seasonal Drainages, Stock Ponds, and Downstream Waters

Potential Impacts. Proposed construction activities may result in soils left barren in the development footprint. Additionally, extensive grading often leaves the soils of construction zones barren of vegetation and, therefore, vulnerable to sheet, rill, or gully erosion. Furthermore, runoff is often polluted with grease, oil, pesticide and herbicide residues, heavy metals, etc. These pollutants may eventually be carried to sensitive wetland habitats used by a diversity of native wildlife species.

The applicant is expected to comply with the provisions of a grading permit, including standard erosion control measures that employ best management practices (BMPs). Projects involving the grading of large tracts of land must also be in compliance with provisions of a General Construction permit (a type of NPDES permit) available from the California Regional Water Quality Control Board. Compliance with the above permit(s) should result in no impacts to water quality in seasonal creeks, reservoirs, and downstream waters from the proposed project and

should not result in the deposition of pollutants and sediments in sensitive riparian and wetland habitats.

Mitigation. Mitigation measures are not warranted.

3.3.19 Local Ordinances, Conservation Strategies or Habitat Conservation Plans

Potential Impacts. With the exception of local ordinances previously discussed, no local ordinances, HCPs, or NCCPs are known to be in effect for this project. However, the project is within the Livermore Watershed of Conservation Zone 4 of the East Alameda County Conservation Strategy for which a Programmatic Biological Opinion has been prepared (USFWS 2012) in which the project must follow guidelines for the Foothill yellow-legged frog, California red-legged frog, western pond turtle, Alameda whipsnake, golden eagle, western burrowing owl, American badger, and San Joaquin kit fox. as these species have the potential to occur onsite. Guidelines for these species have been included in the avoidance and minimization measures of the sections above. This project will follow mitigation measures identified in this document to help to achieve goals and objectives defined in Section 3.5 and Tables 3-2 and 3-3 of the Conservation Strategy (ICF 2010). The project will follow these measures as well as the additional measures in the Biological Opinion (USFWS 2012) which are attached as Appendix E. Therefore, the proposed project would not be impacted by any local policies related to biological resources.

Mitigation. Additional mitigation measures are not warranted.

4 LITERATURE CITED

California Department of Fish and Wildlife. 2018. California fish and game code. Gould Publications. Binghamton, NY.

_____. 2018. State and federally listed endangered and threatened animals of California. The Resources Agency, Sacramento, CA.

_____. 2018. California natural diversity database. The Resources Agency, Sacramento, CA.

California Native Plant Society (CNPS). 2018. Inventory of Rare and Endangered Vascular Plants of California. Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. California Native Plant Society. Sacramento, CA.

Conservation Lands Network. http://www.bayarealands.org/download/?dl=uplandhabitat Accessed online September 4, 2018.

EPA and USACE. 2007. Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States. Environmental Protection Agency and U.S. Army Corps of Engineers. Washington, D.C.

ICF International. 2010. East Alameda County Conservation Strategy. Final Draft. October (ICF 00906.08) San Jose, CA. Prepared for: East Alameda County Conservation Strategy Steering Committee, Livermore, CA.

Jennings, M. R. 1988. Natural history and decline of native ranids in California. Pages 61-72 In: H. F. De Lisle, P. R. Brown, B. Kaufman, and B. McGurty (editors). Proceedings of the Conference On California Herpetology. Southwestern Herpetologists Society, Special Publication (4):1-143.

Jennings, M. R. and M. P. Hayes. 1994. Amphibian and Reptile Species of Special Concern in California. California Department of Fish and Game, Final Report.

Natural Resource Conservation Service. 2018. Web Soil Survey. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

Pickwell, G. 1947. Amphibians and reptiles of the Pacific States. Stanford University Press, Stanford, CA.

Shuford, W. David and Thomas Gardall eds. 2008. California Bird Species of Special Concern. Western Field Orinthologists and California Department of Fish and Game.

Stebbins, R. C. 1951. Amphibians of western North America. University of California Presss, Berkeley, California.

_____. 1985. A field guide to western reptiles and amphibians. Second edition, revised. Houghton Mifflin Company, Boston, Massachusetts. xiv+336 p.

Thomson, Robert C., Amber N. Wright, and H. Bradley Shaffer. 2016. California Amphibian and Reptile Species of Special Concern. California Department of Wildlife. University of California Press.

U.S. Army Corps of Engineers (USACE). 1987. Corps of Engineers wetlands delineation manual. Department of the Army.

_____. 2001. Minimum standards for acceptance of preliminary wetland delineations. U.S. Army Corps of Engineers Regulatory Branch. November 30.

_____. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). Engineer Research and Development Center.

Wetland Training Institute, Inc. 1991. Federal Wetland Regulation Reference Manual. B.N. Goode and R.J. Pierce (eds.) WTI 90-1. 281pp.

APPENDIX A: VASCULAR PLANTS OF THE STUDY AREA

The plants species listed below were observed on the project site during the field surveys conducted by Live Oak Associates, Inc. on October 15, 2018. The U.S. Fish and Wildlife Service wetland indicator status of each plant has been shown following its common name.

OBL - Obligate
FACW - Facultative Wetland
FAC - Facultative
FACU - Facultative Upland
UPL - Upland
+/- - Higher/lower end of category
NR - No review
NA - No agreement
NI - No investigation

ANACARDIACEAE – Sumac Family		
Toxicodendron diversilobum	Poison oak	UPL
ASTERACEAE - Sunflower Family		
Artemisia douglasiana	Mugwort	OBL
*Carduus pycnocephalus**	Italian thistle	UPL
*Centaurea solstitialis**	Yellow star thistle	UPL
*Cirsium vulgare**	Bull thistle	FACU
*Helminthotheca echioides**	Bristly ox-tongue	FAC*
*Lactuca serriola**	Prickly lettuce	FAC
BRASSICACEAE – Mustard Family		
*Brassica nigra**	Black mustard	UPL
CAPRIFOLIACEAE – Honeysuckle Family		
Sambucus nigra ssp. caerulea	Blue elderberry	FAC
CONVOLVULACEAE – Morning-Glory Family		
*Convolvulus arvensis**	Field bindweed	UPL
CUPRESSACEAE – Cypress Family		
Cupressus macrocarpa	Monterey cypress	UPL
EUPHORBIACEAE – Spurge Family		
Croton setiger		
Doveweed		*UPL*
FABACEAE – Legume Family		
*Medicago polymorpha**	Burclover	UPL
FAGACEAE – Oak Family		
Quercus agrifolia	Coast live oak	UPL
Quercus lobata	Valley oak	FACU
GERANIACEAE – Geranium Family		

*Erodium sp.**	Filaree	UPL
JUGLANDACEAE – Walnut Family		
Juglans hindsii	California walnut	FAC
LAMIACEAE – Mint Family		
Marrubium vulgare	Horehound	UPL
MORACEAE – Mulberry Family		
*Ficus carica**	Edible fig	UPL
MYRTACEAE – Myrtle Family		
*Eucalyptus globulus**	Blue gum eucalyptus	UPL
OLEACEAE – Olive Family		
Olea europaea	Olive	UPL
ONAGRACEAE – Evening Primrose Family		
Epilobium canum	California fuschia	UPL
POACEAE - Grass Family		
*Avena sp.**	Wild oat	UPL
*Bromus diandrus**	Ripgut brome	UPL
*Bromus hordeaceus**	Soft chess	FACU-
*Festuca perennis**	Italian ryegrass	FAC
*Hordeum murinum**	Farmer's foxtail	NI
*Polypogon monspeliensis**	Rabbitsfoot grass	FACW
POLYGONACEAE – Buckwheat Family		
*Rumex crispus**	Curly dock	FACW-
URTICACEAE – Nettle Family		
Urtica dioica ssp. holosericea	Stinging nettle	FACW

* Introduced non-native species

APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE STUDY AREA

The species listed below are those that may reasonably be expected to use the habitats the Oasis property routinely or from time to time. The list was not intended to include birds that are vagrants or occasional transients. Terrestrial vertebrate species observed in or adjacent to the study area during the October 2018 site visit have been noted with an asterisk.

CLASS AMPHIBIA (Amphibians)

ORDER CAUDATA (Salamanders)

FAMILY SALAMANDRIDAE (Newts)

California newt	*Taricha torosa*

FAMILY PLETHODONTIDAE (Lungless Salamanders)

Yellow-eyed ensatina	*Ensatina eschscholtzii xanthoptica*
California slender salamander	*Batrachoseps attenuatus*
Pacific slender salamander	*Batrachoseps pacificus*
Arboreal salamander	*Aneides lugubris*

ORDER ANURA (Frogs and Toads)

FAMILY BUFONIDAE (True Toads)

Western toad	*Bufo boreas*

FAMILY HYLIDAE (Tree Frogs and Relatives)

Pacific treefrog	*Hyla regilla*

FAMILY RANIDAE (True Frogs)

California red-legged frog	*Rana draytonii*

CLASS REPTILIA (Reptiles)

ORDER TESTUDINES (Turtles)

FAMILY EMYDIDAE (Box and Water Turtles)

Western Pond Turtle	*Actinemys marmorata*

ORDER SQUAMATA (Lizards and Snakes)

SUBORDER SAURIA (Lizards)

FAMILY PHRYNOSOMATIDAE

*Western fence lizard	*Sceloporus occidentalis*

FAMILY SCINCIDAE (Skinks)

Skilton skink	Eumeces skiltonianus skiltonianus

FAMILY ANGUIDAE (Alligator Lizards and Relatives)

California alligator lizard	*Elgaria multicarinata*

SUBORDER SERPENTES (Snakes)

FAMILY COLUBRIDAE (Colubrids)

Sharp-tailed snake	*Contia tenuis*
Coachwhip	*Masticophis flagellum*
Alameda whipsnake	*Masticophis lateralis euryxanthus*
Gopher snake	*Pituophis catenifer*
Common kingsnake	*Lampropeltis getula*

California kingsnake	*Lampropeltis californiae*
FAMILY NATRICIDAE (Live-bearing Snakes)	
Western terrestrial garter snake	*Thamnophis elegans*
FAMILY VIPERIDAE (Vipers)	
Northern Pacific rattlesnake	*Crotalus oreganus oreganus*

CLASS AVES (Birds)

ORDER CICONIIFORMES (Herons, Storks, Ibises and Relatives)

FAMILY CATHARTIDAE (New World Vultures)	
*Turkey vulture	*Cathartes aura*

ORDER ANSERIFORMES (Screamers, Ducks and Relatives)

FAMILY ANATIDAE (Swans, Geese and Ducks)	
Mallard	*Anas platyrhynchos*
Canada Goose	*Branta canadensis*

ORDER FALCONIFORMES (Vultures, Hawks and Falcons)

FAMILY ACCIPITRIDAE (Hawks, Old World Vultures and Harriers)	
White-tailed kite	*Elanus leucurus*
Northern harrier	*Circus cyaneus*
Sharp-shinned hawk	*Accipiter striatus*
Cooper's hawk	*Accipiter cooperii*
Red-shouldered hawk	*Buteo lineatus*
*Red-tailed hawk	*Buteo jamaicensis*
Swainson's hawk	*Buteo swainsonsi*
Golden eagle	*Aquila chrysaetos*
FAMILY FALCONIDAE (Caracaras and Falcons)	
*American kestrel	*Falco sparverius*
American peregrine falcon	*Falco peregrinus*
Merlin	*Falco columbarius*
Prairie falcon	*Falco mexicanus*

ORDER GALLIFORMES (Magapodes, Curassows, Pheasants and Relatives)

FAMILY PHASIANIDAE (Quails, Pheasants and Relatives)	
*Wild turkey	*Meleagris gallopavo*
FAMILY ODONTOPHORIDAE (New World Quail)	
California quail	*Callipepla californica*

ORDER COLUMBIFORMES (Pigeons and Doves)

FAMILY COLUMBIDAE (Pigeons and Doves)	
*Rock pigeon	*Columba livia*
*Mourning dove	*Zenaida macroura*

ORDER STRIGIFORMES (Owls)

FAMILY TYTONIDAE (Barn Owls)	
*Barn owl	*Tyto alba*
FAMILY STRIGIDAE (Typical Owls)	
Western screech owl	*Otus kennicottii*
Great horned owl	*Bubo virginianus*
Burrowing owl	*Athene cunicularia*

ORDER APODIFORMES (Swifts and Hummingbirds)
FAMILY TROCHILIDAE (Hummingbirds)

Anna's hummingbird	*Calypte anna*
Allen's hummingbird	*Selasphorus sasin*

ORDER PICIFORMES (Woodpeckers and Relatives)
FAMILY PICIDAE (Woodpeckers and Wrynecks)

Acorn woodpecker	*Melanerpes formicivorus*
Downy woodpecker	*Picoides pubescens*
Northern flicker	*Colaptes auratus*
Nuttall's woodpecker	*Picoides nuttallii*

ORDER PASSERIFORMES (Perching Birds)
FAMILY TYRANNIDAE (Tyrant Flycatchers)

Black phoebe	*Sayornis nigricans*
*Say's phoebe	*Sayornis saya*
Ash-throated flycatcher	*Myiarchus cinerascens*
Pacific-slope flycatcher	*Empidonax difficilis*

FAMILY LANIIDAE (Shrikes)

Loggerhead shrike	*Lanius ludovicianus*

FAMILY VIREONIDAE (Typical Vireos)

Cassin's vireo	*Vireo cassinii*
Warbling vireo	*Vireo gilvus*
Hutton's vireo	*Vireo huttoni*

FAMILY CORVIDAE (Jays, Magpies and Crows)

Steller's jay	Cyanocitta stelleri
*California scrub-jay	*Aphelocoma californica*
American crow	*Corvus brachyrhynchos*
*Common raven	*Corvus corax*

FAMILY ALAUDIDAE (Larks)

California horned lark	*Eremophila alpestris actia*

FAMILY HIRUNDINIDAE (Swallows)

Tree swallow	*Tachycineta bicolor*
Violet-green swallow	*Tachycineta thalassina*
Cliff swallow	*Petrochelidon pyrrhonota*
Barn swallow	*Hirundo rustica*

FAMILY PARIDAE (Titmice and Relatives)

Oak titmouse	*Baeolophus inornatus*
Chestnut-backed chickadee	*Poecile rufescens*

FAMILY AEGITHALIDAE (Bushtit)

Bushtit	*Psaltriparus minimus*

FAMILY SITTIDAE (Nuthatches)

White-breasted nuthatch	*Sitta carolinensis*

FAMILY TROGLODYTIDAE (Wrens)

Bewick's wren	*Thryomanes bewickii*
House wren	*Troglodytes aedon*
Winter wren	*Troglodytes troglodytes*

FAMILY REGULIDAE (Kinglets)

Ruby-crowned kinglet	*Regulus calendula*
FAMILY SYLVIIDAE (Old World Warblers and Gnatcatchers)	
Blue-gray gnatcatcher	*Polioptila caerulea*
FAMILY TURDIDAE (Thrushes)	
Western bluebird	*Sialia mexicana*
Hermit thrush	*Catharus guttatus*
American robin	*Turdus migratorius*
FAMILY MIMIDAE (Mockingbirds and Thrashers)	
Northern mockingbird	*Mimus polyglottos*
FAMILY STURNIDAE (Starlings and Allies)	
*European starling	*Sturnus vulgaris*
FAMILY PARULIDAE (Wood Warblers and Relatives)	
Yellow-rumped warbler	*Dendroica coronata*
Yellow warbler	*Dendroica petechia*
Orange-crowned warbler	*Oreothlypis celata*
FAMILY EMBERIZIDAE (Emberizines)	
*California towhee	*Pipilo crissalis*
Lark sparrow	*Chondestes grammacus*
Grasshopper sparrow	*Ammodramus savannarum*
Savannah sparrow	*Passerculus sandwichensis*
*Song sparrow	*Melospiza melodia*
Fox sparrow	*Passerella iliaca*
White-throated sparrow	*Zonotrichia albicollis*
White-crowned sparrow	*Zonotrichia leucophrys*
Dark-eyed junco	*Junco hyemalis*
FAMILY CARDINALIDAE (Cardinals, Grosbeaks and Allies)	
Lazuli bunting	*Passerina amoena*
FAMILY ICTERIDAE (Blackbirds, Orioles and Allies)	
Red-winged blackbird	*Gelaius phoeniceus*
*Western meadowlark	*Sturnella neglecta*
Brewer's blackbird	*Euphagus cyanocephalus*
Brown-headed cowbird	*Molothrus ater*
Bullock's oriole	*Icterus bullockii*
FAMILY FRINGILLIDAE (Finches)	
Purple finch	*Carpodacus purpureus*
House finch	*Carpodacus mexicanus*
Lesser goldfinch	*Carduelis psaltria*
American goldfinch	*Carduelis tristis*

CLASS MAMMALIA (Mammals)

ORDER DIDELPHIMORPHIA (Marsupials)

FAMILY DIDELPHIDAE (Opossums)	
Virginia opossum	*Didelphis virginiana*

ORDER CHIROPTERA (Bats)

FAMILY VESPERTILIONIDAE (Evening Bats)	
Little brown myotis	*Myotis lucifugus*

Yuma myotis	*Myotis yumanensis*
California myotis	*Myotis californicus*
Western pipistrelle	*Pipistrellus hesperus*
Big brown bat	*Eptesicus fuscus*
Townsend's big-eared bat	*Corynorhinus townsendii*
Western red bat	*Lasiurus blossevillii*
Pallid bat	*Antrozous pallidus*
FAMILY MOLOSSIDAE (Free-tailed Bats)	
California mastiff bat	*Eumops perotis californicus*
Mexican free-tailed bat	*Tadarida brasiliensis*
ORDER LAGOMORPHA (Rabbits, Hares and Pika)	
FAMILY LEPORIDAE (Rabbits and Hares)	
Brush rabbit	*Sylvilagus bachmani*
Black-tailed jackrabbit	*Lepus californicus*
ORDER RODENTIA (Rodents)	
FAMILY SCIURIDAE (Squirrels, Chipmunks and Marmots)	
*California ground squirrel	*Spermophilus beecheyi*
Western gray squirrel	*Sciurus griseus*
Eastern fox squirrel	*Sciurus niger*
FAMILY GEOMYIDAE (Pocket Gophers)	
Botta's pocket gopher	*Thomomys bottae*
FAMILY HETEROMYIDAE (Pocket Mice and Kangaroo Rats)	
California pocket mouse	*Chaetodipus californicus*
FAMILY CRICETIDAE (Mice, Rats and Voles)	
Deer mouse	*Peromyscus maniculatus*
Parasitic mouse	*Peromyscus californicus*
Western harvest mouse	*Reithrodontomys megalotis*
California meadow vole	*Microtus californicus*
San Francisco dusky-footed woodrat	*Neotoma fuscipes annectens*
ORDER CARNIVORA (Carnivores)	
FAMILY CANIDAE (Foxes, Wolves and Relatives)	
Coyote	*Canis latrans*
Gray fox	*Urocyon cinereoargenteus*
San Joaquin kit fox	*Vulpes macrotis*
Domestic dog	*Canis familiaris*
FAMILY PROCYONIDAE (Raccoons and Relatives)	
Raccoon	*Procyon lotor*
Ringtail	*Bassariscus astutus*
FAMILY MUSTELIDAE (Weasels and Relatives)	
American badger	*Taxidea taxus*
FAMILY MEPHITIDAE (Skunks)	
Striped skunk	*Mephitis mephitis*
FAMILY FELIDAE (Cats)	
Feral cat	*Felis catus*
Mountain lion	*Puma concolor*

Bobcat *Lynx rufus*

ORDER ARTIODACTYLA (Even-toed Ungulates)

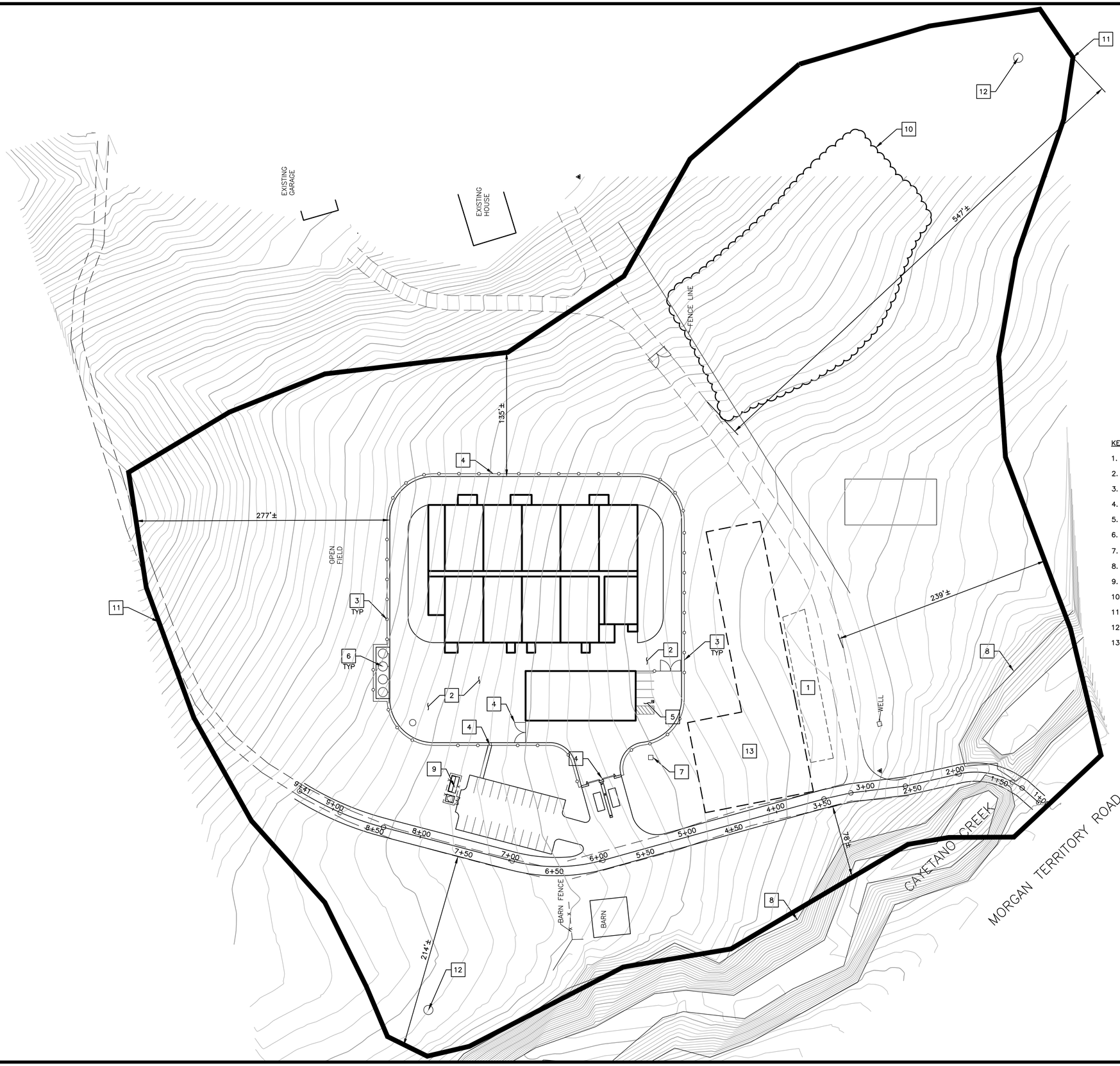
SUBFAMILY BOVINIDAE (Cattle)

FAMILY CERVIDAE (Deer, Elk and Relatives)

Black-tailed deer *Odocoileus hemionus columbianus*

APPENDIX C: Site plans

ALL IDEAS, DESIGNS, ARRANGEMENTS AND PLANS INDICATED BY THIS DRAWING ARE OWNED BY, AND THE PROPERTY OF THIS OFFICE AND WERE CREATED, EVOLVED AND DEVELOPED FOR USE ON , AND IN CONNECTION WITH THE SPECIFIED PROJECT. NONE OF SUCH IDEAS, DESIGNS, ARRANGEMENTS OR PLANS SHALL BE USED BY OR DISCLOSED TO ANY PERSON, FIRM OR CORPORATION FOR ANY PURPOSE WHATSOEVER WITHOUT THE WRITTEN PERMISSION OF GREENWOOD & MOORE, INC.
WRITTEN DIMENSIONS ON THESE DRAWINGS SHALL HAVE PRECEDENCE OVER SCALE DIMENSIONS. CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB. THIS OFFICE MUST BE NOTIFIED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE DRAWINGS. SHOP DETAILS OF ACCURATE SCALE, MUST BE SUBMITTED TO THIS OFFICE FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION. DO NOT SCALE DRAWINGS.



