Appendix A

ANTIOCH
CALIFORNIA

NOTICE OF PREPARATION

DATE: March 16, 2020

TO: State Clearinghouse
1400 10th Street, Suite 222
Sacramento, CA 95814
(916) 445-0613

FROM: City of Antioch

SUBJECT: Creekside/Vineyards at Sand Creek Project
Notice of Preparation of a Draft Environmental Impact Report

LEAD AGENCY: City of Antioch
Community Development Department
Contact: Alexis Morris, Planning Manager
P.O. Box 5007
Antioch, CA 94531-5007
(925) 779-7035
amorris@ci.antioch.ca.us

PROJECT APPLICANT: GBN Partners, LLC

Notice is hereby given that the City of Antioch will be the Lead Agency and will prepare an environmental impact report (EIR) for the proposed Creekside/Vineyards at Sand Creek Project. We are requesting comments on the scope of topics addressed in this EIR.

Please provide comments on the scope of the EIR to Alexis Morris, Planning Manager, at the address listed above. Due to the time limits mandated by State law, your response must be sent at the earliest possible date, but not later than 5:00 PM on April 14, 2020. In your response, please identify a contact person in your agency for future correspondence.

The Lead Agency will hold a **public scoping meeting** to receive verbal comments on **Thursday, April 9, 2020 at 3:00 PM** in the second floor conference room of the City Hall, Third and "H" Streets, Antioch, CA 94509. This EIR Notice of Preparation, the Initial Study and technical appendices are available online at: https://www.antiochca.gov/community-development-department/planning-division/environmental-documents/.

INTRODUCTION:

The purpose of an EIR is to inform decision-makers and the general public of the environmental effects of a proposed project. The EIR process is intended to provide environmental information sufficient to evaluate a proposed project and its potential to cause significant effects on the environment; examine methods of reducing adverse environmental impacts; and consider alternatives to the proposed project. The Creekside/Vineyards at Sand Creek Project EIR will be prepared and processed in accordance with the

California Environmental Quality Act (CEQA) and the CEQA Guidelines. The EIR will generally include the following:

- Description of the project;
- Description of the existing environmental setting for each topic, potential environmental impacts of the project, and mitigation measures;
- Cumulative impacts; and
- Alternatives to the project.

PROJECT LOCATION:

The Creekside/Vineyards at Sand Creek Project (proposed project) consists of 158.2 acres located south of the future Sand Creek Road in the southeastern portion of the City of Antioch, California. The City of Antioch is located within eastern Contra Costa County and is bordered to the north by the San Joaquin River Delta; to the east by the City of Brentwood and the City of Oakley; to the west by the City of Pittsburg and unincorporated portions of Contra Costa County; and to the south by unincorporated portions of Contra Costa County (see Figure 1).

The project site is bordered by the City of Antioch/Contra Costa County line to the south and the City of Antioch/City of Brentwood limit to the east. Sand Creek is located to the north of the site, and State Route (SR) 4 is located approximately 0.38-mile east of the site (see Figure 2). The site is identified by Assessor's Parcel Number (APN) 057-050-024. The project site is situated within the Sand Creek Focus Area of the General Plan, which contains lands designated by the City of Antioch General Plan for open space, residential, commercial, and mixed-use development.

PROJECT SETTING AND SURROUNDING LAND USES:

Per the City's General Plan, the eastern portion of the project site is designated Open Space/Senior Housing, while the western portion is designated Hillside, Estate and Executive Residential/Open Space. The site is zoned Study Area (S). Currently, the site consists primarily of ruderal grasses and is absent of structures or other indications of prior development.

The project site has been dry-land farmed since the 1930s and consists primarily of non-native vegetation. A total of nine energy and communication access and utility easements exist on the project site. Within the northeastern portion of the site, PG&E maintains an access easement that includes a bridge over Sand Creek, which allows PG&E to drive through the project site to access existing off-site utility infrastructure to the west of the project site. An existing PG&E tower line easement extends through the western portion of the project site. In addition, existing oil and gas pipelines within the project site run below ground and cross Sand Creek and the natural drainage area in a number of locations. A 10-foot-wide pole line easement extends along the length of the southern site boundary.

The site is generally rectangular; however, the northern boundary shifts north and south in an irregular shape, following the alignment of Sand Creek. The site's terrain is characterized by a flat valley bordered by hill forms on the west and east sides. Elevations on-site range from 150 to 325 feet above mean sea level (msl). A shallow area exists at the base of the eastern hillslope and appears to collect local natural drainage during rainfall events, draining into Sand Creek. Sand Creek, a tributary of Marsh Creek, flows through the northern portion of the project site in an easterly direction.

As shown in Figure 2, the majority of the surrounding area has been approved or planned for residential development. Within the City of Antioch, the area to the north of the project site is currently approved for development with residential uses as part of the Promenade/Vineyards at Sand Creek project.

Figure 1
Regional Location

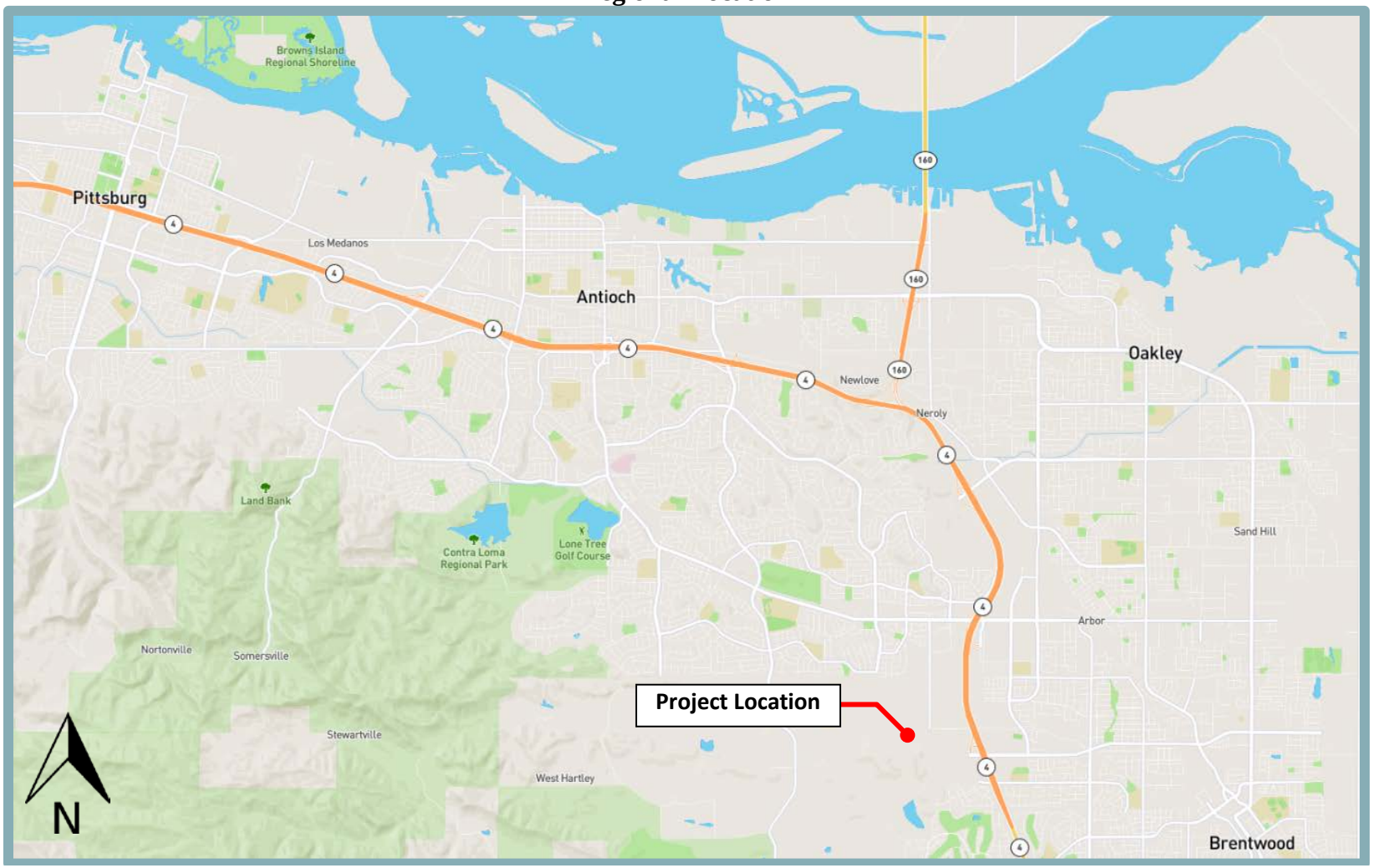
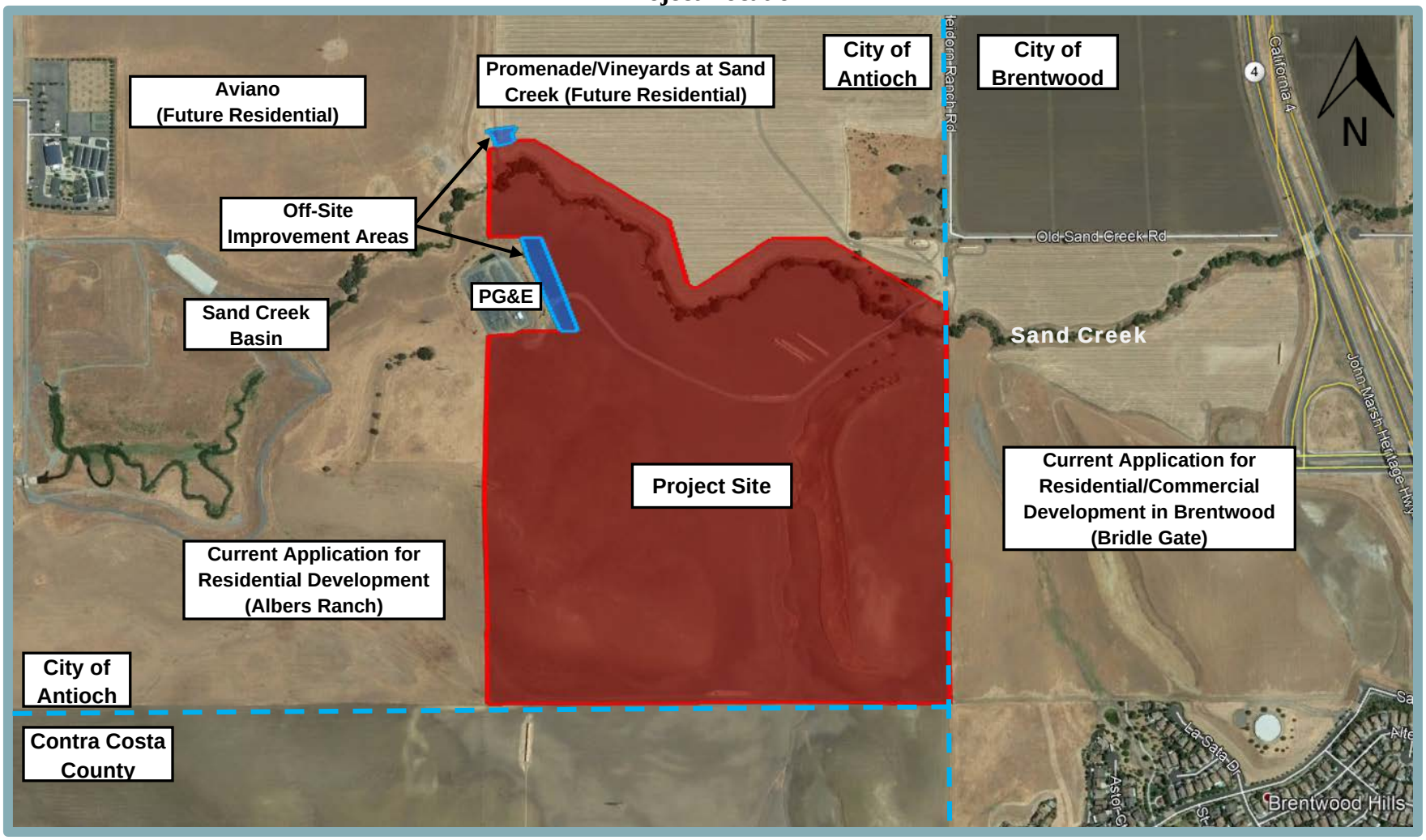


Figure 2
Project Location



The area to the northwest of the site is approved for residential development. The area to the southwest of the project is anticipated for buildout with residential uses per the City's General Plan, and an application to develop the area with residential uses (Albers Ranch) has been received by the City. To the east of the eastern project site boundary, which is contiguous with the Brentwood city limits, the City of Brentwood has received an application for development of the Bridle Gate project, which, if approved, would include both single-family and multi-family residential uses, and would allow for future development of commercial uses. An existing PG&E-owned parcel developed with an electrical substation, designated Public/Quasi Public per the General Plan, is located within a carve-out parcel at the site's western boundary. The area further to the west of the PG&E parcel includes the Sand Creek Basin, managed by the Contra Costa County Flood Control District. The area to the south of the project site consists of undeveloped dry-farmed land outside the City's Sphere of Influence and Planning Area, within unincorporated Contra Costa County.

PROJECT DESCRIPTION

The proposed project would include development of 220 single-family residential units and associated improvements on approximately 58.9 acres of the 158.2-acre project site, as well as 1.8 acres of off-site improvements (see Figure 3).

The project improvements would include, but would not be limited to, parks, trails, landscaping, circulation improvements, and utility installation. The remainder of the site, including Sand Creek and the associated buffer area, would be retained as open space.

The proposed project would require an amendment to the City of Antioch General Plan, a Rezone, a Use Permit, a Vesting Tentative Map, Design Review, and a Development Agreement. The project components are discussed in greater detail below.

General Plan Amendment

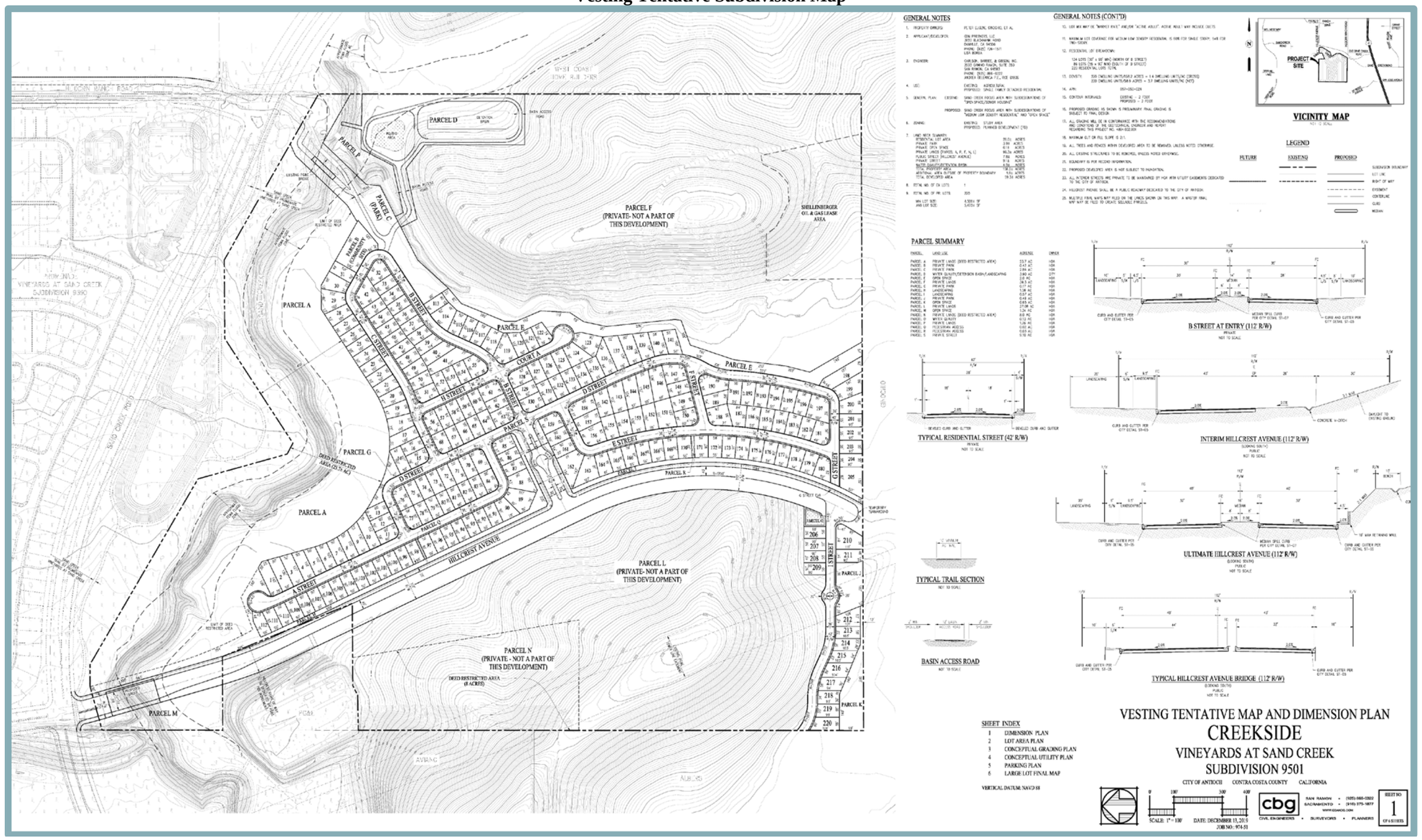
The proposed project would include a General Plan Amendment (GPA) to the Land Use Map for the Sand Creek Focus Area of the General Plan to change the land use designations of the site from Open Space/Senior Housing and Hillside, Estate and Executive Residential/Open Space to Medium Low Density Residential/Open Space, as well as an amendment to the text of the Sand Creek Focus Area of the General Plan in order to add the option of market rate or senior residential on small lots.

Master Development Plan/Rezone/Use Permit/Development Agreement

The proposed project would require approval of a Rezone to change the zoning designation of the site from S to Planned Development District (PD), subject to a Master Development Plan. The Master Development Plan and PD district would list the development standards applicable to the project site, including setbacks, lot sizes and building heights. Such details are included in the Creekside/Vineyards at Sand Creek Project Design Guidelines that have been prepared for the proposed project. A Use Permit would be required to further clarify the details of each phase of the proposed project and to ensure that each phase complies with established provisions of the proposed PD district.

In addition, the project would require a Development Agreement, which would allow the City and the applicant to enter into an agreement to assure the City that the proposed project would be completed in compliance with the plans submitted by the applicant, and assure the applicant of vested rights to develop the project.

Figure 3
Vesting Tentative Subdivision Map



Vesting Tentative Subdivision Map
The proposed project would include a Vesting Tentative Subdivision Map (see Figure 3) to subdivide the project site into 220 single-family residential lots, as well as parcels for associated improvements. Table 1 provides a summary of the proposed land uses. Each of the proposed land uses are described in further detail below.

Table 1
Proposed Land Uses

Proposed Land Use	Parcels	Acreage
Residential	--	28.0
Private Parks	B, C, G, J	3.9
Landscaping/Private Open Space	E, H, I, K, M, Q, R	6.1
Public Street (Hillcrest Avenue)	--	7.8
Private Streets	S	9.1
Water Quality/Detention	D, O	4.0
Private Land*	A, F, L, N, P	99.3
Total Project Site	**--**	**158.2**

***** With the exception of approximately 11 acres proposed to be graded, the proposed project would not include disturbance of Parcels A, F, L, N, or P.

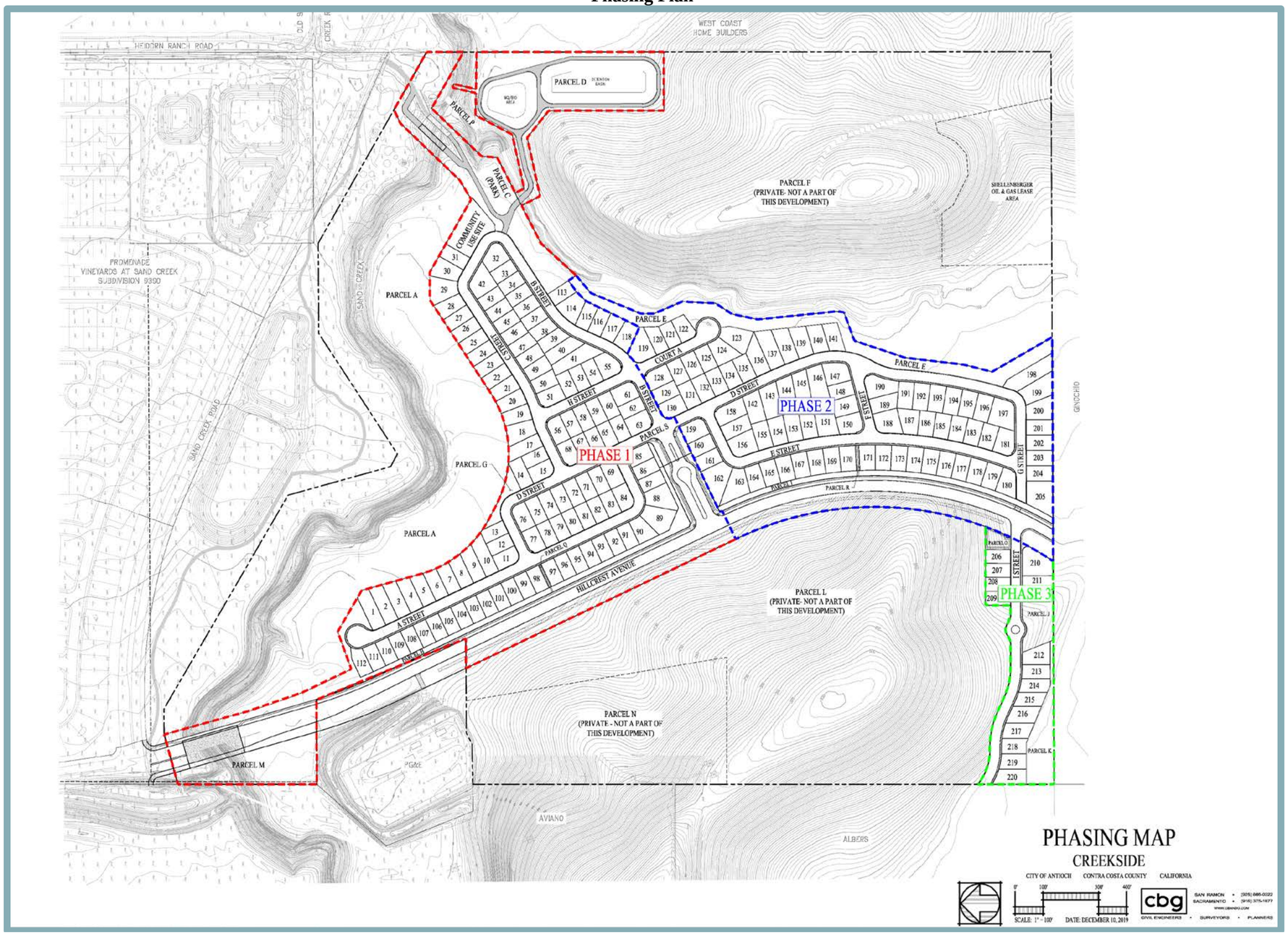
Residential Uses
The proposed residential uses would represent a continuation of other planned development in the project vicinity, specifically the Promenade/Vineyards at Sand Creek Project to the north of the site. Thus, the neighborhood design, lot size, density, and house design included in the proposed project would be similar to what was proposed for the Promenade/Vineyards at Sand Creek Project. The average density of the proposed residential development would be approximately 3.7 units/acre (net) (220 units / 58.9 acres). Similar to the Promenade/Vineyards at Sand Creek project, at least six different models, each with three different elevations, would be constructed, on lots ranging from approximately 4,500 to 5,473 square feet (sf). The proposed residential units would consist of either market-rate units, senior/active adult units, or a combination of both.

The site is anticipated to be developed in three phases (Phases I, II, and III) (see Figure 4). Phase I would include construction of the residential lots east of Hillcrest Avenue and north of the main entry. Phase I would also include the community pool and associated recreational amenities within Parcels B and C. Phase II would include the residential lots east of Hillcrest Avenue and south of the main entry. Phase III would include the residential lots west of Hillcrest Avenue and a park area within the PG&E tower easement along Hillcrest Avenue.

If developed as market-rate units, the majority of the proposed homes would be two-story, with two car garages. If developed as senior/active adult units, the proposed homes would include a mix of two-story and single-story homes.

Access and Circulation
As part of the project, Hillcrest Avenue would be extended through the project site. Hillcrest Avenue at the proposed location is identified in the City General Plan, and would provide connection to future residential uses on the area to the west of the project site. The alignment of the roadway has been designed to span Sand Creek and provide permanent access to the existing PG&E facility and beyond.

Figure 4
Phasing Plan



Vehicular ingress and egress to the proposed project would be provided from Hillcrest Avenue by way of a centrally located main entry, and an emergency vehicle access (EVA)/secondary entry intersection to the south. In addition, a clear span EVA/pedestrian bridge may be constructed adjacent to the existing PG&E bridge spanning Sand Creek in the northeastern portion of the project site, subject to final negotiations with PG&E and final utility designs. The Hillcrest Avenue extension would include sidewalk and landscaping on the east side of the roadway. The Hillcrest Avenue bridge over Sand Creek would be constructed in the ultimate width to facilitate two southbound and two northbound lanes. Right-of-way improvements would be limited to the necessary roadway width, utilities, and pedestrian facilities within the area of the Sand Creek crossing.

Phase I of the proposed project would include construction of approximately 1,500 lineal feet of Hillcrest Avenue in a two-lane undivided roadway configuration from south of the future Sand Creek Road right-of-way to the main entry and all necessary turning lanes at intersections, as well as right-of-way for the ultimate four-lane configuration. Phase I would also include construction of the main entry and the potential EVA/pedestrian bridge.

Phase II of the proposed project would include construction of approximately 1,000 additional lineal feet of Hillcrest Avenue in a two-lane undivided roadway configuration from south of the main entry to the southerly EVA/secondary entry intersection. Phase II would also include construction of the southern EVA into the eastern neighborhood area. Phase III of the proposed project would include construction of the southern secondary entry on the west side of Hillcrest Avenue, across from the Phase II EVA. It should be noted that the main entry to the Phase I and II development is proposed to be gated, while the proposed Phase III development west of Hillcrest Avenue would not be gated. Ultimate construction of the four-lane Hillcrest Avenue configuration would occur as part of buildout of future residential uses on the area to the west of the project site (Albers Ranch), when such development necessitates connection to Hillcrest Avenue.

A new traffic signal would be installed at the main entry. Pedestrian access to the site would be provided by a sidewalk located on Hillcrest Avenue, adjacent to the project site, as well as by the proposed pedestrian trail connection within the northeast corner of the project site. Pedestrian facilities are not proposed on the west side of Hillcrest Avenue.

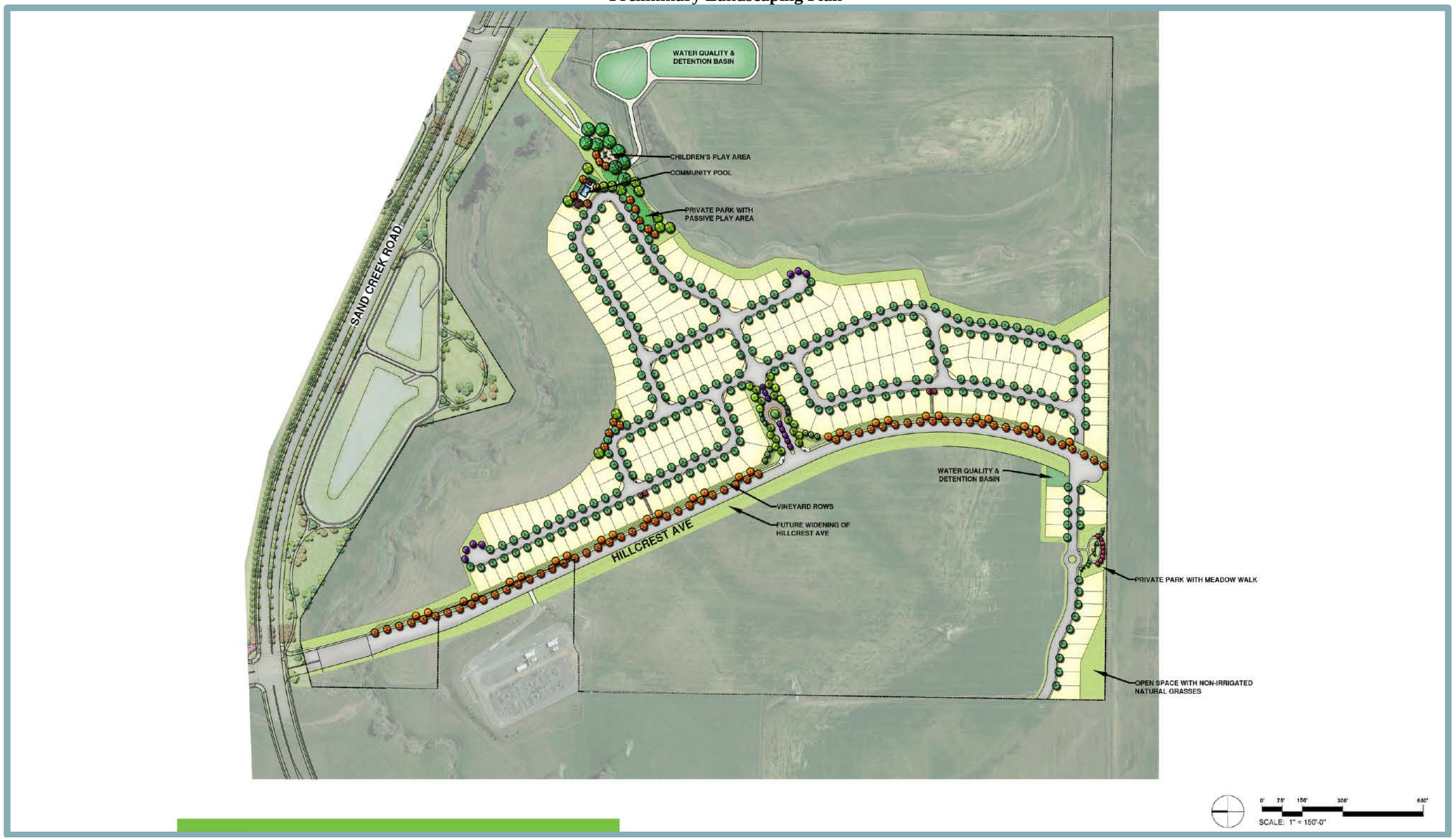
Interior vehicular circulation would be provided by a traditional grid pattern of private two-way streets that connect back to the entrances. The private streets are proposed with a 41-foot right-of-way, including 36 feet curb-to-curb with a five-foot attached monolithic sidewalk on one side of the street. The streets would allow two-way traffic and parking on both sides. Each residential unit would have a two-car garage and driveway with additional street parking.

Parks, Trails, Open Space, Landscaping, and Fencing

As part of the proposed project, a total of 3.9 acres would be developed as private parks (Parcels B, C, G, and J) (see Figure 5).

Parcels B and C, located in the northeastern portion of the site are anticipated to include a children's play area, picnic areas, a community pool, and a passive play area; however, the ultimate programming of the parks would be dictated by the City of Antioch Parks and Recreation Commission. As noted previously, the proposed project may include construction of a new EVA/pedestrian bridge within Parcel C, which includes an existing PG&E-owned bridge over Sand Creek. The project would include a new private pedestrian trail connection extending from the proposed residential neighborhood across either the new bridge or the existing PG&E bridge to connect to the public Sand Creek Trail included in the planned Promenade/Vineyards at Sand Creek development to the north of the site.

Figure 5
Preliminary Landscaping Plan



Parcel G, located at the northern edge of the proposed residential neighborhood, would consist of an open meadow with non-irrigated grasses and oak trees. Parcel J, located in the southwestern portion of the site, would include an open meadow area with a concrete pedestrian path, benches, and various other landscaping features.

Parcels A, P, and M, which include Sand Creek, as well as a 200-foot-wide buffer to the south of the creek, would be preserved as private land and would not be graded or otherwise disturbed as part of the project, with the exception of a storm drain outfall within Parcel M. Parcel A has been deed-restricted as open space for environmental purposes as part of the Promenade/Vineyards at Sand Creek project. The buffer would include the full extent of the 100-year floodplain associated with Sand Creek. In addition, the eastern and western hill forms within the site would be retained as private land and would not be developed with any residential uses or other permanent structures (Parcels F, L, and N). Minor grading activities totaling approximately 11 acres would be required within Parcels F and L; however, the upper portions of the hillsides would remain undisturbed. The grading activities would be required to accommodate the proposed detention basin, adjacent to Parcel F, and to accommodate the grade of the proposed Hillcrest Avenue extension, adjacent to Parcel L. Parcel N, which includes an 8.0-acre area located along the western site boundary, would continue to be deed-restricted.

Landscaping features would be provided throughout the proposed development area, and would conform to the requirements and provisions of Section 9-5.1001 of the City of Antioch Municipal Code. Project landscaping would consist of street trees, shrubs, groundcover, agricultural plantings, and open lawn areas. Both the project entries would be landscaped, as would the east side of Hillcrest Avenue and the roadway medians. Private landscaping and parks throughout the project site would be maintained by a Homeowners Association (HOA). Individual residences would also be landscaped with trees, shrubs, groundcover and some lawns, and would be maintained by either the individual owners or the HOA. Public spaces, common spaces, and private landscaping areas would have an emphasis on drought-tolerant and adaptive plant species.

Along the project frontage at Hillcrest Avenue, the project would include a new masonry sound wall with veneer pilasters (see Figure 6). In addition, the project would include six-foot-tall tube steel fencing at the rear of the residential lots adjacent to the proposed open space areas. Within the proposed residential neighborhoods, lots would be separated by six-foot-tall good neighbor fencing.