GRAPHIC SCALE IN FEET

50 0 50 100

SCALE 1" = 50'

KEYNOTES

1. BIORETENTION AREA
2. ASPHALT PAVING
3. SECURITY FENCE
4. SECURITY GATE
5. ACCESSIBLE PARKING SPACE
6. FIRE STORAGE TANK
7. APPROXIMATE LOCATION OF (E) WELL
8. TOP OF CREEK
9. NEW ELECTRICAL TRANSFORMER AND SWITCHGEAR
10. APPROXIMATE LOCATION OF LEACH FIELD
11. AREA OF WORK
12. APPROXIMATE LOCATION OF PROPOSED WELL
13. CONSTRUCTION STAGING AREA

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OASIS IMPROVEMENTS
7033 MORGAN TERRITORY RD
LIVERMORE, CA 94550
903-0007-001-01

OVERALL SITE PLAN

CHECKED BY:	STAFF
DRAWN BY:	STAFF
SCALE:	1"=50'
DATE	09-19-2018
PROJECT NO.	2017.043
PHASE NO.	
SHEET NO.	C1.0

APPENDIX D: MINIMIZATION MEASURES FOR CALIFORNIA RED-LEGGED FROGS

The following measures will minimize direct and indirect impacts to California red-legged frogs.

1. Prior to the start of construction, a qualified biologist will train all project staff regarding habitat sensitivity, identification of special status species, and required practices. The training shall include the general measures that are being implemented to conserve these species as they relate to the project, the penalties for non-compliance, and the boundaries of the project area. A fact sheet or other supporting materials containing this information should be prepared and distributed. Upon completion of training, employees will sign a form stating that they attended the training and understand all the conservation and protection measures.
2. A qualified biologist will survey the project site prior to, and be present to monitor, construction activities during any initial ground disturbance or vegetation clearing or other periods during construction, as necessary. The biologist will capture and relocate any California red-legged frogs that are discovered during the surveys or construction monitoring. Any individuals that are captured should be held for the minimum amount of time necessary to release them to suitable habitat outside of the work area.
3. A qualified biologist will stake and flag exclusion zones around all known locations of CRLF breeding and upland refugia areas in the construction zone. These areas will be avoided during construction activities to the maximum extent practicable. All construction areas will be flagged, and all activity will be confined to these areas.
4. If a CRLF is encountered during construction work, activities will cease until the animal is removed and relocated by a qualified biologist.
5. Construction activities should be limited to the period from May 1 through October 31.
6. Permanent and temporary construction disturbances and other types of project-related disturbances to CRLF habitat shall be minimized to the maximum extent practicable and confined to the project site. To minimize temporary disturbances, all project-related vehicle traffic shall be restricted to established roads, construction areas, designated cross-country routes, and other designated areas. These areas also should be included in preconstruction surveys and, to the maximum extent possible, should be established in locations disturbed by previous activities to prevent further adverse effects. Sensitive

habitat areas shall be delineated with high visibility flagging or fencing to prevent encroachment of construction personnel and equipment into any sensitive areas during project work activities. At no time shall equipment or personnel be allowed to adversely affect areas outside the project site without authorization from the Service.

7. Because dusk and dawn are often the times when CRLF are most actively foraging and dispersing, all construction activities should cease one half hour before sunset and should not begin prior to one half hour before sunrise.
8. No canine or feline pets or firearms (except for federal, state, or local law enforcement officers and security personnel) shall be permitted at the project site to avoid harassment, killing, or injuring of CRLF.
9. A representative shall be appointed by the applicant who will be the contact source for any employee or contractor who might inadvertently kill or injure a CRLF or who finds a dead, injured or entrapped individual. The representative shall be identified during the tailgate/training session. The representative's name and telephone number shall be provided to the Service prior to the initiation of ground disturbance activities.
10. Tightly woven fiber netting or similar material shall be used for erosion control or other purposes at the project site to ensure that CRLF do not get trapped.
11. A litter control program shall be instituted at the entire project site. All construction personnel should ensure that food scraps, paper wrappers, food containers, cans, bottles, and other trash from the project area are deposited in covered or closed trash containers. The trash containers should be removed from the project area at the end of each working day.

APPENDIX E: ADDITIONAL MINIMIZATION AND MITIGATION MEASURES FROM THE BIOLOGICAL OPINION FOR THE EAST ALAMEDA COUNTY CONSERVATION STRATEGY

PROGRAMMATIC BIOLOGICAL OPINION

FOR THE

EAST ALAMEDA COUNTY CONSERVATION STRATEGY

Suitability Criteria for Projects to be Appended to the Programmatic Biological Opinion

Actions that fall under this consultation are projects that may adversely affect the above mentioned listed species either by take of individuals, temporary disturbance or permanent loss of habitat, and/or temporary disturbance or permanent loss of critical habitat, but which nonetheless are not likely to jeopardize the continued existence of the listed species and are not likely to destroy or adversely modify critical habitat. In order for individual projects to be appended to this Programmatic BO, they must be consistent with the Conservation Strategy and have been reviewed by the Corps and Service via the procedure described above. Individual projects will be located within the Conservation Strategy Study Area and fall under the list of covered activities in this Programmatic BO. Projects that are not covered activities will not be appended to this Programmatic BO and will require individual formal consultation.

Projects will adhere to the maximum extent practicable the Project-Level Use of the Strategy and Conservation Goals and Objectives as outlined in Chapter 3 of the Conservation Strategy including the Generalized Avoidance and Minimization Measures to Reduce Effects on Focal Species, Species-Specific Avoidance and Minimization Measures, Standardized Mitigation Ratios for focal species, and Impact/Mitigation Scoring of Focal Species Habitat. Projects shall follow Conservation Priorities and Summary actions for their specific Conservation Zone as described in Chapter 4 of the Conservation Strategy. All of these sections have been summarized above.

Compensation for project effects should occur within the Conservation Strategy Study Area for the project to be appended to the Programmatic BO. Consistent with the Conservation Strategy, the Service will consider compensation outside of the Conservation Strategy Study Area on a case by case basis. Any projects wishing to use areas outside of the Conservation Strategy Study Area shall provide a biological rational for not compensating within the Conservation Strategy Study Area. The Service reserves the right to determine if the project and compensation is appropriate to append to this Programmatic BO.

BIOLOGICAL OPINION

Description of the Action

Covered Activities

Development Projects:

- Residential
- Commercial
- Industrial
- Parks
- Public Institutions
- Associated Infrastructure (roads, utilities) for new development and redevelopment
- Park Facilities: Security residences, service yards, staging areas, small interpretive

facilities, campgrounds, and picnic areas (includes utilities, fencing for facilities, water and septic, maintenance)

Infrastructure Projects:

- Power Infrastructure and maintenance (includes transmission lines): New and existing infrastructure; minor construction
- Road Construction and Maintenance: New and existing roads
- Trail Construction and Maintenance: New and existing trails
- Rail Construction and Maintenance: New and existing
- Weather Towers and Maintenance: New and existing towers
- Telecommunication Towers and Maintenance: New and existing towers
- Bridge Construction and Maintenance: New and existing bridges and ramps
- Solar Projects: Installation, operation, and maintenance
- Wind Energy Projects: Installation, operation, and maintenance. Avian and bat effects are not included in this consultation.
- Electrical Co-Generation Plants
- Flood Wall Installation
- Bank Stabilization
- Low Flow Crossings and Maintenance
- Levee Installation and Maintenance
- Sedimentation Basins Construction and Maintenance
- Water Detention Basins Construction and Maintenance
- Drainage Pump Station
- New Flood Control Channel: Excavation and construction
- Flood Control Facilities and Appurtenances
- Culvert Installation and Maintenance
- Grade Control Structures: Construction, maintenance, removal
- Water Diversion Structure Construction and Maintenance. The actual diversion of water is not included in this consultation.
- Retaining Walls
- Water Treatment Plants and Appurtenances
- Water Pipelines and Appurtenances
- Sewer/Wastewater Pipelines
- Pump Stations
- Sludge Beds
- Aqueduct and Transmission System Turnouts: Construction and maintenance.
- Wells: Production, monitoring, cathodic protection and injection.
- Water Storage Tanks: Construction and maintenance
- Water Spreading Basins: For groundwater recharge
- Stream Gage: Installation and repairs
- Recycled Water Projects: Irrigation, recharge
- Solid Waste Discharges: Soil disposal, stockpiles (uncontaminated)
- Groundwater remediation systems

Maintenance Projects:

- Sediment Removal: Flood control channel, basin, stock pond
- Debris Removal: For large trash and woody debris
- Dams and Other Water Impoundments (Existing): Maintenance. New construction or increases in capacity or size are not covered.
- Vegetation Management: Riparian, native, and control of invasive vegetation (dependent on application)

Restoration Projects:

- Pond and/or Stream Restoration/Enhancement/Construction
- Fish Barrier Removal and Modification
- Wetland Construction and Maintenance (if needed)
- Channel Reconfiguration to Increase Complexity for Floodplain Creation and Recontouring
- Species/Habitat Conservation/Restoration Projects

Enforcement Actions:

- Actions Related to Regulatory Enforcement (Act, National Environmental Policy Act California Endangered Species Act, California Environmental Quality Act, Clean Water Act, etc...)

Certain activities will be covered as part of a long term management plan for conservation areas that are managed for listed species as compensation for project effects. These activities may include but are not limited to: integrated pest management, vegetation management, grazing, species surveys, conservation area enhancement actions, fence installation and maintenance, grazing water supply infrastructure installation and maintenance, and pond maintenance.

Minimization Measures

To the maximum extent practicable, projects authorized under this Programmatic BO will be designed and implemented in such a way as to minimize adverse effects to listed species and/or their habitat. To achieve that purpose, the projects will follow the Focal Species Goals and Objectives as described in Chapter 3 of the Conservation Strategy, Generalized Avoidance and Minimization Measures to Reduce Effects on Focal Species (Appendix A of this Programmatic BO and Table 3-2 in the Conservation Strategy), Species-Specific Avoidance and Minimization Measures (Appendix B of this Programmatic BO and Table 3-3 in the Conservation Strategy), Standardized Mitigation Ratios (Appendix C of this Programmatic BO and Table 3-4 in the Conservation Strategy), and Impact/Mitigation Scoring of Focal Species Habitat (Appendix D of this Programmatic BO and Appendix E in the Conservation Strategy).

In addition to the measures in the Conservation Strategy and discussed above, the Service has added the following general and species specific minimization measures. The Service recognizes that not all projects will require all of these measures. The applicant may request modification of these measures, if applicable. However, these measures below will be implemented unless

otherwise modified or waived by the Service in writing.

General Minimization Measures

1. At least 15 days prior to any ground disturbing activities, the applicant will submit to the Service for review and approval the qualifications of the proposed biological monitor(s). A qualified biological monitor means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the listed species.

2. A Service-approved biological monitor will remain on-site during all construction activities in or adjacent to habitat for listed species. The Service-approved biological monitor(s) will be given the authority to stop any work that may result in the take of listed species. If the Service-approved biological monitor(s) exercises this authority, the Service will be notified by telephone and electronic mail within one working day. The Service-approved biological monitor will be the contact for any employee or contractor who might inadvertently kill or injure a listed species or anyone who finds a dead, injured or entrapped individual. The Service-approved biological monitor will possess a working wireless/mobile phone whose number will be provided to the Service.

3. Prior to construction, a construction employee education program will be conducted in reference to potential listed species on site. At minimum, the program will consist of a brief presentation by persons knowledgeable in endangered species biology and legislative protection (Service-approved biologist) to explain concerns to contractors, their employees, and agency personnel involved in the project. The program will include: a description of the species and their habitat needs; any reports of occurrences in the project area; an explanation of the status of each listed species and their protection under the Act; and a list of measures being taken to reduce effects to the species during construction and implementation. Fact sheets conveying this information and an educational brochure containing color photographs of all listed species in the work area(s) will be prepared for distribution to the above-mentioned people and anyone else who may enter the project area. A list of employees who attend the training sessions will be maintained by the applicant to be made available for review by the Service upon request. Contractor training will be incorporated into construction contracts and will be a component of weekly project meetings.

4. Preconstruction surveys for listed species will be performed immediately prior to groundbreaking activities. Surveys will be conducted by Service-approved biologists. If at any point, construction activities cease for more than five consecutive days, additional preconstruction surveys will be conducted prior to the resumption of these actions.

5. To prevent the accidental entrapment of listed species during construction, all excavated holes or trenches deeper than 6 inches will be covered at the end of each work day with plywood or similar materials. Foundation trenches or larger excavations that cannot easily be covered will be ramped at the end of the work day to allow trapped animals an

escape method. Prior to the filling of such holes, these areas will be thoroughly inspected for listed species by Service-approved biologists. In the event of a trapped animal is observed, construction will cease until the individual has been relocated to an appropriate location.

6. Translocation will be approved on a project specific basis. The applicant will prepare a listed species translocation plan for the project to be reviewed and approved by the Service prior to project implementation. The plan will include trapping and translocation methods, translocation site, and post translocation monitoring.

7. Only Service-approved biologists will conduct surveys and move listed species.

8. All trash and debris within the work area will be placed in containers with secure lids before the end of each work day in order to reduce the likelihood of predators being attracted to the site by discarded food rappers and other rubbish that may be left on-site. Containers will be emptied as necessary to prevent trash overflow onto the site and all rubbish will be disposed of at an appropriate off-site location.

9. All vegetation which obscures the observation of wildlife movement within the affected areas containing or immediately adjacent aquatic habitats will be completely removed by hand just prior to the initiation of grading to remove cover that might be used by listed species. The Service-approved biologist will survey these areas immediately prior to vegetation removal to find, capture and relocate any observed listed species, as approved by the Service.

10. All construction activities must cease one half hour before sunset and should not begin prior to one half hour after sunrise. There will be no nighttime construction.

11. Grading and construction will be limited to the dry season, typically May-October.

12. Best Management Practices (BMPs) will be used to minimize erosion and impacts to water quality and effects to aquatic habitat. If necessary, a Storm Water Pollution Prevention Plan (SWPPP) will be prepared.

13. The applicant will ensure a readily available copy of this biological opinion is maintained by the construction foreman/manager on the project site whenever earthmoving and/or construction is taking place. The name and telephone number of the construction foreman/manager will be provided to the Service prior to groundbreaking.

14. The construction area shall be delineated with high visibility temporary fencing at least 4 feet in height, flagging, or other barrier to prevent encroachment of construction personnel and equipment outside of the construction area. Such fencing shall be inspected and maintained daily until completion of the project. The fencing will be removed only when all construction equipment is removed from the site.

15. Silt fencing or wildlife exclusion fencing will be used to prevent listed species from entering the project area. Exclusion fencing will be at least 3 feet high and the lower 6 inches of the fence will be buried in the ground to prevent animals from crawling under. The remaining 2.5 feet will be left above ground to serve as a barrier for animals moving on the ground surface. The fence will be pulled taut at each support to prevent folds or snags. Fencing shall be installed and maintained in good condition during all construction activities. Such fencing shall be inspected and maintained daily until completion of the project. The fencing will be removed only when all construction equipment is removed from the site.

16. A Service-approved biologist shall ensure that the spread or introduction of invasive exotic plant species shall be avoided to the maximum extent possible. When practicable, invasive exotic plants in the project areas shall be removed.

17. Project sites shall be revegetated with an appropriate assemblage of native riparian wetland and upland vegetation suitable for the area. A species list and restoration and monitoring plan shall be included with the project proposal for review and approval by the Service and the Corps. Such a plan must include, but not be limited to, location of the restoration, species to be used, restoration techniques, time of year the work will be done, identifiable success criteria for completion, and remedial actions if the success criteria are not achieved.

18. If a work site is to be temporarily dewatered by pumping, intakes shall be completely screened with wire mesh not larger than 5 millimeters. Water shall be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any barriers to flow shall be removed in a manner that would allow flow to resume with the least disturbance to the substrate.

19. A Service-approved biologist shall permanently remove, from within the project area, any individuals of exotic species, such as bullfrogs, crayfish, and centrarchid fishes, to the maximum extent possible. The applicant shall have the responsibility to ensure that their activities are in compliance with the California Fish and Game Code.

Callippe Silverspot Butterfly

1. Preconstruction surveys for the larval food plants of callippe silverspot butterfly will be conducted during typical bloom season during a period from January through April. Any larval food plants found within 300 feet of the project footprint will be clearly marked with pin flagging. Flagged areas will be avoided to the maximum extent practicable and if possible, fenced for avoidance. In addition, orange fencing will be placed along the edge of the work area near any larval food plants to prevent workers and vehicles from entering this area.

2. The applicant and contractors will minimize generation and movement of construction-

related dust through BMPs and SWPPP provisions, such as those that would be conditioned by the SFBRWQCB and Bay Area Air Quality Management District. Specifically, contracts would enforce prudent site watering and application of nontoxic soil stabilizers. The amount of watering will be monitored to ensure polluted runoff from roads does not occur (roads will not be over-watered).

California Red-Legged Frog

1. A Service-approved biologist shall survey the work site immediately prior to construction activities. If California red-legged frogs, tadpoles, or eggs are found, the approved biologist shall contact the Service to determine if moving any of these life-stages is appropriate. In making this determination the Service shall consider if an appropriate relocation site exists as provided in the relocation plan. If the Service approves moving animals, the approved biologist shall be allowed sufficient time to move California red-legged frogs from the work site before work activities begin. Only Service-approved biologists shall participate in activities associated with the capture, handling, and monitoring of California red-legged frogs.

2. Bare hands shall be used to capture California red-legged frogs. Service-approved biologists will not use soaps, oils, creams, lotions, repellents, or solvents of any sort on their hands within two hours before and during periods when they are capturing and relocating individuals. To avoid transferring disease or pathogens of handling of the amphibians, Service-approved biologists will follow the Declining Amphibian Populations Task Force's "Code of Practice."

Central California Tiger Salamander

1. A Service-approved biologist shall survey the work site immediately prior to construction activities. If Central California tiger salamanders, larvae, or eggs are found, the approved biologist shall contact the Service to determine if moving any of these life-stages is appropriate. In making this determination the Service shall consider if an appropriate relocation site exists as provided in the relocation plan. If the Service approves moving animals, the approved biologist shall be allowed sufficient time to move Central California tiger salamanders from the work site before work activities begin. Only Service-approved biologists shall participate in activities associated with the capture, handling, and monitoring of Central California tiger salamanders.

2. Bare hands shall be used to capture Central California tiger salamanders. Service-approved biologists will not use soaps, oils, creams, lotions, repellents, or solvents of any sort on their hands within two hours before and during periods when they are capturing and relocating individuals. To avoid transferring disease or pathogens of handling of the amphibians, Service-approved biologists will follow the Declining Amphibian Populations Task Force's "Code of Practice."

San Joaquin Kit Fox

1. A qualified Service-approved biologist will conduct a preconstruction survey no more than 30 days before the beginning of ground disturbance or any activity likely to affect San Joaquin kit fox. This measure will be implemented in all off-road construction areas. The biologist will survey the proposed construction area and a 200-foot buffer area around the construction area to identify suitable dens. The biologist will conduct den searches by systematically walking transects spaced 30-100 feet apart through the survey area. Transect distance should be determined on the basis of the height of vegetation such that 100 percent visual coverage of the project area is achieved. If dens are found during the survey, the biologist will map the location of each den as well as record the size and shape of the den entrance; the presence of tracks, scat, and prey remains; and if the den was recently excavated. The biologist will also record information on prey availability (e.g., ground squirrel colonies). The status of the den as defined by the Service should also be determined and recorded. Dens will be classified in one of the following four den status categories:

    a. Potential den: Any subterranean hole within the species' range that has entrances of appropriate dimensions for which available evidence is sufficient to conclude that it is being used or has been used by a San Joaquin kit fox. Potential dens comprise: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for San Joaquin kit fox use.

    b. Known den: Any existing natural den or artificial structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records; past or current radio telemetry or spotlighting data; San Joaquin kit fox signs such as tracks, scat, and/or prey remains; or other reasonable proof that a given den is being or has been used by a San Joaquin kit fox.

    c. Natal or pupping den: Any den used by San Joaquin kit fox to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more San Joaquin kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which San Joaquin kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two; therefore, for purposes of this definition either term applies.

    d. Atypical den: Any artificial structure that has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.

Written results of the surveys will be submitted to the Service within one week of the completion of surveys and prior to the beginning of ground disturbance and/or construction activities likely to affect San Joaquin kit fox.

2. After preconstruction den searches and before the commencement of construction activities, a qualified Service-approved biologist will establish and maintain the following exclusion zones measured in a radius outward from the entrance or cluster of entrances of each den.

    a. Potential and atypical dens: A total of 4-5 flagged stakes will be placed 50 feet from the den entrance to identify the den location.

    b. Known den: Orange construction barrier fencing will be installed between the construction work area and the known den site at a minimum distance of 100 feet from the den. The fencing will be maintained until all construction-related disturbances have been terminated. At that time, all fencing will be removed to avoid attracting subsequent attention to the den.

    c. Natal/pupping den: The Service will be contacted immediately if a natal or pupping den is discovered at or within 200 feet from the boundary of the construction area.

    d. Construction and other project activities will be prohibited or greatly restricted within these exclusion zones. Only essential vehicular operation on existing roads and foot traffic should be permitted and articulated to the Service. All other construction activities, vehicle operation, material and equipment storage, and other surface-disturbing activities will be prohibited in the exclusion zones.

    e. In cases where avoidance is not a reasonable alternative, limited destruction of potential San Joaquin kit fox dens will be allowed. Potential dens can be removed by careful hand excavation by a Service-approved biologist or under the supervision of a Service-approved biologist, after the dens have been monitored for three days with tracking medium or a remote sensor camera and determined to be vacant of San Joaquin kit foxes. If, during excavation or monitoring, a potential den is determined to be currently or previously used (e.g., San Joaquin kit fox sign found inside) by San Joaquin kit fox, then destruction of the den or construction in that area will cease and the Service will be notified immediately.

3. Vehicle traffic will be restricted to established roads, construction areas, and other designated areas.

4. Grading activities shall be designed to minimize or eliminate effects to rodent burrows. Areas with high concentrations of burrows and large burrows suitable for San Joaquin kit fox dens shall be avoided by grading activities to the maximum extent possible. In

addition, when concentrations of burrows or large burrows are observed within the site these areas shall be staked and flagged to ensure construction personnel are aware of their location and to facilitate avoidance of these areas.

5. Compensate for the loss of San Joaquin kit foxes and suitable habitat by protecting occupied habitat and/or restoring suitable habitat to establish and maintain San Joaquin kit fox presence.

Palmate-Bracted Bird's-Beak

1. Prior to any ground disturbance in the project area, if feasible, all seasonal wetlands and areas containing palmate-bracted bird's-beak, and any suitable habitat will be staked or flagged and a temporary barrier (silt fencing, etc.) will be constructed.

Compensation/Mitigation

Compensation/mitigation in this Programmatic BO is only to minimize adverse effects to the above named federally listed species. This section does not cover mitigation for effects/impacts to state listed species or waters regulated by the Corps or SFBRWQCB.

As stated in the Suitability Criteria, compensation should occur within the Conservation Strategy Study Area. Compensation shall be identified and approved prior to project commencement. Ideally, compensation should be implemented prior to project commencement. If the land acquisition is not acquired and protected prior to project effects, financial assurances will be provided to the Service and a strict timeline for conservation easement recordation and management will be implemented.

Compensation for permanent effects to listed species and habitat can occur through buying credits at a Service-approved conservation/mitigation bank or land acquisition, management, and protection. Species presence must be established and documented on the compensation site. The conservation property will be free of all liens and incompatible leases and easements or they will be terminated or subordinated to the conservation easement. Geological Hazard Abatement Districts will not be allowed to be established on compensation areas, manage compensation sites, or fund endowments for the management of listed species habitat. Compensation sites will follow the Conservation Priorities and mitigation ratios in the Conservation Strategy for the listed species affected by the project and will be subject to success requirements.

Compensation for temporary effects is similar to compensation for permanent effects discussed above with the exception that the affected areas need to be restored to pre-project conditions within 12 months from the commencement of the activity. In addition to restoration, compensation will occur at a 1:1 ratio at a Service-approved conservation/mitigation bank or through land acquisition, management, and protection. Projects that require longer than 12 months from the commencement of the activity to restore their effects will be considered to have permanent effects and will be required to use the standardized mitigation ratios.

Land acquisition can either be in fee title with a permanent conservation easement placed on the property or through a permanent conservation easement without holding fee title. A Service-approved recorded conservation easement is required and a copy will be provided to the Service prior to project implementation or within the specific approved timeframe. A Service-approved resource management plan and long-term maintenance and monitoring endowment must be established. The applicant is required to obtain the approval of the conservation easement holder, land manager, and endowment holder of the compensation area.

Appendix F of the Conservation Strategy provides examples of what the Service requires for compensation (conservation easement template, management plan template, requirements for off-site compensation, performance securities). The Service periodically revises these documents. Contact the Sacramento Fish and Wildlife Office for the most recent templates and guidance (916-414-6600; http://www.fws.gov/sacramento/).

Reporting and Notification

In order to verify compliance with the Programmatic BO, the project applicant will be required to submit reports during various stages of project implementation. Applicants with projects that have relatively small effects or are limited in scope and duration can request the Service waive this requirement. The Service will be notified immediately in writing if the project is not in compliance with the Programmatic BO and/or the accompanying letter appending the project to the Programmatic BO. Documentation will be provided to the Service verifying compliance with pre-project minimization measures no later than 14 calendar days before project implementation.

The applicant will provide monthly compliance and status reports to the Service during construction documenting: (1) dates that construction occurred; (2) photo documentation of construction and applicable minimization measures; (3) pertinent information concerning the success of the project in meeting minimization measures including status of the compensation; (4) an explanation of failure to meet such measures, if any; (5) known project effects on listed species, if any; (6)occurrences of incidental take of listed species, if any; (7) documentation of employee environmental education; and (8) other pertinent information. Applicants with projects that have relatively small effects or are limited in scope and duration can request the Service waive this requirement.

The applicant will submit a post-construction compliance report prepared by the Service-approved biologist to the Sacramento Fish and Wildlife Office within 30 calendar days of the date of the completion of construction activity. This report will compile the monthly reports and detail: (1) dates that construction occurred; (2) photo documentation of construction and applicable minimization measures; (3) pertinent information concerning the success of the project in meeting minimization measures including status of the compensation; (4) an explanation of failure to meet such measures, if any; (5) known project effects on listed species, if any; (5) occurrences of incidental take of listed species, if any; (7) documentation of employee environmental education; (8) as built drawings for the project and any compensation/mitigation features; and (9) other pertinent information.

The Service must be notified within one (1) working day of the finding of any injured listed species or any unanticipated damage to its habitat associated with the proposed project. Injured listed species must be cared for by a licensed veterinarian or other qualified person(s), such as the Service-approved biologist. Notification must include the date, time, and precise location of the individual/incident clearly indicated on a United States Geological Survey 7.5 minute quadrangle and other maps at a finer scale, as requested by the Service, and any other pertinent information. Dead individuals must be sealed in a sealable plastic bag containing a paper with the date and time when the animal was found, the location where it was found, and the name of the person who found it, and the bag containing the specimen frozen in a freezer located in a secure site. The Service contact persons are the Coast Bay/Forest Foothills Division Chief of the Endangered Species Program at the Sacramento Fish and Wildlife Office at (916) 414-6600; and the Resident Agent-in-Charge of the Service's Division of Law Enforcement, 2800 Cottage Way, Room W-2928, Sacramento, California 95825, at (916) 414-6660.

Non-Compliance and Remedial Actions

Projects that are not in compliance with the Programmatic BO and the accompanying letter appending the project to the Programmatic BO will be required to correct the matter(s) immediately and provide additional compensation. The amount of additional compensation will be determined on case-by-case basis but will be subject to the same requirements as the original compensation. The amount of remedial compensation will increase commensurate with the degree of the violation and the amount of time the project is out of compliance.

Action Area

The action area is defined in 50 CFR § 402.02, as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." For the purposes of the effects assessment, the action area is the Conservation Strategy Study Area encompassing 271,485 acres in eastern Alameda County, California. The western boundary runs along the Alameda Creek watershed boundary which encompasses small portions of the cities of Fremont, Union City, and Hayward, though those jurisdictions were not formally part of the planning process. The northern, southern, and eastern boundaries follow the Alameda County line with Contra Costa County, Santa Clara County, and San Joaquin County, respectively (Figure 1-1).

Analytical Framework for the Jeopardy and Adverse Modification Analyses

Jeopardy Determination

In accordance with policy and regulation, the jeopardy analysis in this Programmatic BO relies on four components: (1) the Status of the Species, which evaluates the longhorn fairy shrimp, vernal pool fairy shrimp, callippe silverspot butterfly, California red-legged frog, Central California tiger salamander, Alameda whipsnake, San Joaquin kit fox, and palmate-bracted bird's-beak's range-wide condition, the factors responsible for that condition, and their survival and recovery needs; (2) the Environmental Baseline, which evaluates the condition of the eight

APPENDIX C

TRAFFIC IMPACT ANALYSIS

Technical Memorandum

Date: December 14, 2018

To: Rod Stinson
Division Manager/Air Quality Specialist
1501 Sports Drive, Suite A
Sacramento, CA 95834

Jurisdiction: Alameda County

From: Chris Kinzel, PE, TE
Vice-President, TJKM

Subject: ***Traffic Impact Analysis for the Proposed Cannabis Cultivation Facility at 7033 Morgan Territory Road, Alameda County***

This technical memorandum presents the results of the traffic impact analysis for the proposed Cannabis Cultivation facility located at 7033 Morgan Territory Road in Alameda County. The proposed 92.53 acre property is located within the Agricultural Zoning District, and the Resource Management land use designation of the East County Area Plan. The project includes the development of one cannabis grow house consisting of a 32,000 square feet greenhouse building, including a 22,000 square feet of canopy and one processing building. Local access to the project site is currently provided via Morgan Territory Road.

TJKM evaluated traffic conditions at two study intersections during the a.m. and p.m. peak hours for a typical weekday. The peak periods observed were between 7-9 a.m. and 4-6 p.m. The study intersections and associated traffic controls are as follows:

1. Morgan Territory Road/Manning Road (Two-Way Stop)
2. Proposed Project Driveway/Morgan Territory Road (One-Way Stop)

Figure 1 illustrates the study intersections and the vicinity map of the proposed project. **Figure 2** shows the proposed project site plan.

This study addresses the following traffic scenarios:

- *Existing Conditions* – This scenario evaluates the study intersections based on existing traffic volumes, lane geometry, and traffic controls.
- *Existing plus Project Conditions* – This scenario is identical to Existing Conditions, but with the addition of traffic from the proposed project.

- *Cumulative (2040) Conditions* – This scenario is similar to Existing Conditions but with the projected growth rate of 2 percent per year for 22 years, which is applied to Existing Conditions traffic volumes to project traffic demands for the horizon year 2040.
- *Cumulative plus Project Conditions* - This scenario is identical to Cumulative Conditions, but with the addition of traffic from the proposed project.

Existing Conditions

Important roadways adjacent to the project site are discussed below:

N. Livermore Avenue is a two lane, north-south roadway, which extends from Manning Road to the City of Livermore. The posted speed limit is 50 mph within the project vicinity. N. Livermore Avenue is accessible to the project via Morgan Territory Road.

Manning Road is a two-lane, east-west roadway, extending from Carneal Road and terminating at N. Livermore Avenue. The posted speed limit is 50 mph within the project vicinity.

Morgan Territory Road is a two-lane, north-south roadway, extending from Manning Road and terminating at Marsh Creek Road. The posted speed limit is 50 mph within the project vicinity. Access to the project will be provided via Morgan Territory Road.

Level of Service Analysis Methodology

Level of Service (LOS) is a qualitative measure that describes operational conditions as they relate to the traffic stream and perceptions by motorists and passengers. The LOS generally describes these conditions in terms of such factors as speed and travel time, delays, freedom to maneuver, traffic interruptions, comfort, convenience and safety. The operational LOS are given letter designations from A to F, with A representing the best operating conditions (free-flow) and F the worst (severely congested flow with high delays). Intersections generally are the capacity-controlling locations with respect to traffic operations on arterial and collector streets.

Unsignalized Intersections

The study intersections under stop control (unsignalized) were analyzed using the 2000 HCM Operations Methodology for unsignalized intersections described in Chapter 17 (HCM 2000). LOS ratings for stop-sign controlled intersections are based on the average control delay expressed in seconds per vehicle. At the side street, controlled intersections or two-way stop sign intersections, the control delay is calculated for each movement, not for the intersection as a whole. For approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. **Table 1** summarizes the relationship between delay and LOS for unsignalized intersections.

Each of the study intersections was analyzed using Synchro Version 9 software and HCM 2000 methodology. The LOS methodology is described for unsignalized intersections in detail in **Appendix A**.

Table 1: Level of Service for Unsignalized Intersections

Level of Service	Description
A	Very low control delay less than 10 seconds per vehicle for each movement subject to delay.
B	Low control delay greater than 10 and up to 15 seconds per vehicle for each movement subject to delay.
C	Acceptable control delay greater than 15 and up to 25 seconds per vehicle for each movement subject to delay.
D	Tolerable control delay greater than 25 and up to 35 seconds per vehicle for each movement subject to delay.
E	Limit of tolerable control delay greater than 35 and up to 50 seconds per vehicle for each movement subject to delay.
F	Unacceptable control delay in excess of 50 seconds per vehicle for each movement subject to delay.

Source: Highway Capacity Manual 2000

Significant Impact Criteria/Level of Service Standards

According to the 2012 Alameda Countywide Transportation Plan published by the Alameda County Transportation Commission (ACTC), the LOS standard for highway systems is LOS D. For this study, LOS D is considered to be the acceptable threshold for intersections.

Existing Peak Hour Volumes and Average daily Traffic

The existing operations of the study intersections were evaluated for the highest one-hour volumes during weekday morning and evening peak periods. Turning movement counts for vehicles, bicycles, and pedestrians were conducted during typical weekday day a.m. and p.m. peak periods (7:00-9:00 a.m. and 4:00-6:00 p.m., respectively) at the study intersections on September 20, 2018. In addition, seven day average daily traffic (ADT) counts at the following locations were conducted in September, 2018.

1. Morgan Territory Road north of Manning Road
2. Manning Road west of North Livermore Avenue

Appendix B includes all the data sheets for the collected ADT, vehicle, bicycle, and pedestrian counts. **Figure 3** illustrates the existing lane geometry, traffic controls, ADT and peak hour traffic volumes at the study intersections.

Intersection Level of Service Analysis – Existing Conditions

The peak hour factor based on the counts, was used at both of the study intersections for the existing analysis. The results of the LOS analysis using the Synchro 9 software program for Existing Conditions are summarized in **Table 2**. Under this scenario, the study intersections operate within the Alameda County standards (LOS D or better) for both a.m. and p.m. peak hours.

Table 2: Intersection Level of Service Analysis – Existing Conditions

#	Intersection	Control	Peak Hour	Existing Conditions	
				Average Delay[1]	LOS[2]
1	Morgan Territory Road/Manning Road	Two-Way Stop	AM	10.5	B
			PM	11.7	B
2	Morgan Territory Road/Project Driveway	One-Way Stop	AM	9.0	A
			PM	9.0	A

Notes: AM – morning peak hour (between 7 and 9 a.m.), PM – evening peak hour (between 4 and 6 p.m.)
[1] Total control delay for the worst movement is presented for side-street stop controlled intersections.
[2]LOS = Level of Service calculations conducted using the Synchro 9.0 level of service analysis software package by applying HCM 2000 Methodology.

The average daily traffic on Morgan Territory Road north of Manning Road is 576 vehicles per day, and on Manning Road west of North Livermore Avenue is 2,229 vehicles per day.

Project Trip Generation and Trip Distribution

Based on the information, the proposed project will operate on a continuous spanning of three shifts, seven days per week. There will be five to six cars per shift including employee's i.e two security guards, master grower, and two trimmers. **Table 3** shows the expected trip generation for the proposed project. The project is expected to generate approximately a maximum of 11 weekday a.m. peak hour trips (11 inbound, 0 outbound) and 11 weekday p.m. peak hour trips (0 inbound, 11 outbound) based on the information provided by the project applicant.

Table 3: Proposed Project Trip Generation

#	Land Use Type	Size		A.M. Peak			P.M. Peak		
				In	Out	Total	In	Out	Total
1	Cannabis Cultivation Center	92.53	Acre	11	0	11	0	11	11
		Total Trips		**11**		**11**		**11**	**11**

Notes: Based on the information provided by developer

Trip distribution assumptions for the proposed project were developed based on the existing travel patterns and TJKM's knowledge of the study area.

The distribution assumptions for the proposed development are as follows**:**

- 70 percent to/from Livermore Avenue
- 30 percent to/from Manning Avenue

Figure 4 illustrates the trip distribution percentages and trip assignment project volumes developed for the proposed project. The assigned project trips were then added to traffic volumes under Existing Conditions to generate Existing plus Project Conditions traffic volumes.

Intersection Level of Service Analysis – Existing Plus Project Conditions

The intersection LOS analysis results for Existing plus Project Conditions are summarized in **Table 4**. Under this scenario, the study intersections operate within the Alameda County standards for both a.m. and p.m. peak hours. Based on the Alameda County levels of service impact criteria, the project is expected to have a *less-than-significant* impact at the study intersections under Existing plus Project Conditions. **Figure 5** shows projected turning movement volumes at the study intersections for Existing plus Project Conditions.

Table 4: Intersection Level of Service Analysis – Existing plus Project Conditions

#	Intersection	Control	Peak Hour	Existing plus Project Conditions	
				Average Delay[1]	LOS[2]
1	Morgan Territory Road/Manning Road	Two-Way Stop	AM	10.6	B
			PM	11.8	B
2	Morgan Territory Road/Project Driveway	One-Way Stop	AM	9.0	A
			PM	9.2	A

Notes: AM – morning peak hour (between 7 and 9 a.m.), PM – evening peak hour (between 4 and 6 p.m.)
[1] Total control delay for the worst movement is presented for side-street stop controlled intersections.
[2]LOS = Level of Service calculations conducted using the Synchro 9.0 level of service analysis software package by applying HCM 2000 Methodology.

The expected average daily traffic with the addition of the proposed project traffic is 686 vehicles per day on Morgan Territory Road north of Manning Road and 2,339 vehicles per day on Manning Road west of North Livermore Avenue.

Intersection Level of Service Analysis – Cumulative (2040) Conditions

This section details expected traffic conditions at the study intersections under Cumulative (No Project) Conditions. This analysis scenario is defined as baseline conditions without the proposed project in year 2040. This scenario is similar to the Existing Conditions, but with a projected growth rate of two percent per year applied over 22 years to project traffic demands for the year 2040. A peak hour factor of 0.92 was used for study intersections for Cumulative Conditions analysis. The intersection LOS analysis results for Cumulative Conditions are summarized in **Table 5**. Under this scenario, the study intersections operate within the Alameda County standards for both a.m. and p.m. peak hours. **Figure 6** shows projected turning movement volumes at the study intersections for Cumulative Conditions.

Table 5: Intersection Level of Service Analysis – Cumulative (2040) Conditions

#	Intersection	Control	Peak Hour	Cumulative Conditions	
				Average Delay[1]	LOS[2]
1	Morgan Territory Road/Manning Road	Two-Way Stop	AM	11.6	B
			PM	13.7	B
2	Morgan Territory Road/Project Driveway	One-Way Stop	AM	9.0	A
			PM	9.1	A

Notes: AM – morning peak hour (between 7 and 9 a.m.), PM – evening peak hour (between 4 and 6 p.m.)
[1] Total control delay for the worst movement is presented for side-street stop controlled intersections.
[2]LOS = Level of Service calculations conducted using the Synchro 9.0 level of service analysis software package by applying HCM 2000 Methodology.

Under Cumulative Conditions the expected average daily traffic is 890 vehicles per day on Morgan Territory Road north of Manning Road and 3,446 vehicles per day on Manning Road west of North Livermore Avenue.

Intersection Level of Service Analysis – Cumulative Plus Project Conditions

The intersection LOS analysis results for Cumulative plus Project Conditions are summarized in **Table 6**. Under this scenario, the study intersections operate within the Alameda County standards for both a.m. and p.m. peak hours. Based on the Alameda County levels of service impact criteria, the project is expected to have a *less-than-significant* impact at the study intersections under Cumulative plus Project Conditions. **Figure 7** shows projected turning movement volumes at the study intersections for Cumulative plus Project Conditions.

Table 6: Intersection Level of Service Analysis – Cumulative plus Project Conditions

#	Intersection	Control	Peak Hour	Cumulative plus Project Conditions	
				Average Delay[1]	LOS[2]
1	Morgan Territory Road/Manning Road	Two-Way Stop	AM	11.7	B
			PM	13.7	B
2	Morgan Territory Road/Project Driveway	One-Way Stop	AM	9.0	A
			PM	9.1	A

Notes: AM – morning peak hour (between 7 and 9 a.m.), PM – evening peak hour (between 4 and 6 p.m.)
[1] Total control delay for the worst movement is presented for side-street stop controlled intersections.
[2]LOS = Level of Service calculations conducted using the Synchro 9.0 level of service analysis software package by applying HCM 2000 Methodology.

The expected average daily traffic with the addition of the proposed project traffic is 1000 vehicles per day on Morgan Territory Road north of Manning Road and 3,556 vehicles per day on Manning Road west of North Livermore Avenue.

Level of service worksheets for all the scenarios are attached in the **Appendix C**.

Site Access and On-Site Circulation

This section analyzes site access and internal circulation for passenger vehicles, trucks, pedestrians, and bicycles based on the site plan. The proposed project's access will be via one full access driveway on Morgan Territory Road as shown in the project site plan. The internal circulation for the proposed project was reviewed for issues related to safety and parking. The internal loop roadway is 22 feet wide and accommodates two-way travel. Based on the evaluation, the access roadway is expected to be adequate for passenger vehicles accessing the project site. Emergency vehicles can access the project via Morgan Territory Road. Overall, the proposed on-site vehicle circulation is adequate and should not result in any traffic operations issues on-site that would provide significant impacts on County streets.

The proposed project is not expected to generate pedestrian and bicycle trips. Based on the pedestrian and bicycle counts conducted there is no pedestrian and bicycle activity along Morgan Territory Road.

Sight Distance Analysis

Sight distance is evaluated to determine if a driver will have adequate visibility to enter a roadway safely without resulting in a conflict with traffic already on the roadway. The project access points should be free and clear of any obstructions that would materially and adversely affect sight distance, thereby ensuring that exiting vehicles can see pedestrians on the sidewalk and other vehicles traveling on adjacent roadways. The line of sight between vehicles exiting the driveway and vehicles travelling northbound is clear and visible. The line of sight of vehicles exiting the driveway and vehicles travelling southbound is affected by existing vegetation and the existing horizontal curve, just north of the driveway. In order to improve the sight distance for southbound traffic on Morgan Territory Road the existing trees should be kept trimmed to a minimum of eight feet from the ground. Ground cover and other landscaping should be kept trimmed to a maximum height of three feet. By clearing the vegetation, sight distance of approximately 300 feet (required for the design speed of 40 mph as per the Highway Design Manual (HDM)) is gained for southbound vehicles. TJKM recommends installation of a stop sign and appropriate pavement markings at the project driveway and also install W1-10C blind driveway signs for southbound travelling vehicles.

PARKING

As per the Alameda County Municipal Code, cannabis grow house building requires four spaces per 1000 square feet. The project proposes 26 standard parking spaces of which one space is accessible parking space. Based on the parking criteria, the proposed number of off-street parking spaces should satisfy the parking needs for the project.

CONCLUSIONS

- The proposed project is expected to generate approximately 11 weekday a.m. peak hour trips and 11 weekday p.m. peak hour trips.
- Based on the Alameda County levels of service impact criteria, the project is expected to have a *less-than-significant* impact at the study intersections under Existing, and Cumulative plus Project Conditions.
- Based on the evaluation, the proposed on-site vehicle circulation is adequate and should not result in significant impacts on County streets.
- The proposed number of off-street parking spaces will satisfy the parking needs for the project
- The line of sight between vehicles exiting the driveway and vehicles travelling northbound is clear and visible. The line of sight of vehicles exiting the driveway and vehicles travelling southbound is affected by existing vegetation and the existing horizontal curve, just north of the driveway. In order to improve the sight distance for southbound traffic on Morgan Territory Road the existing trees should be kept trimmed to a minimum of eight feet from the ground. Ground cover and other landscaping should be kept trimmed to a maximum height of three feet. By clearing the vegetation, sight distance of approximately 300 feet (required for the design speed of 40 mph as per the Highway Design Manual (HDM)) is gained for southbound vehicles. TJKM recommends installation of a stop sign and appropriate pavement markings at the project driveway and also install W1-10C blind driveway signs for southbound travelling vehicles.