Utilities

Figure 7 provides an overview of the proposed water, sewer, stormwater, and electrical/communications utility improvements associated with the project.

Potable water would be distributed to the project site by an extension of the existing 16-inch Zone III trunk line in Hillcrest Avenue. The waterline would be looped back to a Heidorn Ranch Road line by way of a connection over Sand Creek, at the same location as the existing PG&E bridge. The City has also indicated an interest in reserving space in Phase III of the project to facilitate looping of the waterline within Hillcrest Avenue for future residential development to the west of the project site. Sanitary sewer service would be provided to the project site by an extension of the existing 24-inch sanitary sewer pipe from the Promenade/Vineyards at Sand Creek Project through a connection over Sand Creek at the same location as the existing PG&E bridge.

The project site naturally drains to the northeast. The site is within the Sand Creek Drainage Area, and is located just downstream of Sand Creek Basin, a regional detention facility recently constructed by the Contra Costa County Flood Control District.

Figure 6
Preliminary Wall and Fencing Plan

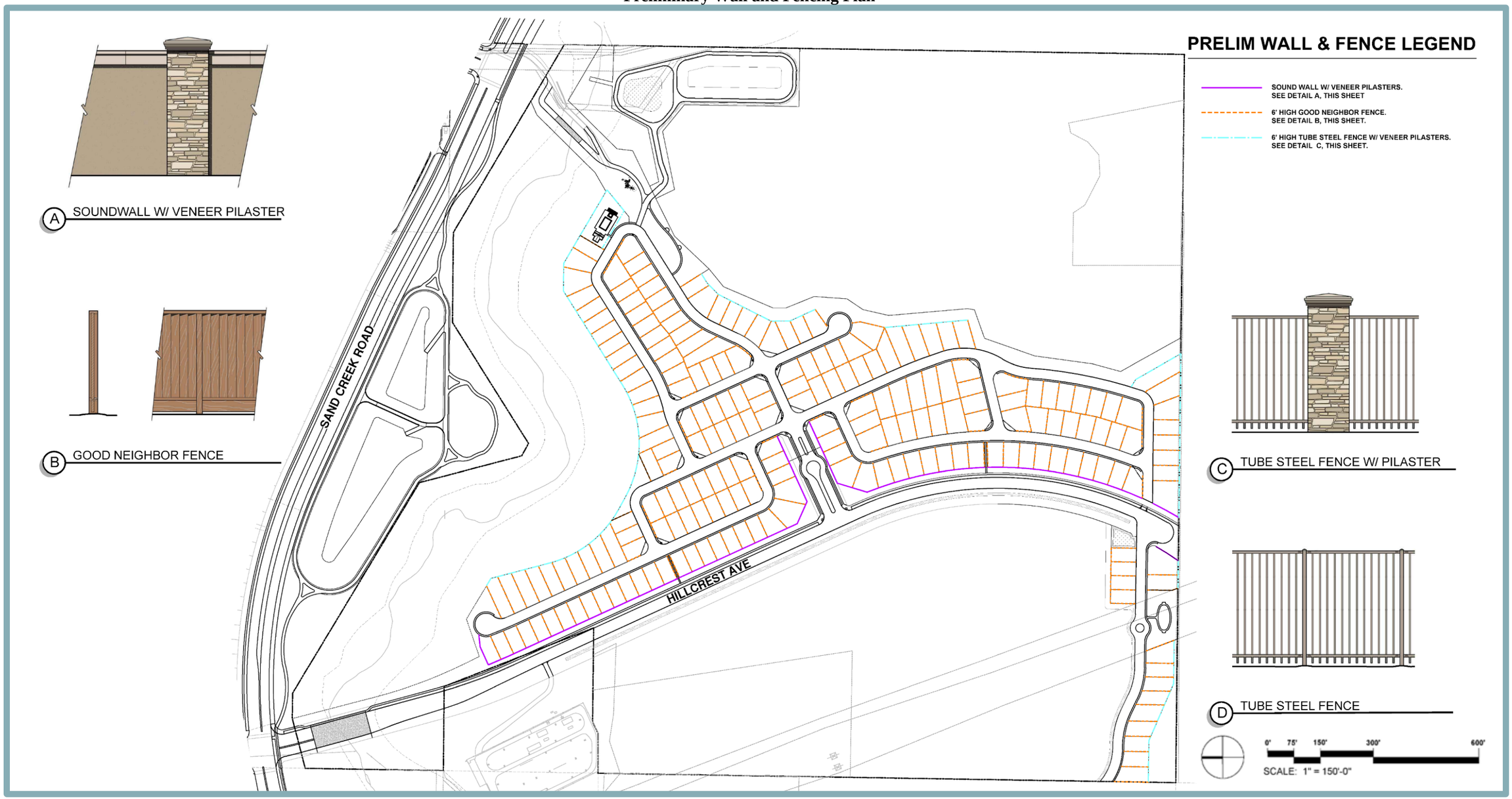
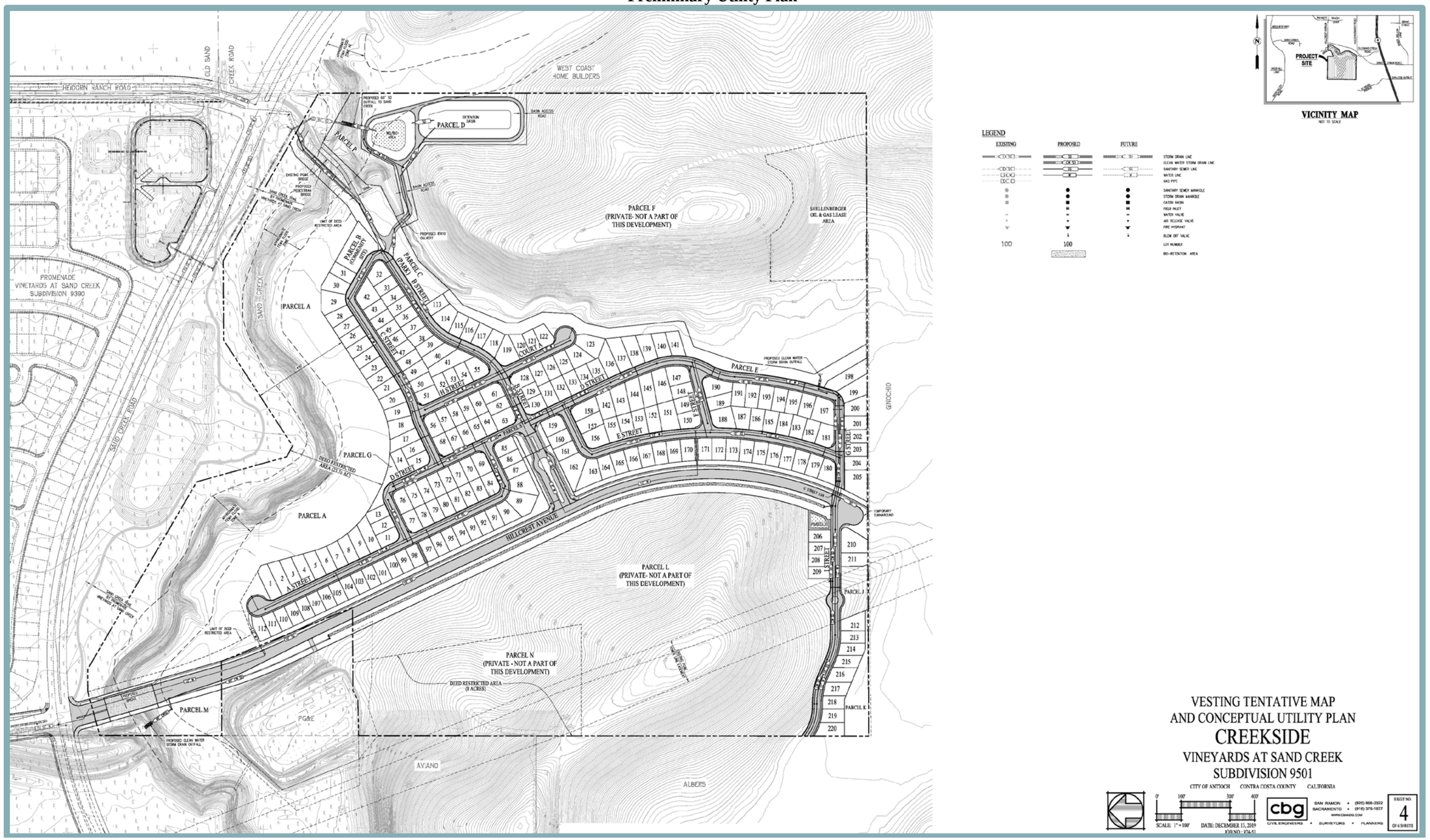


Figure 7
Preliminary Utility Plan



While construction has been completed, the facility is not yet operational. Stormwater runoff from the proposed development area (Hillcrest Avenue and the proposed residential neighborhoods) would be directed to new detention and bio-retention basins located within the northeastern portion of the site (Parcel D). The basins would provide for treatment and detention of captured stormwater runoff. Treated stormwater runoff would flow into Sand Creek by way of a new outfall structure to be constructed on the south side of the existing outfall facility that was constructed by the Promenade/Vineyards at Sand Creek Project.

Stormwater runoff from the open space area in the western hillside of the project site (Parcels L and N) would be captured prior to reaching Hillcrest Avenue; a portion of the captured runoff would be directed north to a new clean water outfall adjacent to the Hillcrest Avenue bridge and the remainder would be directed east to a new clean water outfall releasing towards an existing natural drainage feature within the southern portion of the project site. The eastern hillslope (Parcel F) would continue to drain naturally into the same natural drainage area as occurs under existing conditions.

Electricity for the proposed project would be provided by PG&E. Telecommunications would be provided by AT&T, Comcast, and Astound. Dry utilities, electrical, gas, and technology lines would be extended from existing lines beneath Hillcrest Avenue.

Off-Site Improvements

In order to construct the proposed Hillcrest Avenue roadway extension, a total of 0.25-acre of off-site improvement area would be required to create the planned intersection with Sand Creek Road. The off-site improvement area is primarily flat and is located north of the project site, on the Promenade/Vineyards at Sand Creek Project site. Additional off-site improvements would be necessary to extend Hillcrest Avenue through the eastern edge of the PG&E carve-out parcel at the site's western boundary. The extension through the PG&E parcel has been anticipated by the landowners and is required to replace the overland access easement that PG&E currently uses.

In addition, the proposed project would include construction of new off-site sewer and water connections across Sand Creek near Heidorn Ranch Road. The Promenade/Vineyards at Sand Creek Project proposes to extend such utilities and their easements (located west of Parcel E, Subdivision 9360) to the south of the ultimate Sand Creek Road right-of-way. The proposed project would extend the utilities further south to the project site, crossing Sand Creek with a new pedestrian/EVA bridge, adjacent to the existing PG&E bridge. Overall, the off-site improvement areas would total 1.8 acres.

Project Construction

All project improvements, including off-site improvements, are anticipated to be built over three phases. Phase I of the project would commence after resource agency permits are obtained (anticipated in 2022), and Phase III is expected to be completed within four years of Phase I. All residential lots within the project site would be pad graded. Overall, the site is anticipated to balance; thus, substantial import or export of soil materials would not be required. Accounting for the proposed off-site improvements, as well as minor grading activities within Parcels F and L, the proposed project would include disturbance of approximately 71.7 acres.

Table 2 below provides a summary of the proposed disturbance area associated with the proposed project.

Table 2 Proposed Disturbance Area	
Proposed Use	**Acreage**
On-Site Development Area (Permanent Disturbance)	58.9
Off-Site Improvement Area (Permanent Disturbance)	1.8
Graded Open Space (Temporary Disturbance)	11.0
Undisturbed	88.3
Total Disturbance	**71.7**

PROJECT ENTITLEMENTS AND APPROVALS:

Requested project entitlements are anticipated to include the following:

- General Plan Amendment. The proposed project would require the approval of a General Plan text and map amendment to the Sand Creek Focus Area of the General Plan to change the land use designations of the site from Open Space/Senior Housing and Hillside, Estate and Executive Residential/Open Space to Medium Low Density Residential/Open Space.
- Master Development Plan/Rezone. The proposed project would require a Rezone from S to PD. The PD would include special development standards for the project.
- Vesting Tentative Subdivision Map. The proposed project would require approval of Small Lot and Large Lot Vesting Tentative Subdivision Maps for the subdivision of the project site into multiple parcels to accommodate a total of 220 single-family residential units, as well as public roadway, parks, and open space parcels;
- Use Permit. A Use Permit is required to further clarify the details of each phase of the proposed project and to ensure that each component complies with established provisions of the proposed PD district.
- Design Review. The proposed project would require Design Review to authorize the proposed building conceptual architecture, landscaping, and site design of the residential community and to ensure consistency with the City of Antioch's General Plan and Zoning Ordinance design policies and criteria, except where specifically amended by the requested approvals.
- Resource Management Plan. Pursuant to section 4.4.6.7(t) of the City of Antioch General Plan, the applicant will prepare a Resource Management Plan for City approval.
- Development Agreement. The Development Agreement would allow the City and the applicant to enter into an agreement to assure the City that the proposed project would be completed in compliance with the plans submitted by the applicant, and assure the applicant of vested rights to develop the project.

In addition to approvals from the City of Antioch, the proposed project would require the following approvals/permits from other responsible and trustee agencies:

- Section 404 Nationwide Permit (or Letter of Permission) (U.S. Army Corps of Engineers);
- Section 401 Water Quality Certification (Central Valley Regional Water Quality Control Board); and
- Potential Section 1600 Lake or Streambed Alteration Agreement (California Department of Fish and Wildlife).

PROBABLE ENVIRONMENTAL EFFECTS:

The City has reviewed the proposed project and has prepared an Initial Study (see attached). Based on the analysis within the Initial Study, the City and has determined that an EIR should be prepared for the

proposed project to address potential project-related impacts to the following environmental resource areas: Air Quality, Greenhouse Gas Emissions, and Transportation. All other CEQA issue areas were determined to be less than significant with implementation of the mitigation measures included in the Initial Study.

Each resource area chapter will include a discussion of the existing setting, thresholds of significance, evaluation of potential impacts, and if necessary, feasible mitigation measures to reduce or eliminate potentially significant impacts. In addition, statutorily required sections and discussion of project alternatives will be included. Some refinement to the aforementioned issues may be required based on comments received during the NOP scoping process. The following section describes each of the technical Chapters of the EIR in further detail.

Air Quality and Greenhouse Gas Emissions

The Air Quality and Greenhouse Gas Emissions chapter of the EIR will summarize the regional air quality setting, including climate and topography, existing ambient air quality, regulatory setting, and presence of any sensitive receptors near the project site. The significance of air quality impacts will be determined in comparison to BAAQMD-recommended significance thresholds of significance. The chapter will additionally address toxic air contaminant (TAC) emissions, utilizing the California Air Resource Board (CARB) "Air Quality and Land Use Handbook: A Community Health Perspective." The project's cumulative contribution to regional air quality will be discussed, based in part on the modeling conducted at the project level. Air quality emissions will be modeling using project-specific information applied to the California Emissions Estimator Model (CalEEMod) software. The significance of air quality impacts will be determined in comparison to BAAQMD recommended significance thresholds. Mitigation measures will be incorporated to reduce any significant air quality impacts, and anticipated reductions in emissions associated with proposed mitigation measures will be quantified.

The Greenhouse Gas (GHG) section will also use CalEEMod to produce an estimate of carbon dioxide emissions, including indirect emissions of GHGs (e.g., electricity, natural gas). Emissions will be expressed in units of carbon dioxide equivalents. The analysis will include a discussion of Assembly Bill (AB) 32 and Senate Bill (SB) 32, in compliance with the California 2017 Climate Change Scoping Plan. Emission estimates will also be compared to the City of Antioch's Community and Municipal Climate Action Plans and BAAQMD thresholds. With respect to AB 32 and SB 32, the chapter will include a comparison of the estimated emissions to appropriate statewide thresholds. The analysis will discuss the project's applicable mitigation measures, if needed, for reducing GHG impacts.

Transportation

The Transportation chapter of the EIR will incorporate a Traffic Impact Analysis (TIA) provided to evaluate impacts of the proposed project on existing and future transportation systems. The TIA will be used to examine potential impacts of the proposed project on the following study intersections:

1. Lone Tree Way at Hillcrest Avenue
2. Lone Tree Way at Heidorn Ranch Road
3. Sand Creek Road at Deer Valley Road
4. Sand Creek Road at Hillcrest Avenue (Future Intersection)
5. Sand Creek Road at Heidorn Ranch Road (Future Intersection)
6. Sand Creek Road at State Route 4 Eastbound Ramps
7. Sand Creek Road at State Route 4 Westbound Ramps

The following freeway segments will also be analyzed in the Transportation chapter:

8. State Route 4, west (north) of Lone Tree Way
9. State Route 4, west (north) of Sand Creek Road
10. State Route 4, west (north) of Balfour Road
11. State Route 4, east (south) of Balfour Road

In addition, the chapter will evaluate the adequacy of site access, emergency access, possible design hazards, and on-site circulation. The chapter will also include additional analysis of Vehicle Miles Traveled (VMT) induced by the proposed project. Recommended mitigation measures will be incorporated, if necessary, to reduce significant transportation impacts.

Statutorily Required Sections
Pursuant to CEQA Guidelines Section 21100(B)(5), the Statutorily Required Sections chapter of the EIR will address the potential for growth-inducing impacts of the proposed project, focusing on whether removal of any impediments to growth would occur with the project. A summary of the significant and unavoidable impacts identified within the EIR will be included in this chapter, as well as a discussion of significant irreversible impacts. The chapter will also summarize the cumulative impact analyses, which will be provided in each technical chapter of the EIR.

Alternatives Analysis
In accordance with Section 15126.6(a) of the CEQA Guidelines, the EIR will include an analysis of a range of alternatives, including a No Project Alternative. Consideration will be given to potential off-site locations consistent with CEQA Guidelines, Section 15126.6(f)(2), and such locations will be determined in consultation with City staff. If it is determined that an off-site alternative is not feasible, the EIR will include a discussion describing why such a conclusion was reached. The project alternatives will be selected when more information related to project impacts is available in order to be designed to reduce significant project impacts. The chapter will also include a section of alternatives considered but dismissed, if necessary. The Alternatives Analysis chapter will describe the alternatives and identify the environmentally superior alternative. The alternatives will be analyzed at a level of detail less than that of the proposed project; however, the analyses will include sufficient detail to allow a meaningful comparison of the impacts. Such detail may include conceptual site plans for each alternative, basic quantitative traffic information (e.g., trip generation), as well as a table that will compare the features and the impacts of each alternative.

March 16, 2020

Alexis Morris — Date
Planning Manager, City of Antioch

Attachment

Creekside/Vineyards at Sand Creek Initial Study

CITY OF ANTIOCH
COMMUNITY DEVELOPMENT DEPARTMENT

ANTIOCH
CALIFORNIA

Creekside/Vineyards at Sand Creek

INITIAL STUDY

March 2020

RANEY PLANNING & MANAGEMENT, INC. 20 years
1501 Sports Drive, Suite A, ▪ Sacramento ▪ CA ▪ 95834
Office 916.372.6100 ▪ Fax 916.419.610

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INITIAL STUDY

March 2020

A. PROJECT INFORMATION

1. Project Title: Creekside/Vineyards at Sand Creek Project

2. Lead Agency Name and Address: City of Antioch
Community Development Department
P.O. Box 5007
Antioch, CA 94531

3. Contact Person and Phone Number: Alexis Morris
Planning Manager
(925) 779-7035

4. Project Location: Southeast of future Sand Creek Road/
Hillcrest Avenue intersection
Antioch, CA 94513

5. Project Sponsor's Name and Address: GBN Partners, LLC
Lisa Borba
3820 Blackhawk Road
Danville, CA 94506
(925) 736-1571

6. Existing General Plan Designation: Sand Creek Focus Area: "Open Space/ Senior Housing" and "Hillside, Estate and Executive Residential/Open Space"

7. Proposed General Plan Designation: Medium Low Density Residential/Open Space

8. Existing Zoning Designation: Study Area (S)

9. Proposed Zoning Designation: Planned Development District (PD)

10. Required Approvals from Other Public Agencies:
Section 404 Nationwide Permit (or Letter of Permission) (USACE)
Section 401 Water Quality Certification (RWQCB – Central Valley Region)
Potential Section 1600 Lake or Streambed Alteration Agreement (CDFW)

11. Surrounding Land Uses and Setting:

The majority of the surrounding area has been approved or planned for residential development. Within the City of Antioch, the area to the north of the project site is currently approved for development with residential uses as part of the Promenade/Vineyards at Sand Creek project. Other development is currently contemplated to the northwest, southwest, and east of the site. An existing PG&E-owned parcel developed with an

electrical substation, designated Public/Quasi Public per the General Plan, is located within a carve-out parcel at the site's western boundary. The area to the south of the project site consists of undeveloped dry-farmed land outside the City's Sphere of Influence and Planning Area, within unincorporated Contra Costa County. The City of Brentwood city limits are located to the east of the project site.

12. Project Description Summary:

    The Creekside/Vineyards at Sand Creek Project (proposed project) would include development of 220 single-family residential units and associated improvements on approximately 58.9 acres of the 158.2-acre project site, as well as 1.8 acres of off-site improvements. The proposed project would require an amendment to the City of Antioch General Plan, a Rezone, a Use Permit, a Vesting Tentative Map, Design Review, and a Development Agreement.

13. 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), a project notification letter was distributed to the Amah Mutsun Tribal Band of Mission San Juan Bautista, the Indian Canyon Mutsun Band of Costanoan, the Ohlone Indian Tribe, the Wilton Rancheria, and the Ione Band of Miwok Indians. In addition, because the proposed project includes a request for a General Plan Amendment (GPA), in compliance with Senate Bill (SB) 18, the City of Antioch also sent SB 18 notification letters to all the tribes included on the NAHC's tribal consultation list for Contra Costa County. The letters were distributed on January 31, 2020. Wilton Rancheria and the Northern Valley Yokuts Tribe and Nototomne Cultural Preservation provided responses, requesting copies of relevant cultural information and other project information; however, requests to initiate formal consultation were not received from Wilton Rancheria, the Northern Valley Yokuts Tribe and Nototomne Cultural Preservation, or any other of the contacted tribes. The City will continue to engage in discussions with local tribes as necessary throughout the CEQA process.

B. SOURCES

The following documents are referenced information sources used for the purposes of this Initial Study:

1. Balance Hydrologics, Inc. *Stormwater Control Plan for Creekside Vineyards at Sand Creek.* July 2019.
2. California Air Resources Board. *The 2017 Climate Change Scoping Plan Update.* January 20, 2017.
3. California Department of Conservation. *California Important Farmland Finder.* Available at: https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed January 2020.
4. California Department of Forestry and Fire Protection. *Contra Costa County, Very High Fire Hazard Severity Zones in LRA*. January 7, 2009.
5. California Department of Transportation. *Scenic Highways.* Available at: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed January 2020.
6. California Energy Commission. *2019 Building Energy Efficiency Standards.* March 2018.
7. City of Antioch. *2015 Urban Water Management Plan*. May 2016.

8. City of Antioch. *About APD*. Available at: http://www.antiochca.gov/police/about-apd/. Accessed January 2020.
9. City of Antioch. *Antioch General Plan Update EIR.* July 2003.
10. City of Antioch. *City of Antioch Housing Element 2015-2023*. Adopted April 14, 2015.
11. City of Antioch. *Citywide Design Guidelines Manual*. October 2009.
12. City of Antioch. *General Plan*. Updated November 24, 2003.
13. City of Antioch. *Vineyards at Sand Creek, Environmental Impact Report, SCH#2014092010.* February 10, 2016.
14. Contra Costa Clean Water Program. *Applicability of Hydromodification Management (HM) Requirements in Contra Costa.* Available at: https://www.arcgis.com/apps/webappviewer/index.html?id=d8a16600921140b0ab5363a7d507a5da. Accessed January 2020.
15. Contra Costa Clean Water Program. *Stormwater C.3. Guidebook, Stormwater Quality Requirements for Development Applications*. May 17, 2017.
16. Contra Costa County Department of Conservation and Development. *2016 Agricultural Preserves Map.* February 1, 2017.
17. California Geological Survey. *Earthquake Zones of Required Investigation.* Available at: https://maps.conservation.ca.gov/cgs/EQZApp/app/. Accessed March 2020.
18. ENGEO Inc. *Creekside, Antioch, California, Preliminary Geotechnical Summary Report.* February 27, 2019.
19. ENGEO, Inc. *Creekside, Antioch, California, Phase I Environmental Site Assessment.* March 1, 2019.
20. Fehr & Peers. *Transportation Impact Assessment, Creekside (Vineyards at Sand Creek).* February 2020.
21. j.c. brennan & associates, Inc. *Creekside Vineyards at Sand Creek, Environmental Noise Assessment.* February 21, 2020.
22. Kimley-Horn and Associates, Inc. *Peer Review of the Creekside (Vineyards at Sand Creek) Project in Antioch, CA.* November 20, 2019.
23. Madrone Ecological Consulting. *Peer review for the proposed Vineyards at Sand Creek Project, City of Antioch, Contra Costa County, California.* February 4, 2020.
24. Monk & Associates, Inc. *Administrative Draft Biological Resource Analysis, Creekside Development Project, Antioch, Contra Costa County, California.* February 13, 2020.
25. Native American Heritage Commission. *Re: Native American Consultation, Pursuant to Senate Bill 18 (SB18), Government Codes §65352.3 and §65352.4, as well as Assembly Bill 52 (AB52), Public Resources Codes §21080.1, §21080.3.1 and §21080.3.2, Creekside/Vineyards at Sand Creek Project, Contra Costa County*. January 22, 2020.
26. Natural Investigations Company. *Cultural Resources Assessment for the Creekside Vineyards at Sand Creek Subdivision Project, Antioch, Contra Costa County, California.* February 2020.
27. San Francisco Bay Regional Water Quality Control Board. *Order No. R2-2019-0035, NPDES No. CA0038547*. Adopted December 11, 2019.
28. Stewarts Tree Service, Inc. *Tree Survey, Creekside, Antioch.* July 30, 2019.
29. SWT Engineering. *Joint Technical Document, Keller Canyon Landfill (SWIS NO. 07-AA-0032)*. May 2016.

C. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is "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	March 16, 2020 Date
Alexis Morris, Planning Manager Printed Name	City of Antioch For

E. BACKGROUND AND INTRODUCTION

This Initial Study identifies and analyzes the potential environmental impacts of the Creekside/Vineyards at Sand Creek Project (proposed project). The information and analysis presented in this document is organized in accordance with the order of the California Environmental Quality Act (CEQA) checklist in Appendix G of the CEQA Guidelines. Where the analysis provided in this document identifies potentially significant environmental effects of the project, mitigation measures are prescribed.

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

In 2003, the City of Antioch completed a comprehensive update of the City's General Plan and adopted an Environmental Impact Report (EIR) for the updated General Plan. The General Plan EIR is a program EIR, prepared pursuant to Section 15168 of the CEQA Guidelines (Title 14, California Code of Regulations, Sections 15000 *et seq*.). The General Plan EIR analyzed full implementation of the General Plan and identified measures to mitigate the significant adverse impacts associated with the General Plan. Consistent with Section 15150 of the CEQA Guidelines, applicable portions of the General Plan and General Plan EIR are incorporated by reference as part of this Initial Study.

In 2016, the City certified an EIR for the Promenade/Vineyards at Sand Creek Project, located directly to the north of the project site. The Promenade/Vineyards at Sand Creek Project, which is currently under construction, will include development of up to 650 single-family residential units and associated improvements, including extension of Sand Creek Road westward from Old Sand Creek Road, and extension of Hillcrest Avenue southward towards the project site. The proposed project is independent of the Promenade/Vineyards at Sand Creek project, but would connect to planned infrastructure improvements to be constructed as part of that project.

F. PROJECT DESCRIPTION

The following provides a description of the project site's current location and setting, as well as the proposed project components and the discretionary actions required for the project.

Project Location

The project site consists of 158.2 acres located south of Sand Creek Road in the southeastern portion of the City of Antioch, California. The City of Antioch is located within eastern Contra Costa County and is bordered to the north by the San Joaquin River Delta; to the east by the City of Brentwood and the City of Oakley; to the west by the City of Pittsburg and unincorporated portions of Contra Costa County; and to the south by unincorporated portions of Contra Costa County (see Figure 1).

The project site is bordered by the City of Antioch/Contra Costa County line to the south and the City of Antioch/City of Brentwood limit to the east. Sand Creek is located to the north of the site, and State Route (SR) 4 is located approximately 0.38-mile east of the site (see Figure 2). The site is identified by Assessor's Parcel Number (APN) 057-050-024.

Figure 1
Regional Location

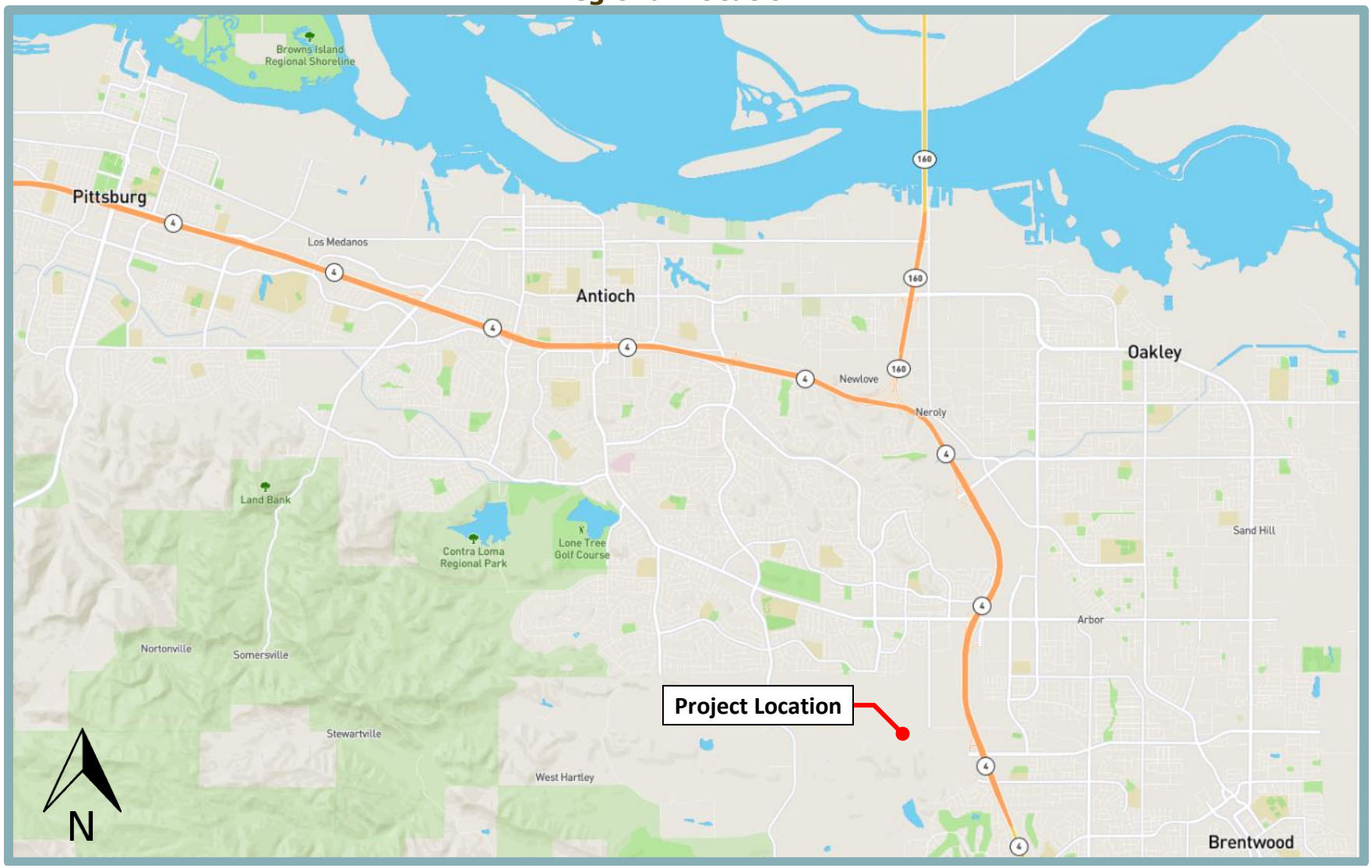
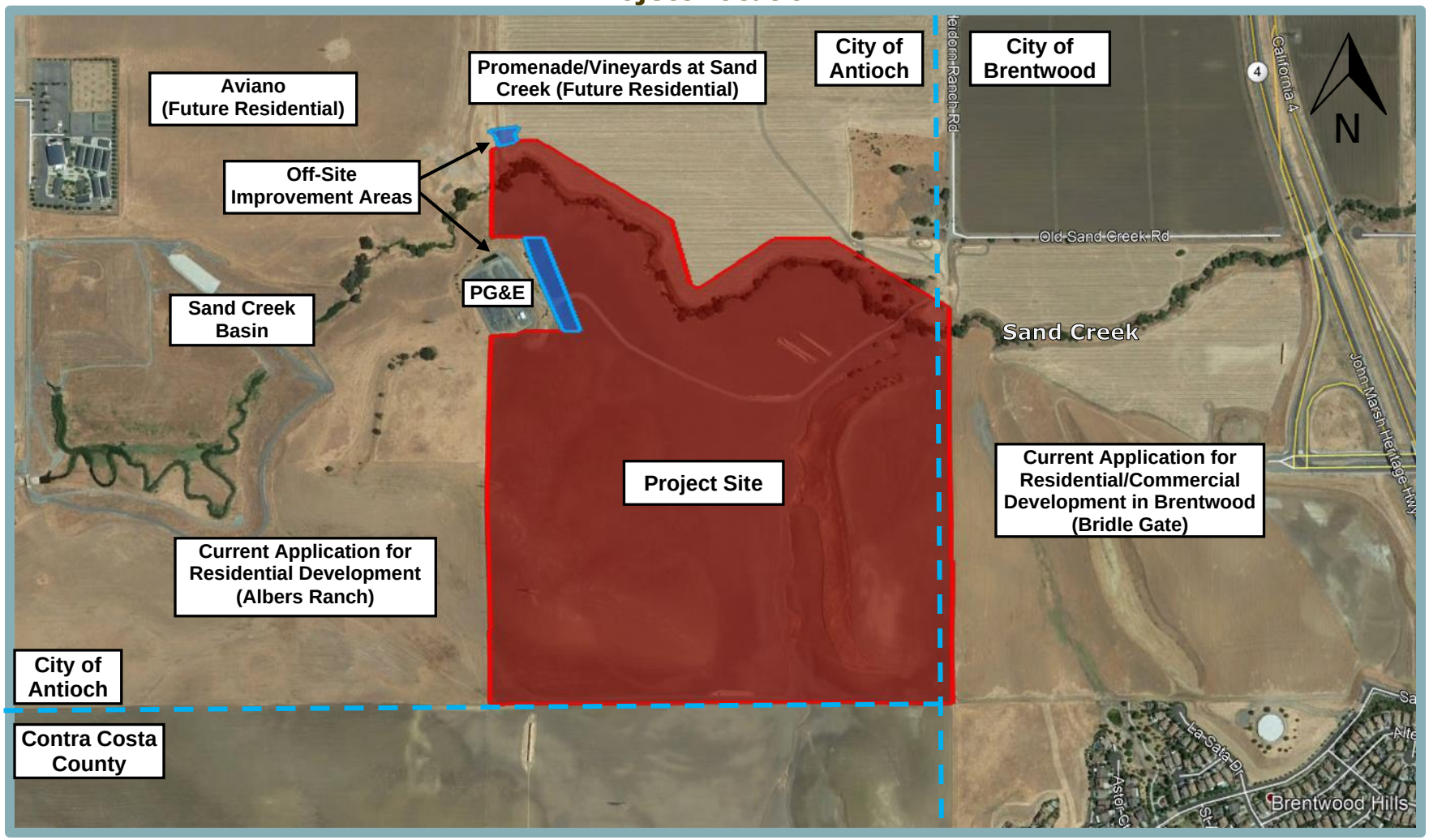


Figure 2
Project Location



The project site is situated within the Sand Creek Focus Area of the General Plan, which contains lands designated by the City of Antioch General Plan for open space, residential, commercial, and mixed-use development.