Vicinity Map

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Figure 1

Project Site Plan

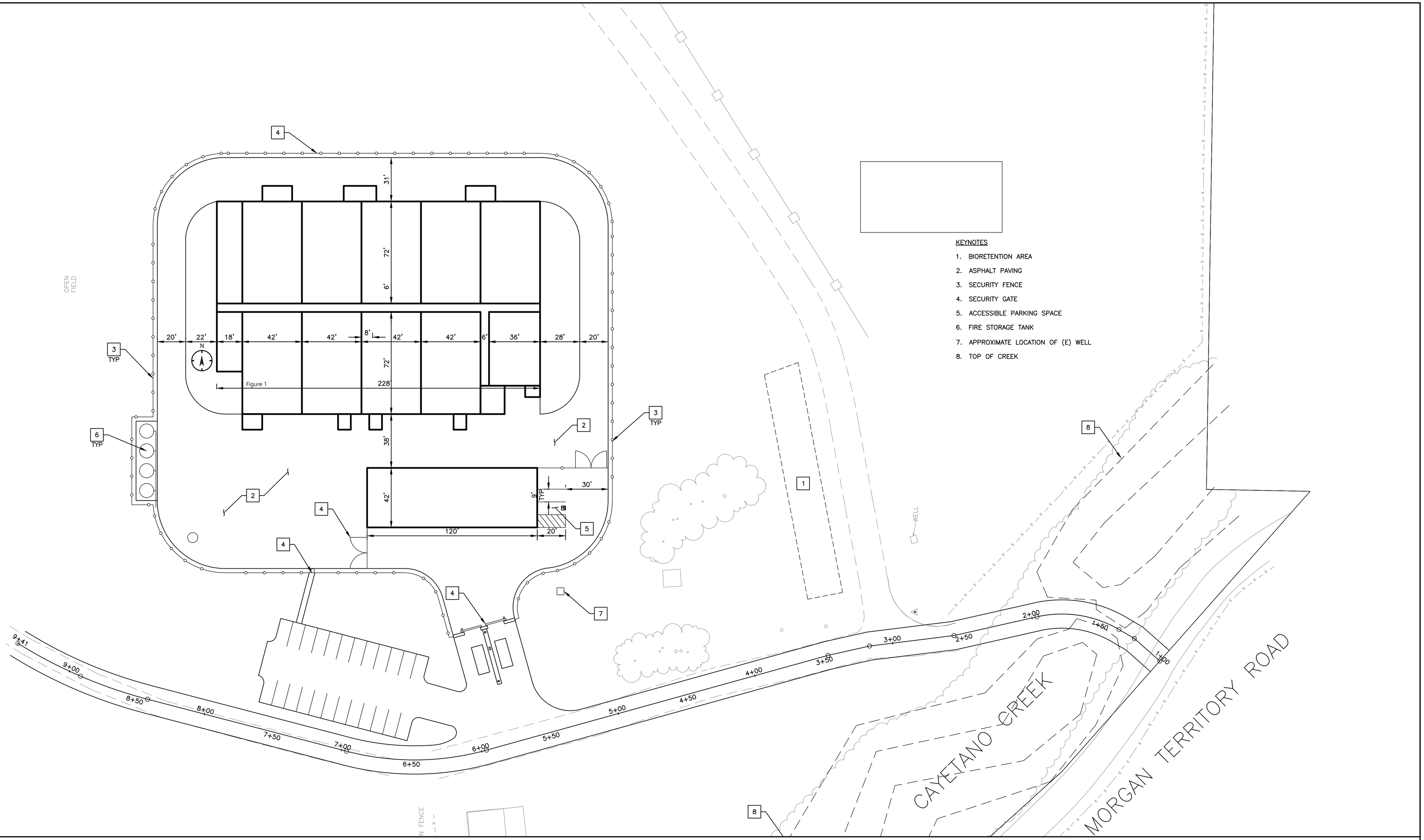

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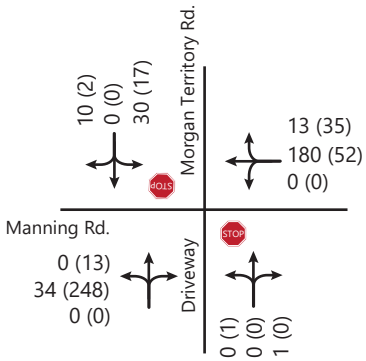
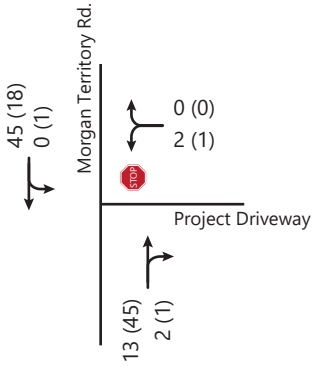
Figure 2

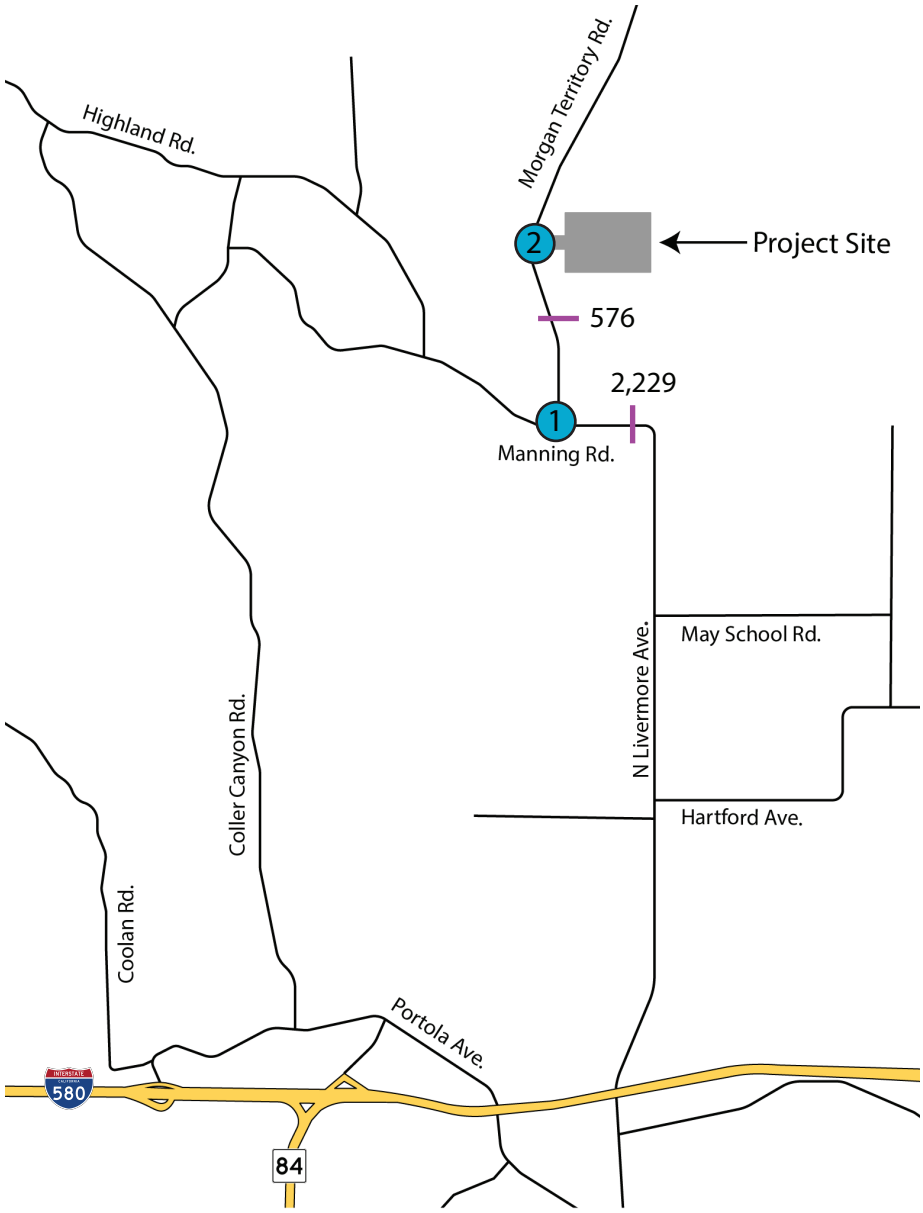
Existing Lane Geometry, Traffic Controls and Peak Hour Traffic Volumes

Intersection #1
Morgan Territory Rd. / Manning Rd.



Intersection #2
Morgan Territory Rd. / Project Driveway





LEGEND

- Project Site
- X — Study Intersections
- Stop Sign
- XX — AM Peak Hour Volumes
- (XX) — PM Peak Hour Volumes
- X,XXX — Average Daily Traffic

N

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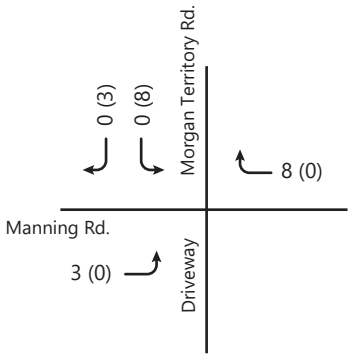
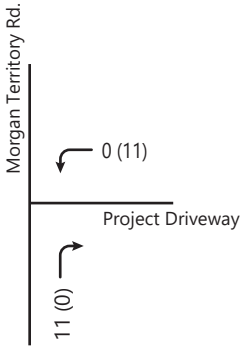
Figure 3

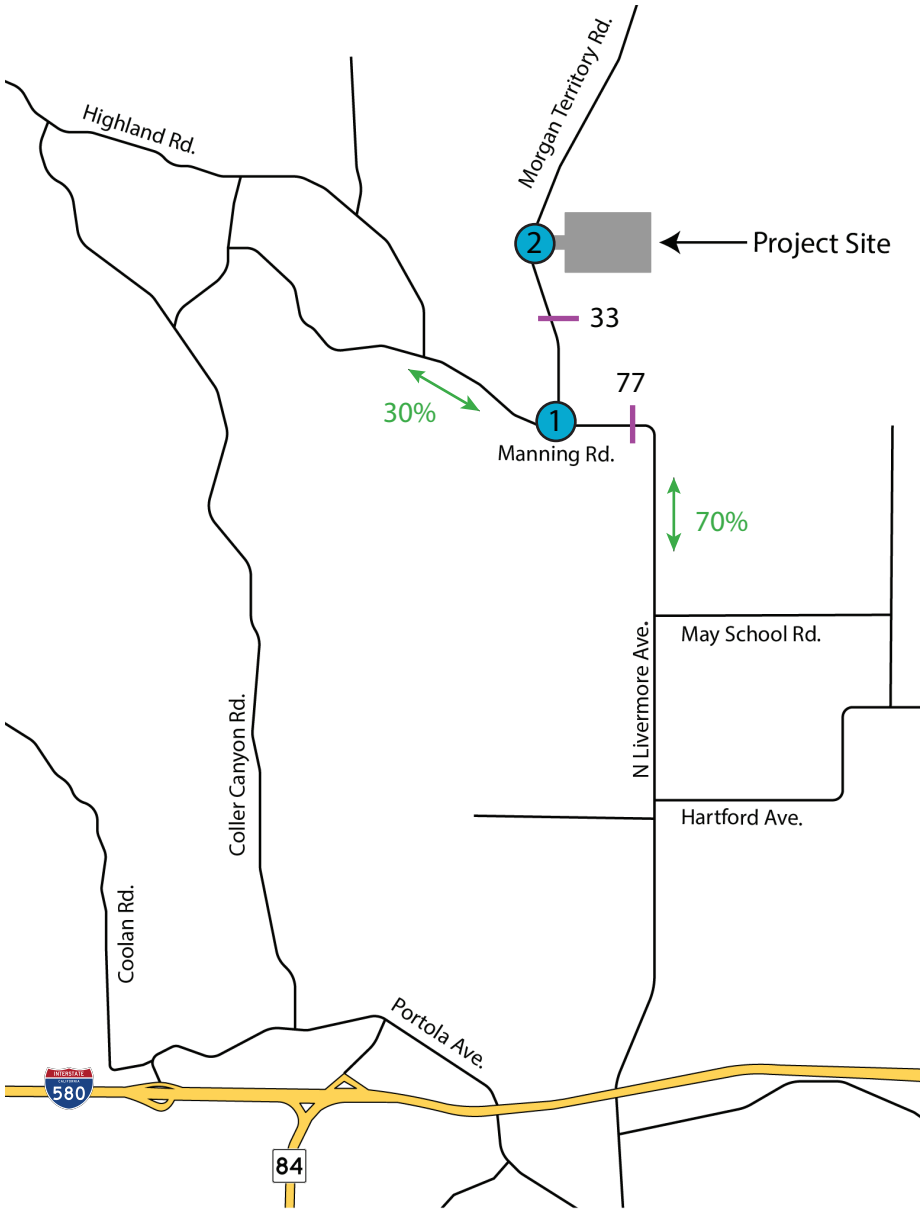
Trip Distribution and Assignment

Intersection #1
Morgan Territory Rd. / Manning Rd.



Intersection #2
Morgan Territory Rd. / Project Driveway





LEGEND

- Project Site
- X — Study Intersections
- XX — AM Peak Hour Trips
- (XX) — PM Peak Hour Trips
- X,XXX — Average Daily Project Trips
- XX% — Trip Distribution

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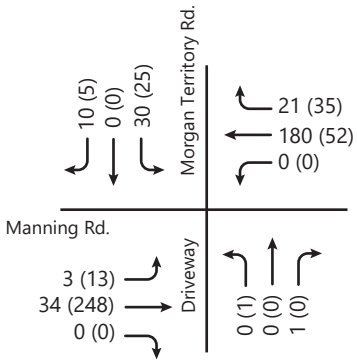
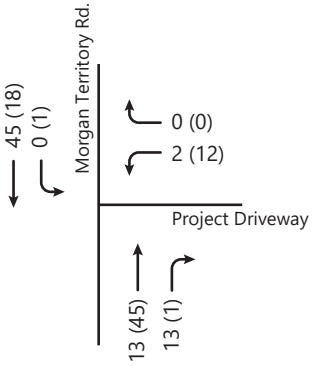
Figure 4

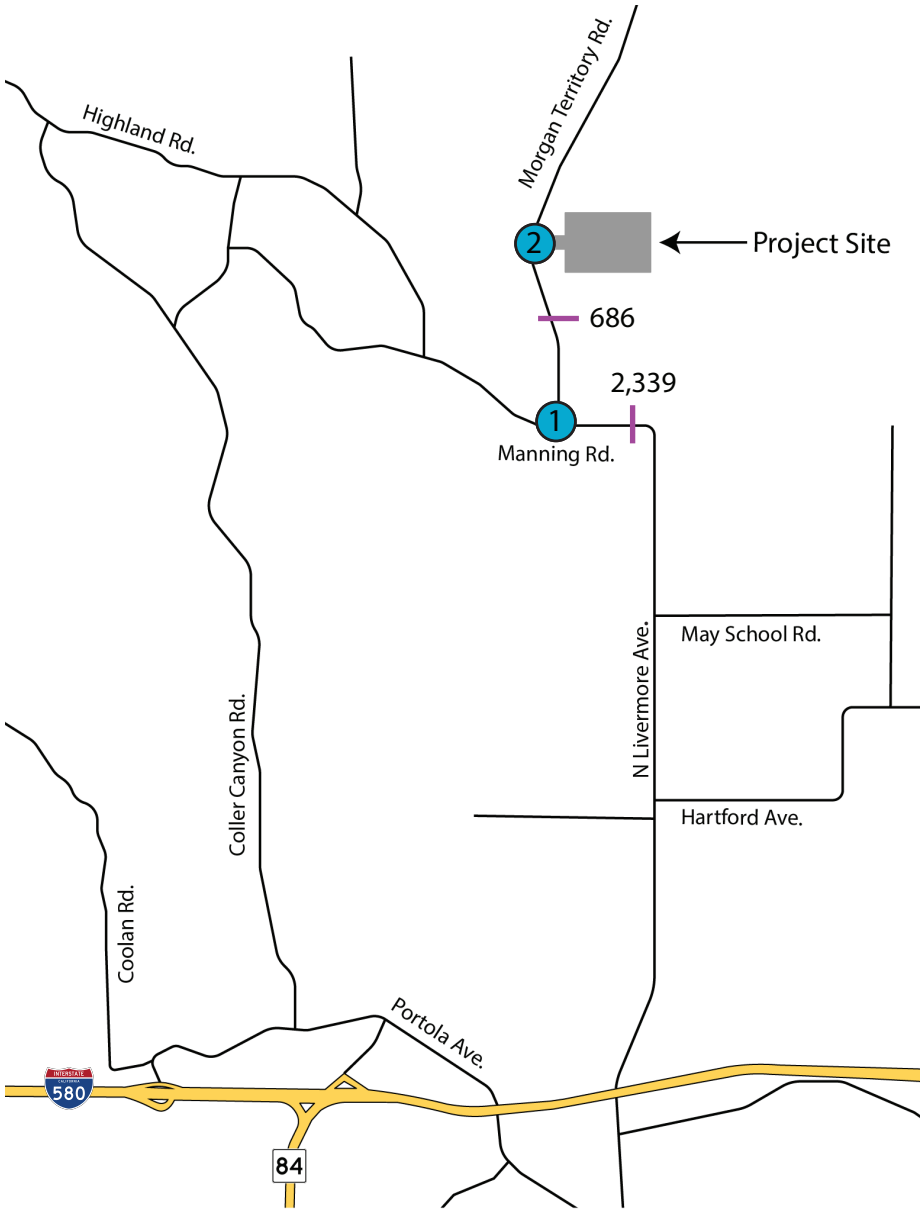
Existing Plus Project Peak Hour Traffic Volumes

Intersection #1
Morgan Territory Rd. / Manning Rd.



Intersection #2
Morgan Territory Rd. / Project Driveway





LEGEND

- Project Site
- X — Study Intersections
- XX — AM Peak Hour Volumes
- (XX) — PM Peak Hour Volumes
- X,XXX — Average Daily Traffic

N

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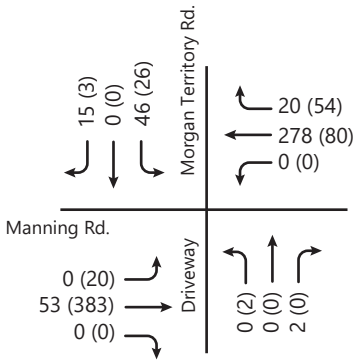
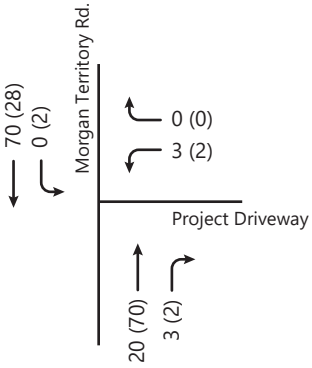
Figure 5

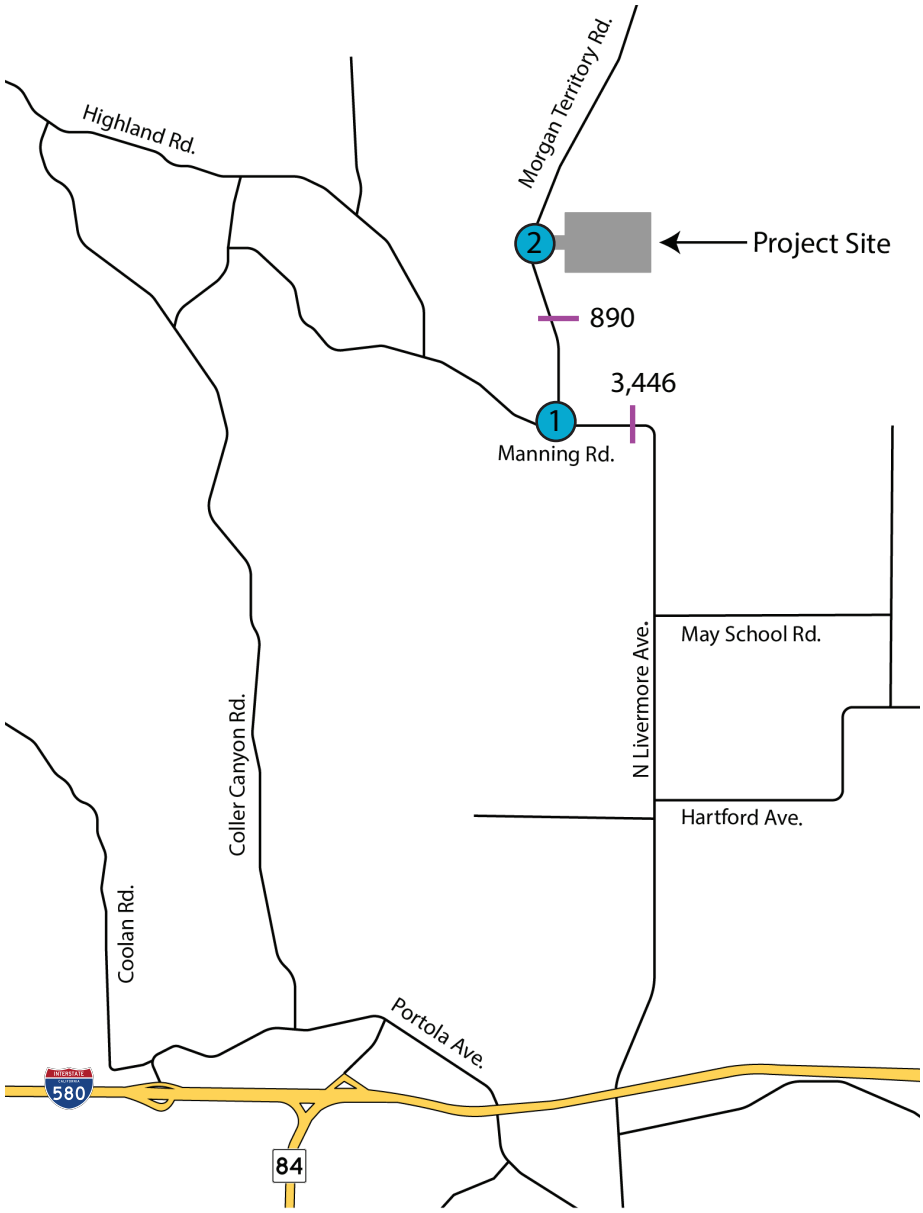
Cumulative Peak Hour Traffic Volumes

Intersection #1
Morgan Teritory Rd. / Manning Rd.



Intersection #2
Morgan Territory Rd. / Project Driveway





LEGEND

- Project Site
- X — Study Intersections
- XX — AM Peak Hour Volumes
- (XX) — PM Peak Hour Volumes
- X,XXX — Average Daily Traffic

N

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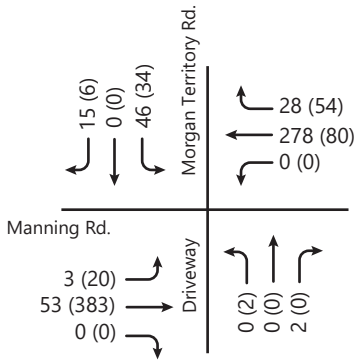
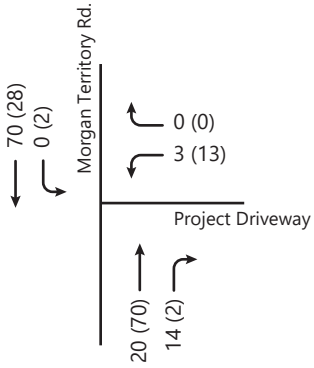
Figure 6

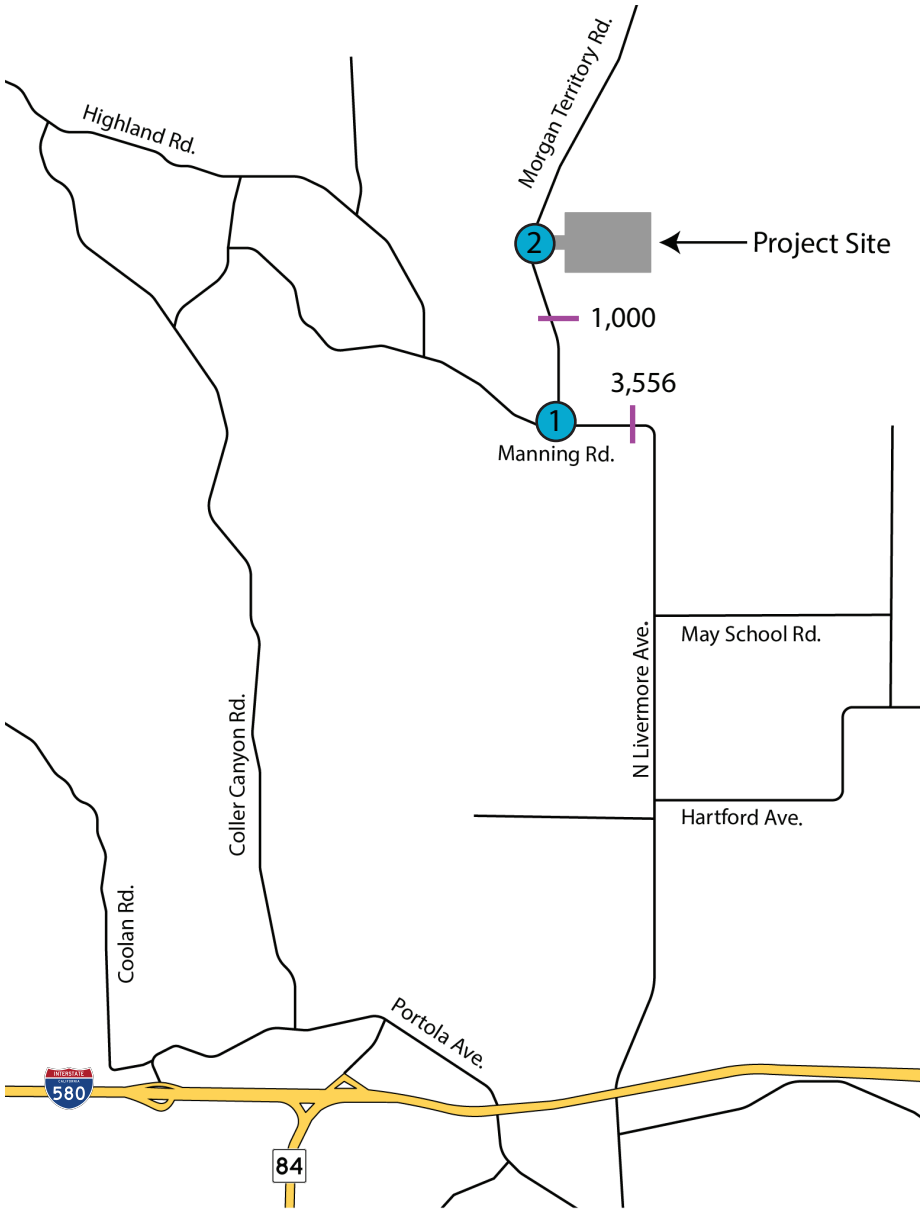
Cumulative Plus Project Peak Hour Traffic Volumes

Intersection #1
Morgan Territory Rd. / Manning Rd.



Intersection #2
Morgan Territory Rd. / Project Driveway





LEGEND

- Project Site
- X — Study Intersections
- XX — AM Peak Hour Volumes
- (XX) — PM Peak Hour Volumes
- X,XXX — Average Daily Traffic

N

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Figure 7

APPENDIX A – LEVEL OF SERVICE METHODOLOGY

LEVEL OF SERVICE METHODOLOGY

LEVEL OF SERVICE

The description and procedures for calculating capacity and level of service are found in Transportation Research Board, *Highway Capacity Manual 2000*. *Highway Capacity Manual 2000* represents the latest research on capacity and quality of service for transportation facilities.

Quality of service requires quantitative measures to characterize operational conditions within a traffic stream. Level of service is a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience.

Six levels of service are defined for each type of facility that has analysis procedures available. Letters designate each level, from A to F, with level-of-service A representing the best operating conditions and level-of-service F the worst. Each level of service represents a range of operating conditions and the driver's perception of these conditions. Safety is not included in the measures that establish service levels.

A general description of service levels for various types of facilities is shown in Table A-I.

Table A-I

Level of Service Description

Facility Type	**Uninterrupted Flow**	**Interrupted Flow**
	Freeways Multi-lane Highways Two-lane Highways Urban Streets	Signalized Intersections Unsignalized Intersections Two-way Stop Control All-way Stop Control
LOS		
A	Free-flow	Very low delay.
B	Stable flow. Presence of other users noticeable.	Low delay.
C	Stable flow. Comfort and convenience starts to decline.	Acceptable delay.
D	High density stable flow.	Tolerable delay.
E	Unstable flow.	Limit of acceptable delay.
F	Forced or breakdown flow.	Unacceptable delay

Source: *Highway Capacity Manual 2000*

Urban Streets

The term "urban streets" refers to urban arterials and collectors, including those in downtown areas.

Arterial streets are roads that primarily serve longer through trips. However, providing access to abutting commercial and residential land uses is also an important function of arterials.

Collector streets provide both land access and traffic circulation within residential, commercial and industrial areas. Their access function is more important than that of arterials, and unlike arterials their operation is not always dominated by traffic signals.

Downtown streets are signalized facilities that often resemble arterials. They not only move through traffic but also provide access to local businesses for passenger cars, transit buses, and trucks. Pedestrian conflicts and lane obstructions created by stopping or standing buses, trucks and parking vehicles that cause turbulence in the traffic flow are typical of downtown streets.

The speed of vehicles on urban streets is influenced by three main factors, street environment, interaction among vehicles and traffic control. As a result, these factors also affect quality of service.

The street environment includes the geometric characteristics of the facility, the character of roadside activity and adjacent land uses. Thus, the environment reflects the number and width of lanes, type of median, driveway density, spacing between signalized intersections, existence of parking, level of pedestrian activity and speed limit.

The interaction among vehicles is determined by traffic density, the proportion of trucks and buses, and turning movements. This interaction affects the operation of vehicles at intersections and, to a lesser extent, between signals.

Traffic control (including signals and signs) forces a portion of all vehicles to slow or stop. The delays and speed changes caused by traffic control devices reduce vehicle speeds, however, such controls are needed to establish right-of-way.

The average travel speed for through vehicles along an urban street is the determinant of the operating level of service. The travel speed along a segment, section or entire length of an urban street is dependent on the running speed between signalized intersections and the amount of control delay incurred at signalized intersections.

Level-of-service A describes primarily free-flow operations. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is minimal.

Level-of-service B describes reasonably unimpeded operations. The ability to maneuver within the traffic stream is only slightly restricted, and control delays at signalized intersections are not significant.

Level-of-service C describes stable operations, however, ability to maneuver and change lanes in midblock location may be more restricted than at level-of-service B. Longer queues, adverse signal coordination, or both may contribute to lower travel speeds.

Level-of-service D borders on a range in which in which small increases in flow may cause substantial increases in delay and decreases in travel speed. Level-of-service D may be due to adverse signal progression, inappropriate signal timing, high volumes, or a combination of these factors.

Level-of-service E is characterized by significant delays and lower travel speeds. Such operations are caused by a combination of adverse progression, high signal density, high volumes, extensive delays at critical intersections, and inappropriate signal timing.

Level-of-service F is characterized by urban street flow at extremely low speeds. Intersection congestion is likely at critical signalized locations, with high delays, high volumes, and extensive queuing.

The methodology to determine level of service stratifies urban streets into four classifications. The classifications are complex, and are related to functional and design categories. Table A-II describes the functional and design categories, while Table A-III relates these to the urban street classification.

Once classified, the urban street is divided into segments for analysis. An urban street segment is a one-way section of street encompassing a series of blocks or links terminating at a signalized intersection. Adjacent segments of urban streets may be combined to form larger street sections, provided that the segments have similar demand flows and characteristics.

Levels of service are related to the average travel speed of vehicles along the urban street segment or section.

Travel times for existing conditions are obtained by field measurements. The maximum-car technique is used. The vehicle is driven at the posted speed limit unless impeded by actual traffic conditions. In the maximum-car technique, a safe level of vehicular operation is maintained by observing proper following distances and by changing speeds at reasonable rates of acceleration and deceleration. The maximum-car technique provides the best base for measuring traffic performance.

An observer records the travel time and locations and duration of delay. The beginning and ending points are the centers of intersections. Delays include times waiting in queues at signalized intersections. The travel speed is determined by dividing the length of the segment by the travel time. Once the travel speed on the arterial is determined, the level of service is found by comparing the speed to the criteria in Table A-IV. Level-of-service criteria vary for the different classifications of urban street, reflecting differences in driver expectations.

Table A-II

Functional and Design Categories for Urban Streets

Criterion	Functional Category	
	Principal Arterial	**Minor Arterial**
Mobility function	Very important	Important
Access function	Very minor	Substantial
Points connected	Freeways, important activity centers, major traffic generators	Principal arterials
Predominant trips served	Relatively long trips between major points and through trips entering, leaving, and passing through city	Trips of moderate length within relatively small geographical areas

Criterion	Design Category			
	High-Speed	**Suburban**	**Intermediate**	**Urban**
Driveway access density	Very low density	Low density	Moderate density	High density
Arterial type	Multilane divided; undivided or two-lane with shoulders	Multilane divided: undivided or two-lane with shoulders	Multilane divided or undivided; one way, two lane	Undivided one way; two way, two or more lanes
Parking	No	No	Some	Usually
Separate left-turn lanes	Yes	Yes	Usually	Some
Signals per mile	0.5 to 2	1 to 5	4 to 10	6 to 12
Speed limits	45 to 55 mph	40 to 45 mph	30 to 40 mph	25 to 35 mph
Pedestrian activity	Very little	Little	Some	Usually
Roadside development	Low density	Low to medium density	Medium to moderate density	High density

Source: *Highway Capacity Manual 2000*

Table A-III

Urban Street Class based on Function and Design Categories

Design Category	Functional Category	
	Principal Arterial	**Minor Arterial**
High-Speed	I	Not applicable
Suburban	II	II
Intermediate	II	III or IV
Urban	III or IV	IV

Source: *Highway Capacity Manual 2000*

Table A-IV

Urban Street Levels of Service by Class

Urban Street Class	I	II	III	IV
Range of Free Flow Speeds (mph)	45 to 55	35 to 45	30 to 35	25 to 35
Typical Free Flow Speed (mph)	50	40	33	30
Level of Service	**Average Travel Speed (mph)**			
A	>42	>35	>30	>25
B	>34	>28	>24	>19
C	>27	>22	>18	>13
D	>21	>17	>14	>9
E	>16	>13	>10	>7
F	≤16	≤13	≤10	≤7

Source: *Highway Capacity Manual 2000*

Interrupted Flow

One of the more important elements limiting, and often interrupting the flow of traffic on a highway is the intersection. Flow on an interrupted facility is usually dominated by points of fixed operation such as traffic signals, stop and yield signs. These all operate quite differently and have differing impacts on overall flow.

Signalized Intersections

The capacity of a highway is related primarily to the geometric characteristics of the facility, as well as to the composition of the traffic stream on the facility. Geometrics are a fixed, or non-varying, characteristic of a facility.

At the signalized intersection, an additional element is introduced into the concept of capacity: time allocation. A traffic signal essentially allocates time among conflicting traffic movements seeking use of the same physical space. The way in which time is allocated has a significant impact on the operation of the intersection and on the capacity of the intersection and its approaches.

Level of service for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, *i. e.,* in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Specifically, level of service criteria for traffic signals are stated in terms of average control delay per vehicle, typically for a 15-minute analysis period. Delay is a complex measure and depends on a number of variables, including the quality of progression, the cycle length, the ratio of green time to cycle length and the volume to capacity ratio for the lane group.

For each intersection analyzed the average control delay per vehicle per approach is determined for the peak hour. A weighted average of control delay per vehicle is then determined for the intersection. A level of service designation is given to the control delay to better describe the level of operation. A

description of levels of service for signalized intersections can be found in Table A-V.

Table A-V

Description of Level of Service for Signalized Intersections

Level of Service	Description
A	Very low control delay, up to 10 seconds per vehicle. Progression is extremely favorable, and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.
B	Control delay greater than 10 and up to 20 seconds per vehicle. There is good progression or short cycle lengths or both. More vehicles stop causing higher levels of delay.
C	Control delay greater than 20 and up to 35 seconds per vehicle. Higher delays are caused by fair progression or longer cycle lengths or both. Individual cycle failures may begin to appear. Cycle failure occurs when a given green phase doe not serve queued vehicles, and overflow occurs. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.
D	Control delay greater than 35 and up to 55 seconds per vehicle. The influence of congestions becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volumes. Many vehicles stop, the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Control delay greater than 55 and up to 80 seconds per vehicle. The limit of acceptable delay. High delays usually indicate poor progression, long cycle lengths, and high volumes. Individual cycle failures are frequent.
F	Control delay in excess of 80 seconds per vehicle. Unacceptable to most drivers. Oversaturation, arrival flow rates exceed the capacity of the intersection. Many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to higher delay.

Source: *Highway Capacity Manual 2000*

The use of control delay, which may also be referred to as signal delay, was introduced in the 1997 update to the *Highway Capacity Manual*, and represents a departure from previous updates. In the third edition, published in 1985 and the 1994 update to the third edition, delay only included stopped delay. Thus, the level of service criteria listed in Table A-V differs from earlier criteria.

Unsignalized Intersections

The current procedures on unsignalized intersections were first introduced in the 1997 update to the *Highway Capacity Manual* and represent a revision of the methodology published in the 1994 update to the 1985 *Highway Capacity Manual*. The revised procedures use control delay as a measure of effectiveness to determine level of service. Delay is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, *i. e.,* in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Control delay is the increased time of travel for a vehicle approaching and passing through an unsignalized intersection, compared with a free-flow vehicle if it were not required to slow or stop at the intersection.

Two-Way Stop Controlled Intersections

Two-way stop controlled intersections in which stop signs are used to assign the right-of-way, are the most prevalent type of intersection in the United States. At two-way stop-controlled intersections the stop-controlled approaches are referred as the minor street approaches and can be either public streets or private driveways. The approaches that are not controlled by stop signs are referred to as the major street approaches.

The capacity of movements subject to delay are determined using the "critical gap" method of capacity analysis. Expected average control delay based on movement volume and movement capacity is calculated. A level of service designation is given to the expected control delay for each minor movement. Level of service is not defined for the intersection as a whole. Control delay is the increased time of travel for a vehicle approaching and passing through a stop-controlled intersection, compared with a free-flow vehicle if it were not required to slow or stop at the intersection. A description of levels of service for two-way stop-controlled intersections is found in Table A-VI.

Table A-VI

Description of Level of Service for Two-Way Stop Controlled Intersections

Level of Service	Description
A	Very low control delay less than 10 seconds per vehicle for each movement subject to delay.
B	Low control delay greater than 10 and up to 15 seconds per vehicle for each movement subject to delay.
C	Acceptable control delay greater than 15 and up to 25 seconds per vehicle for each movement subject to delay.
D	Tolerable control delay greater than 25 and up to 35 seconds per vehicle for each movement subject to delay.
E	Limit of tolerable control delay greater than 35 and up to 50 seconds per vehicle for each movement subject to delay.
F	Unacceptable control delay in excess of 50 seconds per vehicle for each movement subject to delay.

Source: *Highway Capacity Manual 2000*

APPENDIX B – TRAFFIC COUNTS WORKSHEETS

Prepared by NDS/ATD

VOLUME

Morgan Territory Rd N/O Manning Rd

Day: Tuesday
Date: 9/18/2018

City: Livermore
Project #: CA18_8461_001

DAILY TOTALS	NB	SB	EB	WB	Total
	338	308	0	0	646

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	0		0						0		12:00	5		7						12	
00:15	0		0						0		12:15	4		9						13	
00:30	0		0						0		12:30	6		6						12	
00:45	0		1	1					1	1	12:45	3	18	3	25					6	43
01:00	0		0						0		13:00	5		4						9	
01:15	0		0						0		13:15	4		2						6	
01:30	0		0						0		13:30	6		3						9	
01:45	0		0						0		13:45	3	18	2	11					5	29
02:00	0		0						0		14:00	4		5						9	
02:15	0		0						0		14:15	6		5						11	
02:30	1		0						1		14:30	8		5						13	
02:45	0	1	1	1					1	2	14:45	7	25	5	20					12	45
03:00	1		0						1		15:00	2		1						3	
03:15	0		0						0		15:15	6		4						10	
03:30	0		0						0		15:30	4		0						4	
03:45	0	1	1	1					1	2	15:45	12	24	5	10					17	34
04:00	1		0						1		16:00	4		6						10	
04:15	0		2						2		16:15	9		3						12	
04:30	0		0						0		16:30	16		8						24	
04:45	0	1	1	3					1	4	16:45	14	43	1	18					15	61
05:00	1		2						3		17:00	16		2						18	
05:15	1		2						3		17:15	13		6						19	
05:30	3		2						5		17:30	14		5						19	
05:45	3	8	2	8					5	16	17:45	13	56	3	16					16	72
06:00	1		9						10		18:00	9		5						14	
06:15	0		4						4		18:15	5		4						9	
06:30	1		5						6		18:30	7		2						9	
06:45	1	3	7	25					8	28	18:45	8	29	1	12					9	41
07:00	0		7						7		19:00	5		1						6	
07:15	3		10						13		19:15	6		4						10	
07:30	2		17						19		19:30	4		1						5	
07:45	4	9	6	40					10	49	19:45	4	19	0	6					4	25
08:00	4		9						13		20:00	2		1						3	
08:15	2		8						10		20:15	4		2						6	
08:30	4		10						14		20:30	4		3						7	
08:45	10	20	7	34					17	54	20:45	3	13	0	6					3	19
09:00	3		10						13		21:00	2		0						2	
09:15	4		3						7		21:15	0		1						1	
09:30	2		8						10		21:30	3		0						3	
09:45	5	14	2	23					7	37	21:45	2	7	6	7					8	14
10:00	2		6						8		22:00	1		1						2	
10:15	1		2						3		22:15	1		0						1	
10:30	3		1						4		22:30	1		0						1	
10:45	7	13	5	14					12	27	22:45	0	3	0	1					0	4
11:00	1		7						8		23:00	1		0						1	
11:15	4		7						11		23:15	0		0						0	
11:30	4		5						9		23:30	0		0						0	
11:45	3	12	7	26					10	38	23:45	0	1	0						0	1
TOTALS		82		176						258	TOTALS		256		132						388
SPLIT %		31.8%		68.2%						39.9%	SPLIT %		66.0%		34.0%						60.1%

DAILY TOTALS	NB	SB	EB	WB	Total
	338	308	0	0	646

AM Peak Hour	08:30	07:15			07:15	PM Peak Hour	16:30	12:00			16:30
AM Pk Volume	21	42			55	PM Pk Volume	59	25			76
Pk Hr Factor	0.525	0.618			0.724	Pk Hr Factor	0.922	0.694			0.792
7 - 9 Volume	29	74	0	0	103	4 - 6 Volume	99	34	0	0	133
7 - 9 Peak Hour	08:00	07:15			07:15	4 - 6 Peak Hour	16:30	16:00			16:30
7 - 9 Pk Volume	20	42	0	0	55	4 - 6 Pk Volume	59	18	0	0	76
Pk Hr Factor	0.500	0.618	0.000	0.000	0.724	Pk Hr Factor	0.922	0.563	0.000	0.000	0.792

Prepared by NDS/ATD

VOLUME

Morgan Territory Rd N/O Manning Rd

Day: Wednesday
Date: 9/19/2018

City: Livermore
Project #: CA18_8461_001

DAILY TOTALS	NB	SB	EB	WB	Total
	342	289	0	0	631

AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	0	0			0	12:00	2	3			5
00:15	0	0			0	12:15	2	4			6
00:30	0	0			0	12:30	8	5			13
00:45	0	0			0	12:45	4	16	6	18	10	34
01:00	0	0			0	13:00	5	0			5
01:15	0	0			0	13:15	5	3			8
01:30	0	0			0	13:30	4	5			9
01:45	0	0			0	13:45	3	17	4	12	7	29
02:00	0	0			0	14:00	4	3			7
02:15	0	0			0	14:15	10	6			16
02:30	0	0			0	14:30	4	4			8
02:45	0	0			0	14:45	6	24	6	19	12	43
03:00	1	0			1	15:00	4	3			7
03:15	1	0			1	15:15	6	1			7
03:30	0	0			0	15:30	8	4			12
03:45	0	2	0		0	2	15:45	15	33	8	16	23	49
04:00	0	1			1	16:00	14	6			20
04:15	0	0			0	16:15	14	5			19
04:30	0	1			1	16:30	10	3			13
04:45	0	1	3		1	3	16:45	13	51	0	14	13	65
05:00	0	0			0	17:00	16	3			19
05:15	2	3			5	17:15	14	6			20
05:30	1	2			3	17:30	10	2			12
05:45	4	7	4	9	8	16	17:45	11	51	5	16	16	67
06:00	2	12			14	18:00	6	5			11
06:15	3	5			8	18:15	4	7			11
06:30	1	7			8	18:30	8	2			10
06:45	2	8	0	24	2	32	18:45	4	22	2	16	6	38
07:00	0	4			4	19:00	9	3			12
07:15	0	11			11	19:15	5	1			6
07:30	1	8			9	19:30	6	0			6
07:45	1	2	7	30	8	32	19:45	2	22	1	5	3	27
08:00	8	13			21	20:00	5	2			7
08:15	1	11			12	20:15	5	0			5
08:30	3	10			13	20:30	2	0			2
08:45	6	18	3	37	9	55	20:45	4	16	1	3	5	19
09:00	1	5			6	21:00	0	2			2
09:15	3	5			8	21:15	8	1			9
09:30	0	6			6	21:30	2	1			3
09:45	2	6	3	19	5	25	21:45	1	11	0	4	1	15
10:00	3	8			11	22:00	1	1			2
10:15	3	5			8	22:15	0	1			1
10:30	4	3			7	22:30	0	0			0
10:45	6	16	4	20	10	36	22:45	0	1	0	2	0	3
11:00	6	6			12	23:00	3	0			3
11:15	3	3			6	23:15	0	0			0
11:30	3	6			9	23:30	1	0			1
11:45	2	14	6	21	8	35	23:45	1	5	1	1	2	6
TOTALS		73		163		236	TOTALS		269		126		395
SPLIT %		30.9%		69.1%		37.4%	SPLIT %		68.1%		31.9%		62.6%

DAILY TOTALS	NB	SB	EB	WB	Total
	342	289	0	0	631

AM Peak Hour	10:15	07:45			08:00	PM Peak Hour	15:45	15:30			15:45
AM Pk Volume	19	41			55	PM Pk Volume	53	23			75
Pk Hr Factor	0.792	0.788			0.655	Pk Hr Factor	0.883	0.719			0.815
7 - 9 Volume	20	67	0	0	87	4 - 6 Volume	102	30	0	0	132
7 - 9 Peak Hour	08:00	07:45			08:00	4 - 6 Peak Hour	16:15	17:00			17:00
7 - 9 Pk Volume	18	41	0	0	55	4 - 6 Pk Volume	53	16	0	0	67
Pk Hr Factor	0.563	0.788	0.000	0.000	0.655	Pk Hr Factor	0.828	0.667	0.000	0.000	0.838