Project Setting and Surrounding Land Uses

The following sections describe the existing setting of the project site and the surrounding land uses in the project vicinity.

Project Site Setting

Per the City's General Plan, the eastern portion of the project site is designated Open Space/Senior Housing, while the western portion is designated Hillside, Estate and Executive Residential/Open Space. The site is zoned Study Area (S). Currently, the site consists primarily of ruderal grasses and is absent of structures or other indications of prior development.

The site is generally rectangular; however, the northern boundary shifts north and south in an irregular shape, following the alignment of Sand Creek. The site's terrain is characterized by a flat valley bordered by hill forms on the west and east sides. Elevations on-site range from 150 to 325 feet above mean sea level (msl). A shallow area exists at the base of the eastern hillslope and appears to collect local natural drainage during rainfall events, draining into Sand Creek. Sand Creek, a tributary of Marsh Creek, flows through the northern portion of the project site in an easterly direction.

The project site has been dry-land farmed since the 1930s and consists primarily of non-native vegetation. A total of nine energy and communication access and utility easements exist on the project site. Within the northeastern portion of the site, PG&E maintains an access easement that includes a bridge over Sand Creek, which allows PG&E to drive through the project site to access existing off-site utility infrastructure to the west of the project site. An existing PG&E tower line easement extends through the western portion of the project site. In addition, existing oil and gas pipelines within the project site run below ground and cross Sand Creek and the natural drainage area in a number of locations. A 10-foot-wide pole line easement extends along the length of the southern site boundary.

Surrounding Land Uses

As shown in Figure 2, the majority of the surrounding area has been approved or planned for residential development. Within the City of Antioch, the area to the north of the project site is currently approved for development with residential uses as part of the Promenade/Vineyards at Sand Creek project. The area to the northwest of the site is approved for development with the Aviano residential project. The area to the southwest of the project is anticipated for buildout with residential uses per the City's General Plan, and an application to develop the area with residential uses (Albers Ranch) has been received by the City. To the east of the project site, the City of Brentwood has received an application for development of the Bridle Gate project, which, if approved, would include both single-family and multi-family residential uses, and would allow for future development of commercial uses. An existing PG&E-owned parcel developed with an electrical substation, designated Public/Quasi Public per the General Plan, is located within a carve-out parcel at the site's western boundary. The area further to the west of the PG&E parcel includes the Sand Creek Basin, managed by the Contra Costa County Flood Control District. The area to the south of the project site consists of undeveloped dry-farmed land outside the City's Sphere of Influence and Planning Area, within unincorporated Contra Costa County.

Project Components

The proposed project would include development of 220 single-family residential units and associated improvements on approximately 58.9 acres of the 158.2-acre project site, as well as 1.8 acres of off-site improvements (see Figure 3). The project improvements would include, but would not be limited to, parks, trails, landscaping, circulation improvements, and utility installation. The remainder of the site, including Sand Creek and the associated buffer area, would be retained as open space.

The proposed project would require an amendment to the City of Antioch General Plan, a Rezone, a Use Permit, a Vesting Tentative Map, Design Review, and a Development Agreement. The project components are discussed in greater detail below.

General Plan Amendment

The proposed project would include a General Plan Amendment (GPA) to the Land Use Map for the Sand Creek Focus Area of the General Plan to change the land use designations of the site from Open Space/Senior Housing and Hillside, Estate and Executive Residential/Open Space to Medium Low Density Residential/Open Space, as well as an amendment to the text of the Sand Creek Focus Area of the General Plan in order to add the option of market rate or senior residential on small lots.

Master Development Plan/Rezone/Use Permit/Development Agreement

The proposed project would require approval of a Rezone to change the zoning designation of the site from S to Planned Development District (PD), subject to a Master Development Plan. The Master Development Plan and PD district would list the development standards applicable to the project site, including setbacks, lot sizes and building heights. Such details are included in the Creekside/Vineyards at Sand Creek Project Design Guidelines that have been prepared for the proposed project. A Use Permit would be required to further clarify the details of each phase of the proposed project and to ensure that each phase complies with established provisions of the proposed PD district.

In addition, the project would require a Development Agreement, which would allow the City and the applicant to enter into an agreement to assure the City that the proposed project would be completed in compliance with the plans submitted by the applicant, and assure the applicant of vested rights to develop the project.

Vesting Tentative Subdivision Map

The proposed project would include a Vesting Tentative Subdivision Map (see Figure 3) to subdivide the project site into 220 single-family residential lots, as well as parcels for associated improvements. Table 1 provides a summary of the proposed land uses. Each of the proposed land uses are described in further detail below.

Residential Uses

The proposed residential uses would represent a continuation of other planned development in the project vicinity, specifically the Promenade/Vineyards at Sand Creek Project to the north of the site. Thus, the neighborhood design, lot size, density, and house design included in the proposed project would be similar to what is anticipated for the Promenade/Vineyards at Sand Creek Project.

Figure 3
Vesting Tentative Subdivision Map

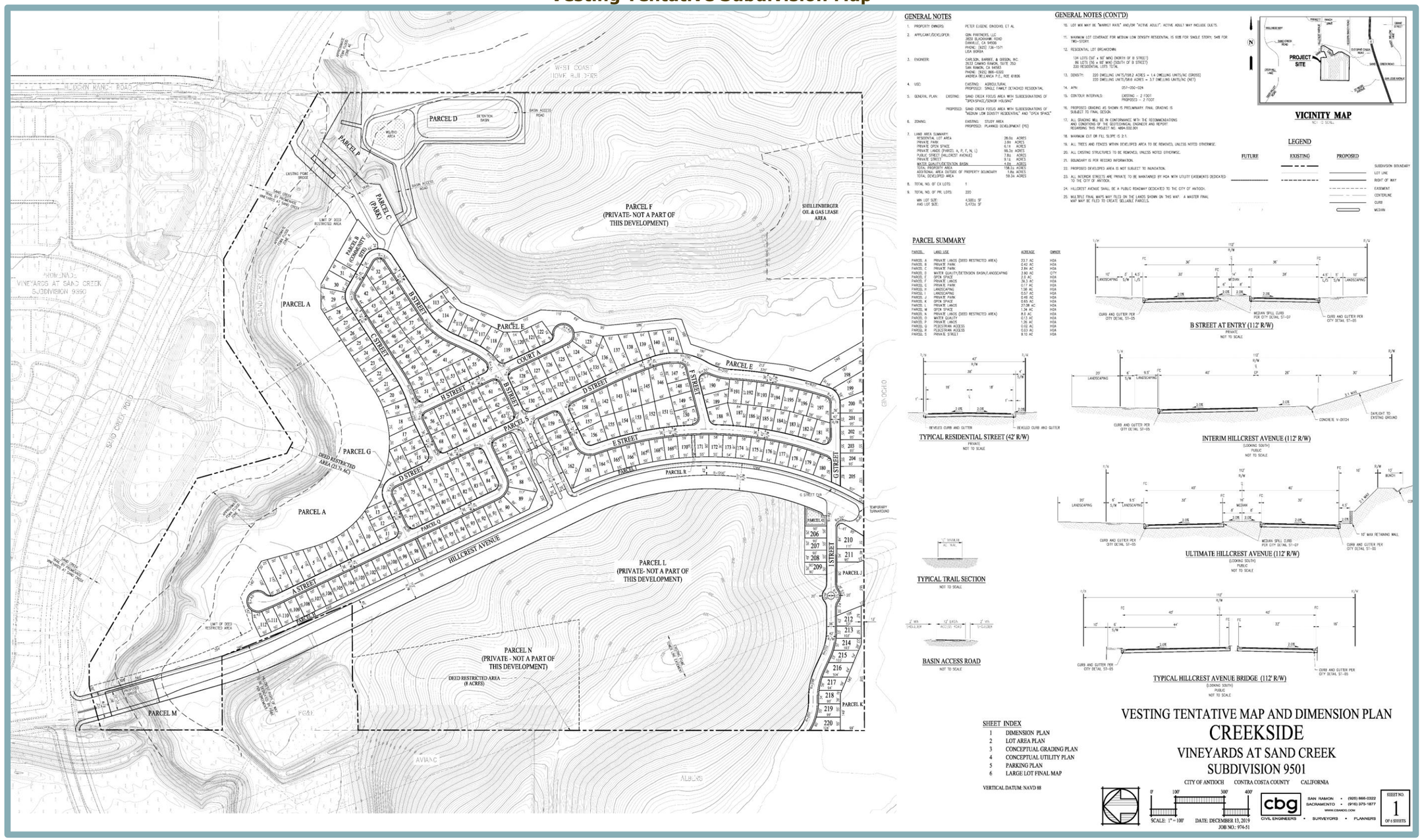


Table 1
Proposed Land Uses

Proposed Land Use	Parcels	Acreage
Residential	--	28.0
Private Parks	B, C, G, J	3.9
Landscaping/Private Open Space	E, H, I, K, M, Q, R	6.1
Public Street (Hillcrest Avenue)	--	7.8
Private Streets	S	9.1
Water Quality/Detention	D, O	4.0
Private Land*	A, F, L, N, P	99.3
Total Project Site	**--**	**158.2**

***** With the exception of approximately 11 acres proposed to be graded, the proposed project would not include disturbance of Parcels A, F, L, N, or P.

The average density of the proposed residential development would be approximately 3.7 units/acre (net) (220 units/58.9 acres). Similar to the Promenade/Vineyards at Sand Creek project, at least six different models, each with three different elevations, would be constructed, on lots ranging from approximately 4,500 to 5,473 square feet (sf). The proposed residential units would consist of either market-rate units, senior/active adult units, or a combination of both.

The site is anticipated to be developed in three phases (Phases I, II, and III) (see Figure 4). Phase I would include construction of the residential lots east of Hillcrest Avenue and north of the main entry. Phase I would also include the community pool and associated recreational amenities within Parcels B and C. Phase II would include the residential lots east of Hillcrest Avenue and south of the main entry. Phase III would include the residential lots west of Hillcrest Avenue and a park area within the PG&E tower easement along Hillcrest Avenue.

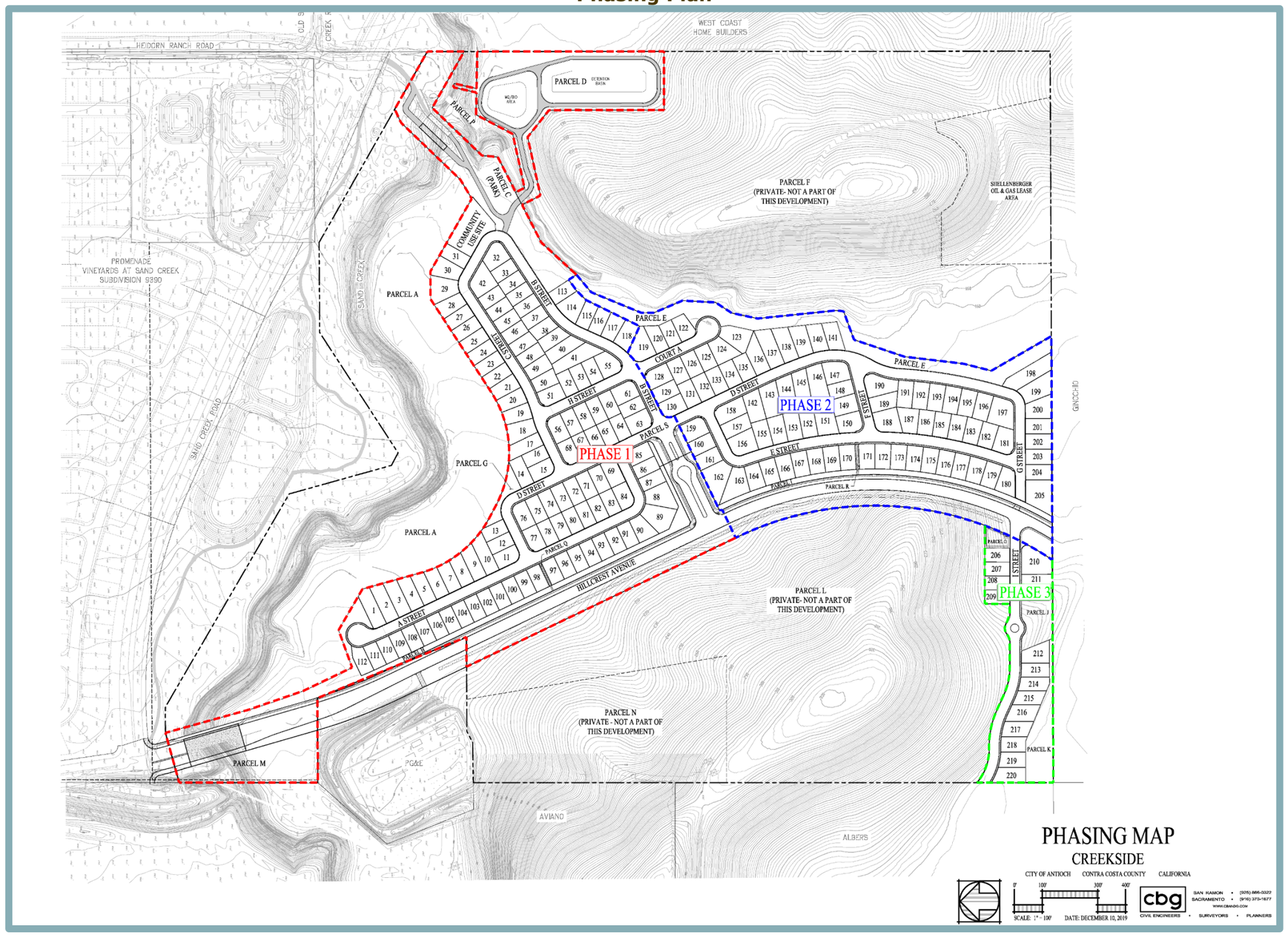
If developed as market-rate units, the majority of the proposed homes would be two-story, with two car garages. If developed as senior/active adult units, the proposed homes would include a mix of two-story and single-story homes.

Access and Circulation

As part of the project, Hillcrest Avenue would be extended through the project site. Hillcrest Avenue at the proposed location is identified in the City General Plan. The alignment of the roadway has been designed to span Sand Creek and provide permanent access to the existing PG&E facility and beyond.

Vehicular ingress and egress to the proposed project would be provided from Hillcrest Avenue by way of a centrally located main entry, and an emergency vehicle access (EVA)/secondary entry intersection to the south. In addition, a clear span EVA/pedestrian bridge may be constructed adjacent to the existing PG&E bridge spanning Sand Creek in the northeastern portion of the project site, subject to final negotiations with PG&E and final utility designs. The Hillcrest Avenue extension would include sidewalk and landscaping on the east side of the roadway. The Hillcrest Avenue bridge over Sand Creek would be constructed in the ultimate width to facilitate two southbound and two northbound lanes. Right-of-way improvements would be limited to the necessary roadway width, utilities, and pedestrian facilities within the area of the Sand Creek crossing.

Figure 4
Phasing Plan



Phase I of the proposed project would include construction of approximately 1,500 lineal feet of Hillcrest Avenue in a two-lane undivided roadway configuration from south of the future Sand Creek Road right-of-way to the main entry and all necessary turning lanes at intersections, as well as right-of-way for the ultimate four-lane configuration. Phase I would also include construction of the main entry and the potential EVA/pedestrian bridge.

Phase II of the proposed project would include construction of approximately 1,000 additional lineal feet of Hillcrest Avenue in a two-lane undivided roadway configuration from south of the main entry to the southerly EVA/secondary entry intersection. Phase II would also include construction of the southern EVA into the eastern neighborhood area. Phase III of the proposed project would include construction of the southern secondary entry on the west side of Hillcrest Avenue, across from the Phase II EVA. It should be noted that the main entry to the Phase I and II development would be gated, while the proposed Phase III development west of Hillcrest Avenue would not be gated and would provide access to the property to the west. Ultimate construction of the four-lane Hillcrest Avenue configuration would occur as part of buildout of future residential uses on the area to the west of the project site (Albers Ranch), when such development necessitates connection to Hillcrest Avenue.

A new traffic signal would be installed at the main entry. Pedestrian access to the site would be provided by a sidewalk located on Hillcrest Avenue, adjacent to the project site, as well as by the proposed pedestrian trail connection within the northeast corner of the project site. Pedestrian facilities are not proposed on the west side of Hillcrest Avenue.

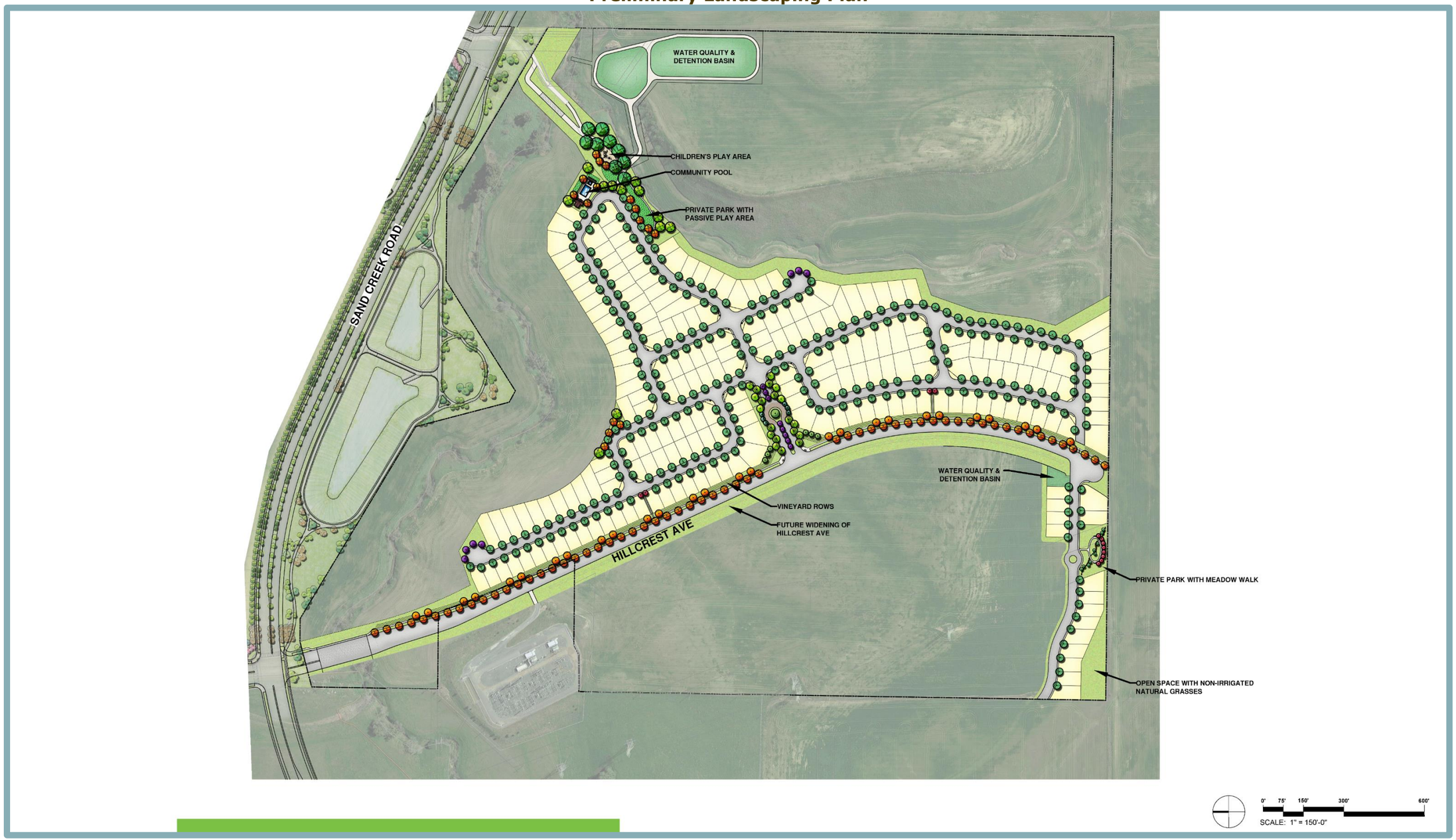
Interior vehicular circulation would be provided by a traditional grid pattern of private two-way streets that connect back to the entrances. The private streets are proposed with a 41-foot right-of-way, including 36 feet curb-to-curb with a five-foot attached monolithic sidewalk on one side of the street. The streets would allow two-way traffic and parking on both sides. Each residential unit would have a two-car garage and driveway with additional street parking.

Parks, Trails, Open Space, Landscaping, and Fencing

As part of the proposed project, a total of 3.9 acres would be developed as private parks (Parcels B, C, G, and J) (see Figure 5). Parcels B and C, located in the northeastern portion of the site are anticipated to include a children's play area, picnic areas, a community pool, and a passive play area; however, the ultimate programming of the parks would be dictated by the City of Antioch Parks and Recreation Commission. As noted previously, the proposed project may include construction of a new EVA/pedestrian bridge within Parcel C, which includes an existing PG&E-owned bridge over Sand Creek. The project would include a new private pedestrian trail connection extending from the proposed residential neighborhood across either the new bridge or the existing PG&E bridge to connect to the public Sand Creek Trail included in the planned Promenade/Vineyards at Sand Creek development to the north of the site. Parcel G, located at the northern edge of the proposed residential neighborhood, would consist of an open meadow with non-irrigated grasses and oak trees. Parcel J, located in the southwestern portion of the site, would include an open meadow area with a concrete pedestrian path, benches, and various other landscaping features.

Parcels A, P, and M, which include Sand Creek, as well as a 200-foot-wide buffer to the south of the creek, would be preserved as private land and would not be graded or otherwise disturbed as part of the project, with the exception of a storm drain outfall within Parcel M. Parcel A has been deed-restricted as open space for environmental purposes as part of the Promenade/Vineyards at Sand Creek project.

Figure 5
Preliminary Landscaping Plan



The buffer would include the full extent of the 100-year floodplain associated with Sand Creek. In addition, the eastern and western hill forms within the site would be retained as private land and would not be developed with any residential uses or other permanent structures (Parcels F, L, and N).

It should be noted that minor grading activities totaling approximately 11 acres would be required within Parcels F and L; however, the upper portions of the hillsides would remain undisturbed. The grading activities would be required to accommodate the proposed detention basin, adjacent to Parcel F, and to accommodate the grade of the proposed Hillcrest Avenue extension, adjacent to Parcel L. Parcel N, which includes an 8.0-acre area located along the western site boundary, would continue to be deed-restricted as a habitat area.

Landscaping features would be provided throughout the proposed development area, and would conform to the requirements and provisions of Section 9-5.1001 of the City of Antioch Municipal Code. Project landscaping would consist of street trees, shrubs, groundcover, agricultural plantings, and open lawn areas. Both the project entries would be landscaped, as would the east side of Hillcrest Avenue and the roadway medians. Private landscaping and parks throughout the project site would be maintained by a Homeowners Association (HOA). Individual residences would also be landscaped with trees, shrubs, groundcover and some lawns, and would be maintained by either the individual owners or the HOA. Public spaces, common spaces, and private landscaping areas would have an emphasis on drought-tolerant and adaptive plant species.

Along the project frontage at Hillcrest Avenue, the project would include a new masonry sound wall with veneer pilasters (see Figure 6). In addition, the project would include six-foot-tall tube steel fencing at the rear of the residential lots adjacent to the proposed open space areas. Within the proposed residential neighborhoods, lots would be separated by six-foot-tall good neighbor fencing.

Utilities

Figure 7 provides an overview of the proposed water, sewer, stormwater, and electrical/communications utility improvements associated with the project.

Potable water would be distributed to the project site by an extension of the existing 16-inch Zone III trunk line in Hillcrest Avenue. The waterline would be looped back to a Heidorn Ranch Road line by way of a connection over Sand Creek, at the same location as existing PG&E bridge. The City has also indicated an interest in reserving space in Phase III of the project to facilitate looping of the waterline within Hillcrest Avenue for future residential development to the west of the project site. Sanitary sewer service would be provided to the project site by an extension of the existing 24-inch sanitary sewer pipe from the Promenade/Vineyards at Sand Creek Project through a connection over Sand Creek at the same location as the existing PG&E bridge.

The project site naturally drains to the northeast. The site is within the Sand Creek Drainage Area, and is located just downstream of Sand Creek Basin, a regional detention facility recently constructed by the Contra Costa County Flood Control District. While construction has been completed, the facility is not yet operational. Stormwater runoff from the proposed development area (Hillcrest Avenue and the proposed residential neighborhoods) would be directed to new detention and bio-retention basins located within the northeastern portion of the site (Parcel D).

Figure 6
Preliminary Wall and Fencing Plan

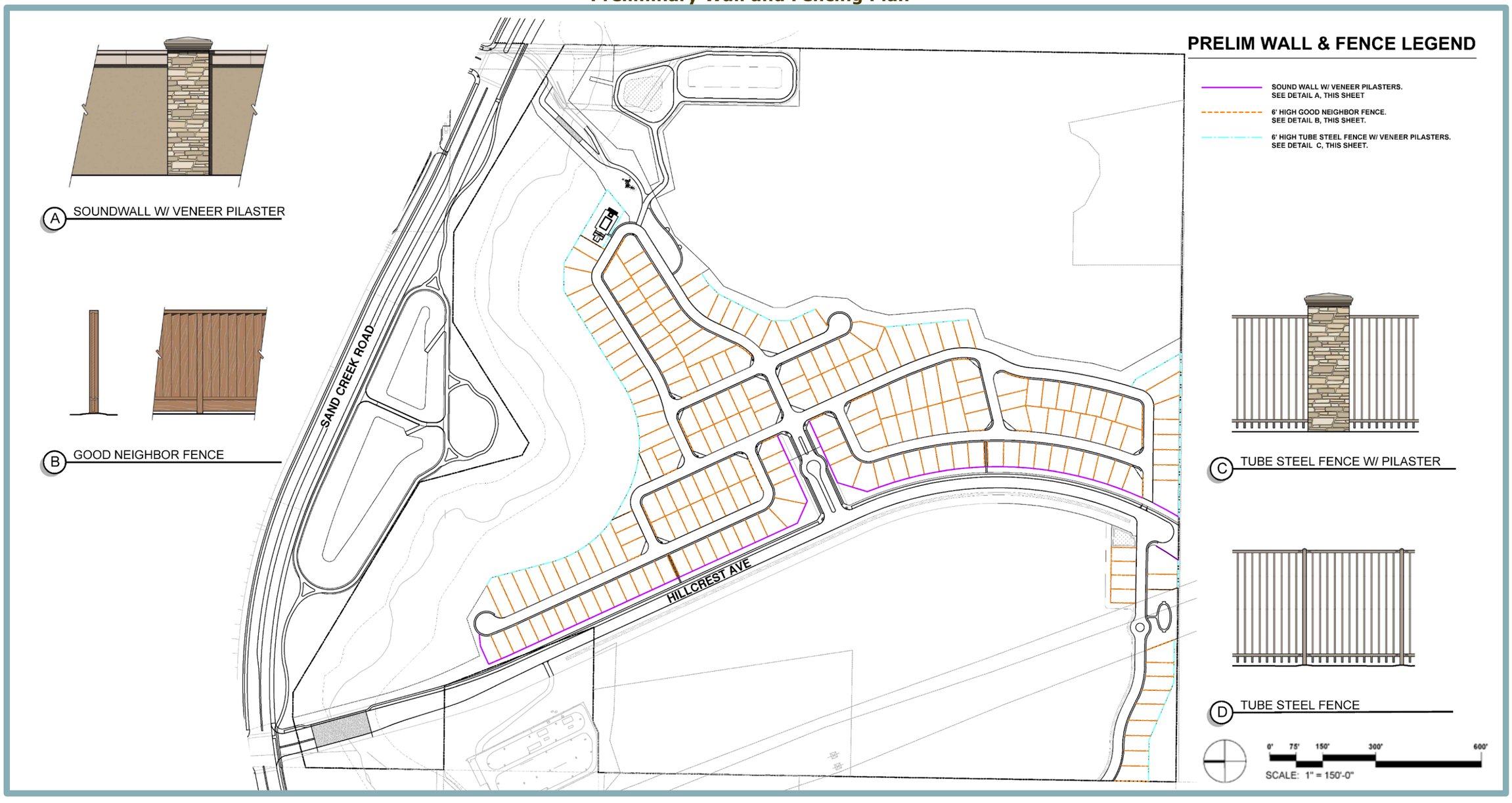
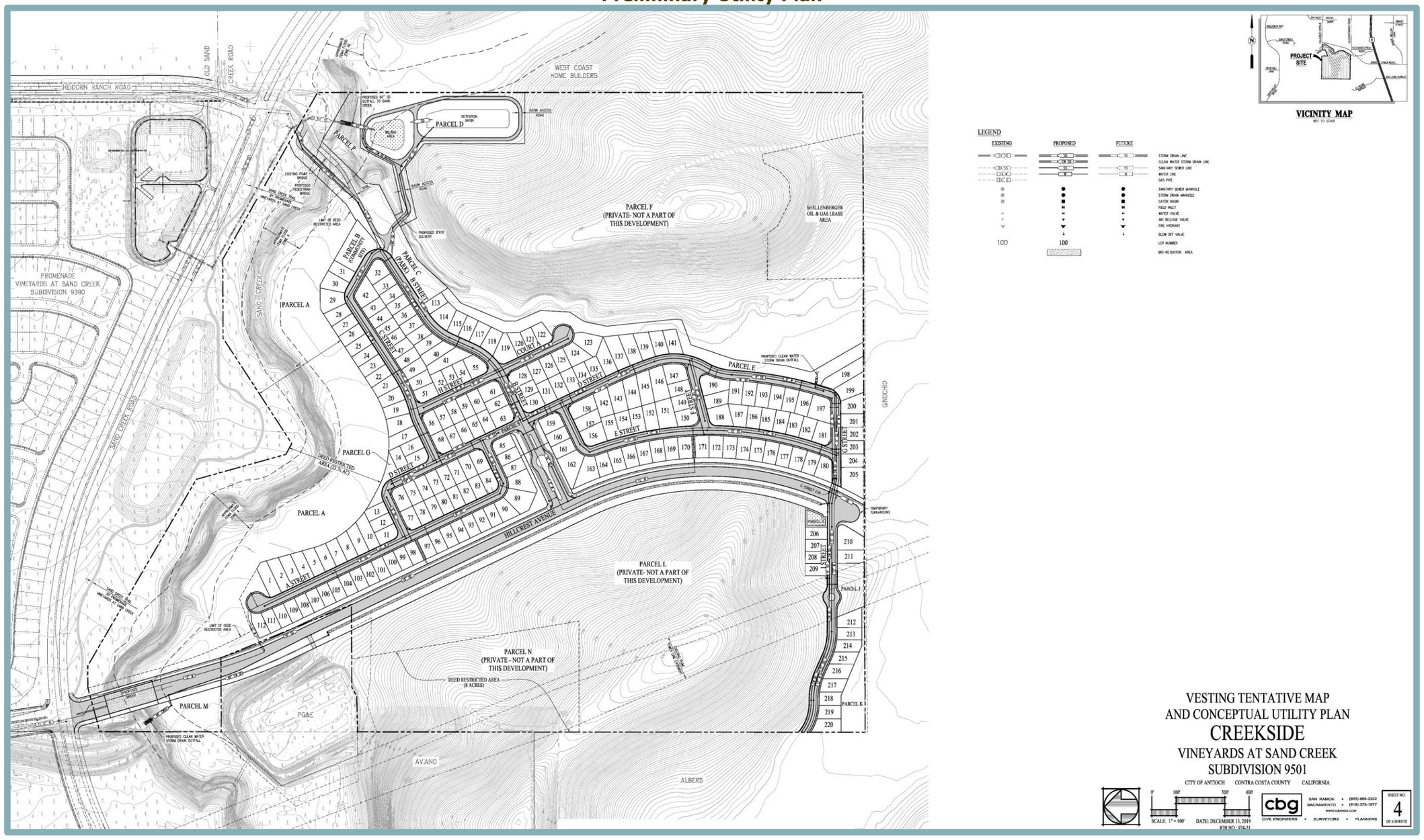


Figure 7
Preliminary Utility Plan



The basins would provide for treatment and detention of captured stormwater runoff. Treated stormwater runoff would flow into Sand Creek by way of a new outfall structure to be constructed on the south side of the existing outfall facility that was constructed by the Promenade/Vineyards at Sand Creek Project.