Prepared by NDS/ATD

VOLUME

Morgan Territory Rd N/O Manning Rd

Day: Thursday
Date: 9/20/2018

City: Livermore
Project #: CA18_8461_001

DAILY TOTALS	NB	SB	EB	WB	Total
	329	311	0	0	640

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0				0		12:00	6		5				11	
00:15	0		0				0		12:15	5		1				6	
00:30	0		0				0		12:30	3		2				5	
00:45	0		0				0		12:45	4	18	7	15			11	33
01:00	0		0				0		13:00	4		5				9	
01:15	0		0				0		13:15	2		2				4	
01:30	0		0				0		13:30	5		7				12	
01:45	0		0				0		13:45	4	15	3	17			7	32
02:00	0		0				0		14:00	6		3				9	
02:15	0		0				0		14:15	5		7				12	
02:30	0		0				0		14:30	6		3				9	
02:45	1	1	0				1	1	14:45	6	23	3	16			9	39
03:00	0		0				0		15:00	8		3				11	
03:15	0		0				0		15:15	8		7				15	
03:30	0		0				0		15:30	6		8				14	
03:45	0		0				0		15:45	16	38	3	21			19	59
04:00	0		0				0		16:00	7		8				15	
04:15	0		1				1		16:15	12		3				15	
04:30	0		1				1		16:30	6		4				10	
04:45	0		0	2			0	2	16:45	13	38	4	19			17	57
05:00	2		1				3		17:00	11		8				19	
05:15	1		5				6		17:15	13		0				13	
05:30	4		2				6		17:30	9		6				15	
05:45	2	9	4	12			6	21	17:45	7	40	1	15			8	55
06:00	2		6				8		18:00	9		3				12	
06:15	1		7				8		18:15	5		2				7	
06:30	1		10				11		18:30	6		5				11	
06:45	3	7	3	26			6	33	18:45	8	28	4	14			12	42
07:00	1		8				9		19:00	6		4				10	
07:15	3		14				17		19:15	5		2				7	
07:30	0		9				9		19:30	0		2				2	
07:45	2	6	6	37			8	43	19:45	4	15	1	9			5	24
08:00	3		10				13		20:00	3		1				4	
08:15	8		15				23		20:15	1		1				2	
08:30	2		15				17		20:30	4		1				5	
08:45	4	17	8	48			12	65	20:45	6	14	0	3			6	17
09:00	4		5				9		21:00	6		1				7	
09:15	2		9				11		21:15	2		0				2	
09:30	4		5				9		21:30	2		0				2	
09:45	1	11	3	22			4	33	21:45	0	10	0	1			0	11
10:00	2		5				7		22:00	2		0				2	
10:15	4		1				5		22:15	1		0				1	
10:30	5		2				7		22:30	1		0				1	
10:45	8	19	5	13			13	32	22:45	0	4	0				0	4
11:00	5		3				8		23:00	0		0				0	
11:15	2		7				9		23:15	1		0				1	
11:30	3		2				5		23:30	0		1				1	
11:45	4	14	8	20			12	34	23:45	1	2	0	1			1	3
TOTALS		84		180				264	TOTALS		245		131				376
SPLIT %		31.8%		68.2%				41.3%	SPLIT %		65.2%		34.8%				58.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	329	311	0	0	640

AM Peak Hour	10:15		08:00				08:00		PM Peak Hour	16:45		15:15				16:45	
AM Pk Volume	22		48				65		PM Pk Volume	46		26				64	
Pk Hr Factor	0.688		0.800				0.707		Pk Hr Factor	0.885		0.813				0.842	
7 - 9 Volume	23		85		0	0	108		4 - 6 Volume	78		34		0	0	112	
7 - 9 Peak Hour	08:00		08:00				08:00		4 - 6 Peak Hour	16:45		16:00				16:45	
7 - 9 Pk Volume	17		48		0	0	65		4 - 6 Pk Volume	46		19		0	0	64	
Pk Hr Factor	0.531		0.800		0.000	0.000	0.707		Pk Hr Factor	0.885		0.594		0.000	0.000	0.842	

Prepared by NDS/ATD

VOLUME

Morgan Territory Rd N/O Manning Rd

Day: Friday
Date: 9/21/2018

City: Livermore
Project #: CA18_8461_001

DAILY TOTALS	NB	SB	EB	WB	Total
	314	278	0	0	592

AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	0	0			0	12:00	7	3			10
00:15	0	0			0	12:15	6	4			10
00:30	0	0			0	12:30	4	4			8
00:45	0	0			0	12:45	2 19	3 14			5 33
01:00	0	1			1	13:00	4	4			8
01:15	0	0			0	13:15	4	3			7
01:30	0	0			0	13:30	4	3			7
01:45	0	1 2			1 2	13:45	5 17	4 14			9 31
02:00	0	0			0	14:00	5	5			10
02:15	0	0			0	14:15	4	1			5
02:30	0	0			0	14:30	7	5			12
02:45	0	0			0	14:45	4 20	9 20			13 40
03:00	1	0			1	15:00	7	5			12
03:15	1	0			1	15:15	8	5			13
03:30	0	0			0	15:30	14	3			17
03:45	0 2	0			0 2	15:45	11 40	6 19			17 59
04:00	0	0			0	16:00	9	8			17
04:15	0	0			0	16:15	7	6			13
04:30	0	2			2	16:30	9	4			13
04:45	0	0 2			0 2	16:45	14 39	3 21			17 60
05:00	1	3			4	17:00	11	4			15
05:15	1	0			1	17:15	9	4			13
05:30	3	1			4	17:30	9	4			13
05:45	3 8	2 6			5 14	17:45	8 37	1 13			9 50
06:00	2	6			8	18:00	9	4			13
06:15	1	12			13	18:15	6	2			8
06:30	2	7			9	18:30	4	5			9
06:45	3 8	4 29			7 37	18:45	2 21	0 11			2 32
07:00	1	3			4	19:00	4	0			4
07:15	2	7			9	19:15	6	0			6
07:30	2	13			15	19:30	3	1			4
07:45	2 7	6 29			8 36	19:45	1 14	1 2			2 16
08:00	3	11			14	20:00	4	1			5
08:15	6	7			13	20:15	4	2			6
08:30	5	8			13	20:30	2	0			2
08:45	0 14	9 35			9 49	20:45	4 14	0 3			4 17
09:00	3	1			4	21:00	5	1			6
09:15	3	7			10	21:15	2	1			3
09:30	2	7			9	21:30	0	0			0
09:45	3 11	4 19			7 30	21:45	1 8	0 2			1 10
10:00	1	3			4	22:00	0	0			0
10:15	0	4			4	22:15	2	0			2
10:30	2	4			6	22:30	0	1			1
10:45	4 7	5 16			9 23	22:45	3 5	0 1			3 6
11:00	7	2			9	23:00	2	0			2
11:15	3	5			8	23:15	2	1			3
11:30	4	8			12	23:30	1	0			1
11:45	1 15	4 19			5 34	23:45	3 8	0 1			3 9
TOTALS	72	157			229	TOTALS	242	121			363
SPLIT %	31.4%	68.6%			38.7%	SPLIT %	66.7%	33.3%			61.3%

DAILY TOTALS	NB	SB	EB	WB	Total
	314	278	0	0	592

AM Peak Hour	10:45	07:15			07:30	PM Peak Hour	16:30	14:30			15:15
AM Pk Volume	18	37			50	PM Pk Volume	43	24			64
Pk Hr Factor	0.643	0.712			0.833	Pk Hr Factor	0.768	0.667			0.941
7 - 9 Volume	21	64	0	0	85	4 - 6 Volume	76	34	0	0	110
7 - 9 Peak Hour	07:45	07:15			07:30	4 - 6 Peak Hour	16:30	16:00			16:00
7 - 9 Pk Volume	16	37	0	0	50	4 - 6 Pk Volume	43	21	0	0	60
Pk Hr Factor	0.667	0.712	0.000	0.000	0.833	Pk Hr Factor	0.768	0.656	0.000	0.000	0.882

Prepared by NDS/ATD

VOLUME

Morgan Territory Rd N/O Manning Rd

Day: Saturday
Date: 9/22/2018

City: Livermore
Project #: CA18_8461_001

DAILY TOTALS	NB	SB	EB	WB	Total
	249	266	0	0	515

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	0		0						0		12:00	2		1						3	
00:15	3		0						3		12:15	1		9						10	
00:30	0		2						2		12:30	3		10						13	
00:45	0	3	0	2					0	5	12:45	3	9	7	27					10	36
01:00	1		0						1		13:00	5		2						7	
01:15	1		0						1		13:15	3		4						7	
01:30	0		0						0		13:30	6		4						10	
01:45	0	2	0						0	2	13:45	3	17	1	11					4	28
02:00	0		0						0		14:00	4		1						5	
02:15	0		0						0		14:15	3		5						8	
02:30	0		0						0		14:30	8		3						11	
02:45	0		0						0		14:45	9	24	3	12					12	36
03:00	1		0						1		15:00	3		6						9	
03:15	0		0						0		15:15	6		15						21	
03:30	0		0						0		15:30	4		2						6	
03:45	0	1	0						0	1	15:45	6	19	11	34					17	53
04:00	0		0						0		16:00	5		4						9	
04:15	0		0						0		16:15	3		4						7	
04:30	0		2						2		16:30	3		3						6	
04:45	0		1	3					1	3	16:45	3	14	1	12					4	26
05:00	0		1						1		17:00	5		6						11	
05:15	0		0						0		17:15	8		2						10	
05:30	1		1						2		17:30	2		3						5	
05:45	0	1	1	3					1	4	17:45	3	18	4	15					7	33
06:00	0		3						3		18:00	3		3						6	
06:15	1		0						1		18:15	5		5						10	
06:30	1		2						3		18:30	4		4						8	
06:45	4	6	1	6					5	12	18:45	1	13	1	13					2	26
07:00	4		2						6		19:00	3		4						7	
07:15	2		1						3		19:15	7		3						10	
07:30	2		6						8		19:30	1		3						4	
07:45	6	14	3	12					9	26	19:45	2	13	0	10					2	23
08:00	4		8						12		20:00	0		0						0	
08:15	6		4						10		20:15	0		4						4	
08:30	7		5						12		20:30	1		2						3	
08:45	8	25	8	25					16	50	20:45	3	4	0	6					3	10
09:00	3		5						8		21:00	4		0						4	
09:15	4		13						17		21:15	1		0						1	
09:30	5		5						10		21:30	3		0						3	
09:45	6	18	2	25					8	43	21:45	2	10	0						2	10
10:00	6		2						8		22:00	1		0						1	
10:15	3		9						12		22:15	1		1						2	
10:30	4		7						11		22:30	1		1						2	
10:45	5	18	9	27					14	45	22:45	0	3	1	3					1	6
11:00	5		4						9		23:00	1		0						1	
11:15	1		3						4		23:15	2		0						2	
11:30	5		11						16		23:30	0		0						0	
11:45	2	13	2	20					4	33	23:45	1	4	0						1	4
TOTALS		101		123						224	TOTALS		148		143						291
SPLIT %		45.1%		54.9%						43.5%	SPLIT %		50.9%		49.1%						56.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	249	266	0	0	515

AM Peak Hour	08:00	08:30			08:30	PM Peak Hour	14:30	15:00			14:30
AM Pk Volume	25	31			53	PM Pk Volume	26	34			53
Pk Hr Factor	0.781	0.596			0.779	Pk Hr Factor	0.722	0.567			0.631
7 - 9 Volume	39	37	0	0	76	4 - 6 Volume	32	27	0	0	59
7 - 9 Peak Hour	08:00	08:00			08:00	4 - 6 Peak Hour	16:30	17:00			17:00
7 - 9 Pk Volume	25	25	0	0	50	4 - 6 Pk Volume	19	15	0	0	33
Pk Hr Factor	0.781	0.781	0.000	0.000	0.781	Pk Hr Factor	0.594	0.625	0.000	0.000	0.750

Prepared by NDS/ATD

VOLUME

Morgan Territory Rd N/O Manning Rd

Day: Sunday
Date: 9/23/2018

City: Livermore
Project #: CA18_8461_001

DAILY TOTALS	NB	SB	EB	WB	Total
	189	213	0	0	402

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		1				1		**12:00**	5		6				11	
00:15	0		0				0		**12:15**	4		7				11	
00:30	1		0				1		**12:30**	4		5				9	
00:45	1	2	0	1			1	3	**12:45**	5	18	9	27			14	45
01:00	0		1				1		**13:00**	4		3				7	
01:15	0		1				1		**13:15**	6		4				10	
01:30	0		0				0		**13:30**	1		1				2	
01:45	0		1	3			1	3	**13:45**	6	17	5	13			11	30
02:00	0		0				0		**14:00**	4		3				7	
02:15	0		0				0		**14:15**	6		8				14	
02:30	0		0				0		**14:30**	1		2				3	
02:45	0		0				0		**14:45**	5	16	2	15			7	31
03:00	0		0				0		**15:00**	4		5				9	
03:15	0		0				0		**15:15**	4		6				10	
03:30	0		0				0		**15:30**	2		5				7	
03:45	1	1	0				1	1	**15:45**	5	15	2	18			7	33
04:00	0		0				0		**16:00**	7		6				13	
04:15	0		0				0		**16:15**	3		3				6	
04:30	0		0				0		**16:30**	2		0				2	
04:45	0		0				0		**16:45**	5	17	4	13			9	30
05:00	0		0				0		**17:00**	4		2				6	
05:15	0		0				0		**17:15**	4		4				8	
05:30	0		1				1		**17:30**	2		1				3	
05:45	0		1	2			1	2	**17:45**	0	10	2	9			2	19
06:00	0		1				1		**18:00**	6		2				8	
06:15	0		2				2		**18:15**	4		2				6	
06:30	1		2				3		**18:30**	0		3				3	
06:45	0	1	0	5			0	6	**18:45**	3	13	2	9			5	22
07:00	1		1				2		**19:00**	4		1				5	
07:15	1		2				3		**19:15**	0		2				2	
07:30	2		2				4		**19:30**	0		1				1	
07:45	5	9	1	6			6	15	**19:45**	3	7	0	4			3	11
08:00	1		1				2		**20:00**	3		2				5	
08:15	2		5				7		**20:15**	3		0				3	
08:30	2		5				7		**20:30**	2		2				4	
08:45	2	7	5	16			7	23	**20:45**	2	10	3	7			5	17
09:00	1		1				2		**21:00**	1		0				1	
09:15	4		7				11		**21:15**	3		0				3	
09:30	4		6				10		**21:30**	1		0				1	
09:45	2	11	6	20			8	31	**21:45**	1	6	0				1	6
10:00	2		4				6		**22:00**	0		1				1	
10:15	2		4				6		**22:15**	0		1				1	
10:30	1		8				9		**22:30**	0		0				0	
10:45	7	12	5	21			12	33	**22:45**	1	1	0	2			1	3
11:00	4		7				11		**23:00**	0		1				1	
11:15	4		7				11		**23:15**	1		0				1	
11:30	7		5				12		**23:30**	0		0				0	
11:45	0	15	2	21			2	36	**23:45**	0	1	0	1			0	2
TOTALS		58		95				**153**	**TOTALS**		131		118				**249**
SPLIT %		37.9%		62.1%				**38.1%**	**SPLIT %**		52.6%		47.4%				**61.9%**

DAILY TOTALS	NB	SB	EB	WB	Total
	189	213	0	0	402

AM Peak Hour	10:45		10:30				**10:45**		**PM Peak Hour**	12:30		12:00				**12:00**	
AM Pk Volume	22		27				**46**		**PM Pk Volume**	19		27				**45**	
Pk Hr Factor	0.786		0.844				**0.958**		**Pk Hr Factor**	0.792		0.750				**0.804**	
7 - 9 Volume	16		22	0	0		**38**		**4 - 6 Volume**	27		22	0	0		**49**	
7 - 9 Peak Hour	07:30		08:00				**08:00**		**4 - 6 Peak Hour**	16:00		16:00				**16:00**	
7 - 9 Pk Volume	10		16	0	0		**23**		**4 - 6 Pk Volume**	17		13	0	0		**30**	
Pk Hr Factor	0.500		0.800	0.000	0.000		**0.821**		**Pk Hr Factor**	0.607		0.542	0.000	0.000		**0.577**	

Prepared by NDS/ATD

VOLUME

Morgan Territory Rd N/O Manning Rd

Day: Monday
Date: 9/24/2018

City: Livermore
Project #: CA18_8461_001

DAILY TOTALS	NB	SB	EB	WB	Total
	303	306	0	0	609

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	0		0						0		12:00	6		6						12	
00:15	0		0						0		12:15	2		4						6	
00:30	0		0						0		12:30	10		7						17	
00:45	0		0						0		12:45	3	21	3	20					6	41
01:00	0		0						0		13:00	4		7						11	
01:15	0		0						0		13:15	1		3						4	
01:30	0		0						0		13:30	5		6						11	
01:45	0		0						0		13:45	1	11	2	18					3	29
02:00	0		1						1		14:00	4		2						6	
02:15	1		0						1		14:15	11		8						19	
02:30	0		0						0		14:30	5		7						12	
02:45	0	1	0	1					0	2	14:45	6	26	8	25					14	51
03:00	0		0						0		15:00	6		5						11	
03:15	0		0						0		15:15	7		4						11	
03:30	1		0						1		15:30	10		3						13	
03:45	0	1	0						0	1	15:45	9	32	7	19					16	51
04:00	0		0						0		16:00	6		9						15	
04:15	0		0						0		16:15	10		6						16	
04:30	0		1						1		16:30	7		1						8	
04:45	1	1	2	3					3	4	16:45	9	32	6	22					15	54
05:00	0		2						2		17:00	7		4						11	
05:15	3		0						3		17:15	9		2						11	
05:30	1		2						3		17:30	7		1						8	
05:45	5	9	2	6					7	15	17:45	6	29	6	13					12	42
06:00	3		14						17		18:00	10		4						14	
06:15	0		1						1		18:15	3		2						5	
06:30	1		9						10		18:30	5		0						5	
06:45	0	4	3	27					3	31	18:45	8	26	2	8					10	34
07:00	0		6						6		19:00	3		2						5	
07:15	1		8						9		19:15	6		4						10	
07:30	1		10						11		19:30	3		3						6	
07:45	5	7	10	34					15	41	19:45	7	19	1	10					8	29
08:00	5		9						14		20:00	1		2						3	
08:15	5		15						20		20:15	3		1						4	
08:30	3		10						13		20:30	2		1						3	
08:45	2	15	6	40					8	55	20:45	3	9	1	5					4	14
09:00	4		6						10		21:00	0		0						0	
09:15	2		9						11		21:15	2		0						2	
09:30	5		5						10		21:30	1		0						1	
09:45	6	17	3	23					9	40	21:45	1	4	0						1	4
10:00	5		4						9		22:00	1		0						1	
10:15	4		3						7		22:15	0		0						0	
10:30	3		3						6		22:30	1		0						1	
10:45	8	20	6	16					14	36	22:45	0	2	0						0	2
11:00	0		2						2		23:00	0		0						0	
11:15	7		6						13		23:15	1		0						1	
11:30	3		4						7		23:30	0		1						1	
11:45	6	16	3	15					9	31	23:45	0	1	0	1					0	2
TOTALS		91		165						256	TOTALS		212		141						353
SPLIT %		35.5%		64.5%						42.0%	SPLIT %		60.1%		39.9%						58.0%

DAILY TOTALS	NB	SB	EB	WB	Total
	303	306	0	0	609

AM Peak Hour	11:45	07:30			07:45	PM Peak Hour	15:30	14:15			15:30
AM Pk Volume	24	44			62	PM Pk Volume	35	28			60
Pk Hr Factor	0.600	0.733			0.775	Pk Hr Factor	0.875	0.875			0.938
7 - 9 Volume	22	74	0	0	96	4 - 6 Volume	61	35	0	0	96
7 - 9 Peak Hour	07:45	07:30			07:45	4 - 6 Peak Hour	16:15	16:00			16:00
7 - 9 Pk Volume	18	44	0	0	62	4 - 6 Pk Volume	33	22	0	0	54
Pk Hr Factor	0.900	0.733	0.000	0.000	0.775	Pk Hr Factor	0.825	0.611	0.000	0.000	0.844

Prepared by NDS/ATD

VOLUME

Manning Rd W/O Livermore Ave

Day: Tuesday
Date: 9/18/2018

City: Livermore
Project #: CA18_8461_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,405	1,104	2,509

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			0		0		0		12:00			12		11		23	
00:15			0		0		0		12:15			15		9		24	
00:30			0		0		0		12:30			14		10		24	
00:45			0		0		0		12:45			14	55	10	40	24	95
01:00			0		0		0		13:00			14		9		23	
01:15			0		0		0		13:15			10		9		19	
01:30			0		0		0		13:30			10		12		22	
01:45			0		1	1	1	1	13:45			10	44	13	43	23	87
02:00			0		0		0		14:00			18		11		29	
02:15			0		0		0		14:15			21		8		29	
02:30			0		1		1		14:30			24		19		43	
02:45			1	1	0	1	1	2	14:45			44	107	16	54	60	161
03:00			0		1		1		15:00			33		8		41	
03:15			0		0		0		15:15			54		11		65	
03:30			0		1		1		15:30			38		20		58	
03:45			2	2	0	2	2	4	15:45			60	185	15	54	75	239
04:00			0		1		1		16:00			79		12		91	
04:15			3		0		3		16:15			69		13		82	
04:30			0		2		2		16:30			67		16		83	
04:45			3	6	3	6	6	12	16:45			58	273	20	61	78	334
05:00			2		5		7		17:00			60		16		76	
05:15			4		9		13		17:15			57		23		80	
05:30			3		11		14		17:30			72		17		89	
05:45			2	11	16	41	18	52	17:45			58	247	18	74	76	321
06:00			12		11		23		18:00			44		14		58	
06:15			5		17		22		18:15			49		10		59	
06:30			7		23		30		18:30			20		12		32	
06:45			8	32	23	74	31	106	18:45			27	140	13	49	40	189
07:00			11		38		49		19:00			12		15		27	
07:15			19		48		67		19:15			17		8		25	
07:30			18		51		69		19:30			6		7		13	
07:45			12	60	56	193	68	253	19:45			3	38	7	37	10	75
08:00			11		45		56		20:00			4		10		14	
08:15			18		42		60		20:15			5		6		11	
08:30			15		38		53		20:30			9		7		16	
08:45			8	52	39	164	47	216	20:45			0	18	2	25	2	43
09:00			13		22		35		21:00			2		3		5	
09:15			12		24		36		21:15			4		0		4	
09:30			11		19		30		21:30			2		8		10	
09:45			11	47	18	83	29	130	21:45			7	15	2	13	9	28
10:00			4		9		13		22:00			2		4		6	
10:15			7		13		20		22:15			1		2		3	
10:30			2		8		10		22:30			2		1		3	
10:45			9	22	13	43	22	65	22:45			0	5	0	7	0	12
11:00			14		11		25		23:00			4		1		5	
11:15			9		11		20		23:15			0		0		0	
11:30			5		6		11		23:30			0		0		0	
11:45			12	40	8	36	20	76	23:45			1	5	2	3	3	8
TOTALS				273		644		917	TOTALS				1132		460		1592
SPLIT %				29.8%		70.2%		36.5%	SPLIT %				71.1%		28.9%		63.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,405	1,104	2,509

AM Peak Hour				07:00	07:15	07:15		PM Peak Hour				15:45	16:45	16:00
AM Pk Volume				60	200	260		PM Pk Volume				275	76	334
Pk Hr Factor				0.789	0.893	0.942		Pk Hr Factor				0.870	0.826	0.918
7 - 9 Volume	0	0		112	357	469		4 - 6 Volume	0	0		520	135	655
7 - 9 Peak Hour				07:00	07:15	07:15		4 - 6 Peak Hour				16:00	16:45	16:00
7 - 9 Pk Volume	0	0		60	200	260		4 - 6 Pk Volume	0	0		273	76	334
Pk Hr Factor	0.000	0.000		0.789	0.893	0.942		Pk Hr Factor	0.000	0.000		0.864	0.826	0.918

Prepared by NDS/ATD

VOLUME

Manning Rd W/O Livermore Ave

Day: Wednesday
Date: 9/19/2018

City: Livermore
Project #: CA18_8461_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,451	1,133	2,584

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			0		0		0		12:00			11		13		24	
00:15			0		0		0		12:15			15		14		29	
00:30			0		2		2		12:30			12		15		27	
00:45			1	1	0	2	1	3	12:45			14	52	10	52	24	104
01:00			1		0		1		13:00			10		9		19	
01:15			1		0		1		13:15			12		6		18	
01:30			0		0		0		13:30			17		13		30	
01:45			0	2	0		0	2	13:45			12	51	8	36	20	87
02:00			0		1		1		14:00			18		11		29	
02:15			0		1		1		14:15			23		14		37	
02:30			0		0		0		14:30			32		17		49	
02:45			0		0	2	0	2	14:45			38	111	15	57	53	168
03:00			0		1		1		15:00			44		10		54	
03:15			0		1		1		15:15			42		11		53	
03:30			0		0		0		15:30			59		21		80	
03:45			0		0	2	0	2	15:45			58	203	20	62	78	265
04:00			1		0		1		16:00			53		20		73	
04:15			1		0		1		16:15			66		32		98	
04:30			1		0		1		16:30			71		17		88	
04:45			2	5	5	5	7	10	16:45			63	253	17	86	80	339
05:00			0		4		4		17:00			57		20		77	
05:15			5		10		15		17:15			80		16		96	
05:30			2		8		10		17:30			55		18		73	
05:45			6	13	16	38	22	51	17:45			51	243	13	67	64	310
06:00			10		13		23		18:00			51		11		62	
06:15			7		14		21		18:15			45		10		55	
06:30			11		26		37		18:30			45		12		57	
06:45			1	29	22	75	23	104	18:45			25	166	9	42	34	208
07:00			10		41		51		19:00			13		12		25	
07:15			13		48		61		19:15			15		5		20	
07:30			22		45		67		19:30			6		9		15	
07:45			16	61	41	175	57	236	19:45			6	40	7	33	13	73
08:00			20		46		66		20:00			5		8		13	
08:15			22		30		52		20:15			1		7		8	
08:30			15		42		57		20:30			7		2		9	
08:45			7	64	44	162	51	226	20:45			3	16	7	24	10	40
09:00			6		25		31		21:00			4		2		6	
09:15			7		35		42		21:15			5		4		9	
09:30			11		22		33		21:30			2		7		9	
09:45			7	31	22	104	29	135	21:45			1	12	2	15	3	27
10:00			10		14		24		22:00			1		3		4	
10:15			11		13		24		22:15			4		0		4	
10:30			9		12		21		22:30			2		0		2	
10:45			15	45	11	50	26	95	22:45			2	9	1	4	3	13
11:00			11		13		24		23:00			1		1		2	
11:15			4		6		10		23:15			0		0		0	
11:30			15		10		25		23:30			1		2		3	
11:45			10	40	7	36	17	76	23:45			2	4	1	4	3	8
TOTALS				291		651		942	TOTALS				1160		482		1642
SPLIT %				30.9%		69.1%		36.5%	SPLIT %				70.6%		29.4%		63.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,451	1,133	2,584

AM Peak Hour				07:30	07:15	07:15		PM Peak Hour				16:30	15:30	16:15
AM Pk Volume				80	180	251		PM Pk Volume				271	93	343
Pk Hr Factor				0.909	0.938	0.937		Pk Hr Factor				0.847	0.727	0.875
7 - 9 Volume	0	0		125	337	462		4 - 6 Volume	0	0		496	153	649
7 - 9 Peak Hour				07:30	07:15	07:15		4 - 6 Peak Hour				16:30	16:00	16:15
7 - 9 Pk Volume	0	0		80	180	251		4 - 6 Pk Volume	0	0		271	86	343
Pk Hr Factor	0.000	0.000		0.909	0.938	0.937		Pk Hr Factor	0.000	0.000		0.847	0.672	0.875

Prepared by NDS/ATD

VOLUME

Manning Rd W/O Livermore Ave

Day: Thursday
Date: 9/20/2018

City: Livermore
Project #: CA18_8461_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,493	1,225	2,718

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			0		0		0		12:00			10		17		27	
00:15			1		0		1		12:15			10		10		20	
00:30			0		1		1		12:30			13		13		26	
00:45			0	1	0	1	0	2	12:45			18	51	11	51	29	102
01:00			1		0		1		13:00			9		8		17	
01:15			0		0		0		13:15			14		13		27	
01:30			0		0		0		13:30			15		19		34	
01:45			0	1	1	1	1	2	13:45			12	50	12	52	24	102
02:00			0		1		1		14:00			21		15		36	
02:15			1		0		1		14:15			30		8		38	
02:30			0		0		0		14:30			20		8		28	
02:45			0	1	1	2	1	3	14:45			48	119	16	47	64	166
03:00			0		1		1		15:00			36		14		50	
03:15			0		0		0		15:15			60		15		75	
03:30			0		0		0		15:30			56		18		74	
03:45			0		0	1	0	1	15:45			58	210	17	64	75	274
04:00			0		1		1		16:00			49		12		61	
04:15			2		0		2		16:15			74		15		89	
04:30			1		2		3		16:30			66		17		83	
04:45			0	3	3	6	3	9	16:45			52	241	28	72	80	313
05:00			2		6		8		17:00			67		23		90	
05:15			4		6		10		17:15			63		26		89	
05:30			5		15		20		17:30			83		10		93	
05:45			3	14	16	43	19	57	17:45			54	267	10	69	64	336
06:00			9		10		19		18:00			45		8		53	
06:15			11		13		24		18:15			28		10		38	
06:30			7		23		30		18:30			34		13		47	
06:45			7	34	24	70	31	104	18:45			23	130	17	48	40	178
07:00			11		28		39		19:00			16		14		30	
07:15			11		43		54		19:15			26		6		32	
07:30			19		50		69		19:30			8		4		12	
07:45			12	53	51	172	63	225	19:45			9	59	9	33	18	92
08:00			21		35		56		20:00			7		5		12	
08:15			15		56		71		20:15			7		1		8	
08:30			22		38		60		20:30			7		9		16	
08:45			14	72	48	177	62	249	20:45			4	25	8	23	12	48
09:00			11		52		63		21:00			5		6		11	
09:15			19		45		64		21:15			2		6		8	
09:30			10		36		46		21:30			3		3		6	
09:45			12	52	19	152	31	204	21:45			4	14	1	16	5	30
10:00			12		13		25		22:00			2		2		4	
10:15			2		20		22		22:15			3		2		5	
10:30			8		9		17		22:30			3		1		4	
10:45			3	25	28	70	31	95	22:45			3	11	2	7	5	18
11:00			13		12		25		23:00			2		2		4	
11:15			15		11		26		23:15			0		0		0	
11:30			16		8		24		23:30			2		1		3	
11:45			12	56	11	42	23	98	23:45			0	4	3	6	3	10
TOTALS				312		737		1049	TOTALS				1181		488		1669
SPLIT %				29.7%		70.3%		38.6%	SPLIT %				70.8%		29.2%		61.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,493	1,225	2,718

AM Peak Hour				08:00	08:15	07:30		PM Peak Hour				17:00	16:30	16:45
AM Pk Volume				72	194	259		PM Pk Volume				267	94	352
Pk Hr Factor				0.818	0.866	0.912		Pk Hr Factor				0.804	0.839	0.946
7 - 9 Volume	0	0		125	349	474		4 - 6 Volume	0	0		508	141	649
7 - 9 Peak Hour				08:00	07:30	07:30		4 - 6 Peak Hour				17:00	16:30	16:45
7 - 9 Pk Volume	0	0		72	192	259		4 - 6 Pk Volume	0	0		267	94	352
Pk Hr Factor	0.000	0.000		0.818	0.857	0.912		Pk Hr Factor	0.000	0.000		0.804	0.839	0.946

Prepared by NDS/ATD

VOLUME

Manning Rd W/O Livermore Ave

Day: Friday
Date: 9/21/2018

City: Livermore
Project #: CA18_8461_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,534	1,196	2,730

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			0		0		0		**12:00**			9		9		18	
00:15			0		0		0		**12:15**			18		16		34	
00:30			1		2		3		**12:30**			19		7		26	
00:45			0	1	0	2	0	3	**12:45**			8	54	5	37	13	91
01:00			1		0		1		**13:00**			23		12		35	
01:15			0		0		0		**13:15**			24		13		37	
01:30			0		0		0		**13:30**			14		14		28	
01:45			1	2	0		1	2	**13:45**			19	80	7	46	26	126
02:00			0		0		0		**14:00**			23		10		33	
02:15			0		0		0		**14:15**			34		8		42	
02:30			0		0		0		**14:30**			43		8		51	
02:45			0		1	1	1	1	**14:45**			36	136	7	33	43	169
03:00			1		1		2		**15:00**			69		15		84	
03:15			0		1		1		**15:15**			66		9		75	
03:30			0		0		0		**15:30**			59		25		84	
03:45			0	1	1	3	1	4	**15:45**			79	273	14	63	93	336
04:00			0		0		0		**16:00**			68		19		87	
04:15			1		0		1		**16:15**			65		12		77	
04:30			1		0		1		**16:30**			48		25		73	
04:45			1	3	3	3	4	6	**16:45**			71	252	26	82	97	334
05:00			4		8		12		**17:00**			56		10		66	
05:15			1		5		6		**17:15**			58		14		72	
05:30			2		15		17		**17:30**			64		17		81	
05:45			2	9	15	43	17	52	**17:45**			56	234	25	66	81	300
06:00			4		14		18		**18:00**			48		19		67	
06:15			16		22		38		**18:15**			39		11		50	
06:30			5		16		21		**18:30**			30		10		40	
06:45			3	28	29	81	32	109	**18:45**			18	135	6	46	24	181
07:00			7		29		36		**19:00**			16		12		28	
07:15			12		25		37		**19:15**			9		7		16	
07:30			18		69		87		**19:30**			9		2		11	
07:45			16	53	59	182	75	235	**19:45**			3	37	6	27	9	64
08:00			10		54		64		**20:00**			5		8		13	
08:15			15		60		75		**20:15**			5		6		11	
08:30			12		45		57		**20:30**			1		9		10	
08:45			14	51	39	198	53	249	**20:45**			5	16	5	28	10	44
09:00			9		23		32		**21:00**			2		10		12	
09:15			13		31		44		**21:15**			2		7		9	
09:30			10		15		25		**21:30**			2		1		3	
09:45			7	39	11	80	18	119	**21:45**			5	11	5	23	10	34
10:00			10		7		17		**22:00**			3		0		3	
10:15			10		12		22		**22:15**			4		2		6	
10:30			11		28		39		**22:30**			5		3		8	
10:45			16	47	22	69	38	116	**22:45**			3	15	6	11	9	26
11:00			12		20		32		**23:00**			4		2		6	
11:15			12		15		27		**23:15**			1		3		4	
11:30			12		16		28		**23:30**			4		2		6	
11:45			11	47	11	62	22	109	**23:45**			1	10	3	10	4	20
TOTALS				281		724		**1005**	**TOTALS**				1253		472		**1725**
SPLIT %				28.0%		72.0%		**36.8%**	**SPLIT %**				72.6%		27.4%		**63.2%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,534	1,196	2,730

AM Peak Hour				07:30	07:30	**07:30**		**PM Peak Hour**				15:00	16:00	**15:30**
AM Pk Volume				59	242	**301**		**PM Pk Volume**				273	82	**341**
Pk Hr Factor				0.819	0.877	**0.865**		**Pk Hr Factor**				0.864	0.788	**0.917**
7 - 9 Volume	0	0		104	380	**484**		**4 - 6 Volume**	0	0		486	148	**634**
7 - 9 Peak Hour				07:30	07:30	**07:30**		**4 - 6 Peak Hour**				16:00	16:00	**16:00**
7 - 9 Pk Volume	0	0		59	242	**301**		**4 - 6 Pk Volume**	0	0		252	82	**334**
Pk Hr Factor	0.000	0.000		0.819	0.877	**0.865**		**Pk Hr Factor**	0.000	0.000		0.887	0.788	**0.861**

Prepared by NDS/ATD

VOLUME

Manning Rd W/O Livermore Ave

Day: Saturday
Date: 9/22/2018

City: Livermore
Project #: CA18_8461_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	735	684	1,419

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			0		0		0		**12:00**			10		9		19	
00:15			0		2		2		**12:15**			16		14		30	
00:30			2		1		3		**12:30**			13		13		26	
00:45			1	3	0	3	1	6	**12:45**			21	60	19	55	40	115
01:00			0		2		2		**13:00**			20		16		36	
01:15			0		2		2		**13:15**			9		17		26	
01:30			1		1		2		**13:30**			13		15		28	
01:45			0	1	0	5	0	6	**13:45**			10	52	10	58	20	110
02:00			0		0		0		**14:00**			18		8		26	
02:15			1		0		1		**14:15**			14		10		24	
02:30			0		1		1		**14:30**			12		17		29	
02:45			0	1	1	2	1	3	**14:45**			12	56	12	47	24	103
03:00			0		1		1		**15:00**			14		21		35	
03:15			0		0		0		**15:15**			28		13		41	
03:30			0		1		1		**15:30**			15		10		25	
03:45			0		0	2	0	2	**15:45**			26	83	19	63	45	146
04:00			1		0		1		**16:00**			17		18		35	
04:15			0		0		0		**16:15**			12		13		25	
04:30			3		1		4		**16:30**			15		10		25	
04:45			1	5	1	2	2	7	**16:45**			10	54	5	46	15	100
05:00			1		0		1		**17:00**			20		9		29	
05:15			0		1		1		**17:15**			17		14		31	
05:30			1		3		4		**17:30**			9		10		19	
05:45			2	4	2	6	4	10	**17:45**			12	58	5	38	17	96
06:00			2		1		3		**18:00**			8		9		17	
06:15			0		3		3		**18:15**			6		7		13	
06:30			2		5		7		**18:30**			13		8		21	
06:45			2	6	6	15	8	21	**18:45**			11	38	7	31	18	69
07:00			3		6		9		**19:00**			8		7		15	
07:15			7		4		11		**19:15**			12		11		23	
07:30			8		13		21		**19:30**			10		4		14	
07:45			7	25	14	37	21	62	**19:45**			2	32	6	28	8	60
08:00			7		11		18		**20:00**			5		3		8	
08:15			12		11		23		**20:15**			12		5		17	
08:30			10		13		23		**20:30**			5		3		8	
08:45			12	41	16	51	28	92	**20:45**			0	22	5	16	5	38
09:00			12		7		19		**21:00**			4		7		11	
09:15			22		11		33		**21:15**			5		5		10	
09:30			16		11		27		**21:30**			2		4		6	
09:45			8	58	14	43	22	101	**21:45**			3	14	4	20	7	34
10:00			11		17		28		**22:00**			2		4		6	
10:15			13		8		21		**22:15**			5		1		6	
10:30			13		10		23		**22:30**			5		4		9	
10:45			14	51	15	50	29	101	**22:45**			5	17	0	9	5	26
11:00			14		15		29		**23:00**			1		2		3	
11:15			8		11		19		**23:15**			2		2		4	
11:30			24		13		37		**23:30**			0		0		0	
11:45			5	51	11	50	16	101	**23:45**			0	3	3	7	3	10
TOTALS				246		266		**512**	**TOTALS**				489		418		**907**
SPLIT %				48.0%		52.0%		**36.1%**	**SPLIT %**				53.9%		46.1%		**63.9%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	735	684	1,419

AM Peak Hour				08:45	10:45	**10:45**		**PM Peak Hour**				15:15	12:45	**15:00**
AM Pk Volume				62	54	**114**		**PM Pk Volume**				86	67	**146**
Pk Hr Factor				0.705	0.900	**0.770**		**Pk Hr Factor**				0.768	0.882	**0.811**
7 - 9 Volume	0	0		66	88	**154**		**4 - 6 Volume**	0	0		112	84	**196**
7 - 9 Peak Hour				08:00	08:00	**08:00**		**4 - 6 Peak Hour**				16:30	16:00	**16:00**
7 - 9 Pk Volume	0	0		41	51	**92**		**4 - 6 Pk Volume**	0	0		62	46	**100**
Pk Hr Factor	0.000	0.000		0.854	0.797	**0.821**		**Pk Hr Factor**	0.000	0.000		0.775	0.639	**0.714**

Prepared by NDS/ATD

VOLUME

Manning Rd W/O Livermore Ave

Day: Sunday
Date: 9/23/2018

City: Livermore
Project #: CA18_8461_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	539	534	1,073

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			3		0		3		12:00			9		9		18	
00:15			0		0		0		12:15			18		8		26	
00:30			1		3		4		12:30			16		23		39	
00:45			1	5	1	4	2	9	12:45			19	62	12	52	31	114
01:00			2		2		4		13:00			13		16		29	
01:15			0		0		0		13:15			12		10		22	
01:30			0		0		0		13:30			11		7		18	
01:45			1	3	1	3	2	6	13:45			11	47	10	43	21	90
02:00			0		0		0		14:00			11		11		22	
02:15			0		0		0		14:15			13		10		23	
02:30			0		0		0		14:30			6		7		13	
02:45			0		0		0		14:45			10	40	11	39	21	79
03:00			0		0		0		15:00			8		20		28	
03:15			0		0		0		15:15			13		13		26	
03:30			1		0		1		15:30			13		12		25	
03:45			0	1	1	1	1	2	15:45			12	46	16	61	28	107
04:00			0		0		0		16:00			12		8		20	
04:15			0		0		0		16:15			12		9		21	
04:30			0		1		1		16:30			18		12		30	
04:45			0		0	1	0	1	16:45			6	48	11	40	17	88
05:00			0		0		0		17:00			4		14		18	
05:15			0		0		0		17:15			10		14		24	
05:30			1		1		2		17:30			9		7		16	
05:45			0	1	0	1	0	2	17:45			6	29	3	38	9	67
06:00			1		2		3		18:00			7		18		25	
06:15			3		3		6		18:15			8		9		17	
06:30			2		6		8		18:30			6		9		15	
06:45			0	6	2	13	2	19	18:45			6	27	8	44	14	71
07:00			2		8		10		19:00			7		7		14	
07:15			2		3		5		19:15			5		5		10	
07:30			3		4		7		19:30			9		2		11	
07:45			2	9	9	24	11	33	19:45			12	33	8	22	20	55
08:00			4		5		9		20:00			9		6		15	
08:15			6		5		11		20:15			4		9		13	
08:30			6		3		9		20:30			5		5		10	
08:45			6	22	2	15	8	37	20:45			3	21	4	24	7	45
09:00			13		6		19		21:00			1		2		3	
09:15			7		5		12		21:15			3		3		6	
09:30			8		13		21		21:30			4		2		6	
09:45			10	38	3	27	13	65	21:45			2	10	1	8	3	18
10:00			11		6		17		22:00			2		1		3	
10:15			14		6		20		22:15			1		1		2	
10:30			13		5		18		22:30			1		0		1	
10:45			10	48	10	27	20	75	22:45			0	4	1	3	1	7
11:00			9		10		19		23:00			1		0		1	
11:15			11		12		23		23:15			1		1		2	
11:30			10		13		23		23:30			0		0		0	
11:45			7	37	8	43	15	80	23:45			0	2	0	1	0	3
TOTALS				170		159		329	TOTALS				369		375		744
SPLIT %				51.7%		48.3%		30.7%	SPLIT %				49.6%		50.4%		69.3%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	539	534	1,073

AM Peak Hour				11:45	11:45	11:45		PM Peak Hour				12:15	12:30	12:15
AM Pk Volume				50	48	98		PM Pk Volume				66	61	125
Pk Hr Factor				0.694	0.522	0.628		Pk Hr Factor				0.868	0.663	0.801
7 - 9 Volume	0	0		31	39	70		4 - 6 Volume	0	0		77	78	155
7 - 9 Peak Hour				08:00	07:00	07:45		4 - 6 Peak Hour				16:00	16:30	16:30
7 - 9 Pk Volume	0	0		22	24	40		4 - 6 Pk Volume	0	0		48	51	89
Pk Hr Factor	0.000	0.000		0.917	0.667	0.909		Pk Hr Factor	0.000	0.000		0.667	0.911	0.742

Prepared by NDS/ATD

VOLUME

Manning Rd W/O Livermore Ave

Day: Monday
Date: 9/24/2018

City: Livermore
Project #: CA18_8461_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,404	1,166	2,570

AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00			0	0	0	12:00			10	14	24
00:15			0	0	0	12:15			12	9	21
00:30			0	0	0	12:30			13	9	22
00:45			0	0	0	12:45			16	18	34
01:00			0	0	0	13:00			18	5	23
01:15			0	0	0	13:15			16	7	23
01:30			0	0	0	13:30			18	12	30
01:45			0	1	1	13:45			13	5	18
02:00			0	0	0	14:00			18	11	29
02:15			0	1	1	14:15			27	19	46
02:30			0	0	0	14:30			35	12	47
02:45			0	0	0	14:45			39	10	49
03:00			0	0	0	15:00			32	14	46
03:15			0	1	1	15:15			47	14	61
03:30			1	2	3	15:30			42	12	54
03:45			1	0	1	15:45			65	15	80
04:00			1	1	2	16:00			67	11	78
04:15			1	0	1	16:15			74	17	91
04:30			1	1	2	16:30			59	15	74
04:45			4	4	8	16:45			64	14	78
05:00			3	4	7	17:00			50	17	67
05:15			0	12	12	17:15			54	20	74
05:30			2	12	14	17:30			69	15	84
05:45			3	17	20	17:45			47	13	60
06:00			16	18	34	18:00			46	14	60
06:15			4	21	25	18:15			38	11	49
06:30			5	19	24	18:30			16	12	28
06:45			10	33	43	18:45			24	16	40
07:00			9	41	50	19:00			10	4	14
07:15			10	30	40	19:15			11	10	21
07:30			17	52	69	19:30			6	4	10
07:45			14	48	62	19:45			11	8	19
08:00			17	49	66	20:00			4	5	9
08:15			18	46	64	20:15			9	8	17
08:30			24	47	71	20:30			6	8	14
08:45			15	45	60	20:45			3	6	9
09:00			17	42	59	21:00			3	2	5
09:15			11	30	41	21:15			2	1	3
09:30			12	27	39	21:30			1	4	5
09:45			13	34	47	21:45			1	1	2
10:00			6	17	23	22:00			3	1	4
10:15			9	12	21	22:15			2	0	2
10:30			3	12	15	22:30			2	2	4
10:45			11	18	29	22:45			1	0	1
11:00			7	6	13	23:00			1	0	1
11:15			9	12	21	23:15			1	1	2
11:30			11	11	22	23:30			3	1	4
11:45			9	13	22	23:45			1	0	1
TOTALS			294	739	1033	TOTALS			1110	427	1537
SPLIT %			28.5%	71.5%	40.2%	SPLIT %			72.2%	27.8%	59.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,404	1,166	2,570