Stormwater runoff from the open space area in the western hillside of the project site (Parcels L and N) would be captured prior to reaching Hillcrest Avenue; a portion of the captured runoff would be directed north to a new clean water outfall adjacent to the Hillcrest Avenue bridge and the remainder would be directed east to a new clean water outfall releasing towards an existing natural drainage feature within the southern portion of the project site. The eastern hillslope (Parcel F) would continue to drain naturally into the same natural drainage area as occurs under existing conditions.

Electricity for the proposed project would be provided by PG&E. Telecommunications would be provided by AT&T, Comcast, and Astound. Dry utilities, electrical, gas, and technology lines would be extended from existing lines beneath Hillcrest Avenue.

Off-Site Improvements

In order to construct the proposed Hillcrest Avenue roadway extension, a total of 0.25-acre of off-site improvement area would be required to create the planned intersection with Sand Creek Road. The off-site improvement area is primarily flat and is located north of the project site, on the Promenade/Vineyards at Sand Creek Project site. Additional off-site improvements would be necessary to extend Hillcrest Avenue through the eastern edge of the PG&E carve-out parcel at the site's western boundary. The extension through the PG&E parcel has been anticipated by the landowners and is required to replace the overland access easement that PG&E currently uses.

In addition, the proposed project would include construction of new off-site sewer and water connections across Sand Creek near Heidorn Ranch Road. The Promenade/Vineyards at Sand Creek Project proposes to extend such utilities and their easements (located west of Parcel E, Subdivision 9360) to the south of the ultimate Sand Creek Road right-of-way. The proposed project would extend the utilities further south to the project site, crossing Sand Creek with a new pedestrian/EVA bridge, adjacent to the existing PG&E bridge. Overall, the off-site improvement areas would total 1.8 acres.

Project Construction

All project improvements, including off-site improvements, are anticipated to be built over three phases. Phase I of the project would commence after resource agency permits are obtained (anticipated in 2022), and Phase III is expected to be completed within four years of Phase I.

All residential lots within the project site would be pad graded. Overall, the site is anticipated to balance; thus, substantial import or export of soil materials would not be required. Accounting for the proposed off-site improvements, as well as minor grading activities within Parcels F and L, the proposed project would include disturbance of approximately 71.7 acres.

Table 2 below provides a summary of the proposed disturbance area associated with the proposed project.

Table 2 **Proposed Disturbance Area**	
Proposed Use	**Acreage**
On-Site Development Area (Permanent Disturbance)	58.9
Off-Site Improvement Area (Permanent Disturbance)	1.8
Graded Open Space (Temporary Disturbance)	11.0
Undisturbed	88.3
Total Disturbance	**71.7**

Project Approvals

The proposed project would require City approval of the following:

- General Plan Amendment. The proposed project would require the approval of a General Plan text and map amendment to the Sand Creek Focus Area of the General Plan to change the land use designations of the site from Open Space/Senior Housing and Hillside, Estate and Executive Residential/Open Space to Medium Low Density Residential/Open Space.
- Master Development Plan/Rezone. The proposed project would require a Rezone from S to PD. The PD would include special development standards for the project.
- Vesting Tentative Subdivision Map. The proposed project would require approval of Small Lot and Large Lot Vesting Tentative Subdivision Maps for the subdivision of the project site into multiple parcels to accommodate a total of 220 single-family residential units, as well as public roadway, parks, and open space parcels;
- Use Permit. A Use Permit is required to further clarify the details of each phase of the proposed project and to ensure that each component complies with established provisions of the proposed PD district.
- Design Review. The proposed project would require Design Review to authorize the proposed building conceptual architecture, landscaping, and site design of the residential community and to ensure consistency with the City of Antioch's General Plan and Zoning Ordinance design policies and criteria, except where specifically amended by the requested approvals.
- Resource Management Plan. Pursuant to section 4.4.6.7(t) of the City of Antioch General Plan, the applicant will prepare a Resource Management Plan for City approval.
- Development Agreement. The Development Agreement would allow the City and the applicant to enter into an agreement to assure the City that the proposed project would be completed in compliance with the plans submitted by the applicant, and assure the applicant of vested rights to develop the project.

In addition to approvals from the City of Antioch, the proposed project would require the following approvals/permits from other responsible and trustee agencies:

- Section 404 Nationwide Permit (or Letter of Permission) (U.S. Army Corps of Engineers);
- Section 401 Water Quality Certification (Central Valley Regional Water Quality Control Board); and
- Potential Section 1600 Lake or Streambed Alteration Agreement (California Department of Fish and Wildlife).

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 no mitigation has 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 would include mountain ranges, ridgelines, or bodies of water as viewed from a highway, public space, or other area 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. The City's General Plan does not specifically identify any scenic vistas.

According to the California Scenic Highway Mapping System, the proposed project site is located approximately 14 miles northeast of the nearest State Scenic Highway, Interstate 680 (I-680). It should be noted that while not officially designated, SR 4, located approximately 0.38-mile east of the site, is an Eligible State Scenic Highway.[1] However, the project site is not visible from SR 4 and does not contain any scenic resources such as trees, rocks, or historic buildings.

The proposed project site is not located within the vicinity of a designated scenic vista. In addition, SR 160 in the project region has not been designated as an official State Scenic Highway. Therefore, the proposed project would not have a substantial adverse effect on a scenic vista and would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway. Thus, a ***less-than-significant*** impact would occur.

c. General Plan Policy 5.4.2.c states that view corridors from public spaces to natural ridgelines and landmarks, such as Mt. Diablo and distant hills, local ridgelines, the San Joaquin River, and other water bodies (such as Sand Creek), should be preserved. Specific view corridors identified in Policy 5.4.2.c include Somersville Road, Lone Tree Way, Hillcrest Avenue, SR 4, SR 160, James Donlon Boulevard, Deer Valley Road, and Empire Mine Road. However, Policy 5.4.2.c also recognizes that new development will inevitably result in some loss of existing views.

Distinguishing between public and private views is important when evaluating changes to visual character or quality, because private views are views seen from privately-owned land and are typically associated with individual viewers, including views from private

[1] California Department of Transportation. *Scenic Highways.* Available at: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed January 2020.

residences. Public views are experienced by the collective public, and include views of significant landscape features and along scenic roads. According to CEQA (Pub. Resources Code, § 21000 et seq.) case law, only public views, not private views, are protected under CEQA. For example, in *Association for Protection etc. Values v. City of Ukiah* (1991) 2 Cal.App.4th 720 [3 Cal. Rptr.2d 488], the court determined that "we must differentiate between adverse impacts upon particular persons and adverse impacts upon the environment of persons in general. As recognized by the court in *Topanga Beach Renters Assn. v. Department of General Services* (1976) 58 Cal.App.3d 188 [129 Cal.Rptr. 739]: '[A]ll government activity has some direct or indirect adverse effect on some persons. The issue is not whether [the project] will adversely affect particular persons but whether [the project] will adversely affect the environment of persons in general.'" Therefore, the focus in this section is on potential impacts to public views.

Existing sensitive public viewers in the surrounding area primarily consist of motorists travelling on Old Sand Creek Road and Heidorn Ranch Road to the northeast of the site. Given that neither roadway includes sidewalks or paved shoulders within the vicinity of the project site, pedestrian and bicycle traffic on the roadways is limited. Figure 8 provides an example of a typical view of the project site from the intersection of Old Sand Creek Road and Heidorn Ranch Road. It should be noted that the area to the north of the project site, directly west of Heidorn Ranch Road, is currently undergoing development with residential uses as part of the Promenade/Vineyards at Sand Creek Project. In addition, the area to the northwest of the site is approved for development with the Aviano residential project. Both projects, along with development anticipated within the City of Brentwood to the east of the project site, will eliminate Old Sand Creek Road, provide a westward extension of Sand Creek Road from its existing terminus at SR 4, and provide a new southward extension of Heidorn Ranch Road. Such improvements are anticipated to be complete prior to construction of the proposed project. Thus, the visual character of the surrounding area will change substantially prior to construction of the proposed project. Nonetheless, consistent with CEQA Guidelines, the conditions at the time of the release of the Notice of Preparation have been used as the baseline conditions for analysis within this Initial Study.
Due to the hilly topography of the project area, the proposed development would not be visible from the public roadways within the existing residential subdivision to the southeast of the site (Copperfield Court, St. Regis Avenue, and Astor Court). In addition, views of the proposed development area from SR 4, located approximately 0.38-mile east of the site, are currently obscured by intervening vegetation.

The proposed project would change the visual character and quality of the site from a vacant, undeveloped lot to a single-family residential subdivision. However, approximately 88.3 acres of the project site, including Sand Creek, a 200-foot-wide buffer to the south of the creek, and the upper portions of the hill forms within the southeastern and western portions of the project site, would be preserved as open space as part of the project. The existing vegetation along Sand Creek would help to screen views of the proposed residences from Old Sand Creek Road and Heidorn Ranch Road, while the hill form within the southeastern portion of the site would continue to obscure views of the site interior from the existing residential subdivision to the southeast of the site. Improvements within the northeastern portion of the site, closest to Old Sand Creek Road, would be limited to trail and park improvements within Parcel C and a new detention and bio-retention basins located within Parcel D. As part of the proposed project, new landscaping features would be provided within both parcels, further blocking views of the proposed residences. Due to the topography of the project site, the proposed development would not substantially affect views of Mount Diablo and the surrounding ridgelines as seen from SR 4 or other existing public roadways.

Figure 8
Existing View of Site from Old Sand Creek Road looking Southwest

Based on the above, the City has already anticipated changes to the visual character of the project area as viewed from the public roadways in the site vicinity.

While the proposed project would require approval of a rezone to change the zoning designation of the project site from S to PD, the site has been previously anticipated for development with residential uses by the City and associated impacts to aesthetic resources have been evaluated in the General Plan EIR; the proposed project would not conflict with applicable zoning standards and other regulations governing scenic quality. The proposed PD zoning designation would be subject to a Master Development Plan, which would list the development standards applicable to the project site, including setbacks, lot sizes and building heights. Such details are included in the Creekside/Vineyards at Sand Creek Project Design Guidelines that have been prepared for the proposed project. A Use Permit is required to further clarify the details of each phase of the proposed project and to ensure that each phase complies with established provisions of the proposed PD district. In addition, the project would be subject to Design Review by the City of Antioch per Section 9-5.2607 of the Municipal Code. The purpose of the Design Review process is to promote the orderly development of the City, encourage high quality site design and planning, protect the stability of land values and investments, and ensure consistency with the Citywide Design Guidelines Manual and the proposed Creekside/Vineyards at Sand Creek Project Design Guidelines. The Design Review process would help to ensure that the proposed project would be visually compatible with Promenade/Vineyards at Sand Creek Project currently under construction to the north of the site.

The City's General Plan includes specific policies related to preservation of visual quality within hillside areas, including Policies 5.4.14a, 5.4.14b, 5.4.14c, 5.4.14d, 5.4.14e, and 5.4.14f. Per Policy 5.14b, projects within hillside areas must be designed to protect important natural features and to minimize the amount of grading. The following grading guidelines are provided:

- Slopes less than 25%: Redistribution of earth over large areas may be permitted.
- Slopes between 25% and 35%: Some grading may occur, but landforms need to retain their natural character. Split-level designs and clustering are encouraged as a means of avoiding the need for large padded building areas.
- Slopes between 35% and 50%: Development and limited grading can occur only if it can be clearly demonstrated that safety hazards, environmental degradation, and aesthetic impacts will be avoided. Structures shall blend with the natural environment through their shape, materials and colors. Impact of traffic and roadways is to be minimized by following natural contours or using grade separations. Encouraged is the use of larger lots, variable setbacks and variable building structural techniques such as stepped or post and beam foundations are required.
- Slopes greater than 50%: Except in small, isolated locations, development in areas with slopes greater than 50% should be avoided.

Approximately 89.2 percent of the proposed grading area would occur on slopes of 25 percent or less, and approximately 7.4 percent of the grading area would occur on slopes between 25 and 35 percent. Areas in which grading would occur on slopes between 30 and 50 percent would be limited to approximately 2.2 acres, while grading on slopes greater than 50 percent would be limited to 0.1-acre. The steepest areas of grading activity would generally be located in the vicinity of the proposed detention and bio-retention

basins and within the southwestern portion of the site along Hillcrest Avenue. Such grading activity would be necessary to ensure the stability of the existing hill forms, and would not adversely affect the visual character or quality of the project site. Thus, the proposed project would be generally consistent with applicable General Plan policies related to hillside grading.

Based on the above, impacts related to degrading the existing visual character of the site and its surroundings or a conflict with applicable zoning and other regulations governing scenic quality would be ***less-than-significant***.

d. The project site is currently undeveloped, and, thus, does not contain any existing sources of light or glare. Implementation of the proposed project would develop the site with residential buildings, and, thus, would introduce new sources of light and glare where none currently exists. Potential sources of light and glare associated with the proposed project would include interior light spilling through windows, exterior lighting on homes, street lighting on the internal street system, and light reflected off windows. However, all components of the proposed project would be subject to Design Review by the City of Antioch to ensure that the project is consistent with Chapter 6.0, Residential Design Guidelines, of the Citywide Design Guidelines Manual, as well as the proposed Creekside/Vineyards at Sand Creek Project Design Guidelines. The Citywide Design Guidelines Manual prohibits the use of flood lights to light entire structures or yards and states that any exterior night lighting installed shall be of a low intensity, low-glare design, and shall be hooded to direct light downward onto the subject parcel and prevent spillover onto adjacent parcels.[2] Compliance with such standards would ensure that on-site lighting would be directed within the project site and would not substantially illuminate adjacent properties. In addition, the proposed site layout would cluster the proposed residences near the center of the site, retaining open space areas within the northern, eastern, and western portions of the project site. Given the clustering of the proposed residential development, and the added assurance of the Design Review process, implementation of the project would result in a ***less-than-significant*** impact with respect to creating a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

[2] City of Antioch. *Citywide Design Guidelines Manual* [pg 6-43]. October 2009.

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. The project site is currently undeveloped. Per the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP), the site is currently designated as "Farmland of Local Importance" and "Grazing Land".[3] The site does not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Furthermore, the site is not zoned or designated in the General Plan for agriculture uses. Given the FMMP designations of the site, development of the proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use, or otherwise result in the loss of Farmland to non-agricultural use. Therefore, the proposed project would have a ***less-than-significant*** impact.

b. The proposed project site is not under a Williamson Act contract and is not designated or zoned for agricultural uses.[4] Therefore, buildout of the proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract, and ***no impact*** would occur.

c,d. The project area is not considered forest land (as defined in Public Resources Code section 12220[g]), timberland (as defined by Public Resources Code section 4526), and is not zoned Timberland Production (as defined by Government Code section 51104[g]). Therefore, the proposed project would have ***no impact*** with regard to conversion of forest land or any potential conflict with forest land, timberland, or Timberland Production zoning.

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[3] California Department of Conservation. *California Important Farmland Finder.* Available at: https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed January 2020.

[4] Contra Costa County Department of Conservation and Development. *2016 Agricultural Preserves Map.* February 1, 2017.

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-d. The City of Antioch 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). The SFBAAB area is currently designated as a nonattainment area for State and federal ozone, State and federal fine particulate matter 2.5 microns in diameter ($PM_{2.5}$), and State respirable 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).

During construction of the project, various types of equipment and vehicles would temporarily operate on the project site. Construction exhaust emissions would be generated from construction equipment, demolition, grading, construction worker commutes, and construction material hauling for the entire construction period. The aforementioned activities would involve the use of diesel and gasoline powered equipment that would generate emissions of criteria pollutants. Project construction activities also represent sources of fugitive dust, which includes PM emissions. As construction of the proposed project would generate air pollutant emissions intermittently within the site, and the vicinity of the site, until all construction has been completed, construction is a potential concern because the proposed project is in a non-attainment zone for ozone and PM.

Furthermore, development of the proposed project would result in an increased number of vehicle trips associated with traffic to and from the project site. Operation of the proposed project would result in emissions associated with area sources such as gas combustion from heating mechanisms and landscape maintenance equipment. The additional traffic and operations associated with the proposed project could result in

increases in criteria pollutant emissions above thresholds established by the BAAQMD. Therefore, the proposed project could violate an air quality standard or result in a cumulatively considerable net increase of any criteria pollutant, and thus, may conflict with or obstruct implementation of the applicable air quality plan.

The major pollutants of concern are localized carbon monoxide (CO) emissions and toxic air contaminant (TAC) emissions. Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. Implementation of the proposed project could increase traffic volumes on streets near the project site. Because the proposed project could cause an increase in the localized CO concentrations in the project vicinity, and would involve temporary TAC emissions associated with construction, the proposed project could expose sensitive receptors to substantial pollutant concentrations.

Accordingly, the proposed project could result in a ***potentially significant*** impact related to air quality.

Further analysis of this impact will be discussed in the Air Quality and Greenhouse Gas Emissions chapter of the Creekside/Vineyards at Sand Creek EIR being prepared for the project.

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 primarily on a Biological Resource Analysis prepared for the proposed project by Monk & Associates, Inc. (M&A) (see Appendix A),[5] which has been peer-reviewed by Madrone Ecological Consulting.[6]

Currently, the site consists primarily of ruderal grasses and is absent of structures or other indications of prior development. The site's terrain is characterized by a flat valley bordered by hill forms on the west and east side. Elevations on-site range from 150 to 325 feet msl. A shallow area exists at the base of the eastern hillslope and appears to collect local natural drainage during rainfall events, draining into Sand Creek. Sand Creek, a tributary of Marsh Creek, flows intermittently through the northern portion of the project site in an easterly direction. The project site has been subject to prior disturbance associated with dry-land farming activities, and ongoing use of existing PG&E access easements. In addition, the site contains existing pipelines.

As noted in the Biological Resource Analysis, special-status species are defined to include the following:

[5] Monk & Associates, Inc. *Administrative Draft Biological Resource Analysis, Creekside Development Project, Antioch, Contra Costa County, California.* February 13, 2020.

[6] Madrone Ecological Consulting. *Peer review for the proposed Vineyards at Sand Creek project, City of Antioch, Contra Costa County, California.* February 4, 2020.

- Plants and animals that are listed or proposed for listing as threatened or endangered under State or Federal Endangered Species lists;
- Plants and animals that are candidates for possible future listing as threatened or endangered under the State or Federal Endangered Species lists;
- Plants and animals that meet the definition of endangered, rare, or threatened under CEQA, which may include species not found on either State or Federal Endangered Species lists;
- Plants occurring on the California Native Plant Society (CNPS) Lists 1A, 1B, 2A, 2B, 3, and 4. Additional plants may be included as special-status species on a case by case basis due to local significance or recent biological information;
- Migratory nongame birds of management concern listed by USFWS;
- Animals that are designated as "species of special concern" by the CDFW; and
- Animal species that are "fully protected" per the CDFW.

In addition to regulations for special-status species, most birds in the U.S., including non-status species, are protected by the Migratory Bird Treaty Act (MBTA) of 1918. Under the MBTA, destroying active nests, eggs, and young is illegal.

As part of the Biological Resource Analysis prepared for the proposed project, M&A conducted a search of published records of special-status plant and wildlife species known to occur within three miles of the project site using the California Natural Diversity Data Base (CNDDB) Rarefind 5 application. The intent of the database review was to identify documented occurrences of special-status species in the vicinity of the project area, to determine their locations relative to the project site and off-site improvement areas, and for use in the field assessment of habitats suitable for special-status species within the site. In addition, M&A conducted a nine-quadrangle search of the 2020 electronic version of the CNPS' *Inventory of Rare and Endangered Plants of California* for records of special-status plants known in the region of the project site. M&A also reviewed plant species that are considered locally rare as listed in the East Bay Chapter of the CNPS *Database of Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties* for the Marsh Creek/Lone Tree Valley area.

On January 18, 2019, M&A conducted a survey of the project site and off-site improvement areas to record biological resources and to assess the likelihood of agency-regulated areas. The survey involved searching all habitats on the site and recording all plant and wildlife species observed. M&A's site evaluation included a thorough examination of the site to document potential habitats on or adjacent to the project site that could support special-status species and/or waters of the U.S. and State. The habitats found on the project site were cross-referenced against the habitat requirements of local or regionally known special-status species to determine if the proposed project could directly or indirectly impact such species.

In the spring and summer of 2005 and 2006, M&A completed focused surveys for special-status plants on the project site and off-site improvement areas. Consistent with CDFG (2000) and CNPS (2001) published survey guidelines, the surveys were conducted during the months when special-status plant species from the region are known to be evident and flowering. The surveys were conducted by walking systematic transects through potential habitat, and by closely examining any existing microhabitats that could potentially support special-status plants.

The results of the CNDDB search, the site survey, the focused plant surveys, and other queries conducted as part of the Biological Resource Analysis are discussed below.

Special-Status Plants

Based on the results of the CNDDB search and the CNPS nine-quadrangle search, a total of 56 special-status plant species have been recorded within the project region. However, owing to the farmed conditions of the project site, which has been ongoing since the mid-1930s, special-status plants are unlikely to occur within the proposed development area. Of the 56 species, 39 are considered absent from or unlikely to occur on the site due to a lack of suitable habitat, such as chaparral, coastal scrub, chenopod scrub, and/or inland dunes. Accordingly, plant species occurring in such specialized habitats were summarily dismissed from further consideration. However, San Joaquin spearscale was identified adjacent to the project site in 2006 (CNDDB Occurrence No. 104). In addition, several rare plant species that thrive in disturbed areas have a low potential to occur on the project site and off-site improvement areas. Such species include big tarplant, Congdon's tarplant, Carquinez goldenbush, showy golden madia, large-flowered fiddleneck, Hoover's cryptantha, caper-fruited tropidocarpum, heartscale, brittlescale, lesser saltbush, alkali milkvetch, Mt. Diablo fairy lantern, diamond-petaled California poppy, California alkali grass, shining navarretia, Mount Diablo buckwheat, and recurved larkspur. None of the aforementioned species were detected on the project site during the focused plant surveys conducted in 2005 and 2006 or during the reconnaissance survey conducted in January 2019. However, per CDFW, USFWS, and CNPS published survey guidelines, new focused special-status plant surveys must be conducted the year prior to disturbance of the project site to ensure that the species are not present. Given that considerable time has elapsed since the 2005 and 2006 focused plant surveys were conducted, and construction of the proposed project could occur a year or more after the 2019 reconnaissance survey conducted by M&A, a potentially significant impact could occur.

Special-Status Wildlife

Based on the results of the CNDDB search, at total of 12 special-status wildlife species have been recorded within the project region. Of the 12 species, one species, Northern California legless lizard, would be absent from or unlikely to occur on the site due to a lack of suitable habitat (i.e., sandy soils). The remaining 11 species for which the project site and off-site improvement areas provide suitable habitat include the following: vernal pool fairy shrimp, California red-legged frog, California tiger salamander, western pond turtle, golden eagle, white-tailed kite, Swainson's hawk, western burrowing owl, tricolored blackbird, San Joaquin kit fox, and American badger. In addition, the project site contains suitable habitat for other migratory birds and raptors protected under the MBTA.

Vernal Pool Fairy Shrimp

Vernal pool fairy shrimp was designated as threatened in the species' entire range on September 19, 1994. Critical habitat for the species was designated on August 6, 2003. The project site is not located within this species' designated critical habitat. The vernal pool fairy shrimp occupies a variety of different vernal pool habitats, from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. The species tends to occur in smaller pools (less than 0.05-acre) that are most commonly found in grass or mud bottomed swales, or basalt flow depression pools in unplowed grasslands. It has also been collected in large vernal pools (e.g., 25 acres). Vernal pool fairy shrimp have been collected from early December to early May.

The CNDDB includes a documented occurrence of vernal pool fairy shrimp 1.6 miles west of the project site, in 2003. In addition, in 2002 vernal pool fairy shrimp were found within the project site in pools near the top-of-bank of the ephemeral drainage channel, located within the eastern portion of the site. As described in further detail under questions 'b,c' below, such pools would be avoided as part of the project. Given that the pools are located outside of the proposed development footprint, impacts to vernal pool fairy shrimp would be less than significant.

California Red-Legged Frog

The California red-legged frog was federally-listed as threatened on May 23, 1996 and is protected pursuant to the Federal Endangered Species Act. On March 16, 2010, the USFWS issued the final designation for California red-legged frog Critical Habitat. The project site is not within mapped critical habitat for the species.

The California red-legged frog is typically found in ponds and slow-flowing portions of perennial and intermittent streams that maintain water in the summer months. The species is also found in hillside seeps that maintain pool environments or saturated soils throughout the summer months. Populations likely cannot be maintained if all surface water disappears (i.e., surface water is not available for egg laying and larval development habitat). Larval California red-legged frogs require 11 to 20 weeks of deep water to reach metamorphosis, in water depths of 10 to 20 inches. Riparian vegetation such as willows and emergent vegetation such as cattails are preferred red-legged frog habitats, though not necessary for the species to be present. California red-legged frogs also use upland habitats for migration and dispersal. The USFWS' Recovery Plan for the California Red-Legged Frog states that frog's overland excursions through uplands can vary between 0.25-mile up to 3 miles during the course of a wet season, and that frogs "have been observed to make long-distance movements that are straight-line, point to point migrations rather than using corridors for moving in between habitats". M&A's direct observation are that such overland straight-line migrations are primarily limited to periods of heavy rainfall or during periods when ambient conditions exhibit high moisture levels such as in fog belts along the coast. In locations that are characterized by hot and seasonally dry climates, the California red-legged frog is inclined to stay closer to aquatic environments or will not migrate. Thus, long forays across the landscape found in coastal populations are less likely in dry inland locations.

The closest known CNDDB record of California red-legged frog is a 2005 record located 0.70-mile west of the project site within Sand Creek. In 2013, numerous California red-legged frogs and tadpoles were found within a section of Sand Creek located approximately 0.25-mile to the west of the project site during work associated with the construction of the Upper Sand Creek Detention Basin. Consequently, the USFWS regards Sand Creek as occupied habitat of the California red-legged frog. Because Sand Creek is regarded as occupied habitat, lands located adjacent to the creek, including the project site, constitute potential upland dispersal habitat for the species.

Therefore, the proposed project would impact potential California red-legged frog dispersal habitat; 60.7 acres within the project site would cease to be available as potential dispersal habitat and 11 acres would be temporarily disturbed by grading. In addition, installation of the outfall structures on the banks of Sand Creek may result in impacts to breeding habitat for the species. Therefore, a potentially significant impact to California red-legged frog could occur.

California Tiger Salamander

The California tiger salamander is a federally-listed threatened species. The project site falls into the range of the Central California Distinct Population Segment (DPS) of the California tiger salamander. The DPS of the California tiger salamander was federally-listed as threatened on August 4, 2004, and the USFWS designated critical habitat for the California tiger salamander Central California DPS in 2005. The project site is located outside of the closest mapped critical habitat for the Central California DPS, which is Critical Habitat Unit 18 within Alameda County.

California tiger salamanders occur in grasslands and open oak woodlands that provide suitable over summering and/or breeding habitats. California tiger salamanders spend the majority of their lives underground. The species typically only emerge from their subterranean refugia for a few nights each year during the rainy season to migrate to breeding ponds. Adult California tiger salamanders have been observed up to 1.3 miles from breeding ponds. As such, unobstructed migration corridors are an important component of California tiger salamander habitat.

California tiger salamanders emerge during the first heavy, warm rains of the year, typically in late November and early December. In most instances, larger movements of California tiger salamander do not without several hours of hard and continuous rain. Typically, for larger movements of California tiger salamander to occur, nighttime temperatures also must be above 48 degrees Fahrenheit. Significant obstructions that block California tiger salamander movements include freeways and other major (heavy traffic) roads, rivers, and deep, vertical, or near vertical-sided concrete irrigation/flood control ditches.

During the spring, summer, and fall months, most known populations of the California tiger salamander predominately use California ground squirrel burrows as over-summering habitat. Other secondary subterranean refugia, or primary refugia where California ground squirrels are absent, likely include Botta's pocket gopher burrows, deep fissures in desiccated clay soils, and debris piles (e.g., downed wood and rock piles). Stock ponds, seasonal wetlands, and deep vernal pools typically provide most of the breeding habitat used by California tiger salamander. In such locations, California tiger salamander attach their eggs to rooted, emergent vegetation, and other stable filamentous objects in the water column. Occasionally California tiger salamanders are found breeding in slow-moving, streams or ditches. Ditches and/or streams that are subject to rapid flows, even if only on occasion, typically will not support or sustain California tiger salamander egg attachment through hatching, and thus, are not usually used successfully by California tiger salamander for breeding. Similarly, streams and/or ditches that support predators of California tiger salamander or their eggs and larvae such as fish, bullfrogs, red swamp crayfish, or signal crayfish, almost never constitute suitable breeding habitat.

Per the CNDDB, California tiger salamander is known to occur 0.25-mile south of the project site. The species was also found during work being conducted in the Upper Sand Creek Detention Basin, located approximately 0.25-mile west of the project site. While California tiger salamander could conceivably disperse or migrate to the project site from such known record locations, the farmed condition of the project site presumably would reduce over-summering opportunities.

Nonetheless, given that the species has a known dispersal distances of up to 1.3 miles, CDFW and USFWS may consider the project site as migration/over-summering habitat

for California tiger salamander. While the project site and off-site improvement areas do not contain California tiger salamander breeding habitat, the proposed project would impact 60.7 acres of potential California tiger salamander migration/over-summering habitat, and project grading would result in temporary impacts to an additional 11 acres of potential California tiger salamander migration/over-summering habitat. Therefore, a potentially significant impact to the species could occur.

Western Pond Turtle

The western pond turtle is a California "species of special concern." In April of 2015, the USFWS issued a 90-day finding on a petition to list the species under the Federal Endangered Species Act. In September 2016, M&A spoke with USFWS' Sacramento Field Office and was told that the USFWS "hope to finish a 12-month finding in the fiscal year of 2021". Until the western pond turtle is formally listed, the species is not afforded the protections of the Federal Endangered Species Act.

The western pond turtle is a habitat generalist, inhabiting a wide range of fresh and brackish, permanent and intermittent water bodies from sea level to approximately 4,500 feet msl. Typically, the species is found in ponds, marshes, ditches, streams, and rivers with rocky or muddy bottoms. The species is most often found in aquatic environments with plant communities dominated by watercress, cattail, and other aquatic vegetation. The species usually only leaves the aquatic site to reproduce and to overwinter. Western pond turtles may overwinter on land or in water or may remain active in water during the winter season, depending on latitude, water temperature, and habitat type. The Western pond turtle also requires upland areas for burrowing habitat, where the species digs nests and buries its eggs. Such nests can extend from 52 feet to 1,219 feet from watercourses; however, most Western pond turtles nest in uplands within 250 meters (820 feet) of water. Upland nest sites are usually found in areas with sparse vegetation. Sunny, barren, and undisturbed (not disked) land provides optimal habitat, while shady riparian habitat and planted agricultural fields do not provide suitable habitat.

The closest CNDDB record for western pond turtle is located 3.5 miles south of the project site in the Marsh Creek Reservoir. As Sand Creek is an intermittent creek without large permanent pools, the waterway is not optimal habitat for the species; however, Sand Creek may provide migration habitat for the species. Installation of the proposed stormwater outfall structures on the banks of Sand Creek may result in impacts to suitable western pond turtle dispersal habitat. Therefore, a potentially significant impact to the species could occur.

Golden Eagle

The golden eagle is designated as a California species of special concern and is fully protected under the Bald and Golden Eagle Protection Act. Golden eagles are found breeding throughout western North America in remote open habitats. Typical habitats in North America include savannah woodland habitats, grasslands, aspen parkland, high and low deserts, and in taiga and zone habitats. Golden eagles nest from January until September, with peak nesting occurring in March through July. Golden eagles are very sensitive to disturbance near the nest site, particularly in remote regions where human activities are minimal.

In 2018 and 2019, golden eagles were identified nesting in a bluegum eucalyptus growing along the bank of Sand Creek, immediately to the north of the project site. Because

farming activities, including the use of heavy equipment for disking, planting, and harvesting crops often twice per year, has been ongoing for decades within the immediate vicinity of the bluegum eucalyptus grove where the identified individuals nest, the individuals are acclimated to such recurring activities. In addition, a residential subdivision has been under construction approximately 1,000 feet north of the eagles' nests throughout 2018 and 2019, and yet the eagles fledged one young in 2018, and two young in 2019.[7] Also, residential development activities have been ongoing within a one-mile radius around the nesting tree for over 20 years, apparently without substantial deleterious effects on the nesting eagles.

Nesting surveys would be required to confirm or negate the species' presence as an active nesting bird on or adjacent to the project site prior to construction. While the pair of golden eagles appears to be well-acclimated to mechanized disturbance, if an active nest is identified within the zone of project influence the year that construction commences, project construction could result in impacts or deleterious disturbance to the nesting golden eagles. Specifically, disturbance could result in nest abandonment, loss of young, or reduced health and vigor of eggs and/or nestlings and could ultimately result in the take of nestling or fledgling golden eagles. Accordingly, a potentially significant impact to the species could occur.