AM Peak Hour			08:00	07:30	07:45	PM Peak Hour			15:45	16:30	15:45
AM Pk Volume			74	195	263	PM Pk Volume			265	66	323
Pk Hr Factor			0.771	0.938	0.926	Pk Hr Factor			0.895	0.825	0.887
7 - 9 Volume	0	0	124	358	482	4 - 6 Volume	0	0	484	122	606
7 - 9 Peak Hour			08:00	07:30	07:45	4 - 6 Peak Hour			16:00	16:30	16:00
7 - 9 Pk Volume	0	0	74	195	263	4 - 6 Pk Volume	0	0	264	66	321
Pk Hr Factor	0.000	0.000	0.771	0.938	0.926	Pk Hr Factor	0.000	0.000	0.892	0.825	0.882

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

File Name : 18-08462-001
Date : 09/20/2018

Unshifted Count = All Vehicles & Uturns

	Morgan Territory Rd Southbound					Manning Rd Westbound					Morgan Territory Rd Northbound					Manning Rd Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	7	0	1	0	8	0	28	0	0	28	0	0	0	0	0	1	3	0	0	4	40	0
7:15	8	0	6	0	14	0	41	3	0	44	0	0	0	0	0	0	6	0	0	6	64	0
7:30	9	0	0	0	9	0	49	0	0	49	0	0	0	0	0	0	10	0	0	10	68	0
7:45	3	0	3	0	6	0	49	2	0	51	0	0	0	0	0	0	8	0	0	8	65	0
Total	27	0	10	0	37	0	167	5	0	172	0	0	0	0	0	1	27	0	0	28	237	0
8:00	9	0	1	0	10	0	33	3	0	36	0	0	1	0	1	0	9	0	0	9	56	0
8:15	9	0	6	0	15	0	49	8	0	57	0	0	0	0	0	0	7	0	0	7	79	0
8:30	10	0	5	0	15	0	35	2	0	37	0	0	0	0	0	0	8	0	0	8	60	0
8:45	6	0	2	0	8	0	44	4	0	48	0	0	0	0	0	0	8	0	0	8	64	0
Total	34	0	14	0	48	0	161	17	0	178	0	0	1	0	1	0	32	0	0	32	259	0
16:00	8	0	0	0	8	0	8	5	0	13	0	0	0	0	0	3	43	0	0	46	67	0
16:15	3	0	0	0	3	0	6	9	0	15	0	0	0	0	0	2	69	0	0	71	89	0
16:30	4	0	0	0	4	0	14	3	0	17	0	0	0	0	0	3	63	0	0	66	87	0
16:45	3	0	1	0	4	0	17	9	0	26	0	0	0	0	0	4	52	0	0	56	86	0
Total	18	0	1	0	19	0	45	26	0	71	0	0	0	0	0	12	227	0	0	239	329	0
17:00	7	0	1	1	9	0	12	10	0	22	0	0	0	0	0	2	58	0	0	60	91	1
17:15	0	0	0	0	0	0	17	11	0	28	0	0	0	1	1	3	64	0	0	67	96	1
17:30	6	0	0	0	6	0	6	5	0	11	0	0	0	0	0	4	74	0	0	78	95	0
17:45	1	0	0	0	1	0	9	3	0	12	0	0	0	0	0	3	54	0	0	57	70	0
Total	14	0	1	1	16	0	44	29	0	73	0	0	0	1	1	12	250	0	0	262	352	2
Grand Total	93	0	26	1	120	0	417	77	0	494	0	0	1	1	2	25	536	0	0	561	1177	2
Apprch %	77.5%	0.0%	21.7%	0.8%		0.0%	84.4%	15.6%	0.0%		0.0%	0.0%	50.0%	50.0%		4.5%	95.5%	0.0%	0.0%			
Total %	7.9%	0.0%	2.2%	0.1%	10.2%	0.0%	35.4%	6.5%	0.0%	42.0%	0.0%	0.0%	0.1%	0.1%	0.2%	2.1%	45.5%	0.0%	0.0%	47.7%	100.0%	

AM PEAK HOUR	Morgan Territory Rd Southbound					Manning Rd Westbound					Morgan Territory Rd Northbound					Manning Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	9	0	0	0	9	0	49	0	0	49	0	0	0	0	0	0	10	0	0	10	68
7:45	3	0	3	0	6	0	49	2	0	51	0	0	0	0	0	0	8	0	0	8	65
8:00	9	0	1	0	10	0	33	3	0	36	0	0	1	0	1	0	9	0	0	9	56
8:15	9	0	6	0	15	0	49	8	0	57	0	0	0	0	0	0	7	0	0	7	79
Total Volume	30	0	10	0	40	0	180	13	0	193	0	0	1	0	1	0	34	0	0	34	268
% App Total	75.0%	0.0%	25.0%	0.0%		0.0%	93.3%	6.7%	0.0%		0.0%	0.0%	100.0%	0.0%		0.0%	100.0%	0.0%	0.0%		
PHF	.833	.000	.417	.000	.667	.000	.918	.406	.000	.846	.000	.000	.250	.000	.250	.000	.850	.000	.000	.850	.848

PM PEAK HOUR	Morgan Territory Rd Southbound					Manning Rd Westbound					Morgan Territory Rd Northbound					Manning Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	3	0	1	0	4	0	17	9	0	26	0	0	0	0	0	4	52	0	0	56	86
17:00	7	0	1	1	9	0	12	10	0	22	0	0	0	0	0	2	58	0	0	60	91
17:15	0	0	0	0	0	0	17	11	0	28	0	0	0	1	1	3	64	0	0	67	96
17:30	6	0	0	0	6	0	6	5	0	11	0	0	0	0	0	4	74	0	0	78	95
Total Volume	16	0	2	1	19	0	52	35	0	87	0	0	0	1	1	13	248	0	0	261	368
% App Total	84.2%	0.0%	10.5%	5.3%		0.0%	59.8%	40.2%	0.0%		0.0%	0.0%	0.0%	100.0%		5.0%	95.0%	0.0%	0.0%		
PHF	.571	.000	.500	.250	.528	.000	.765	.795	.000	.777	.000	.000	.000	.250	.250	.813	.838	.000	.000	.837	.958

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

File Name : 18-08462-001
Date : 09/20/2018

Bank 1 Count = Bikes & Peds

	Morgan Territory Rd Southbound					Manning Rd Westbound					Morgan Territory Rd Northbound					Manning Rd Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%				
Total %	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	

AM PEAK HOUR	Morgan Territory Rd Southbound					Manning Rd Westbound					Morgan Territory Rd Northbound					Manning Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

PM PEAK HOUR	Morgan Territory Rd Southbound					Manning Rd Westbound					Morgan Territory Rd Northbound					Manning Rd Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

File Name : 18-08462-002
Date : 09/20/2018

Unshifted Count = All Vehicles & Uturns

	Morgan Territory Rd Southbound					Project Dwy Westbound					Morgan Territory Rd Northbound					Project Dwy Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	7	0	0	7	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	8	0
7:15	0	13	0	0	13	1	0	0	0	1	0	3	0	0	3	0	0	0	0	0	17	0
7:30	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0
7:45	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	6	0
Total	0	34	0	0	34	1	0	0	0	1	0	6	0	0	6	0	0	0	0	0	41	0
8:00	0	10	0	0	10	1	0	0	0	1	0	3	0	0	3	0	0	0	0	0	14	0
8:15	0	12	0	0	12	1	0	0	0	1	0	5	2	0	7	0	0	0	0	0	20	0
8:30	0	15	0	0	15	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	17	0
8:45	0	8	0	0	8	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	11	0
Total	0	45	0	0	45	2	0	0	0	2	0	13	2	0	15	0	0	0	0	0	62	0
16:00	0	3	0	0	3	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	10	0
16:15	0	1	0	0	1	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	13	0
16:30	0	4	0	0	4	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	10	0
16:45	0	4	0	0	4	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	16	0
Total	0	12	0	0	12	0	0	0	0	0	0	37	0	0	37	0	0	0	0	0	49	0
17:00	1	7	0	0	8	1	0	0	0	1	0	9	1	0	10	0	0	0	0	0	19	0
17:15	0	1	0	0	1	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	17	0
17:30	0	6	0	0	6	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	14	0
17:45	0	1	0	0	1	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	8	0
Total	1	15	0	0	16	1	0	0	0	1	0	40	1	0	41	0	0	0	0	0	58	0
Grand Total	1	106	0	0	107	4	0	0	0	4	0	96	3	0	99	0	0	0	0	0	210	0
Apprch %	0.9%	99.1%	0.0%	0.0%		100.0%	0.0%	0.0%	0.0%		0.0%	97.0%	3.0%	0.0%		0.0%	0.0%	0.0%	0.0%			
Total %	0.5%	50.5%	0.0%	0.0%	51.0%	1.9%	0.0%	0.0%	0.0%	1.9%	0.0%	45.7%	1.4%	0.0%	47.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

AM PEAK HOUR	Morgan Territory Rd Southbound					Project Dwy Westbound					Morgan Territory Rd Northbound					Project Dwy Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	10	0	0	10	1	0	0	0	1	0	3	0	0	3	0	0	0	0	0	14
8:15	0	12	0	0	12	1	0	0	0	1	0	5	2	0	7	0	0	0	0	0	20
8:30	0	15	0	0	15	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	17
8:45	0	8	0	0	8	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	11
Total Volume	0	45	0	0	45	2	0	0	0	2	0	13	2	0	15	0	0	0	0	0	62
% App Total	0.0%	100.0%	0.0%	0.0%		100.0%	0.0%	0.0%	0.0%		0.0%	86.7%	13.3%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.000	.750	.000	.000	.750	.500	.000	.000	.000	.500	.000	.650	.250	.000	.536	.000	.000	.000	.000	.000	.775

PM PEAK HOUR	Morgan Territory Rd Southbound					Project Dwy Westbound					Morgan Territory Rd Northbound					Project Dwy Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	4	0	0	4	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	16
17:00	1	7	0	0	8	1	0	0	0	1	0	9	1	0	10	0	0	0	0	0	19
17:15	0	1	0	0	1	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	17
17:30	0	6	0	0	6	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	14
Total Volume	1	18	0	0	19	1	0	0	0	1	0	45	1	0	46	0	0	0	0	0	66
% App Total	5.3%	94.7%	0.0%	0.0%		100.0%	0.0%	0.0%	0.0%		0.0%	97.8%	2.2%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.250	.643	.000	.000	.594	.250	.000	.000	.000	.250	.000	.703	.250	.000	.719	.000	.000	.000	.000	.000	.868

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

File Name : 18-08462-002
Date : 09/20/2018

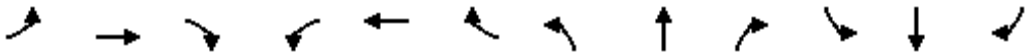
Bank 1 Count = Bikes & Peds

	Morgan Territory Rd Southbound					Project Dwy Westbound					Morgan Territory Rd Northbound					Project Dwy Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%				
Total %	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	

AM PEAK HOUR	Morgan Territory Rd Southbound					Project Dwy Westbound					Morgan Territory Rd Northbound					Project Dwy Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

PM PEAK HOUR	Morgan Territory Rd Southbound					Project Dwy Westbound					Morgan Territory Rd Northbound					Project Dwy Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

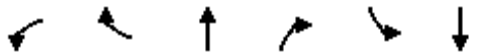
APPENDIX C – LEVEL OF SERVICE WORKSHEETS FOR EXISTING AND CUMULATIVE CONDITIONS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	34	0	0	180	13	0	0	1	30	0	10
Future Volume (Veh/h)	0	34	0	0	180	13	0	0	1	30	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.25	0.25	0.25	0.67	0.67	0.67
Hourly flow rate (vph)	0	40	0	0	212	15	0	0	4	45	0	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	227			40			274	267	40	264	260	220
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	227			40			274	267	40	264	260	220
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	93	100	98
cM capacity (veh/h)	1341			1570			666	639	1031	687	645	820

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	40	227	4	60
Volume Left	0	0	0	45
Volume Right	0	15	4	15
cSH	1341	1570	1031	716
Volume to Capacity	0.00	0.00	0.00	0.08
Queue Length 95th (ft)	0	0	0	7
Control Delay (s)	0.0	0.0	8.5	10.5
Lane LOS			A	B
Approach Delay (s)	0.0	0.0	8.5	10.5
Approach LOS			A	B

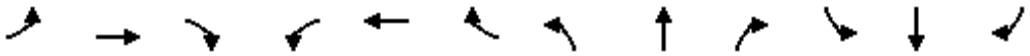
Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	25.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	2	0	13	2	0	45
Future Volume (Veh/h)	2	0	13	2	0	45
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.50	0.50	0.54	0.54	0.75	0.75
Hourly flow rate (vph)	4	0	24	4	0	60
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	86	26			28	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	86	26			28	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	915	1050			1585	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	4	28	60
Volume Left	4	0	0
Volume Right	0	4	0
cSH	915	1700	1585
Volume to Capacity	0.00	0.02	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	9.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	248	0	0	52	35	1	0	0	17	0	2
Future Volume (Veh/h)	13	248	0	0	52	35	1	0	0	17	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.78	0.78	0.78	0.25	0.25	0.25	0.53	0.53	0.53
Hourly flow rate (vph)	15	295	0	0	67	45	4	0	0	32	0	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	112			295			418	437	295	414	414	90
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	112			295			418	437	295	414	414	90
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	100	100	94	100	100
cM capacity (veh/h)	1478			1266			538	508	744	544	523	968

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	310	112	4	36
Volume Left	15	0	4	32
Volume Right	0	45	0	4
cSH	1478	1266	538	572
Volume to Capacity	0.01	0.00	0.01	0.06
Queue Length 95th (ft)	1	0	1	5
Control Delay (s)	0.4	0.0	11.7	11.7
Lane LOS	A		B	B
Approach Delay (s)	0.4	0.0	11.7	11.7
Approach LOS			B	B

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	30.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1	0	45	1	1	18
Future Volume (Veh/h)	1	0	45	1	1	18
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.25	0.25	0.72	0.72	0.60	0.60
Hourly flow rate (vph)	4	0	63	1	2	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	98	64			64	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	98	64			64	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	900	1001			1538	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	4	64	32
Volume Left	4	0	2
Volume Right	0	1	0
cSH	900	1700	1538
Volume to Capacity	0.00	0.04	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	9.0	0.0	0.5
Lane LOS	A		A
Approach Delay (s)	9.0	0.0	0.5
Approach LOS	A		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	34	0	0	180	21	0	0	1	30	0	10
Future Volume (Veh/h)	3	34	0	0	180	21	0	0	1	30	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.25	0.25	0.25	0.67	0.67	0.67
Hourly flow rate (vph)	4	40	0	0	212	25	0	0	4	45	0	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	237			40			288	285	40	276	272	224
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	237			40			288	285	40	276	272	224
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	93	100	98
cM capacity (veh/h)	1330			1570			651	622	1031	672	632	815

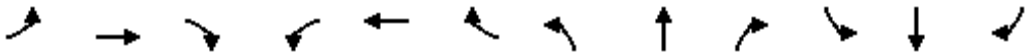
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	44	237	4	60
Volume Left	4	0	0	45
Volume Right	0	25	4	15
cSH	1330	1570	1031	703
Volume to Capacity	0.00	0.00	0.00	0.09
Queue Length 95th (ft)	0	0	0	7
Control Delay (s)	0.7	0.0	8.5	10.6
Lane LOS	A		A	B
Approach Delay (s)	0.7	0.0	8.5	10.6
Approach LOS			A	B

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	26.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	2	0	13	13	0	45
Future Volume (Veh/h)	2	0	13	13	0	45
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.50	0.50	0.54	0.54	0.75	0.75
Hourly flow rate (vph)	4	0	24	24	0	60
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	96	36			48	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	96	36			48	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	903	1037			1559	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	4	48	60
Volume Left	4	0	0
Volume Right	0	24	0
cSH	903	1700	1559
Volume to Capacity	0.00	0.03	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	9.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	248	0	0	52	35	1	0	0	25	0	5
Future Volume (Veh/h)	13	248	0	0	52	35	1	0	0	25	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.78	0.78	0.78	0.25	0.25	0.25	0.53	0.53	0.53
Hourly flow rate (vph)	15	295	0	0	67	45	4	0	0	47	0	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	112			295			424	437	295	414	414	90
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	112			295			424	437	295	414	414	90
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	100	100	91	100	99
cM capacity (veh/h)	1478			1266			532	508	744	544	523	968

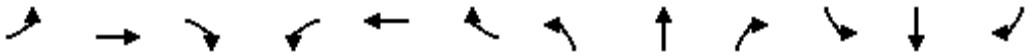
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	310	112	4	56
Volume Left	15	0	4	47
Volume Right	0	45	0	9
cSH	1478	1266	532	585
Volume to Capacity	0.01	0.00	0.01	0.10
Queue Length 95th (ft)	1	0	1	8
Control Delay (s)	0.4	0.0	11.8	11.8
Lane LOS	A		B	B
Approach Delay (s)	0.4	0.0	11.8	11.8
Approach LOS			B	B

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	30.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	0	45	1	1	18
Future Volume (Veh/h)	12	0	45	1	1	18
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.25	0.25	0.72	0.72	0.60	0.60
Hourly flow rate (vph)	48	0	63	1	2	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	98	64			64	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	98	64			64	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	100			100	
cM capacity (veh/h)	900	1001			1538	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	48	64	32
Volume Left	48	0	2
Volume Right	0	1	0
cSH	900	1700	1538
Volume to Capacity	0.05	0.04	0.00
Queue Length 95th (ft)	4	0	0
Control Delay (s)	9.2	0.0	0.5
Lane LOS	A		A
Approach Delay (s)	9.2	0.0	0.5
Approach LOS	A		

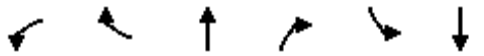
Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	53	0	0	278	20	0	0	2	46	0	15
Future Volume (Veh/h)	0	53	0	0	278	20	0	0	2	46	0	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	58	0	0	302	22	0	0	2	50	0	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	324			58			387	382	58	373	371	313
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	324			58			387	382	58	373	371	313
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	91	100	98
cM capacity (veh/h)	1236			1546			559	551	1008	583	559	727

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	58	324	2	66
Volume Left	0	0	0	50
Volume Right	0	22	2	16
cSH	1236	1546	1008	612
Volume to Capacity	0.00	0.00	0.00	0.11
Queue Length 95th (ft)	0	0	0	9
Control Delay (s)	0.0	0.0	8.6	11.6
Lane LOS			A	B
Approach Delay (s)	0.0	0.0	8.6	11.6
Approach LOS			A	B

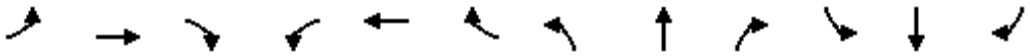
Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	32.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	0	20	3	0	70
Future Volume (Veh/h)	3	0	20	3	0	70
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	0	22	3	0	76
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	100	24			25	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	100	24			25	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	899	1053			1589	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	3	25	76
Volume Left	3	0	0
Volume Right	0	3	0
cSH	899	1700	1589
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	9.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.0	0.0	0.0
Approach LOS	A		

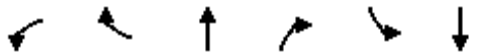
Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	13.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	383	0	0	80	54	2	0	0	26	0	3
Future Volume (Veh/h)	20	383	0	0	80	54	2	0	0	26	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	416	0	0	87	59	2	0	0	28	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	146			416			580	606	416	576	576	116
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	146			416			580	606	416	576	576	116
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	100	100	93	100	100
cM capacity (veh/h)	1436			1143			420	405	637	423	421	936

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	438	146	2	31
Volume Left	22	0	2	28
Volume Right	0	59	0	3
cSH	1436	1143	420	447
Volume to Capacity	0.02	0.00	0.00	0.07
Queue Length 95th (ft)	1	0	0	6
Control Delay (s)	0.5	0.0	13.6	13.7
Lane LOS	A		B	B
Approach Delay (s)	0.5	0.0	13.6	13.7
Approach LOS			B	B

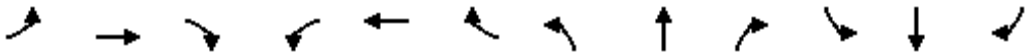
Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	2	0	70	2	2	28
Future Volume (Veh/h)	2	0	70	2	2	28
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	76	2	2	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	111	77			78	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	111	77			78	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	885	984			1520	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	2	78	32
Volume Left	2	0	2
Volume Right	0	2	0
cSH	885	1700	1520
Volume to Capacity	0.00	0.05	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	9.1	0.0	0.5
Lane LOS	A		A
Approach Delay (s)	9.1	0.0	0.5
Approach LOS	A		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	13.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	53	0	0	278	28	0	0	2	46	0	15
Future Volume (Veh/h)	3	53	0	0	278	28	0	0	2	46	0	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	58	0	0	302	30	0	0	2	50	0	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	332			58			397	396	58	383	381	317
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	332			58			397	396	58	383	381	317
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	91	100	98
cM capacity (veh/h)	1227			1546			550	540	1008	573	550	724

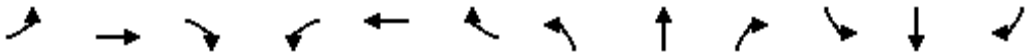
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	61	332	2	66
Volume Left	3	0	0	50
Volume Right	0	30	2	16
cSH	1227	1546	1008	603
Volume to Capacity	0.00	0.00	0.00	0.11
Queue Length 95th (ft)	0	0	0	9
Control Delay (s)	0.4	0.0	8.6	11.7
Lane LOS	A		A	B
Approach Delay (s)	0.4	0.0	8.6	11.7
Approach LOS			A	B

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	33.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	0	20	14	0	70
Future Volume (Veh/h)	3	0	20	14	0	70
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	0	22	15	0	76
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	106	30			37	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	106	30			37	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	892	1045			1574	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	3	37	76
Volume Left	3	0	0
Volume Right	0	15	0
cSH	892	1700	1574
Volume to Capacity	0.00	0.02	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	9.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	13.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	383	0	0	80	54	2	0	0	34	0	6
Future Volume (Veh/h)	20	383	0	0	80	54	2	0	0	34	0	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	416	0	0	87	59	2	0	0	37	0	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	146			416			584	606	416	576	576	116
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	146			416			584	606	416	576	576	116
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	100	100	91	100	99
cM capacity (veh/h)	1436			1143			415	405	637	423	421	936

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	438	146	2	44
Volume Left	22	0	2	37
Volume Right	0	59	0	7
cSH	1436	1143	415	463
Volume to Capacity	0.02	0.00	0.00	0.09
Queue Length 95th (ft)	1	0	0	8
Control Delay (s)	0.5	0.0	13.7	13.6
Lane LOS	A		B	B
Approach Delay (s)	0.5	0.0	13.7	13.6
Approach LOS			B	B

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	0	70	2	2	28
Future Volume (Veh/h)	13	0	70	2	2	28
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	0	76	2	2	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	111	77			78	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	111	77			78	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	885	984			1520	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	14	78	32
Volume Left	14	0	2
Volume Right	0	2	0
cSH	885	1700	1520
Volume to Capacity	0.02	0.05	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.1	0.0	0.5
Lane LOS	A		A
Approach Delay (s)	9.1	0.0	0.5
Approach LOS	A		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	13.8%	ICU Level of Service	A
Analysis Period (min)	15		