White-Tailed Kite

The white-tailed kite is a "Fully Protected" species under the California Fish and Game Code and is protected under the federal MBTA. The white-tailed kite is typically found foraging in grassland, marsh, or cultivated fields with dense-topped trees or shrubs for nesting and perching. The species nests in a wide variety of trees of moderate height and occasionally in tall bushes, such as coyote bush. Although the surrounding terrain may be semi-arid, the species often resides near water sources, where prey is more abundant. The particular characteristics of the nesting site do not appear to be as important as its proximity to a suitable food source.

The nearest CNDDB record for the species is located 2.1 miles north of the project site. The on-site trees along Sand Creek provide potentially suitable nesting habitat for the species. While Sand Creek would be left mostly undisturbed during construction of the proposed project, the project would include installation of two new crossings at the creek, as well as minor trail improvements within the northeastern portion of the site adjacent to the creek. Therefore, a potentially significant impact to the species could occur.

Swainson's Hawk

Swainson's hawk is a State-listed threatened species afforded protection pursuant to the California Endangered Species Act. The species is protected from direct take under the federal MBTA.

The Swainson's hawk inhabits open to semi-open areas at low to middle elevations in valleys, dry meadows, foothills, and level uplands. The species nests almost exclusively in trees and will nest in almost any tree species that is at least 10 feet tall. Nests are constructed in isolated trees that are dead or alive along drainages and in wetlands, or in windbreaks in fields and around farmsteads. Swainson's hawks occasionally nest in shrubs, on telephone poles, and on the ground. Foraging habitats include alfalfa fields,

[7] Monk & Associates, Inc. *Administrative Draft Biological Resource Analysis, Creekside Development Project, Antioch, Contra Costa County, California* [pg. 28]. February 13, 2020.

fallow fields, beet, tomato, and other low-growing row or field crops, dry-land and irrigated pasture, and rice land when not flooded. During the nesting season, Swainson's hawks usually forage within two miles of their nests.

The closest CNDDB nesting record for the species is 0.10-mile east of the project site in a large valley oak tree along Sand Creek. Swainson's hawks have not been detected nesting on or adjacent to the project site during multiple surveys in the vicinity of the project site over the last four years by M&A biologists. However, trees growing along Sand Creek provide suitable nesting trees for the species. In addition, the project site constitutes foraging habitat that could be used by the species. As such, the potential exists for the species to occupy the project site prior to initiation of project construction. A potentially significant impact to the species could occur.

Western Burrowing Owl

The western burrowing owl is a California "species of special concern." Burrowing owl habitat is usually found in annual and perennial grasslands, characterized by low-growing vegetation. Often, the burrowing owl utilizes rodent burrows, typically California ground squirrel burrows, for nesting and cover. The species may also on occasion dig their own burrows or use man-made objects such as concrete culverts or rip-rap piles for cover.

Per the CNDDB, western burrowing owls were identified adjacent to the project site in 2007, and a presumed wintering western burrowing owl was observed on-site during the January 2019 survey conducted by M&A. The majority of the project site consists of disked farmed fields; however, the site contains a limited number of burrows that provide potentially suitable habitat for western burrowing owl. As such, the potential exists for the species to occupy the project site prior to initiation of project construction. A potentially significant impact to the species could occur.

Tricolored Blackbird

The tricolored blackbird is a State listed threatened species pursuant to the California Endangered Species Act. The tricolored blackbird is typically found near freshwater, particularly near marsh habitat. Flooded lands, margins of ponds, and grassy fields in summer and winter provide typical foraging habitat for the species.

The closest known CNDDB record for the species is located two miles southwest of the project site, in ponds on the Roddy Ranch golf course. Sand Creek provides limited nesting habitat for the species within the creek corridor. Although tricolored blackbirds have not been detected on the project site during multiple site surveys in the project vicinity, installation of the proposed outfall structures in Sand Creek could disturb nesting tricolored blackbird individuals, if present. Therefore, a potentially significant impact to the species could occur.

Nesting and Migratory Birds

As noted previously, the existing trees within the project site may support nesting birds and ground-nesting raptors, including golden eagle, white-tailed kite, Swainson's hawk, western burrowing owl, and tricolored blackbird, as well as loggerhead shrike, northern harrier, and grasshopper sparrow. Buildout of the project during the nesting period for migratory birds (i.e., typically between February 1 to August 31), including initial site grading, could pose a risk of nest abandonment and death of any live eggs or young that

may be present within the nest within or near the site. Thus, a potentially significant impact could occur.

San Joaquin Kit Fox

The San Joaquin kit fox is a federally- and State-listed endangered species. The San Joaquin kit fox live primarily in the lowlands of the San Joaquin Valley of California, but are also known to occur in several counties in the coast mountain ranges, including Santa Barbara, San Luis Obispo, Monterey, San Benito, Santa Clara, Contra Costa, and Alameda counties. The species is usually found in open grassland and shrub land communities, but has also been observed in ruderal plant communities.

The closest CNDDB record for the species was recorded in the 1970s and is located 2.75 miles south of the project site. More recently, independently conducted surveys cited in the 2006 report, Relative Abundance of Endangered San Joaquin Kit Fox (Vulpes macrotis mutica) Based on Scat-Detection Dog Surveys, were unable to document presence of San Joaquin kit fox in Contra Costa County. Although the report suggests that San Joaquin kit fox is likely extirpated from Contra Costa County, Figure 5-5 in the East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan (ECCC HCP) indicates that the project site is within the "Suitable Core Habitat" of the San Joaquin kit fox. Suitability does not infer the presence of the species, only that the model used indicates the presence of suitable habitat in which the species could occur.

Ongoing site disturbance associated with farming activities at the project site would likely preclude the presence of an occupied den. As such, the federally-listed San Joaquin kit fox is not expected to occur on the project site. Nonetheless, further measures are required to ensure that the species does not occupy the project site prior to the initiation of project construction activities. In the absence of such measures, a potentially significant impact could occur.

American Badger

American badger is a California "species of special concern." The species is found in a variety of habitats, especially in open habitats such as oak-savannah and grasslands where the species' presence is typically identified by distinctive, large underground dens (burrows) excavated in friable (loose) soils. The nocturnal mammal is rarely observed. In the project region, the species is uncommon.

American badger was identified adjacent to the project site in 2007. Due to ongoing farming practices, the project site provides marginal habitat for the species. However, the unfarmed portions of the site provide unlikely but suitable foraging habitat for the species. As such, the potential exists for American badger to occupy the project site prior to initiation of project construction. A potentially significant impact to the species could occur.

Conclusion

Based on the above, the project would not result in adverse effects to vernal pool fairy shrimp. However, implementation of the proposed project could potentially affect special-status plant species, California red-legged frog, California tiger salamander, western pond turtle, golden eagle, white-tailed kite, Swainson's hawk, western burrowing owl, tricolored blackbird, other migratory birds and raptors protected by the MBTA, San Joaquin kit fox, and American badger. Thus, the proposed project could have an adverse effect, either directly or through habitat modifications, on species identified as special-status species in

local or regional plans, policies, or regulations, or by the CDFW or the USFWS. A ***potentially significant*** impact could result.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level. It should be noted that in July 2007, the East Contra Costa County (ECCC) Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) was adopted by Contra Costa County, other member cities, the USFWS, and the CDFW. The City of Antioch, however, declined to participate in the HCP/NCCP. Nonetheless, the mitigation measures include language to reflect the possibility that the City may, in the future, enter into an agreement with the Conservancy for coverage of impacts to ECCC HCP/NCCP covered species or otherwise adopt a different HCP/NCCP.

Special-Status Plants

IV-1 *Prior to initiation of ground-disturbing activities on the project site and off-site improvement areas, the project proponent shall retain a qualified biologist to conduct rare plant surveys within one year of the anticipated groundbreaking for the proposed project. The surveys shall be conducted following the CDFW (2018), USFWS (2000), and CNPS (2001), or the most current published survey guidelines. During the surveys, qualified botanists shall search for all the plants identified in the Biological Resources Analysis (Monk & Associates, 2020) as having the potential to occur on the project site and off-site improvement areas, and all plants that are considered locally rare as listed in the East Bay Chapter of the CNPS Database of Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties for the Marsh Creek/Lone Tree Valley area. Project construction shall not be initiated until all special-status plant surveys are completed and the mitigation is implemented, if necessary and required prior to starting construction.*

A special-status plant survey report that includes the methods used, survey participants, and associated findings shall be prepared and submitted to the City no more than 30 days following the completion of the final site visit. A record of any special-status plant species identified within the project site during the preconstruction surveys shall be submitted to the CNDDB. If new special-status plant populations are not found on the site during the appropriately timed surveys, additional mitigation is not required. If construction is not started within two years after the rare plant surveys are completed, the City may require additional rare plant surveys.

If special-status plants are observed on the site during the survey, the populations shall be avoided to the maximum degree possible during project development, and a Mitigation and Monitoring Plan shall be prepared detailing the measures to be implemented to avoid the plant population. Measures shall include establishment of appropriate buffers during construction, fencing of the population prior to and during construction, and regular monitoring of the preserved population by a biologist during and after construction activities. The Mitigation and Monitoring Plan shall be implemented prior to the initiation of project grading. If the plant populations cannot be avoided, the applicant shall hire

a qualified biologist to prepare a seed collection and replanting plan in coordination with the City of Antioch to reduce impacts to the identified special-status plant populations, subject to review and approval by the City of Antioch Community Development Department.

California Red-Legged Frog

IV-2 *Prior to initiation of ground-disturbing activities on the project site and off-site improvement areas, the project applicant shall implement the following measures:*

- *An education program shall be conducted by a qualified biologist to explain the endangered species concerns to contractors/operators working at the project site. The education/training program shall include a description of California red-legged frog and its habitat, a review of the Endangered Species Act and the federal listing of the species, the general protection measures to be implemented to protect the frog and minimize take, and a delineation of the limits of the work area. A sign-in sheet shall be distributed to all participants of the education/training program and submitted to the City of Antioch within two weeks of program completion.*
- *The work areas adjacent to Sand Creek shall be isolated with suitable wildlife exclusion fencing (see below) that would block the movement of California red-legged frogs from entering the work areas. The wildlife exclusion fence shall also prevent mammals migrating along Sand Creek from entering the project site. The fence shall be installed along the northern border of the project site, adjacent to the Sand Creek Buffer Area, prior to the time any site grading or vegetation removal activities are implemented. The exact location of the fencing shall be determined by a qualified biologist. The fence shall remain in place during site grading or other construction-related activities and shall prevent frogs and wildlife from entering the project site work areas. While normally California red-legged frog exclusion fencing often consists of silt fencing, owing to the duration of project construction, the project proponent may install a more weather resilient fence that is durable enough to remain in place for the duration of construction, such as a commercially available exclusion fencing (e.g., ERTEC Fence). Fencing shall be installed by staking the route of the wildlife exclusion fencing in a 4- inch-deep trench. Then, the bottom of the fence shall be firmly seated in the trench. The project proponent may replace the wildlife exclusion fencing during construction with permanent fencing, approved by the City.*
- *A qualified biologist shall be onsite when grading activities occur within 300 feet of Sand Creek to conduct daily inspections of the fencing and to otherwise ensure that stranded animals are salvaged and relocated back to the stream channel. The biological monitor shall be responsible for ensuring that the wildlife exclusion fencing is not compromised and shall notify the onsite contractor representative when fencing needs to be repaired.*

- *All construction work in Sand Creek associated with the outfall structures shall be scheduled for the dry season (May 15 through October 15) and when Sand Creek is dry or there is reduced flow in this creek. See also the permitting requirements specified in Mitigation Measure IV-14. Any necessary in-drainage work when there are flows shall be isolated from flows via the installation of temporary coffer dams that have flow-through bypass pipes ensuring that flows pass by the stormwater outfall work areas. Flows shall be diverted around isolated work areas either by gravity flow or, if necessary, by pumping water around the work area. No silty water shall be allowed to reenter the tributary below any in-drainage work area. Methods and materials shall be adapted in the field to match the size, shape, and anticipated flow volume of the drainage, and shall be pre-approved by the biological monitor. All diversions shall conform to the following provisions:*
    - *A qualified 10(a)(1)(A) biologist shall conduct preconstruction surveys for California red-legged frog prior to isolating any work area within Sand Creek. If any frogs are found in the work area, the USFWS shall be notified, and if the USFWS authorizes relocation, the frogs shall be moved from the two stormwater outfall work areas, up or downstream in Sand Creek to appropriate aquatic habitats. Upon completion of the survey, if the outfall construction areas must be dewatered, coffer dams may be installed. Any isolated water shall be dip-netted or as appropriate, seined by the biologist to search for frogs prior to pumping water out of the isolated work areas. The project biological monitor shall be present during all in-drainage work. Dewatered work areas shall not result in stranded aquatic wildlife.*
    - *Drainage diversion shall be practiced only where deemed unavoidable by the proposed project engineer and biological monitor.*
    - *Diversion shall be limited to the minimum time period necessary to complete the work and restore the channel.*
    - *Construction equipment shall work from above the top-of-bank. There shall be no vehicle passage, vehicle parking, or materials storage below the top-of-bank.*
    - *All in-drainage and diversion work plans shall reflect and incorporate standard erosion control measures and Best Management Practices (BMPs) as prescribed in the project's Stormwater Pollution and Prevention Plan (SWPPP).*
    - *In certain cases where water seeps into the dewatered area, sump pits may be excavated in the work area and seepage water would then be pumped back upstream behind the coffer dam. All discharged water shall be silt free. If silt is a problem, water shall be pumped through a silt sock into baker tank(s) prior to discharge back into the channel.*
    - *All downstream flows shall be maintained throughout the period that coffer dams are installed.*

- *The entire work area below the top-of-bank, including the coffer dam location, shall be restored to the approximate pre-construction contours and shall be stabilized as necessary to withstand the expected high-water flows. All dam materials shall be completely removed from the channel when work is complete and shall not be disposed of in or near the channel.*
- *All trash that might attract predators to the project site shall be properly contained and removed from the site and disposed of regularly. All construction debris and trash shall be removed from the site when construction activities are complete.*
- *All fueling and maintenance of equipment and vehicles, and staging areas shall be at least 60 feet from Sand Creek. The construction personnel shall ensure that contamination of California red-legged frog habitat does not occur and shall have a plan to promptly address any accidental spills.*

- *To mitigate for permanent impacts to 60.7 acres of California red-legged frog dispersal habitat, the project proponent shall preserve dispersal habitat adjacent to occupied California red-legged frog habitat, or as otherwise approved by USFWS, at a minimum of a 1:1 impacts to replacement.[8] Protection shall be via the purchase of the mitigation land in fee title or via recordation of a conservation easement over the mitigation land. Alternatively, the project proponent may purchase California red-legged frog credits at a 1:1 ratio from a USFWS-approved mitigation bank.*
- *If mitigation credits are not used, prior to the start of construction, the project proponent shall record a conservation easement over the mitigation property preserving it in perpetuity as wildlife habitat. The easement shall be granted to a qualified conservation organization as defined by Section 815.3 of the California Civil Code. Prior to the start of construction, the project proponent shall prepare a habitat management plan that addresses management of the mitigation land that inures to the benefit of the California red-legged frog and shall submit the plan to the City of Antioch prior to the start of construction. The project proponent shall also establish an endowment fund, or other funding mechanism to provide for the long-term management, maintenance, and monitoring of the mitigation site.*

The project proponent may satisfy the requirements of this mitigation measure by providing the City of Antioch with a copy of a biological opinion issued by the USFWS that includes these, or other functionally equivalent, habitat preservation measures prior to the start of construction.

[8] The 60.7 acres of permanently impacted habitat includes off-site improvement areas that overlap with the Promenade/Vineyards at Sand Creek Project. For any off-site impacted habitat for which replacement habitat has already been provided as part of the Promenade/Vineyards at Sand Creek Project, further mitigation is not required.

As an alternative to completion of MM IV-2, the project applicant could comply with one of the following conditions:

1. *Comply with the applicable terms and conditions of the ECCC HCP/NCCP, as determined in written "Conditions of Coverage" by the Conservancy, provided that the City has first entered into an agreement with the Conservancy for coverage of impacts to ECCC HCP/NCCP Covered Species; or*
2. *Comply with a habitat conservation plan and/or natural community conservation plan developed and adopted by the City, including payment of applicable fees, provided that CDFW and USFWS have approved the conservation plan.*

California Tiger Salamander

IV-3 *Prior to initiation of construction activities, to mitigate for the permanent impacts to 60.7 acres of potential California tiger salamander migration/over-summering habitat, the project applicant shall compensate for impacted California tiger salamander migration/over-summering habitat at a minimum of a 1:1 impacts to replacement ratio.*[9] *Mitigation land shall be permanently protected land within the Central California DPS range of the California tiger salamander within 1.3 miles of a known breeding site, or as otherwise approved by CDFW and USFWS. Protection shall be accomplished through the purchase of the mitigation land in fee title or via recordation of a conservation easement over the mitigation land. In lieu of this mitigation prior to construction, the project proponent may purchase California tiger salamander credits at a 1:1 ratio from a approved mitigation bank.*

If mitigation credits are not used, prior to the start of construction, the project proponent shall record a conservation easement over the mitigation property preserving it in perpetuity as wildlife habitat. The easement shall be granted to a qualified conservation organization as defined by Section 815.3 of the California Civil Code. The project proponent shall prepare a habitat management plan that addresses management of the mitigation land that inures to the benefit of the California tiger salamander and shall submit the plan to the City of Antioch prior to the start of construction. The project proponent shall also establish an endowment fund, or other funding mechanism to provide for the long-term management, maintenance, and monitoring of the mitigation site.

The project proponent may satisfy the requirements of this mitigation measure by providing the City of Antioch with a copy of a biological opinion issued by the USFWS that includes these, or other functionally equivalent, habitat preservation measures, to be implemented prior to initiation of construction activities.

[9] The 60.7 acres of permanently impacted habitat includes off-site improvement areas that overlap with the Promenade/Vineyards at Sand Creek Project. For any off-site impacted habitat for which replacement habitat has already been provided as part of the Promenade/Vineyards at Sand Creek Project, further mitigation is not required.

As an alternative to completion of MM IV-3, the project applicant could comply with one of the following conditions:

1. *Comply with the applicable terms and conditions of the ECCC HCP/NCCP, as determined in written "Conditions of Coverage" by the Conservancy, provided that the City has first entered into an agreement with the Conservancy for coverage of impacts to ECCC HCP/NCCP Covered Species; or*
2. *Comply with a habitat conservation plan and/or natural community conservation plan developed and adopted by the City, including payment of applicable fees, provided that CDFW and USFWS have approved the conservation plan.*

Western Pond Turtle

IV-4 *Prior to initiation of construction activities, a qualified biologist shall conduct a preconstruction survey of the two stormwater outfall work areas in Sand Creek, and if a western pond turtle is identified in the work area, the turtle shall be relocated to suitable habitat downstream. A written summary of the survey results shall be submitted to the City of Antioch Community Development Department. The work areas adjacent to Sand Creek shall be isolated with exclusion fencing in accordance with Mitigation Measure IV-2 that shall prevent western pond turtle from entering the work site and accidentally being harmed by construction activities.*

Preconstruction surveys for turtle nest sites in uplands adjacent to suitable aquatic habitat during spring and summer months shall be conducted within 30 days prior to beginning any ground-disturbing activities. If nests are not found, further consideration for western pond turtle nests is not warranted. If nest sites are located during preconstruction surveys adjacent to a proposed work area, the nest site plus a 50-foot buffer around the nest site shall be fenced where the buffer intersects a project work area to avoid impacts to the eggs or hatchlings which over-winter at the nest site. In addition, if nest(s) are located during surveys, moth balls (naphthalene) should be sprinkled around the vicinity of the nest (no closer than 10 feet) to mask human scent and discourage predators.

Construction at the nest site and within the 50-foot buffer area shall be delayed until the young leave the nest (this could be a period of many months) or as otherwise advised and directed by a qualified biologist. A qualified CDFW approved biologist, with the concurrence of CDFW, may also relocate young pond turtles.

As an alternative to completion of MM IV-4, the project applicant could comply with one of the following conditions:

1. *Comply with the applicable terms and conditions of the ECCC HCP/NCCP, as determined in written "Conditions of Coverage" by the Conservancy, provided that the City has first entered into an agreement with the Conservancy for coverage of impacts to ECCC HCP/NCCP Covered Species; or*

2. *Comply with a habitat conservation plan and/or natural community conservation plan developed and adopted by the City, including payment of applicable fees, provided that CDFW and USFWS have approved the conservation plan.*

Golden Eagle

IV-5 *Prior to initiation of ground-disturbing activities or tree removal, preconstruction surveys shall be conducted by a qualified raptor biologist on the project site and within a zone of influence (determined by a qualified biologist) of all project-related activities during the golden eagle breeding season (January through August). The zone of influence is affected by geographic barriers that affect direct line of sight from disturbance to the nest site, and/or distances that proposed activities could influence nesting behavior. The zone of influence shall be determined by a qualified raptor biologist. If nesting golden eagles are found nesting within the zone of influence, a qualified raptor biologist shall determine an appropriate buffer consistent with the USFWS' 2017 Recommended Buffer Zones for Ground-Based Human Activities Around Nesting Sites of Golden Eagles in California and Nevada. A written summary of the survey results shall be submitted to the City of Antioch Community Development Department.*

The USFWS' 2017 Recommended Buffer Zones for Ground-Based Human Activities Around Nesting Sites of Golden Eagles in California and Nevada, recommends buffer zones for active nests. Such recommended buffer zones may increase or decrease in size depending on specific site or activity circumstances and local jurisdiction recommendations. For any active nest found within a zone of influence of the project site, the qualified raptor biologist shall determine the appropriate buffer size(s) to ensure that project activities do not impact the active nest site. Buffer sizes are likely to be reduced in size when a qualified raptor biologist makes a determination that the nesting golden eagles are acclimated to mechanized activities and disturbances of the like, or the nest is shielded from disturbance by geographic barriers.

If no active nesting golden eagles are identified during survey(s), project construction may commence without further regard for protection of nesting eagles. If golden eagles are found nesting in the project vicinity after project construction has commenced, it should be assumed that the golden eagles began nesting while the project site was under construction and thus, that the eagles are habituated to the ambient level of noise and disturbance emanating from the project site.

If active nesting golden eagles are identified during the preconstruction surveys, the qualified biologist shall establish a nest protection buffer and no project-related disturbance shall be allowed within any established nesting buffer until the young fledge the nest or the nesting attempt is otherwise complete for the year. The buffer shall remain in place until the fledglings become independent of the nesting tree. The young can be considered successfully fledged when the eaglets no longer return to the nesting tree for several consecutive nights. A qualified raptor biologist shall monitor the nesting eagles initially for a period long enough to understand

the nesting eagles' response to disturbance, and thereafter on a routine basis (at least once per week) until the nestlings successfully fledge and become independent of the nesting tree.

It should be noted that if the developer initiates grading of the project site in the non-nesting season (September to December) and development disturbance remains continuous through the nesting season, and the golden eagles return and nest, it can be assumed that the golden eagles are sufficiently acclimated to the project disturbance. A qualified raptor biologist would be required to confirm the level of acclimation and would have to monitor the nesting attempt continuously through the nesting season to ensure that the project disturbance is not affecting the golden eagles nesting efforts and behaviors. After commencement of nesting, if the golden eagles respond negatively to the ongoing disturbance, a 600-foot buffer shall be immediately established and maintained under the supervision of the raptor biologist until the nesting cycle is completed, as determined by a qualified raptor biologist.

As an alternative to completion of MM IV-5, the project applicant could comply with one of the following conditions:

1. *Comply with the applicable terms and conditions of the ECCC HCP/NCCP, as determined in written "Conditions of Coverage" by the Conservancy, provided that the City has first entered into an agreement with the Conservancy for coverage of impacts to ECCC HCP/NCCP Covered Species; or*
2. *Comply with a habitat conservation plan and/or natural community conservation plan developed and adopted by the City, including payment of applicable fees, provided that CDFW and USFWS have approved the conservation plan.*

Swainson's Hawk

IV-6 *Prior to any project-related ground disturbance that occurs during the nesting season (March 15th to September 15th), a qualified biologist shall conduct a preconstruction survey at least two survey periods prior to the start of construction. Surveys shall follow the protocol in the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee 2000), including the survey period lengths identified therein. A written summary of the survey results shall be submitted to the City of Antioch Community Development Department.*

If the proposed project could result in take of the Swainson's hawk, its nest, or eggs, typically assumed to be the case if a nest is detected within a 0.25-mile of the project site, the project proponent shall prepare a Swainson's Hawk Monitoring and Habitat Management Plan. If take of Swainson's hawk eggs, nestlings, fledglings could occur from the proposed activities, as determined by a qualified raptor biologist, protective buffers shall be established on the project site that shall prevent such take from occurring. The protective buffer around the active nest site shall be maintained until such time that the Swainson's hawks have completed their nesting cycle

as determined by a qualified raptor biologist. The nest protection buffer shall be coordinated with the CDFW.

If the preconstruction surveys find Swainson's hawk nests within 0.25 mile of the project site, impacts to its foraging habitat shall be mitigated by preserving 60.7 acres of suitable Swainson's hawk foraging habitat (1:1 mitigation for permanent impacts to foraging habitat).[10] *The mitigation land used to mitigate impacts to the California tiger salamander (see Mitigation Measure IV-3) shall also constitute suitable Swainson's hawk foraging habitat.*

As an alternative to completion of Mitigation Measure IV-6, the project applicant could comply with one of the following conditions:

1) *Comply with the applicable terms and conditions of the ECCC HCP/NCCP, as determined in written "Conditions of Coverage" by the East Contra Costa County Habitat Conservancy (Conservancy), provided that the City has first entered into an agreement with the Conservancy for coverage of impacts to ECCCHCP/NCCP Covered Species; or*
2) *Comply with a habitat conservation plan and/or natural community conservation plan developed and adopted by the City, including payment of applicable fees, provided that CDFW and FWS have approved the conservation plan.*

Western Burrowing Owl

IV-7 *Prior to initiation of ground-disturbing activities, a preconstruction survey for burrowing owls shall be conducted. The CDFG's Staff Report on Burrowing Owl Mitigation (CDFG 2012) states that take avoidance (preconstruction) surveys shall be conducted 14 days prior to ground disturbance. As burrowing owls may recolonize a site after only a few days, time lapses between project activities trigger subsequent take avoidance surveys including but not limited to a final survey conducted within 24 hours prior to ground disturbance to ensure absence of the species. The results of the survey shall be submitted to the City of Antioch Community Development Department.*

Burrowing owl surveys shall be conducted by walking the entire project site and (where possible) in areas within 150 meters (approximately 500 feet) of the proposed project impact zone. The 150-meter buffer zone shall be surveyed to identify burrows and owls outside of the proposed disturbance area which may be impacted by factors such as noise and vibration (heavy equipment) during project construction.

Pedestrian survey transects shall be spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines

[10] The 60.7 acres of permanently impacted habitat includes off-site improvement areas that overlap with the Promenade/Vineyards at Sand Creek Project. For any off-site impacted habitat for which replacement habitat has already been provided as part of the Promenade/Vineyards at Sand Creek Project, further mitigation is not required.

shall be 7 meters to 20 meters and shall be reduced to account for differences in terrain, vegetation density, and ground surface visibility. Poor weather may affect the surveyor's ability to detect burrowing owls thus, the biologist shall avoid conducting surveys when wind speed is greater than 20 kilometers per hour and the site is affected by precipitation or dense fog. To avoid impacts to owls from surveyors, owls and/or occupied burrows shall be avoided by a minimum of 50 meters (approximately 160 feet) wherever practical to avoid flushing occupied burrows. Disturbance to occupied burrows shall be avoided during all seasons.

If burrowing owls are detected on the site, the following restricted activity dates and setback distances are recommended per the CDFG's Staff Report on Burrowing Owl Mitigation (CDFG 2012).

- *From April 1 through October 15, low disturbance and medium disturbance activities shall have a 200-meter buffer while high disturbance activities shall have a 500-meter buffer from occupied nests.*
- *From October 16 through March 31, low disturbance activities shall have a 50- meter buffer, medium disturbance activities shall have a 100-meter buffer, and high disturbance activities shall have a 500-meter buffer from occupied nests.*
- *No earth-moving activities or other disturbance shall occur within the afore- mentioned buffer zones of occupied burrows. The buffer zones shall be fenced as well. If burrowing owls are found in the proposed project area, a qualified biologist shall delineate the extent of western burrowing owl habitat on the site.*

The mitigation land used to mitigate impacts to the California tiger salamander (see Mitigation Measure IV-3) shall also constitute suitable western burrowing owl mitigation land.

As an alternative to completion of MM IV-6, the project applicant could comply with one of the following conditions:

1. *Comply with the applicable terms and conditions of the ECCC HCP/NCCP, as determined in written "Conditions of Coverage" by the Conservancy, provided that the City has first entered into an agreement with the Conservancy for coverage of impacts to ECCC HCP/NCCP Covered Species; or*
2. *Comply with a habitat conservation plan and/or natural community conservation plan developed and adopted by the City, including payment of applicable fees, provided that CDFW and USFWS have approved the conservation plan.*

Tricolored Blackbird

IV-8 *Prior to any ground-disturbing activities commencing between February 1 and August 31, the project applicant shall retain a qualified biologist to conduct a nesting survey for tricolored blackbird. A written summary of the survey results shall be submitted to the City of Antioch Community*

Development Department. If tricolored blackbirds are not identified during the surveys, further mitigation is not required.

If nesting tricolored blackbirds are identified during the surveys, a 300-foot radius around the nesting colony shall be staked with bright orange lath or other suitable staking. The size of the buffer may be altered if a qualified biologist conducts behavioral observations and determines the nesting tricolored blackbirds are well acclimated to disturbance. In such a case, the biologist shall prescribe a modified buffer that allows sufficient room to prevent undue disturbance or harassment to the nesting tricolored blackbirds. Construction or earth-moving activity shall not occur within the established buffer until it is determined by a qualified biologist that the young have fledged (i.e., left the nest) and have attained sufficient flight skills to avoid project construction zones, as typically occurs by August 1. Construction or earth-moving activity may occur earlier or later, subject to the discretion of a qualified biologist. If a qualified biologist is not hired to watch the nesting tricolored blackbirds, then the buffers shall be maintained in place through the month of August and work within the buffer can commence September 1. If buffers are removed prior to September 1, the qualified biologist monitoring the nesting buffer(s) shall prepare and submit a report to the City of Antioch that provides details about the nesting outcome and the removal of buffers. The report shall be submitted prior to the time that nest protection buffers are removed if the date is before September 1.

As an alternative to completion of Mitigation Measure IV-7, the project applicant could comply with one of the following conditions:

1) *Comply with the applicable terms and conditions of the ECCC HCP/NCCP, as determined in written "Conditions of Coverage" by the East Contra Costa County Habitat Conservancy (Conservancy), provided that the City has first entered into an agreement with the Conservancy for coverage of impacts to ECCCHCP/NCCP Covered Species; or*
2) *Comply with a habitat conservation plan and/or natural community conservation plan developed and adopted by the City, including payment of applicable fees, provided that CDFW and FWS have approved the conservation plan.*

Nesting Migratory Birds

IV-9 *If project site disturbance associated with the proposed project would commence between March 1 and September 1, a preconstruction nesting survey shall be completed in the 15-day period prior to commencing with any proposed project related disturbance on the project site or off-site improvement areas. The nesting survey shall be conducted on the project site and within a zone of influence around the project site. The zone of influence includes those areas off the project site where birds could be disturbed by earth-moving vibrations or noise as determined by a qualified ornithologist. Accordingly, the nesting survey(s) must cover the project site and an area around the project site boundary. A written summary of the survey results shall be submitted to the City of Antioch Community*

Development Department. If special-status birds are not identified during the surveys, further mitigation is not required.

If special-status birds are identified nesting on or adjacent to the project site, a non-disturbance buffer of 100 feet shall be established or as otherwise prescribed by a qualified ornithologist. If common (that is, not special-status) birds, for example, California towhee, California scrub jay, or acorn woodpeckers (Melanerpes formicivorus), are identified nesting on or adjacent to the project site, a non-disturbance buffer of 75 feet shall be established or as otherwise prescribed by a qualified ornithologist. The buffer shall be demarcated with painted orange lath or via the installation of orange construction fencing. Disturbance within the buffer shall be postponed until it is determined by a qualified ornithologist that the young have fledged and have attained sufficient flight skills to leave the area or that the nesting cycle has otherwise completed.

Nesting buffers shall be maintained until September 1 unless a qualified ornithologist determines that young have fledged and are independent of their nests at an earlier date. If nest projection buffers are removed prior to September 1, the qualified biologist conducting the nesting surveys shall prepare and submit a report to the City of Antioch that provides details about the nesting outcome and the removal of buffers. The report shall be submitted prior to the time that nest protection buffers are removed if the date is before September 1.

As an alternative to completion of Mitigation Measure IV-8, the project applicant could comply with one of the following conditions:

1) *Comply with the applicable terms and conditions of the ECCC HCP/NCCP, as determined in written "Conditions of Coverage" by the East Contra Costa County Habitat Conservancy (Conservancy), provided that the City has first entered into an agreement with the Conservancy for coverage of impacts to ECCCHCP/NCCP Covered Species; or*
2) *Comply with a habitat conservation plan and/or natural community conservation plan developed and adopted by the City, including payment of applicable fees, provided that CDFW and FWS have approved the conservation plan.*

Raptors (Including White-Tailed Kite)

IV-10 *Prior to commencement of ground-disturbing activities or tree removal between February 1 and August 31, the project applicant shall retain a qualified biologist to conduct raptor nesting surveys. The raptor nesting surveys shall include examination of all trees within 300 feet of the entire project site, including trees that are not planned for removal. A written summary of the survey results shall be submitted to the City of Antioch Community Development Department. If nesting raptors are not identified during the surveys, further mitigation is not required.*

If nesting raptors, including white-tailed kite, are identified during the surveys, the dripline of the nest tree shall be fenced with orange

construction fencing (provided the tree is on the project site), and a 300-foot radius around the nest tree shall be staked with bright orange lath or other suitable staking. If the tree is located off the project site, then the buffer shall be demarcated per above where the buffer intersects the project site. The size of the buffer may be altered if a qualified raptor biologist conducts behavioral observations and determines the nesting raptors are well acclimated to disturbance. In such case, the raptor biologist shall prescribe a modified buffer that allows sufficient room to prevent undue disturbance/harassment to the nesting raptors. Construction or earth-moving activity shall not occur within the established buffer until it is determined by a qualified raptor biologist that the young have fledged (i.e., left the nest) and have attained sufficient flight skills to avoid project construction zones, which typically occurs by August 1. Initiation of construction or earth-moving activity may be earlier or later, as determined by a qualified raptor biologist. If a qualified biologist is not hired to watch the nesting raptors, then the buffers shall be maintained in place through the month of August and work within the buffer may commence September 1. If buffers are removed prior to September 1, the qualified raptor biologist monitoring the nesting buffer shall prepare and submit a report to the City of Antioch that provides details about the nesting outcome and the removal of buffers. The report shall be submitted prior to the time that nest protection buffers are removed if the date is before September 1.

As an alternative to completion of Mitigation Measure IV-9, the project applicant could comply with one of the following conditions:

1) *Comply with the applicable terms and conditions of the ECCC HCP/NCCP, as determined in written "Conditions of Coverage" by the East Contra Costa County Habitat Conservancy (Conservancy), provided that the City has first entered into an agreement with the Conservancy for coverage of impacts to ECCCHCP/NCCP Covered Species; or*
2) *Comply with a habitat conservation plan and/or natural community conservation plan developed and adopted by the City, including payment of applicable fees, provided that CDFW and FWS have approved the conservation plan.*

San Joaquin Kit Fox

IV-11 *The project proponent shall implement the following standard avoidance measures for San Joaquin kit fox:*

- *An education program shall be conducted by a qualified biologist prior to the start of construction to explain the endangered species concerns to contractors working at the project site. The program shall include an explanation of the FESA and CESA and any endangered species concerns in the area. A sign-in sheet shall be distributed to all participants of the education program and submitted to the City of Antioch within two weeks of program completion.*

- *Qualified biologists shall conduct preconstruction den surveys no more than 14 days prior to site grading to ensure that potential kit fox dens are not disrupted. If "potential dens" are not identified during the surveys (potential dens are defined as burrows at least four inches in diameter which open up within two feet), further mitigation is not required. If potential dens are identified, infrared camera stations shall be set up and maintained for three consecutive nights at den openings prior to initiation of grading activities to determine the status of the potential dens. If kit fox is not found to be using the den, site grading may proceed unhindered. However, if a kit fox is found using a den site within the project site, the USFWS and the CDFW shall be notified and consulted before work activities resume. A written summary of the survey results shall be submitted to the City of Antioch Community Development Department.*
- *To prevent harm to San Joaquin kit fox, any steep-walled holes and/or trenches excavated on the project site shall be completely covered at the end of each workday or escape ramps shall be provided to allow any entrapped animals to escape unharmed. All pipe sections stored at the project site overnight that are four inches in diameter or greater shall be inspected for San Joaquin kit fox before the pipes are moved or buried. If San Joaquin kit fox are identified in the work area at any time, the USFWS and/or the CDFW, as well as the City, shall be notified and consulted before work activities resume. All trash items shall be removed from the site to reduce the potential for attracting predators of San Joaquin kit fox. Contractors shall be prohibited from bringing firearms and pets to the job site.*

As an alternative to completion of Mitigation Measure IV-10, the project applicant could comply with one of the following conditions:

1) *Comply with the applicable terms and conditions of the ECCC HCP/NCCP, as determined in written "Conditions of Coverage" by the East Contra Costa County Habitat Conservancy (Conservancy), provided that the City has first entered into an agreement with the Conservancy for coverage of impacts to ECCCHCP/NCCP Covered Species; or*
2) *Comply with a habitat conservation plan and/or natural community conservation plan developed and adopted by the City, including payment of applicable fees, provided that CDFW and FWS have approved the conservation plan.*

American Badger

IV-12 *The project applicant shall retain a qualified biologist to conduct a preconstruction den survey within 21 days prior to site grading. If potential dens are not identified, further mitigation is not required. If a potential den is located, infrared camera stations shall be set up and maintained for three consecutive nights at the potential den openings prior to initiation of grading/work activities to determine the status of the potential dens. If*

American badger is not found to be using the den, the burrow shall be filled, and site grading may proceed in the vicinity of the burrow(s) unhindered. However, if American badger is found to be using a den site within the area of proposed grading, provided it is not a natal den, the badger shall be passively and humanely evicted from its den if the individual could be impacted by grading or other activities. If a natal den is found, the project proponent shall consult with CDFW to prepare an eviction plan and shall submit the eviction plan to the City prior to implementation. A written summary of the survey results shall be submitted to the City of Antioch Community Development Department.

As an alternative to completion of Mitigation Measure IV-11, the project applicant could comply with one of the following conditions:

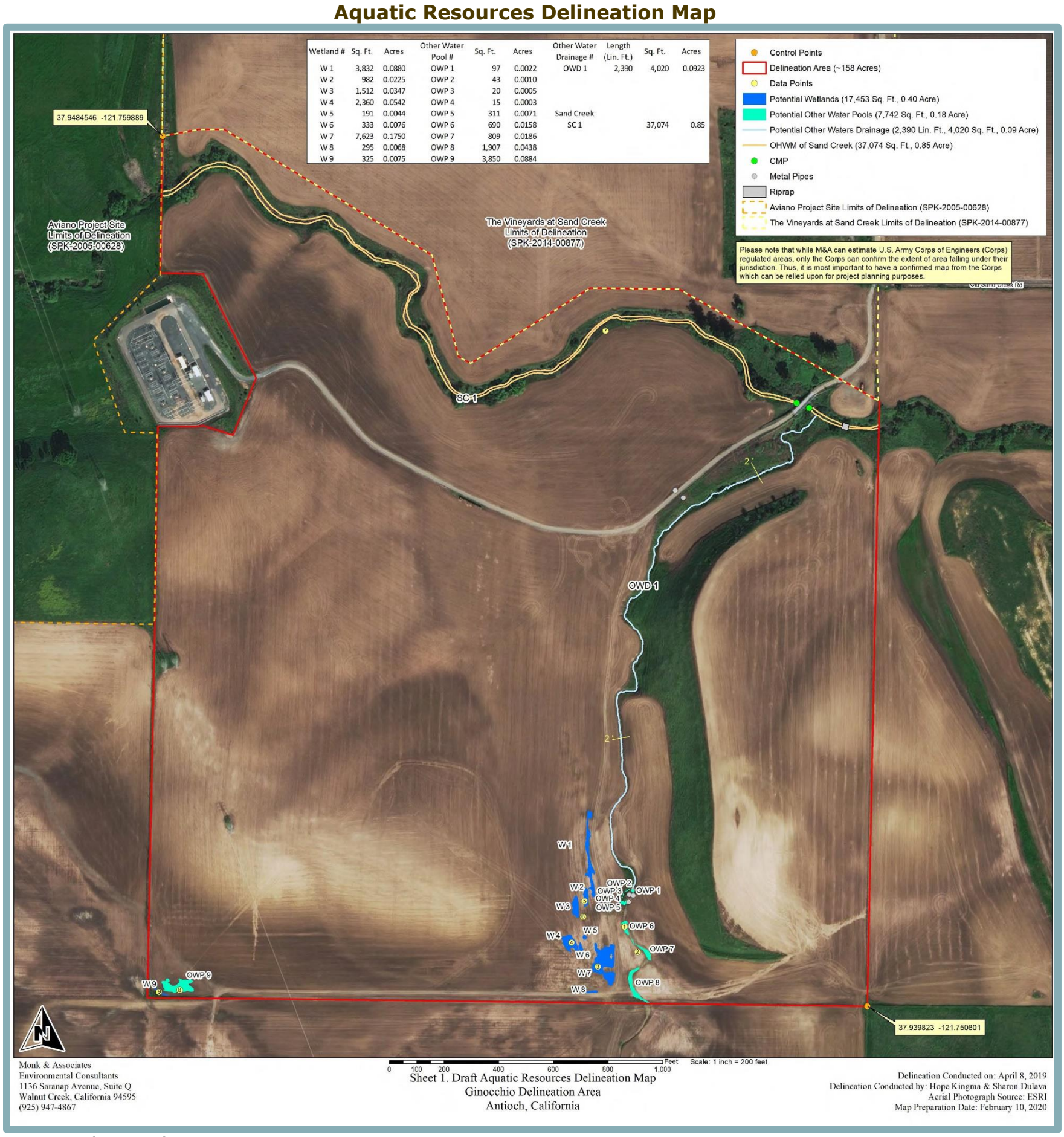
1) *Comply with the applicable terms and conditions of the ECCC HCP/NCCP, as determined in written "Conditions of Coverage" by the East Contra Costa County Habitat Conservancy (Conservancy), provided that the City has first entered into an agreement with the Conservancy for coverage of impacts to ECCCHCP/NCCP Covered Species; or*
2) *Comply with a habitat conservation plan and/or natural community conservation plan developed and adopted by the City, including payment of applicable fees, provided that CDFW and FWS have approved the conservation plan.*

b,c. Sand Creek, an intermittent creek, flows west to east near the northern project site boundary. The creek receives urban runoff from developments to the northwest, and from a flood control basin that was constructed upstream of the project site in Sand Creek circa 2013-2014. The average distance between ordinary high-water marks (OHWM) in Sand Creek is five to 15 feet, and the waterway is approximately 50 to 125 feet wide between the top-of-banks. Sand Creek is incised approximately 20 feet down below the existing grade of the project site, with steeply sloped banks.

The project site primarily drains to a shallow ephemeral drainage channel adjacent to the eastern edge of the project site. After large storm events, the ephemeral drainage channel flows northward to Sand Creek along the base of the eastern hillside within the site. The ephemeral drainage channel averages two to three feet between ordinary high-water marks (OHWM) and is steeply sloped in most sections. The drainage is incised three to six feet below the surrounding grade. During M&A's surveys in 2019, several pools of standing water of up to 10 inches deep were observed in the drainage thalweg.

On April 8, 2019, M&A biologists conducted a wetland delineation of the project site (see Figure 9), using criteria prescribed in the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual and the USACE 2008 Regional Supplement for the Arid West Region. The results of the wetland delineation are currently pending verification by the USACE. As noted in the Biological Resources Analysis, both Sand Creek and the ephemeral drainage are regulated as a "water of the U.S." pursuant to Section 404 of the Clean Water Act (CWA). Within the project site, the OHWM of Sand Creek covers a total of 0.85-acre and the ephemeral drainage covers a total of 0.09 acres, or 2,408 linear feet.

Figure 9
Aquatic Resources Delineation Map



Source: Monk & Associates, Inc., 2020.

Approximately 0.004-acre of disconnected water pools are located at the southern end of the ephemeral drainage. Sand Creek and the ephemeral drainage channel on the project site are channels with a bed and bank and, as such, are within the CDFW's jurisdiction pursuant to Section 1602 of the California Fish and Game Code. In addition, the southern portion of the site contains a total of 0.58-acre of seasonal wetlands and other water pools. Aquatic features were not identified within the proposed off-site improvement areas.

The proposed project would include construction of two stormwater outfalls on the banks of Sand Creek, resulting in permanent impacts to 0.0137-acre (600 sf) of waters of the U.S. that are potentially under the jurisdiction of the USACE. The remainder of Sand Creek, as well as a 200-foot buffer to the south of the creek, would be permanently conserved as open space as part of the proposed project. In addition, the project would include construction of a culverted road crossing over the existing ephemeral drainage channel within the eastern portion of the site.

The culverted road crossing would result in permanent impacts to 0.0316-acre (1,380 sf) of waters of the U.S. potentially under the jurisdiction of USACE and CDFW. Table 3 below provides a summary of the anticipated impacts to aquatic features within the project site.

Table 3
On-Site Aquatic Features

Feature	Total Acreage	Impacted by Project
OHWM of Sand Creek	0.85	0.0137
Ephemeral Drainage	0.09	0.0316
Seasonal Wetlands	0.40	0
Other Water Pools	0.18	0
Total	**1.52**	**0.0453**

Source: Monk & Associates, Inc., 2019.

The proposed Hillcrest Avenue crossing at Sand Creek has been previously anticipated per the City's General Plan and would be a clear span design, and would not require any substantial disturbance within the banks of Sand Creek. In addition, the existing seasonal wetlands would not be disturbed as part of the proposed project.

Because the proposed project would fill less than 0.5-acre of waters of the U.S., the proposed project likely meets conditions to use NWPs, as administered by the USACE pursuant to Section 404 of the CWA. The USACE would likely authorize use of NWP 7 (outfalls), NWP 33 (access and dewatering), NWP 14 (Linear transportation projects), and NWP 29 (Residential Development). A notification (i.e., Preconstruction Notice) must be filed with the USACE's District Engineer to obtain authorization to use such NWPs. Any Section 404 permit authorized by the USACE for the project would be subject to Section 401 water quality certification by the RWQCB, and also may be subject to the State's Porter-Cologne Water Quality Control Act.

Considering the above, the proposed project may result in fill or other disturbance of waters of the U.S. and/or the State. Therefore, the proposed project could have a substantial adverse effect on riparian habitat, sensitive natural communities, or State or federally protected wetlands, and a ***potentially significant*** impact could occur.

Mitigation Measure(s)

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

IV-13 *Prior to discharging any dredged or fill materials into any waters of the U.S. within the project site and/or the off-site improvement areas, the applicant shall obtain permit authorization to fill wetlands under Section 404 of the federal CWA (Section 404 Permit) from USACE. The Section 404 Permit application shall include an assessment of directly impacted, avoided, and preserved acreages to waters of the U.S. Mitigation measures shall be developed as part of the Section 404 Permit to ensure no net loss of wetland function and values. Mitigation for direct impacts to waters of the U.S. within the project site and/or the off-site improvement areas would occur at a minimum of 1:1 ratio for direct impacts by purchasing seasonal wetland credits from the Cosumnes Mitigation Bank or other wetland mitigation bank that services the project site, as approved by the USACE and the RWQCB.*

Alternatively, the project proponent may create, preserve, and manage new seasonal wetlands on or off of the project site at a 2:1 mitigation ratio. A project-specific Wetland Mitigation and Monitoring Plan prepared by a qualified wetland restoration ecologist that includes the following information shall be provided to the City prior to conducting any activity that would result in the placement of any fill material into a water of the U.S. or water of the State:

- *A description of the impacted water;*
- *A map depicting the location of the mitigation site(s) and a description of existing site conditions;*
- *A detailed description of the mitigation design that includes: (i) the location of the new seasonal wetlands; (ii) proposed construction schedule; (iii) a planting/vegetation plan; (iv) specific monitoring metrics, and objective performance and success criteria, such as delineation of created area as jurisdictional waters using USACE published methods; and (v) contingency measures if the created wetlands do not achieve the specified success criteria; and*
- *Short-term and long-term management and monitoring methods.*

If the wetland mitigation site is a separate mitigation property, the project proponent will grant a conservation easement to a qualified entity, as defined by Section 81.5.3 of the California Civil Code, preserving the created seasonal wetland(s) in perpetuity, and establish an endowment fund to provide for the long-term management, maintenance, and monitoring of the created seasonal wetland(s). If the proposed project includes placing fill material into jurisdictional waters of the U.S. or waters of the State, the project proponent shall provide the City with a copy of permits issued by the USACE and RWQCB authorizing the fill.

In addition, a Water Quality Certification or waiver pursuant to Section 401 of the CWA must be obtained for Section 404 permit actions. Proof of

compliance with the mitigation measure shall be submitted to the City of Antioch Community Development Department prior to the issuance of grading permits.

IV-14 *Impacts to riparian habitat within CDFW's Section 1602 jurisdictional areas that would occur during the installation of two stormwater outfalls in Sand Creek, construction of the Hillcrest Avenue bridge over Sand Creek, and the installation of the potential EVA/Pedestrian Bridge over Sand Creek, shall be mitigated through planting California native trees and/or shrubs within the Sand Creek buffer area. Impacted trees and shrubs shall be mitigated with a 3:1 (replacement to impacts) ratio. Replacement trees and shrubs shall be a minimum of one gallon size trees/shrub replacements.*

In addition, the project proponent will implement appropriate BMPs to prevent construction related impacts that could introduce de minimus fill or other pollutants into Sand Creek and the eastern ephemeral channel on the project site. The measures shall include the installation of wildlife-friendly hay wattles and/or silt fence that will prevent unintended de minimus fill impacts to Sand Creek while the stormwater outfalls are constructed. In addition, orange silt fencing shall be installed at the top-of-bank of Sand Creek to prevent unintended human and equipment traffic adjacent to Sand Creek. Finally, the dripline of all protected trees within the drainages on the project site, if near work areas, shall be protected through the installation of orange construction fencing.

The project proponent shall satisfy this mitigation by providing the City of Antioch with a fully executed copy of a Streambed Alteration Agreement (SBAA) with the CDFW that includes these, or other functionally equivalent, BMPs, prior to installation of the two stormwater outfalls in Sand Creek, construction of the Hillcrest Avenue bridge over Sand Creek, and/or installation of the potential EVA/Pedestrian Bridge over Sand Creek. The project proponent shall implement the conditions of the executed SBAA.

d. Wildlife corridors are linear and/or regional habitats that provide connectivity to other natural vegetation communities within a landscape fractured by urbanization and other development. Regional wildlife corridors provide foraging, breeding, and retreat areas for migrating, dispersing, immigrating, and emigrating wildlife populations. Local wildlife corridors also provide access routes to food, cover, and water resources within restricted habitats.

The proposed project would not substantially interfere with the movement of native wildlife, as the majority of the project site is a disked agricultural field that has been subject to regular disturbance. Sand Creek, near the northern boundary of the project site, provides a valuable east/west wildlife corridor with suitable cover, foraging and water resources, and migration pathways that lead to other natural habitats. However, the proposed project would retain Sand Creek and a 200-foot-wide buffer to the south of the creek as open space. The two proposed outfall structures and the two proposed clear span bridges over Sand Creek would not adversely affect the existing use of the creek as a wildlife corridor. Medium and large mammal movements along the creek would remain unaffected by the proposed project.

As such, the project would not 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. Thus, a ***less-than-significant*** impact would occur.

e. In 2019, a tree survey was conducted on the project site by Stewart's Tree Service, Inc.[11] The tree survey identified a total of 14 existing trees within the project site, all of which are located along Sand Creek within the northern portion of the site. Each tree was evaluated to determine the species, trunk diameter at breast height (DBH), and health (i.e., good, fair, or poor). Installation of the two outfall structures on the banks of Sand Creek and installation of the two clear span bridges across Sand Creek may require removal of to up to 12 existing trees along the banks of the waterway.

According to the City of Antioch's Zoning Ordinance, Article 12: Tree Preservation and Regulation (Section 9-5.1205), tree removal for the proposed project is evaluated as part of the "regular development application process." In deciding whether to approve the removal of a tree, or require its preservation, the City considers whether the tree being evaluated is considered a landmark, indigenous, mature, or established tree. In addition, the City would also evaluate the tree's appearance, species type, and aesthetic compatibility with the proposed project.

The City's Design Requirements under the Subdivision Ordinance (Section 9-4.617), requires the removal of all trees that conflict with grading, utilities, or improvements in the public right-of-way. Therefore, trees within any right-of-way that would conflict with roadway improvements proposed as part of the project must be removed. The trees for which the City authorizes removal must be replaced. The City's Tree Preservation and Regulation Ordinance (Section 9-5.1205) requires two 24-inch box trees for each established tree, two 48-inch box trees for each mature tree, and the City Council has discretion in determining the appropriate ratio of box tree replacement for any landmark or indigenous trees. The City of Antioch's Tree Ordinance defines six categories of trees:

- An established tree is any tree that is at least ten inches in diameter, at diameter at breast height (DBH). DBH is measured 4.5 feet above natural or finished grade.
- An indigenous tree is a naturally growing tree of the following species: Blue Oak (*Quercus douglasii*), Valley Oak (*Quercus lobata*), Coast Live Oak (*Quercus agrifolia*), Canyon Live Oak (*Quercus chrysolepis*), Interior Live Oak (*Quercus wislizenii*), California Buckeye (*Aesculus californica*), and California Bay (*Umbellularia californica*)
- A landmark tree is any tree that is at least 48 inches in DBH and/or is over 40 feet in height.
- A mature tree is any tree which is at least 26 inches in DBH.
- A street tree is any tree planted within a public right-of-way and/or a tree planting easement.
- A protected tree is any tree required to be preserved as a condition of an approval from a regular development application.

Per Title 9, Chapter 5, Article 1205 of the City's Municipal Code, a request for tree removal would be included in the final development application submitted by the project applicant.

[11] Stewarts Tree Service, Inc. *Tree Survey, Creekside, Antioch.* July 30, 2019.

The development application would include a site plan showing the existing topography, a description of the established trees, and a written statement requesting permission to remove the trees. Approval or denial of the tree removal request would be made as part of the development application and discretionary project review process. Adherence to the requirements set forth in the Municipal Code would ensure that the proposed project would be in compliance with the City's Tree Preservation and Regulation Ordinance. In accordance with Section 9-5.1205, the project must include replacement of trees that have been removed as part of the proposed project.

Should the project applicant fail to comply with the requirements noted above, the proposed project could conflict with local policies or ordinances protecting biological resources, including Section 9-5.1205 of the City's Municipal Code, and a ***potentially significant*** impact could occur.

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

IV-15 *Prior to issuance of certificates of occupancy, all trees that are legally removed as part of the proposed project shall be replaced according to the following schedule, to the satisfaction of the City of Antioch Community Development Department:*

1. *Each established tree: two 24-inch box trees.*
2. *Each mature tree: two 48-inch box trees.*

The locations and sizes of the replacement trees shall be clearly shown on the final landscape plans, subject to review and approval by the City.

f. As noted previously, in July 2007, the ECCC HCP/NCCP was adopted by Contra Costa County, other member cities, the USFWS, and the CDFW. The City of Antioch, however, declined to participate in the HCP/NCCP. While the City is currently considering drafting a new HCP/NCCP, the document has not yet been finalized or adopted. Therefore, the project site is not located in an area with an approved HCP/NCCP, or local, regional, or State habitat conservation plan. As a result, ***no impact*** would occur regarding a conflict with the provisions of such a plan.

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 dedicated cemeteries.	☐	✖	☐	☐

Discussion

The following discussion is based on a Cultural Resources Assessment prepared for the proposed project by Natural Investigations Company.[12]

a. Historical resources are features that are associated with the lives of historically important persons and/or historically significant events, that embody the distinctive characteristics of a type, period, region or method of construction, or that have yielded, or may be likely to yield, information important to the pre-history or history of the local area, California, or the nation. As noted in the Cultural Resources Assessment, a historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR) (Public Resources Code [PRC] Section 21084.1), a resource included in a local register of historical resources (PRC Section 15064.5[a][2]), or any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant (PRC Section 15064.5[a][3]).

As part of the Cultural Resources Assessment, a California Historical Resources Information System (CHRIS) records search was conducted by the Northwest California Information Center (NWIC) to determine whether prehistoric or historic cultural resources have been previously recorded within the project area, the extent to which the project area has been previously surveyed, and the number and type of cultural resources within a 0.25-mile radius of the project site limits. In addition, an intensive pedestrian survey of the entire project site was conducted by Natural Investigations between January 27 and 29, 2020. During the pedestrian survey, all visible ground surfaces within the project area were examined for cultural materials; soil discoloration that might indicate the presence of cultural midden; soil depressions and features indicative of the former presence of structures or buildings (e.g., postholes, foundations); and historic period debris (e.g., metal, glass, ceramic). Ground disturbances (e.g., animal burrows, dirt roads, etc.) were also visually inspected for cultural remains.

The CHRIS records search indicates that two cultural resources (P-07-000005 and-07-002951) have been previously recorded within the project site, and one additional resource has been previously recorded outside the project site and off-site improvement areas, but within the 0.25-mile search radius. In addition, one previously unrecorded cultural resource (NI751-S-001) was identified during the field survey. It should be noted that while the off-site improvement areas were not included in the field survey, such areas do not include any existing structures or notable features that could be considered historic.

[12] Natural Investigations Company. *Cultural Resources Assessment for the Creekside Vineyards at Sand Creek Subdivision Project, Antioch, Contra Costa County, California.* February 2020.

The first of the two sites within the project site (P-07-000005) is an outpost of the historical Heidorn Ranch, made up of numerous archaeological features including an earthen ramp, metal water tank, cistern, fencing, and other debris. As noted in the Cultural Resources Assessment, archaeological testing, agricultural disking, and construction related to PG&E substation improvements have disturbed the site since its original recording. The resource was recommended ineligible for listing on the NRHP/CRHR during a previous evaluation. The second resource within the project site (P-07-002951) is the Contra Costa Las Positas Transmission Line, which extends for 24 miles through portions of Contra Costa and Alameda Counties. An evaluation of the resource completed in 2008 concluded that the resource is not eligible for listing on either the NRHP or the CRHR under any criteria.

In addition to the resources noted above, the Caltrans Statewide Historic Bridge Inventory identifies the existing PG&E bridge located within the northeastern portion of the project site, along the access road to the PG&E distribution substation, south from Heidorn Ranch Road. The PG&E bridge was built in 2007 when the Antioch substation was established and is not eligible for listing on either the NRHP or the CRHR, according to the Cultural Resources Assessment.

The previously unrecorded cultural resource (NI751-S-001) identified during the field survey is a remnant timber post and barbed-wire fence on the hill lining the eastern border of the project site. Based on the findings of the Cultural Resources Assessment, NI751-S-001 does not appear to have the data potential or integrity needed to comprise a NRHP/CRHR-eligible resource, and further consideration is not required.

Based on the above, the project site and off-site improvement areas do not contain any existing historic resources. 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. Based on the results of the CHRIS records search conducted as part of the Cultural Resources Assessment, the project site and off-site improvement areas do not include any known archaeological resources. In addition, a search of the Native American Heritage Commission (NAHC) Sacred Lands File search did not yield any information regarding the presence of Tribal Cultural Resources within the project site or off-site improvement areas. Archaeological site indicators or soils were not observed during the survey of the project site.

However, unknown archaeological resources, including human remains, have the potential to be uncovered during ground-disturbing construction and excavation activities associated with the proposed project. Therefore, if previously unknown resources are encountered during construction activities, 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 dedicated cemeteries, during construction. Therefore, impacts could be considered ***potentially significant***.

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

V-1 *Prior to initiation of ground-disturbing activities, a consultant and construction worker tribal cultural resources training program shall be provided for all personnel involved in project implementation, to be administered by a qualified cultural resources specialist. The training program shall include relevant information regarding sensitive tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The worker cultural resources awareness program shall also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the project site, and shall outline what to do and whom to contact if any potential archaeological resources or artifacts are encountered. The program shall also underscore the requirement for confidentiality and culturally-appropriate treatment for any find of significance to Native Americans and behaviors, consistent with Native American tribal values. A sign-in sheet shall be distributed to all participants of the training program and submitted to the City of Antioch within two weeks of program completion.*

V-2 *In the event of the accidental discovery or recognition of any or human remains, further excavation or disturbance of the find or any nearby area reasonably suspected to overlie adjacent human remains shall not occur until compliance with the provisions of CEQA Guidelines Section 15064.5(e)(1) and (2) has occurred. The Guidelines specify that in the event of the discovery of human remains other than in a dedicated cemetery, no further excavation at the site or any nearby area suspected to contain human remains shall occur until the County Coroner has been notified to determine if an investigation into the cause of death is required. If the coroner determines that the remains are Native American, then, within 24 hours, the Coroner must notify the Native American Heritage Commission, which in turn will notify the most likely descendants who may recommend treatment of the remains and any grave goods. If the Native American Heritage Commission is unable to identify a most likely descendant or most likely descendant fails to make a recommendation within 48 hours after notification by the Native American Heritage Commission, or the landowner or his authorized agent rejects the recommendation by the most likely descendant and mediation by the Native American Heritage Commission fails to provide a measure acceptable to the landowner, then the landowner or his authorized representative shall rebury the human remains and grave goods with appropriate dignity at a location on the property not subject to further disturbances. Should human remains be encountered, a copy of the resulting County Coroner report noting any written consultation with the Native American Heritage Commission shall be submitted as proof of compliance to the City's Community Development Department.*

V-3 *If any prehistoric or historic artifacts, or other indications of cultural deposits, such as historic privy pits or trash deposits, are found once ground disturbing activities are underway, all work within the vicinity of the find(s) shall cease, the City of Antioch shall be notified, and the find(s) shall be immediately evaluated by a qualified archaeologist and Native American representatives from culturally affiliated Native American tribes to assess*

the significance of the find and make recommendations for further evaluation and treatment, as necessary. Such recommendations shall be documented in the project record. For any recommendations made by interested Native American tribes which are not implemented, a justification for why the recommendation was not followed will be provided in the project record. If the find is determined to be a historical or unique archaeological resource, contingency funding and a time allotment to allow for implementation of avoidance measures or appropriate mitigation shall be made available (CEQA Guidelines Section 15064.5). Work may continue on other parts of the project site while historical or unique archaeological resource mitigation takes place (Public Resources Code Sections 21083 and 21087).

If inadvertent adverse impacts to tribal cultural resources, unique archeology, or other cultural resources occurs, consultation with the culturally affiliated Native American tribes regarding the standards contained in Public Resources Code sections 21084.3(a) and (b) and CEQA Guidelines section 15370 should occur, in order to coordinate for compensation for the adverse impacts by replacing or providing substitute resources or environments.

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 2019 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 2019 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, 2020. 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 use of low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particle board; and
- For some single-family and low-rise residential development developed after January 1, 2020, mandatory on-site solar energy systems capable of producing 100 percent of the electricity demand created by the residence(s). Certain residential developments, including those developments that are subject to substantial shading, rendering the use of on-site solar photovoltaic systems infeasible, are exempted from the foregoing requirement.

Building Energy Efficiency Standards

The 2019 Building Energy Efficiency Standards is a portion of the CBSC, which expands upon energy efficiency measures from the 2016 Building Energy Efficiency Standards. Per the California Energy Commission, single-family homes built with the 2019 standards use

approximately seven percent less energy due to energy efficiency measures versus those built under the 2016 standards.[13] Once rooftop solar electricity generation is factored in, homes built under the 2019 standards will use approximately 53 percent less energy than those under the 2016 standards.

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 sites 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 per 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 prepared the *2017 Climate Change Scoping Plan Update* (2017 Scoping Plan),[14] 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. 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

[13] California Energy Commission. *2019 Building Energy Efficiency Standards.* March 2018.
[14] California Air Resources Board. *The 2017 Climate Change Scoping Plan Update.* January 20, 2017.

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 residential uses, requiring electricity and natural gas for interior and exterior building lighting, heating, ventilation, and air conditioning (HVAC), electronic equipment, machinery, refrigeration, appliances, security systems, and more. Maintenance activities during operations, such as landscape maintenance, would involve the use of electric or gas-powered equipment. In addition to on-site energy use, the proposed project would result in transportation energy use associated with vehicle trips generated by the proposed residential development.

The proposed residential 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 structures would consume energy efficiently through the incorporation of such features as efficient water heating systems, high performance attics and walls, and high efficacy 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 Renewables Portfolio Standard, 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. Issues related to vehicle miles travelled (VMT) and access to public transit, bicycle, and pedestrian facilities will be addressed in the Transportation chapter of the Creekside/Vineyards at Sand Creek EIR being prepared for the project.

Conclusion

Based on the 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? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	✖	☐
ii. Strong seismic ground shaking?	☐	☐	✖	☐
iii. Seismic-related ground failure, including liquefaction?	☐	✖	☐	☐
iv. Landslides?	☐	✖	☐	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	✖	☐	☐
c. Be located on a geologic unit 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

The following discussion is based on a Geotechnical Summary Report prepared for the proposed project by ENGEO Inc. (see Appendix B).[15]

ai-ii. According to the Geotechnical Summary Report, the project site is not located within an Alquist-Priolo Earthquake Fault Zone. The two nearest earthquake faults zoned as active by the California Geological Survey are the Greenville Connected fault, located approximately 6.0 miles to the southwest of the project site, and the Great Valley fault, located approximately 7.0 miles northwest of the site. An active fault is defined by the State Mining and Geology Board as one that has had surface displacement within Holocene time (within the last 11,000 years). Thus, the potential for surface rupture due to faulting occurring beneath the site during the design life of the proposed development would be low.

Due to the site's proximity to nearby active faults, the potential exists for the proposed residential buildings to be subject to seismic ground shaking. In particular, per the Geotechnical Summary Report, the Great Valley fault is capable of causing substantial ground shaking at the project site. In addition, the project site could be exposed to ground lurching during earthquake events. Ground lurching is a result of the rolling motion imparted to the ground surface during energy released by an earthquake. Such rolling

[15] ENGEO Inc. *Creekside, Antioch, California, Preliminary Geotechnical Summary Report.* February 27, 2019.

motion can cause ground cracks to form in weaker soils. The potential for the formation of such cracks is considered greater at contacts between deep alluvium and bedrock.

However, per the Geotechnical Summary Report, potential ground surface offset from ground lurching at the project site is expected to be very minor. In addition, the proposed buildings would be properly engineered in accordance with the latest version of the CBSC, which includes engineering standards appropriate for the seismic area in which the project site is located. Structures built consistent with the CBSC should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage.

Conformance with the design standards is enforced through building plan review and approval by the City of Antioch Building Division prior to the issuance of building permits. Proper engineering of the proposed project would ensure that seismic-related effects would not cause adverse impacts. Therefore, a ***less-than-significant*** impact would occur related to seismic surface rupture and strong seismic ground shaking.

aiii,aiv, c,d. The proposed project's potential effects related to liquefaction, landslides, lateral spreading, settlement, and expansive soils are discussed in detail below.

Liquefaction

Soil liquefaction results from loss of strength during cyclic loading, such as imposed by earthquakes. Soils most susceptible to liquefaction are clean, loose, saturated, uniformly graded fine sands below the groundwater table. Empirical evidence indicates that loose silty sands are also potentially liquefiable. When seismic ground shaking occurs, the soil is subjected to cyclic shear stresses that can cause excess hydrostatic pressures to develop. If excess hydrostatic pressures exceed the effective confining stress from the overlying soil, the sand may undergo deformation. If the sand undergoes virtually unlimited deformation without developing significant resistance, the sand is said to have liquefied, and if the sand consolidates or vents to the surface during and following liquefaction, ground settlement and surface deformation may occur. Borings conducted as part of the Geotechnical Summary Report on the northern edge of the project site encountered medium-dense to dense sands below the groundwater table, beginning as shallow as 25 feet below ground surface. Based on the previous liquefaction analysis by ENGEO, Inc., the subsurface sands within the project site may have the potential to liquefy during a design-level seismic event. In addition, per the California Geological Survey, portions of the project site are included within a designated Liquefaction Zone.[16]

Deformation of the ground surface is a common result of liquefaction. Vertical settlement may result from densification of the deposit or volume loss from venting to the ground surface. Densification occurs as excess pore pressures dissipate, resulting as vertical settlement at the ground surface. Based on the previous liquefaction analysis performed by ENGEO, Inc., the total liquefaction-based settlement at the project site would likely vary over the entirety of the site. Per the Geotechnical Summary Report, total liquefaction-induced settlements would be up to approximately two inches in areas where the sand thickness is approximately 10 feet. Implementation of the grading and structural design

[16] California Geological Survey. *Earthquake Zones of Required Investigation.* Available at: https://maps.conservation.ca.gov/cgs/EQZApp/app/. Accessed March 2020.

recommendations contained within the Geotechnical Summary Report would be necessary to alleviate liquefaction and liquefaction-induced settlement risks.

Landslides

Seismically-induced landslides are triggered by earthquake ground shaking. The risk of landslides is greatest in the late winter when groundwater levels are highest and hillside colluvium is saturated. As with all slopes in the region, landslide risks are present at the site to varying degrees, depending on the slope conditions and time of year. Areas of potential landslide deposits "Qls" were mapped by Nilsen (1975) and identified by ENGEO, Inc. on the west-facing slope located in the southeastern portion of the site. In addition, per the California Geological Survey, portions of the project site are included within a designated Landslide Zone.[17] The landslide deposit identified by ENGEO consists of multiple shallow earthflows and slumpflow-type failures likely caused by erosion at the toe of the slope. The identified landslide area has a relatively high likelihood of experiencing future instability.

The currently mapped landslide area is located outside the proposed development area. Nonetheless, site-specific design considerations would be required in order to ensure that the proposed project would not result in substantial risks related to landslides.

Lateral Spreading

Lateral spreading is a failure within a nearly horizontal soil zone (possibly due to liquefaction) which causes the overlying soil mass to move toward a free face or down a gentle slope. Sand Creek within the northern portion of the site is situated within a deeply incised channel with steeply-sloped sides. Thus, construction of the proposed clear span bridges at Sand Creek, as well as the proposed detention and bio-retention basins within the northeastern portion of the site, would be required to incorporate specific design considerations to avoid potential risks related to lateral spreading and slope stability.

Settlement

The structures proposed within the southwestern portion of the project site may be located in colluvial deposits. Excessive total and differential settlement at the site may result from settlement of foundation elements supported directly over such compressible colluvial deposits. To reduce settlement resulting from the deposits, the Geotechnical Summary Report includes recommendations to overexcavate the deposits to expose stiff in-place materials, and to restore the deposit locations with properly compacted engineered fill material. Soil from the deposits may be reused as fill material.

Expansive Soils

Expansive soils shrink and swell as a result of moisture changes, which can cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations. Building damage due to moisture changes in expansive soils can be reduced by appropriate grading practices and using post-tensioned slab foundations or similarly stiffened foundation systems, which are designed to resist the deflections associated with soil expansion.

[17] California Geological Survey. *Earthquake Zones of Required Investigation.* Available at: https://maps.conservation.ca.gov/cgs/EQZApp/app/. Accessed March 2020.

Based on the results of on-site soil boring investigations conducted as part of the Geotechnical Summary Report, the near-surface soils within the project site exhibit low to moderate shrink/swell potential with variations in moisture content. Compliance with the design recommendations included in the Geotechnical Summary Report would be necessary to ensure that hazards related to expansive soils do not occur.

Conclusion

Based on the above discussion, without incorporation of site-specific design considerations, the proposed project could be subject to risks related to liquefaction and landslides, as well as risks related to being located on potentially unstable soils, thereby resulting in lateral spreading and/or settlement. In addition, the project site is located on low- to moderately expansive soil. Thus, a ***potentially significant*** impact could occur.

Mitigation Measure(s)

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

VII-1 *Prior to issuance of any grading permits, all recommendations set forth in Sections 5.0, 6.0, and 7.0 of the Geotechnical Summary Report prepared for the proposed project shall be reflected on the project grading and foundation plans, subject to review and approval by the City Engineer.*

VII-2 *Prior to issuance of any grading permits, the project applicant shall submit to the City of Antioch Engineering Department, for review and approval, a design-level geotechnical exploration study produced by a California Registered Civil Engineer or Geotechnical Engineer and identify grading and building practices necessary to achieve compliance with the latest adopted edition of the California Building Standards Code's geologic, soils, and seismic requirements. Consistent with Section 8.0 of the Geotechnical Summary Report prepared for the proposed project, the design-level geotechnical exploration study shall include supplemental borings, surface samples, Cone Penetration Tests (CPTs) and laboratory soil testing to address the following geotechnical concerns:*

- *Liquefaction-induced settlement risks, lateral spreading risks, and design considerations.*
- *Detailed foundation design criteria based on building types and surficial soil material properties.*
- *Identification of any undocumented fill located on the property.*

The design-level geotechnical exploration study shall identify measures to address construction requirements to mitigate any potential geotechnical hazards.

b. During grading activities associated with development of the proposed project, and prior to overlaying of the ground with impervious surfaces and landscaping elements, topsoil would temporarily be exposed. Thus, the potential exists for wind and water to erode portions of the exposed topsoil during construction, which could adversely affect downstream storm drainage facilities. Impacts related to substantial soil erosion or the

loss of topsoil during construction of the proposed project would be ***potentially significant.***

Mitigation Measure(s)

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

VII-3 *Prior to issuance of grading and building permits, the project applicant shall submit, for the review and approval by the City Engineer, an erosion control plan that utilizes standard construction practices to limit the erosion effects during construction of the proposed project. Measures shall include, but are not limited to, the following:*

- *Hydro-seeding;*
- *Placement of erosion control measures within drainage ways and ahead of drop inlets;*
- *The temporary lining (during construction activities) of drop inlets with "filter fabric" (a specific type of geotextile fabric);*
- *The placement of straw wattles along slope contours;*
- *Directing subcontractors to a single designation "wash-out" location (as opposed to allowing them to wash-out in any location they desire);*
- *The use of siltation fences; and*
- *The use of sediment basins and dust palliatives.*

e. Sanitary sewer service would be provided to the project site by an extension of the existing 24-inch sanitary sewer pipe from the Promenade/Vineyards at Sand Creek Project through a connection over Sand Creek at the same location as the existing PG&E bridge. The construction or operation of septic tanks or other alternative wastewater disposal systems is not included as part of the proposed project. Therefore, ***no impact*** regarding the capability of soil to adequately support the use of septic tanks or alternative wastewater disposal systems would occur.

f. As noted in the Cultural Resources Assessment prepared for the proposed project by Natural Investigations Company, paleontological resources occur in geologic units (e.g., formations or members). The probability for finding significant fossils at a given location can be estimated based on previous records of fossils recovered from the geologic units present in and/or adjacent to the location. Based on paleontological research conducted as part of the Cultural Resources Assessment, the project area is underlain by Eocene-aged (56 to 33.9 million years ago) Markley Sandstone bedrock (Tkm) of the Kreyenhagen Formation. Quaternary alluvium from Sand Creek (Qa) overlies the Markley Formation at lower elevations at north, south, and center of the project site. Such sediments date from the Latest Pleistocene to historic times (30,000 to 150 years ago). Both the Eocene-aged Markley Formation and Quaternary sediments have yielded vertebrate remains which are considered important paleontological resources for CEQA purposes. Thus, the Cultural Resources Assessment concluded that the project site has variable sensitivity for paleontological resources, ranging from low to high, and increasing with depth, though the precise depth that high sensitivity Pleistocene sediments are reached is unknown.

Project-related ground disturbances, such as grading, trenching or excavating, could have the potential to affect previously undisturbed Quaternary alluvium at, or just below, the depth of past agricultural disturbances such as disking. Such disturbance could impact vertebrate fossils, if present within the proposed disturbance area. Given that the upper portions of the two hill forms within the project site where Markley Sandstone is exposed would not be graded or developed as part of the proposed project, the project disturbances to any previously unknown Eocene-aged fossils is unlikely, though still possible in lower elevation where overlying alluvium and colluvium is most shallow (i.e., furthest from natural drainages and the base of slopes). Therefore, the proposed project could result in the direct or indirect destruction of a unique paleontological resource, and a ***potentially significant*** impact could occur.

Mitigation Measure(s)

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

VII-4 *Prior to initiation of ground-disturbing activities, the applicant shall retain the services of a professional paleontologist to conduct a Worker's Environmental Awareness Training for the construction crew that will be conducting earthmoving activities (i.e., grading and excavation) at the project site and off-site improvement areas. The Environmental Awareness Training may be conducted concurrently with the tribal cultural resources training program required per Mitigation Measure V-1 of this Initial Study. Consistent with the recommendations of the 2020 Cultural Resources Assessment prepared for the proposed project by Natural Investigations, training shall include information on the types of fossils that may be encountered during project work, relevant compliance requirements, and the course to action to be taken in the event of an inadvertent fossil discovery.*

Should any vertebrate fossils (e.g., teeth, bones), an unusually large or dense accumulation of intact invertebrates, or well-preserved plant material (e.g., leaves) be unearthed by the construction crew, ground-disturbing activity shall be diverted to another part of the project site and the City and paleontologist shall be called on-site to assess the find and, if significant, recover the find in a timely matter. Finds determined significant by and paleontologist shall then be conserved and deposited with a recognized repository, such as the University of California Museum of Paleontology. The alternative mitigation would be to leave the significant finds in place, determine the extent of significant deposit, and avoid further disturbance of the significant deposit. Within two weeks of training completion, proof of the construction crew awareness training shall be submitted to the City's Community Development Department in the form of a copy of training materials and the completed training attendance roster.

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 greenhouse gases (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 global 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.

A number of regulations currently exist related to GHG emissions, predominantly Assembly Bill (AB 32), Executive Order S-3-05, and Senate Bill (32). AB 32 sets forth a statewide GHG emissions reduction target of 1990 levels by 2020. Executive Order S-3-05 sets forth a transitional reduction target of 2000 levels by 2010, the same target as AB 32 of 1990 levels by 2020, and further builds upon the AB 32 target by requiring a reduction to 80 percent below 1990 levels by 2050. SB 32 also builds upon AB 32 and sets forth a transitional reduction target of 40 percent below 1990 levels by 2030. In order to implement the statewide GHG emissions reduction targets, local jurisdictions are encouraged to prepare and adopt area-specific GHG reduction plans and/or thresholds of significance for 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. Buildout of the proposed project would contribute to increases of GHG emissions that are associated with global climate change during construction and operations. As such, the proposed project would 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. Therefore, impacts related to GHG emissions and global climate change could be considered ***potentially significant***.

Further analysis of this impact will be discussed in the Air Quality and Greenhouse Gas Emissions chapter of the Creekside/Vineyards at Sand Creek EIR being prepared for the project.

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. Residential land uses are not typically associated with the routine transport, use, disposal, or generation of substantial amounts of hazardous materials. Future residents may use common household cleaning products, fertilizers, and herbicides on-site, any of which could contain potentially hazardous chemicals; however, such products would be expected to be used in accordance with label instructions. Due to the regulations governing use of such products and the amount utilized on the site, routine use of such products would not represent a substantial risk to public health or the environment. Therefore, the project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, and a ***less-than-significant*** impact would occur.

b. The following discussion provides an analysis of potential hazards and hazardous materials associated with upset or accident conditions related to the proposed construction activities and existing on-site conditions.

Construction Activities

Construction activities associated with the proposed project would involve the use various products such as concrete, paints, and adhesives, as well as the use of heavy equipment, which would contain fuels, oils, and hydraulic fluid. Small quantities of potentially toxic substances (e.g., petroleum and other chemicals used to operate and maintain construction equipment) would be used at the project site and transported to and from the site during construction. However, the project contractor would be required to comply with

all California Health and Safety Codes and local City ordinances regulating the handling, storage, and transportation of hazardous and toxic materials.

Existing On-Site Hazardous Materials

A Phase I Environmental Site Assessment (ESA) was prepared for the proposed project by ENGEO, Inc. for the purpose of identifying potential recognized environmental conditions (RECs) associated with the project site (see Appendix C).[18] The Phase I ESA included a survey of the site and a review of historical documentation, aerial photography, regulatory agency files, and environmental site radius reports. In addition, the Phase I ESA incorporates the findings of a separate Phase I ESA prepared in August 2000 for the project site and the neighboring parcels to the north, south, and west.

Historical sources reviewed as part of the most recent Phase I ESA indicate that the project site has been used for dry land farming, cattle grazing, and oil production. The site has note been developed within any habitable structures. Currently, an electric transmission line extends through the southwestern portion of the project site, trending northwest-to-southeast. A PG&E access road crosses the northern portion of the project site, trending west to east. The access road connects between the PG&E electric substation to the west of the project site and Heidorn Ranch Road to the northeast of the project site.

Per the Phase I ESA, features such as stressed vegetation, septic systems, water wells, above-ground storage tanks (ASTs), and underground storage tanks (USTs) were not identified on the site. In addition, the Vapor Encroachment Screening (VES) conducted as part of the Phase I ESA did not identify any vapor encroachment conditions associated with the project site due to contaminated soils and/or groundwater. Based on a review of environmental record sources regarding the project site and nearby properties, the project site is not located within the vicinity of any preexisting off-site hazards that could pose a risk to the proposed development.

While not considered RECs, the Phase I ESA noted that the site includes a total of four abandoned oil/gas wells within the project site, the locations of which are shown in Figure 10 below. An additional 13 wells are located on adjacent parcels to the north, south, and west of the project site. The wells identified on the project site and adjacent parcels were drilled from 1962 through 1987 and have since been plugged and abandoned. ENGEO, Inc. has indicated the potential for subsurface impacts associated with well improvements from condensate tanks, compressor units, and drilling sumps. In addition, the site previously contained multiple oil/gas pipelines. While the Phase I ESA notes that such pipelines are believed to have been removed from the project site, the potential exists for remnants of the pipelines to be encountered during project construction.

It should be noted that the project applicant has submitted an application for a new oil/gas well on the project site. Installation and operation of the oil/gas well on the project site would be conducted in compliance with all applicable regulations, including California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) guidelines and recommendations for setback, casing height, and measures for venting systems. Compliance with such would ensure that the new oil/gas well would not create a significant hazard to the public or the environment through upset or accident conditions.

[18] ENGEO, Inc. *Creekside, Antioch, California, Phase I Environmental Site Assessment.* March 1, 2019.

Figure 10
Existing Oil and Gas Well Locations

Note: The site plan included in the figure above does not reflect the current development proposal for the project site.

Source: ENGEO, Inc., 2019.

Conclusion

Construction activities would be required to adhere to all relevant guidelines and ordinances regulating the handling, storage, and transportation of hazardous materials. In addition, based on the results of the Phase I ESA, existing RECs have not been identified on the project site. Nonetheless, the project site contains four existing oil/gas wells that could pose a risk to the proposed project if not properly managed.

In addition, the potential exists for ground-disturbing activities associated with the proposed project to encounter oil/gas pipelines associated with former petroleum extraction operations on the project site. Therefore, implementation of the proposed project could create a significant hazard to the public or the environment through reasonably foreseeable upset and accidental conditions involving the release of hazardous materials into the environment, and a ***potentially significant*** impact could occur.

Mitigation Measure(s)

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

IX-1 *Prior to final map approval, the project applicant shall submit to the City of Antioch Engineering Department, for review and approval, plans which show that future inhabited structures will not be located over the four on-site abandoned oil/gas wells. The plans shall be completed in compliance with the Division of Oil, Gas, and Geothermal Resources (DOGGR) Construction Site Review Program, which includes guidelines and recommendations for setbacks and mitigation measures for venting systems. If grading is proposed proximate to the four abandoned well locations, DOGGR shall be consulted to determine if the wells will require modification in casing height. In addition, DOGGR shall be consulted to determine if the well abandonment procedures are consistent with current requirements.*

IX-2 *If remnant oil/gas pipelines are encountered during site development work, the pipelines shall be abandoned and/or removed in accordance with applicable federal, State, and/or local standards to the satisfaction of the Contra Costa Environmental Health Department and the City Engineer. If any indicators of apparent soil contamination (soil staining, odors, debris fill material, etc.) are found at the project site associated with the petroleum pipelines, the impacted area shall be isolated from surrounding, non-impacted areas. The project environmental professional shall obtain samples of the potentially impacted soil for analysis of the contaminants of concern and comparison with applicable regulatory residential screening levels (i.e., Environmental Screening Levels, California Human Health Screening Levels, Regional Screening Levels, etc.). Where the soil contaminant concentrations exceed the applicable regulatory residential screening levels, the impacted soil shall be excavated and disposed of offsite at a licensed landfill facility to the satisfaction of the Contra Costa Environmental Health Department. If soil contaminants do not exceed the applicable regulatory residential screening levels, further action is not required.*

c. The proposed project site is not located within a quarter mile of any existing or proposed schools. The nearest school is Loma Vista Elementary School, located approximately 0.75-mile east of the site. While the Antioch Unified School District owns a parcel approximately 0.5-mile to the west of the project site (APN #057-042-005), development of the property with a school is not proposed at this time. Furthermore, as discussed above, hazardous materials would not be emitted during construction or operation of the proposed project. Therefore, the proposed project would have ***no impact*** related to hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

d. Per the Phase I ESA, the proposed project site is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.[19] Therefore, the project would not create a significant hazard to the public or the environment associated with such, and ***no impact*** would occur.

e. The nearest airport to the site is the Byron Airport, located approximately 10 miles southeast of the site. As such, the project site is not located within two miles of any public airports or private airstrips, and does not fall within an airport land use plan area. Therefore, ***no impact*** related to a safety hazard for people residing or working in the project area related to such would occur.

f. In 1996, the City of Antioch approved an Emergency Plan that addresses response to disasters, including, but not limited to, earthquakes, floods, fires, hazardous spills or leaks, major industrial accidents, major transportation accidents, major storms, airplane crashes, environmental response, civil unrest, and national security emergencies. The plan outlines the general authority, organization, and response actions for City of Antioch staff when disasters happen. Implementation of the proposed project would not result in any substantial modifications to the existing roadway system and, thus, would not physically interfere with the Emergency Plan, particularly with identified emergency routes. Furthermore, the proposed project would not include land uses or operations that could impair implementation of the plan. Therefore, the proposed project would not interfere with an emergency evacuation or response plan, and a ***less-than-significant*** impact would occur.

g. Issues related to wildfire hazards are discussed in Section XX, Wildfire, of this Initial Study. According to the California Department of Forestry and Fire Protection (CAL FIRE) Fire and Resource Assessment Program, the project site is located within a Local Responsibility Area and is included in a “Moderate” Fire Hazard Severity Zone; the site is not located within a Very High Fire Hazard Severity Zone.[20] The area to the south of the project site, which is located outside of the city limits within a State Responsibility Area (SRA), is similarly classified as a Moderate Fire Hazard Severity Zone. The open space areas proposed within the eastern and western portions of the project site would continue to be subject to grazing to reduce vegetation growth, thereby minimizing the fuel load within the vicinity of the proposed homes. In addition, upon completion of the Promenade/Vineyards at Sand Creek Project to the north of the project site, directly west of Heidorn Ranch Road, as well as future development of residential uses to the west east of the project site, wildfire risk at the project site would be further reduced. Therefore, the

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[19] ENGEO, Inc. *Creekside, Antioch, California, Phase I Environmental Site Assessment.* March 1, 2019.

[20] California Department of Forestry and Fire Protection. *Contra Costa County, Very High Fire Hazard Severity Zones in LRA*. January 7, 2009.

proposed project would not expose people or structures, either directly or indirectly, to the risk of loss, injury or death involving wildland fires, and a ***less-than-significant*** impact would occur.

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 following discussion provides a summary of the proposed project's potential to violate water quality standards/waste discharge requirements or otherwise degrade water quality within Sand Creek during construction and operation.

Construction

During the early stages of construction activities, topsoil would be exposed due to grading and excavation of the site. After grading and prior to overlaying the ground surface with impervious surfaces and structures, the potential exists for wind and water erosion to discharge sediment and/or urban pollutants into stormwater runoff, which could adversely affect water quality within Sand Creek and other downstream waterways.

The State Water Resources Control Board (SWRCB) regulates stormwater discharges associated with construction activities where clearing, grading, or excavation results in a land disturbance of one or more acres. The City'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. The State's General Construction Permit requires a Storm Water Pollution Prevention Plan (SWPPP) to be prepared for the site. A SWPPP describes Best Management Practices (BMPs) to control or minimize pollutants from entering stormwater and must address both grading/erosion impacts and non-point source pollution impacts of the development project. Because the proposed project would disturb greater than one acre of land, the

proposed project would be subject to the requirements of the State's General Construction Permit.

Operation

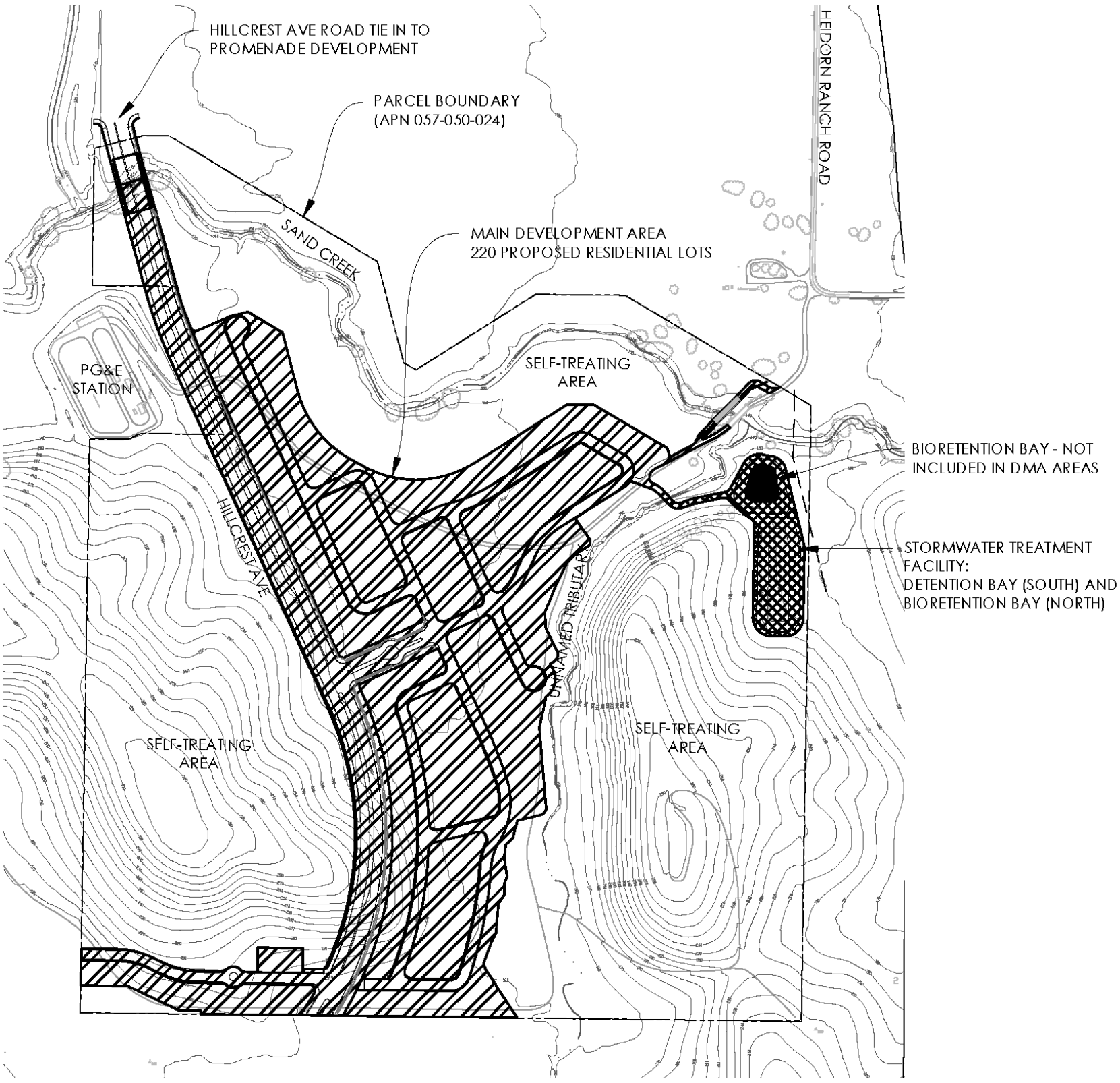
The proposed residential uses would not involve operations typically associated with the generation or discharge of polluted water. Thus, typical operations on the project site would not violate any water quality standards or waste discharge requirements, nor degrade water quality. However, addition of the impervious surfaces on the site would result in the generation of urban runoff, which could contain pollutants if the runoff comes into contact with vehicle fluids on parking surfaces and/or landscape fertilizers and herbicides. All municipalities within Contra Costa 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 NPDES permit.

The City of Antioch has adopted the County C.3 Stormwater Standards, which require new development and redevelopment projects that create or alter 10,000 or more square feet of impervious area to contain and treat all stormwater runoff from the project site. Thus, the proposed project would be subject to the requirements of the SWRCB and the Regional Water Quality Control Board (RWQCB), including the C.3 Standards, which are included in the City's NPDES General Permit. Compliance with such requirements would ensure that impacts to water quality standards or waste discharge requirements would not occur during operation of the proposed project.

The Stormwater Control Plan (SWCP) prepared for the proposed project conforms with the most recent Contra Costa Clean Water Program Stormwater C.3 Guidebook and verifies that the proposed project would comply with all City stormwater requirements. In compliance with the C.3 Guidebook, the proposed development area would be divided into two distinct drainage management areas (DMAs) (see Figure 11). Stormwater runoff from Hillcrest Avenue and the proposed residential neighborhoods would be directed to new detention and bio-retention basins located within the northeastern portion of the site (Parcel D). The basins would provide for treatment and detention of captured stormwater runoff by filtering runoff slowly through an active layer of soil. Treated stormwater runoff would flow into Sand Creek by way of a new outfall structure to be constructed on the south side of the existing outfall facility that was constructed by the Promenade/Vineyards at Sand Creek Project. The basins would be sized to meet or exceed the minimum volume requirements necessary to adequately handle all runoff from the proposed impervious surfaces and landscaping within the drainage area.

Stormwater runoff from the open space area in the western hillside of the project site (Parcels L and N) would be captured prior to reaching Hillcrest Avenue; half of the captured runoff would be directed north to a new clean water outfall adjacent to the Hillcrest Avenue bridge and the remainder would be directed east to a new clean water outfall releasing towards an existing natural drainage feature within the southern portion of the project site. The eastern hillslope (Parcel F) would continue to drain naturally into the same natural drainage area as occurs under existing conditions.

Figure 11
Preliminary Stormwater Control Plan



DMA 1- WEST DEVELOPMENT
DMA 2- EAST BASIN
OPEN SPACE AREA
PARCEL BOUNDARY
10 FT CONTOURS
CHANNEL FLOW PATH

POST-PROJECT WATER QUALITY AND HYDROMODIFICATION AREAS

	Total Area		Impervious			Pervious
			Old	New	Replaced	
	(sf)	*(acres)*	*(sf)*			*(sf)*
DMA 1: West Development	2,122,710	48.73	34462	1,379,762	34462	742,949
DMA 2: East Basin	115,090	2.64	-	115,090	-	-
SW Bioretention Basin	14,000	0.32	-	-	-	14,000
Total	**2,251,800**	**51.7**	**34,462**	**1,494,852**	**34,462**	**756,949**

Storage basin treated as impervious surface
Bioretention basin (14,000 sq ft) not included in DMA 2 area for IMP calculator
Site Plan sent by CBG on 03-12-2015

Balance Hydrologics, Inc.
218173-WaterQuality.dwg 7/2/2019 09:16

Water Quality and Hydromodification, Creekside Vineyards and Stand Creek, City of Antioch, California.

0' 250' 500'
SCALE: 1" = 500'
N

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Based on the above, the proposed project would comply with the requirements of the SWRCB and the RWQCB, and would meet or exceed C.3 Standards. Therefore, during operation, the project would comply with all relevant water quality standards and waste discharge requirements, and would not degrade water quality.

Conclusion

Based on the SWCP prepared for the proposed project, the project would comply with all applicable regulations during operation, does not involve uses associated with the generation or discharge of polluted water, and would be designed to adequately treat stormwater runoff from the site prior to discharge. However, disturbance of the on-site soils during construction activities could result in a ***potentially significant*** impact with regard to violation of water quality standards and degradation of water quality should adequate BMPs not be incorporated during construction in accordance with SWRCB regulations.

Mitigation Measure(s)

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

X-1 *Prior to issuance of grading permits, the contractor shall prepare a Storm Water Pollution Prevention Plan (SWPPP). The developer shall file the Notice of Intent (NOI) and associated fee to the SWRCB. The SWPPP shall serve as the framework for identification, assignment, and implementation of BMPs. The contractor shall implement BMPs to reduce pollutants in stormwater discharges to the maximum extent practicable. The SWPPP shall be submitted to the Director of Public Works/City Engineer for review and approval and shall remain on the project site during all phases of construction. Following implementation of the SWPPP, the contractor shall subsequently demonstrate the SWPPP's effectiveness and provide for necessary and appropriate revisions, modifications, and improvements to reduce pollutants in stormwater discharges to the maximum extent practicable.*

b,e. The City of Antioch currently does not rely on groundwater for water supplies.[21] Therefore, any water demand associated with the proposed project would not result in a depletion of groundwater in the project area. It should be noted that the project would develop portions of the site with impervious surfaces, which could impede groundwater recharge. However, 88.3 acres of the 158.2-acre project site would be retained as undisturbed open space, including Sand Creek and the area directly south of the creek. Therefore, the proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin, and would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Thus, a ***less-than-significant*** impact would occur.

ci-iii. Development of the proposed project would result in an increase in impervious surfaces on the project site, which would alter the existing drainage pattern of the site. However, as discussed above, the project is required to comply with C.3 Standards and is proposed to include appropriate site design measures, source controls, and hydraulically-sized

[21] City of Antioch. *2015 Urban Water Management Plan* [pg. 6-12]. May 2016.

stormwater treatment measures. In addition, projects creating or replacing an acre or more of impervious area—unless exempted—must also provide flow control so post-project runoff does not exceed estimated pre-project rates and durations.[22] Per the Contra Costa Clean Water Program, the project site is located within a non-exempt hydromodification management subbasin.[23]

As discussed above, runoff from the developed areas of the site would be collected and conveyed to new detention and bio-retention basins. As noted in the SWCP prepared for the proposed project, runoff would be piped first to the detention basin, from which low flows would be metered to the bio-retention basin.[24] The proposed configuration would allow for hydromodification management in the detention basin, water-quality treatment in the bio-retention basin, and provide peak flow control during large storm events. The peak-flow attenuation and hydromodification controls located in the detention basin would consist of a lower orifice sized to appropriately meter treatment flows to the bio-retention basin and a riser box structure with overflow that would act as a weir when the active storage volume in the detention basin rises above the required hydromodification storage volume. Per the SWCP, the basins would be designed to exceed the minimum volume needed to treat and control runoff from all proposed impervious surfaces. As demonstrated in Table 4 below, modeled post-project flows from the project site would not exceed pre-project flows.

Table 4
Pre-Project and Post-Project Runoff Conditions

	Pre-Project		Post-Project	
Storm Event	**Peak Discharge (cfs)**	**Volume (acre-feet)**	**Peak Discharge (cfs)**	**Volume (acre-feet)**
10-year, 3-hour	57.7	4.5	33.5	6.2
10-year, 6-hour	45.2	3.6	28.3	6.4
10-year, 12-hour	38.7	3.8	23.8	6.7
10-year, 24-hour	50.3	5.0	31.6	6.8
100-year, 24-hour	115.0	12.4	92.3	16.1

Note: Peak discharge rates presented in cubic feet per second (cfs).

Source: Balance Hydrologics, Inc., 2019.

In order to ensure that the proposed project's stormwater treatment facilities remain adequate, long-term maintenance would be required. Routine maintenance of the facilities is necessary to ensure that infiltration of water is unobstructed, erosion is prevented, and soils are held together by biologically active plant roots. As noted in the SWCP, proper operation and maintenance of the stormwater management facilities would be the sole responsibility of the property owner, prior to eventual transfer of maintenance responsibilities to the HOA for the proposed development. Maintenance requirements are detailed in Section 7 of the SWCP. With implementation of the required maintenance

[22] Contra Costa Clean Water Program. *Stormwater C.3. Guidebook, Stormwater Quality Requirements for Development Applications* [pg. 9]. May 17, 2017.

[23] Contra Costa Clean Water Program. *Applicability of Hydromodification Management (HM) Requirements in Contra Costa.*
Available at: https://www.arcgis.com/apps/webappviewer/index.html?id=d8a16600921140b0ab5363a7d507a5da. Accessed January 2020.

[24] Balance Hydrologics, Inc. *Stormwater Control Plan for Creekside Vineyards at Sand Creek.* July 2019.

activities, the bio-retention facilities would continue to properly manage runoff long after completion of construction activities.

In conclusion, the proposed project would not 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 result in erosion, siltation, or flooding on- or off-site, 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. Consequently, the proposed project would result in a ***less-than-significant*** impact.

civ. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map number 06013C0335F, the northern portion of the project site along the alignment of Sand Creek is classified as a Special Flood Hazard Area located within the 100-year floodplain. As part of the proposed project, development within the mapped 100-year floodplain would be limited to the proposed clear span bridges over Sand Creek and installation of stormwater outfalls. The remainder of the site, within which the proposed residential buildings would be developed, is classified as Zone X, defined by FEMA as an area not within a 100-year or 500-year floodplain. Construction of the proposed bridges would not require substantial placement or removal of fill within the existing Sand Creek channel, and the proposed stormwater outfalls would require only minor channel disturbance. Thus, the proposed project would not impede or redirect flood flows, and a ***less-than-significant*** impact would result.

d. Tsunamis are defined as sea waves created by undersea fault movement, whereas a seiche is a long-wavelength, large-scale wave action set up in a closed body of water such as a lake or reservoir. The project area is located over 50 miles from the Pacific Ocean and tsunamis typically affect coastlines and areas up to one-quarter mile inland. Due to the project's distance from the coast, the project site would not be exposed to flooding risks associated with tsunamis. Seiches do not pose a risk to the proposed project, as the project site is not located adjacent to a large closed body of water. Furthermore, as noted above, the proposed project would not include development of any habitable structures within a Flood Hazard Zone. Based on the above, the proposed project would not pose a risk related to the release of pollutants due to project inundation due to flooding, tsunami, or seiche, and ***no impact*** would occur.

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 use so as to change the land use conditions in the surrounding community, or isolate an existing land use. The proposed project site does not contain existing housing or other development, and the proposed project would be consistent with the Promenade/Vineyards at Sand Creek Project currently under construction to the north of the project site, as well as future residential uses anticipated to the east and west of the project site. The proposed project would not alter the existing general development trends in the area or isolate an existing land use. As such, the proposed project would not physically divide an established community and a ***less-than-significant*** impact would occur.

b. Per the City's General Plan, the eastern portion of the project site is designated Open Space/Senior Housing, while the western portion is designated Hillside, Estate and Executive Residential/Open Space. The site is zoned 'S'. The proposed project would include a GPA to the Land Use Map for the Sand Creek Focus Area of the General Plan to change the land use designations of the site to Medium Low Density Residential/Open Space, as well as an amendment to the text of the Sand Creek Focus Area of the General Plan in order to add the option of market rate or senior residential on small lots. In addition, the project would require approval of a Rezone to change the zoning designation of the site from S to PD, subject to a Master Development Plan. Furthermore, per Section 9-5.207 of the Municipal Code, all new development within the City is subject to Design Review approval. Approval of the requested GPA and Rezone would be subject to the determination of the Antioch City Council.

As discussed throughout this Initial Study, the proposed project would not conflict with City policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect, including, but not limited to, the City's Tree Preservation and Regulation Ordinance, the City's noise standards, and applicable SWRCB regulations related to stormwater. For all CEQA issue areas exclusive of air quality, GHG emissions, and transportation, which will be further evaluated in an EIR, this Initial Study includes mitigation to reduce identified environmental impacts to less-than-significant levels. Therefore, the proposed project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental impact. Thus, a ***less-than-significant*** impact would occur.

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. According to the City of Antioch's General Plan EIR, areas identified in the General Plan for new development do not contain known mineral resources that would be of value to the region or residents of the State.[25] Therefore, ***no impact*** to mineral resources would occur as a result of development of the project.

[25] City of Antioch. *General Plan Update EIR* [pg. 5-9]. July 2003.

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. 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 following discussion is based on an Environmental Noise Assessment prepared for the proposed project by j.c. brennan & associates, Inc. (see Appendix D).[26] The report analyzed traffic noise level increases at the project site and at existing sensitive receptors in comparison to the City's exterior and interior noise level standards. In addition, a discussion of construction noise associated with the proposed project is provided.

Sensitive Noise Receptors

Some land uses are considered more sensitive to noise than others, and, thus, are referred to as sensitive noise receptors. Land uses often associated with sensitive noise receptors generally include residences, schools, libraries, hospitals, and passive recreational areas. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise. In the vicinity of the project site, the nearest noise sensitive land uses are the single-family residences currently under construction as part of the Promenade/Vineyards at Sand Creek Project to the north of the project site, across Sand Creek.

Thresholds of Significance

Based on the City's General Plan Noise Element, the proposed project could result in a potentially significant impact if the project would exceed any of the thresholds below:

- An increase in long-term ambient noise by 5 dBA CNEL/L_{dn} or more, where existing noise levels do not exceed the City's 60 dBA CNEL exterior noise level standard; or
- An increase in long-term ambient noise by 3 dBA CNEL/L_{dn} or more, where existing noise levels exceed the City's 60 dBA CNEL exterior noise level.

In addition, Title 24, Part 2, of the California Building Code mandates that interior noise levels attributable to exterior noise sources shall not exceed 45 dB L_{dn} or CNEL in any habitable room. Accordingly, the proposed project could result in a potentially significant

[26] j.c. brennan & associates, Inc. *Creekside Vineyards at Sand Creek, Environmental Noise Assessment.* February 21, 2020.

impact if the interior noise levels at the proposed residences would exceed 45 dB L_{dn} or CNEL.

Existing Noise Environment

The existing ambient noise environment at the project site is primarily defined by construction noise from the Promenade/Vineyards at Sand Creek Project. To quantify the existing ambient noise environment at the project site, j.c. brennan & associates, Inc. conducted a continuous (24-hour) noise level measurement at the northern portion of the project site on January 22 through 23, 2020 (see Figure 12).

The results of the measurements are summarized in Table 5, presented in terms of the community noise equivalent level (CNEL), the average noise level (L_{eq}), the median noise level (L_{50}), and the maximum (L_{max}) noise level. All noise level values are in decibels (dB).

Table 5
Summary of Long-Term Ambient Noise Monitoring Results

Site	CNEL	Average Measured Hourly Noise Levels (dB)					
		Daytime (7 AM to 10 PM)			Nighttime (10 PM to 7 AM)		
		L_{eq}	L_{50}	L_{max}	L_{eq}	L_{50}	L_{max}
A	52.7	51.4	40.9	64.0	44.6	40.2	58.9

Source: j.c. brennan & associates, Inc., 2020.

As shown in Table 5, the existing ambient noise levels at the project site currently comply with the City's 60 dB L_{dn} exterior traffic noise level standard for residential land uses.

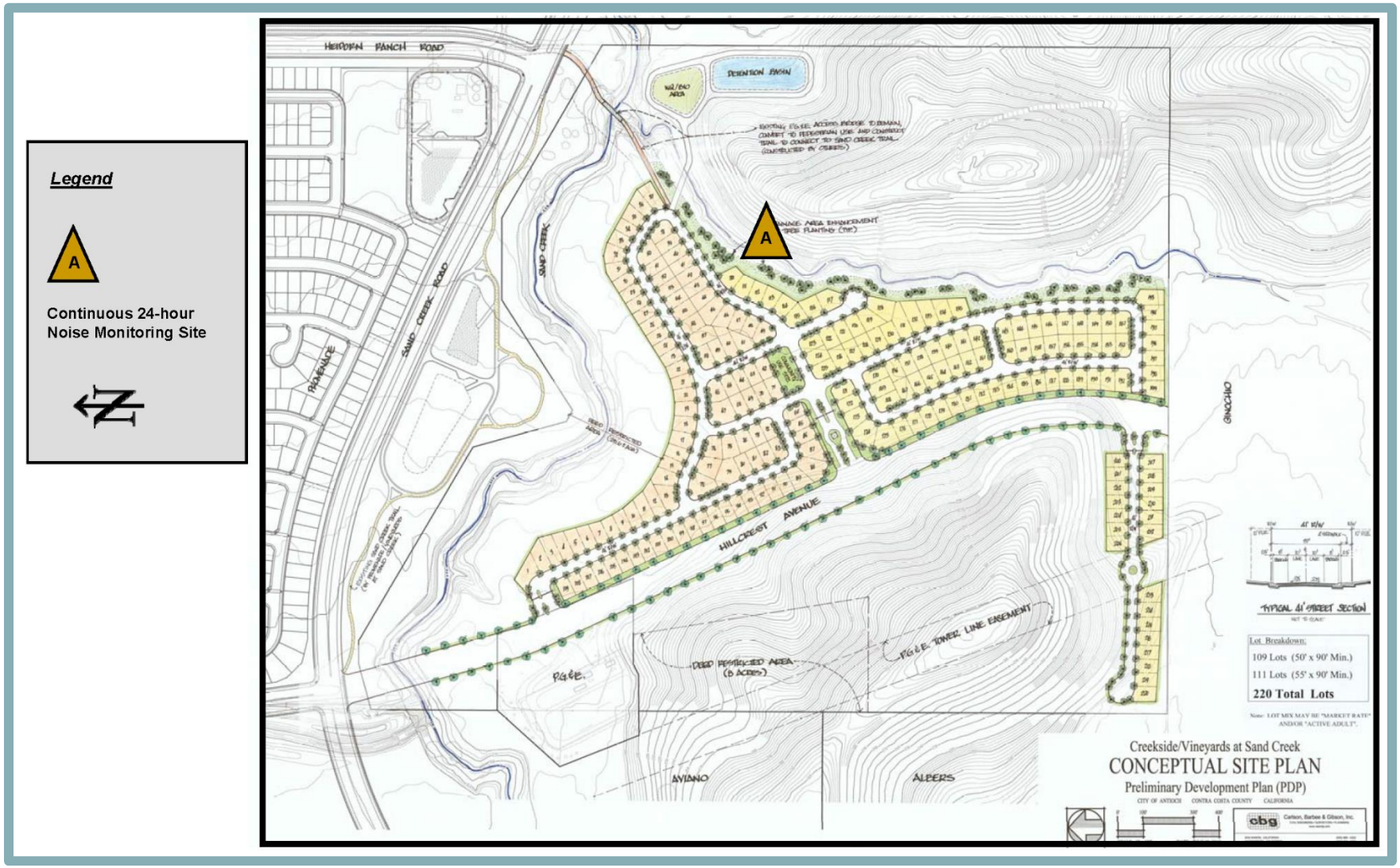
Project Construction Noise

During the construction of the proposed project, heavy equipment would be used for grading, excavation, paving, and building construction, which would increase ambient noise levels when in use. Noise levels would vary depending on the type of equipment used, how the equipment is operated, and how well the equipment is maintained. In addition, noise exposure at any single point outside the project site would vary depending on the proximity of construction activities to that point.

Activities involved in construction would generate maximum noise levels, as indicated in Table 6, ranging from 76 to 90 dB at a distance of 50 feet. The noise values represent maximum noise generation, or full- power operation of the equipment. As one increases the distance between equipment, or increases separation of areas with simultaneous construction activity, dispersion and distance attenuation reduce the effects of combining separate noise sources.

The single-family residences currently under construction to the north of the site as part of the Promenade/Vineyards at Sand Creek Project are located approximately 150 feet from the nearest proposed construction activity, which would be the off-site improvements to Hillcrest Avenue. Aside from the Hillcrest Avenue improvements, all other proposed construction activities would be located approximately 750 feet or further from the Promenade/Vineyards at Sand Creek Project residences.

Figure 12
Noise Measurement Sites



Note: The site plan included in the figure above does not reflect the current development proposal for the project site.

Source: j.c. brennan & associates, Inc., 2020.

Table 6 **Typical Construction Equipment Noise**	
Type of Equipment	**Maximum Noise Level at 50 feet (dB L_{max})**
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85
Source: j.c. brennan & associates, Inc., 2020.	

As shown in Table 6, construction activities typically generate noise levels ranging from approximately 76 to 90 dB L_{max} at a reference distance of 50 feet from the construction activities. The noise levels from construction operations decrease at a rate of approximately 6 dB per doubling of distance from the source. Thus, worst-case maximum construction noise levels associated with the proposed off-site roadway improvements would range from approximately 66 to 80 dB L_{max} at the Promenade/Vineyards at Sand Creek Project residences. Accordingly, if the Promenade/Vineyards at Sand Creek Project residences are constructed and occupied prior to initiation of construction activities associated with the proposed project, project construction noise could exceed the City's 60 dB exterior noise level threshold at the residences.

Project Operational Noise

As discussed in Section XVII, Transportation, of this Initial Study, the proposed project would result in increased traffic volumes on existing and planned roadways in the project vicinity. Thus, the proposed project could cause an increase in traffic noise levels in the project area.

Future Traffic Noise Levels at Sensitive Receptors

The Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA Model) was used with traffic data obtained from the project traffic consultant, Fehr & Peers, to predict traffic noise levels on the existing and planned roadway network in the project vicinity. Fehr & Peers has prepared traffic volume and trip distribution estimates for the proposed project, accounting for vehicle trips generated by the project, under Existing Plus Project and Cumulative Plus Project conditions.

Predicted traffic noise levels for the Existing Plus Promenade Plus Project and Cumulative Plus Project conditions are presented in Table 7 and Table 8 below. The actual distances to noise level contours shown in the tables may vary from the distances predicted by the FHWA model due to roadway curvature, roadway grade, shielding from local topography, sound walls or structures. The distances reported are generally considered to be conservative estimates of noise exposure along the project-area roadways.

As shown in the tables, the proposed project would not result in an increase in long-term ambient noise by 3 dBA CNEL/L_{dn} or more, where existing noise levels exceed the City's 60 dBA CNEL exterior noise level standard.

Table 7
Traffic Noise Levels: Existing Plus Promenade Plus Project

Roadway	Segment	Traffic Noise Level (CNEL, dB)			Distance to Noise Level Contours (feet)					
		Existing Plus Promenade	Existing Plus Promenade Plus Project	Change	Existing Plus Promenade (CNEL, dB)			Existing Plus Promenade Plus Project (CNEL, dB)		
					70	65	60	70	65	60
Lone Tree Way	West of Hillcrest Avenue	67.6	67.7	0.1	52	112	242	53	113	244
Lone Tree Way	Hillcrest Avenue to Heidorn Road	68.4	68.6	0.2	59	127	274	61	131	282
Lone Tree Way	Heidorn Road to SR 4	63.7	63.9	0.2	29	62	133	29	64	137
Sand Creek Road	West of Deer Valley Road	41.2	41.2	0	1	2	4	1	2	4
Sand Creek Road	Deer Valley Road to Future Hillcrest Avenue	57.0	57.0	0	10	22	47	10	22	47
Sand Creek Road	East of SR 4	68.3	68.4	0.1	58	125	269	58	126	271
Deer Valley Road	South of Sand Creek Road	62.3	62.6	0.3	23	50	107	24	52	111
Deer Valley Road	North of Sand Creek Road	62.2	62.4	0.2	23	49	105	23	50	108
Heidorn Road	Lone Tree Way to Future Sand Creek Road	62.0	62.0	0	22	47	102	22	47	102
Hillcrest Avenue	North of Lone Tree Way	64.8	64.9	0.1	34	73	157	34	73	158
Hillcrest Avenue	Lone Tree Way to Future Sand Creek Road	61.3	62.5	1.2	20	43	92	24	51	111
Hillcrest Avenue	South of Sand Creek Road	---	57.6	NA	---	---	---	11	24	52

Notes:
- Traffic noise levels are modeled at 75-feet from the centerlines of the roadways.
- Distances to traffic noise contours are measured in feet from the centerlines of the roadways.
- Traffic noise levels do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.

Source: j.c. brennan & associates, Inc., 2020.

Table 8
Traffic Noise Levels: Cumulative Plus Project

Roadway	Segment	Traffic Noise Level (CNEL, dB)			Distance to Noise Level Contours (feet)					
		Cumulative No Project	Cumulative Plus Project	Change	Cumulative No Project (CNEL, dB)			Cumulative Plus Project (CNEL, dB)		
					70	65	60	70	65	60
Lone Tree Way	West of Hillcrest Avenue	69.4	69.7	0.3	69	148	319	71	154	332
Lone Tree Way	Hillcrest Avenue to Heidorn Road	70.0	70.1	0.1	75	163	350	76	163	352
Lone Tree Way	Heidorn Road to SR 4	65.8	65.8	0	39	85	183	39	85	183
Sand Creek Road	West of Deer Valley Road	62.7	62.7	0	24	53	114	24	53	114
Sand Creek Road	Deer Valley Road to Future Hillcrest Avenue	65.4	65.8	0.4	37	80	172	39	84	181
Sand Creek Road	East of SR 4	69.9	70.1	0.2	73	158	341	76	165	355
Deer Valley Road	South of Sand Creek Road	65.2	65.3	0.1	36	77	165	36	78	168
Deer Valley Road	North of Sand Creek Road	67.0	67.0	0	47	101	219	47	102	220
Heidorn Road	Lone Tree Way to Future Sand Creek Road	66.7	66.7	0	45	97	208	45	97	208
Hillcrest Avenue	North of Lone Tree Way	66.8	66.8	0	46	99	212	46	99	213
Hillcrest Avenue	Lone Tree Way to Future Sand Creek Road	64.5	64.8	0.3	32	70	151	34	73	157
Hillcrest Avenue	South of Sand Creek Road	60.5	62.3	1.8	17	38	81	23	50	107

Notes:
- Traffic noise levels are modeled at 75-feet from the centerlines of the roadways.
- Distances to traffic noise contours are measured in feet from the centerlines of the roadways.
- Traffic noise levels do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.

Source: j.c. brennan & associates, Inc., 2020.

Thus, the proposed project would not generate a substantial 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.

Future Traffic Noise Levels at New Sensitive Receptors

Impacts of the environment on a project (as opposed to impacts of a project on the environment) are beyond the scope of required CEQA review. "[T]he purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project." (*Ballona Wetlands Land Trust v. City of Los Angeles,* (2011) 201 Cal.App.4th 455, 473 (*Ballona*).) The California Supreme Court recently held that "CEQA does not generally require an agency to consider the effects of existing environmental conditions on a proposed project's future users or residents. What CEQA does mandate… is an analysis of how a project might exacerbate existing environmental hazards." (*California Building Industry Assn. v. Bay Area Air Quality Management Dist.* (2015) 62 Cal.4th 369, 392; see also *Mission Bay Alliance v. Office of Community Investment & Infrastructure* (2016) 6 Cal.App.5th 160, 197 ["identifying the effects on the project and its users of locating the project in a particular environmental setting is neither consistent with CEQA's legislative purpose nor required by the CEQA statutes"], quoting *Ballona*, *supra*, 201 Cal.App.4th at p. 474.) Therefore, for the purposes of the CEQA analysis, the relevant inquiry is not whether the proposed project's future residents will be exposed to preexisting environmental noise-related hazards, but instead whether project-generated noise will exacerbate the pre-existing conditions. Nonetheless, for informational purposes and General Plan consistency determination, the Environmental Noise Analysis evaluated noise impacts of the surrounding area on the proposed project.

The FHWA traffic noise prediction model was used to predict cumulative traffic noise levels at the location of the first row of residences proposed along Hillcrest Avenue, which would subject to the greatest level of traffic noise. As shown in Table 8, the traffic noise levels at the proposed residences would range between 62.3 dB and 63.2 dB CNEL. Using the FHWA barrier analysis, a six-foot-tall barrier would be required to reduce traffic noise levels to less than 60 dB CNEL. The modeled noise barrier assumes flat site conditions where roadway elevations, base of wall elevations, and building pad elevations are approximately equivalent.

Typical construction results in an exterior to interior noise level reduction of 25 dB, provided that air conditioning is provided to allow residents to close windows and doors for the appropriate acoustical isolation. All residences are assumed to provide air conditioning for occupants. Because the projected Cumulative Plus Project conditions would result in exterior noise levels less than 70 dBA CNEL, the interior noise levels at the project site would be expected to comply with the interior noise level standard of 45 dBA CNEL. However, in order to provide a sufficient margin of safety in meeting the City's standard, additional noise reduction features would be required for the proposed project. In the absence of such features, a potentially significant impact could occur related to interior noise levels at the proposed residences.

Conclusion

Based on the above, construction noise could exceed the City's 60 dB exterior noise level threshold at the nearest sensitive receptors. Construction noise is conditionally exempt from 7:00 AM to 6:00 PM, Monday through Friday, and from 9:00 AM to 5:00 PM on weekends and holidays per Section 5-17.04 of the City Zoning Ordinance. In addition,

noise associated with construction activities would be temporary in nature, and would be anticipated to occur during normal daytime working hours. Nonetheless, given the proximity of the Promenade/Vineyards at Sand Creek residences to the proposed construction activities, noise levels at the residences would temporarily or periodically increase above existing levels without the project.

With regard to operations, traffic noise associated with the proposed project would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of the standards established in the City's General Plan, or applicable standards of other agencies. However, noise levels at the exteriors of the proposed residences could exceed the City's 60 dB L_{dn} exterior noise level threshold for residential uses. In addition, interior noise levels at the proposed residential units could exceed the City's 45 dB L_{dn} interior noise level standard. Thus, a ***potentially significant*** impact could occur.

Mitigation Measure(s)

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

XII-1 *During construction activities, the use of heavy construction equipment shall adhere to Sections 5-17.04 and 5-17.05 of the City's Municipal Code with regard to hours of operation, which state that it is unlawful for any person to operate heavy construction equipment or otherwise be involved in construction activities during the hours specified below:*

1) *On weekdays prior to 7:00 AM and after 6:00 PM.*
2) *On weekdays within 300 feet of occupied dwelling space, prior to 8:00 AM and after 5:00 PM.*
3) *On weekends and holidays, prior to 9:00 AM and after 5:00 PM, irrespective of the distance from the occupied dwelling.*

Such standards shall be included, via written notation, on final improvement plans, to the satisfaction of the City Engineer.

XII-2 *The project applicant shall ensure that all on-site construction activities occur pursuant to the criteria identified in Policy 11.6.2, Temporary Construction, of the City of Antioch General Plan. Such criteria include, but are not limited to, preparation of a construction-related noise mitigation plan. The construction-related noise mitigation plan shall be submitted to the Community Development Department for review and approval prior to issuance of grading permits for the project. Items included in the plan could contain, but would not be limited to, the following:*

- *All equipment driven by internal combustion engines shall be equipped with mufflers which are in good working condition and appropriate for the equipment;*
- *The construction contractor shall utilize "quiet" models of air compressors and other stationary noise sources where the technology exists;*

- *At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practical from noise-sensitive receptors;*
- *Unnecessary idling of internal combustion engines shall be prohibited;*
- *Owners and occupants of residential and non-residential properties located with 300 feet of the construction site shall be notified of the construction schedule in writing; and*
- *The construction contractor shall designate a "noise disturbance coordinator" who shall be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and institute reasonable measures as warranted to correct the problem. A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.*

XIII-3 *A solid noise barrier measuring a minimum of six feet in height shall be constructed along Hillcrest Avenue where residences are located within 157 feet of the roadway. Suitable materials for the noise barrier include concrete panels, concrete masonry units, earthen berms, or any combination thereof. If roadway elevations and building pad elevations are not equal, the barrier heights and locations shall be reviewed once final grading plans are available. The final design of the noise barrier shall be approved by the Community Development Department prior to building permit issuance.*

XIII-4 *Prior to building permit issuance, the construction drawings for the project shall include a suitable form of forced-air mechanical ventilation for all proposed residential units, subject to approval by the Community Development Department, such that doors and windows may be kept closed at the occupant's discretion to control interior noise and achieve the City's 45 dB L_{dn} interior noise level threshold.*

b. Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities (PPV) in inches per second (in/sec). Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of PPV. Per the Environmental Noise Assessment, the threshold for architectural damage to structures is 0.20 in/sec PPV. Continuous vibrations of 0.10 in/sec PPV or greater would likely cause annoyance to sensitive receptors.

During project construction, heavy equipment would be used for grading, excavation, paving, and building construction, which would generate localized vibration in the immediate vicinity of construction. Table 9 shows the typical vibration levels produced by construction equipment. As noted previously, the nearest receptors would be the residences currently under construction within the Promenade/Vineyards at Sand Creek Project, located approximately 150 feet from the proposed the off-site improvements to Hillcrest Avenue. Aside from the Hillcrest Avenue improvements, all other proposed

construction activities would be located approximately 750 feet or further from the Promenade/Vineyards at Sand Creek Project residences.

Table 9
Vibration Levels for Various Construction Equipment

Type of Equipment	PPV at 25 feet (inches/second)	PPV at 50 feet (inches/second)	PPV at 100 feet (inches/second)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210	0.074	0.026

Based on the vibration levels presented in the table above, construction-generated vibration levels associated with the proposed project are predicted to be less than the 0.20 in/sec PPV threshold at which vibration levels become distinctly perceptible. Therefore, the project would not result in the exposure of persons to or generation of excessive groundborne vibration levels. Additionally, construction activities would be temporary in nature and would be limited to normal daytime working hours in accordance with Section 5-17.04 of the City Zoning Ordinance. Therefore, a ***less-than-significant*** impact would occur related to exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

c. The nearest airport to the site is the Byron Airport, located approximately 10 miles southeast of the site. Given the substantial distance between the airport and the project site, noise levels resulting from aircraft at the nearest airport would be negligible at the proposed project site. Therefore, ***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. The proposed project would include the development of 220 single-family residential units. Per the City's 2015-2023 Housing Element, as of the 2010 census, the City of Antioch had an average household size of 3.15 persons per household. Consequently, the proposed project could provide housing for up to approximately 693 people (220 proposed households X 3.15 persons per household = 693 new residents). It should be noted that if a portion of the proposed residential units may be reserved as active adult units, which would be anticipated to accommodate fewer occupants per unit. However, to provide a conservative analysis, this Initial Study assumes the proposed units would be market rate.

According to the City of Antioch Housing Element, Antioch's population increased by approximately 4.0 percent between the years 2010 and 2014, from 102,372 residents to 106,455 residents.[27] Contra Costa County's population has increased at a similar pace, growing by approximately 3.6 percent from 2010 to 2014, from 1,049,025 to 1,087,008. Per the City's Housing Element, the Association of Bay Area Governments (ABAG) estimates that the City's population would be 116,200 in 2030, increasing by 9,745 persons. Assuming that the proposed project would be fully built out and operating at full capacity by 2030, the project's contribution to the overall population increase by 2030 would not contribute to an increase above the anticipated population levels. It should be noted that the City of Antioch has previously considered buildout of the proposed project site (as well as the Sand Creek Focus Area) as part of the General Plan.

Therefore, the proposed project would not result in substantially more intensive population growth beyond what has been previously analyzed for the site, and a ***less-than-significant*** impact would occur.

b. The proposed project site is currently vacant, and does not include existing housing or other habitable structures. As such, the proposed project would not displace a substantial number of existing housing or people and would not necessitate the construction of replacement housing elsewhere. Therefore, ***no impact*** would occur.

[27] City of Antioch. *City of Antioch Housing Element 2015-2023* [pg. 2-2]. Adopted April 14, 2015.

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. Fire protection services for the project area are provided by the Contra Costa County Fire Protection District (CCCFPD). The CCCFPD is an “all-hazards” organization providing fire suppression, paramedic emergency medical services (EMS), technical rescue, water rescue, and fire prevention/investigation services to more than 600,000 residents across a 304 square mile coverage area. The CCCFPD operates 25 fire stations and responds to approximately 45,000 incidents annually. Four of the fire stations are located within the City of Antioch. Station 88 is located approximately 2.5 miles north of the project site. Upon completion of the proposed residential development, the CCCFPD would provide fire protection services to the project site.

It should be noted a future CCCFPD fire station is planned for development on a two-acre property as part of the The Ranch Residential Project. The future fire station would house up to four firefighting equipment vehicles. Physical environmental effects associated with development of the fire station will be analyzed in The Ranch Residential Project EIR currently being prepared.

In *Goleta Union School District v. Regents of University of California* (1995) 37 Cal.App.4th 1025, the court held that the need for additional fire protection service is not an environmental impact that CEQA requires a project to mitigate. The decision was reaffirmed in *City of Hayward v. Board of Trustees of the California State University* (2012) Cal.App.4th, 2012 WL 2832858 (cert. for pub. 6/28/12) when the court also found that mitigation was not necessary to address the need for additional fire protection services due to the potential increase in response time caused by the increase in population under the project. The court noted that, under the California Constitution, the obligation to provide adequate fire and emergency medical services fell to the city. Furthermore, in *City of Hayward v. Board of Trustees of the California State University*, the court cited CEQA Guidelines § 15382 and *Goleta Union School District v. Regents of University of California*, in holding that the need for additional fire protection service is not an environmental impact that CEQA requires a project to mitigate. Furthermore, the court found that the potential dangers associated with delayed response times do not mandate a finding of significance under CEQA Guidelines § 15065(a)(4). It should be noted that a discussion of emergency access to the project site, as well as potential vehicle delay increases at nearby intersections, will be provided in the Transportation chapter of the Creekside/Vineyards at Sand Creek EIR being prepared for the project.

The proposed project would be required to pay applicable fire protection fees per the City's Master Fee Schedule. In addition, the proposed residential buildings would be constructed in accordance with the fire protection requirements of the most recent California Fire Code. The CCCFPD and the City's Building Inspection Services Division would review the project building plans to ensure compliance with all code requirements. Therefore, the proposed project would have a ***less-than-significant*** impact related to the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts.

b. The Antioch Police Department (APD) currently provides police protection services to the project area. The Antioch PD operates out of the police headquarters at 300 L Street, and is currently staffed with 104 sworn and 33 non-sworn employees.[28] According to the Antioch General Plan EIR, population growth has created an increased demand for police-related services, and consequently a need for additional Antioch PD staff. The City of Antioch General Plan establishes a goal for the Antioch PD staffing ratio to be between 1.20 to 1.50 officers per 1,000 residents.[29] Per the City's Housing Element, the City of Antioch had a population of 106,455 in 2014. Thus, the current Antioch PD staffing ratio is approximately 1.0 per 1,000 residents.

The proposed project would increase the demand for police protection services at the site. However, construction of a new police station or other APD facilities would not be necessary in order to adequately serve the proposed project. In addition, the project applicant would be required to pay Development Impact Fees for police facilities per Section 9-3.50 of the City Municipal Code, and the project site would be required to annex into a community facilities district (CFD) for financing police services. Therefore, the project would have a ***less-than-significant*** impact related to the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts.

c. School services in the City are provided by the Antioch Unified School District (AUSD). The proposed project would include the development of the project site with a total of 220 single-family residences and, thus, would increase demand for school facilities and services. It should be noted that the proposed residential units may consist of either market-rate units, senior/active adult units, or a combination of both. Any senior/active adult units would not house school-age residents and would not increase the demand for school facility and services. However, to provide a conservative analysis, this Initial Study assumes all of the proposed units would be market rate.

The AUSD collects development fees for new residential projects on a per square foot basis. The development fees serve to offset school facility costs associated with serving new students. Proposition 1A/SB 50 prohibits local agencies from using the inadequacy of school facilities as a basis for denying or conditioning approvals of any "[…] legislative or adjudicative act…involving …the planning, use, or development of real property" (Government Code 65996(b)). Satisfaction of the Proposition 1A/SB 50 statutory requirements by a developer is deemed to be "full and complete mitigation." Because the project applicant would be required to pay development fees to the AUSD, the proposed project would result in a ***less-than-significant*** impact regarding an increase in demand for schools.

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[28] City of Antioch. *About APD*. Available at: http://www.antiochca.gov/police/about-apd/. Accessed January 2020.
[29] City of Antioch. *Antioch General Plan Update EIR* [pg. 4.11-1]. July 2003.

d,e. Consistent with the requirements of the Quimby Act, Standard 3.5.7.2 in the City of Antioch General Plan and Section 9-4.1004 of the Antioch Municipal Code set a standard of five acres of parks and open space per 1,000 residents.[30] The City of Antioch receives land for parks through land dedications or purchases funded through fee collection. The Antioch Municipal Code requires a dedication of parkland at the rate of 0.015 acres per single-family unit. Given that the project would include a total of 220 units, the project would be required to include a minimum of 3.3 acres of dedicated public parkland. Alternatively, fees may be paid in lieu of parkland dedication at a rate of $1,500 for single-family detached units and $1,100 for single-family attached units.

The proposed project would include a total of 3.9 acres of parks. Of the 3.9 acres of park area, 0.49-acre would be publicly accessible, while the remainder would be private, to be reserved for future residents of the project. The parks included in the project would be dedicated to the City; however, pursuant to Section 9-4.1010 of the City's Municipal Code, the 3.9 acres of park areas may count for park credits against the amount of land required to be dedicated, subject to final determination by the City Parks and Recreation Commission. If the City determines that the minimum parkland dedication requirements are not met for the project, the project applicant would be subject to payment of in-lieu park fees pursuant to Sections 9-4.1005 through 9-4.1007 of the Municipal Code. In addition, the project would be required to pay Development Impact Fees, which include a component for parks. Therefore, the proposed project would have a ***less-than-significant*** impact related to the need for new or physically altered parks or other public facilities, the construction of which could cause significant environmental impacts.

[30] City of Antioch. *General Plan* [pg. 3-12]. Updated November 24, 2003.

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 include the development of 220 residential units, and thus, would likely result in an increase in the use of existing neighborhood, regional, parks and/or other recreational facilities. While the project site is located approximately four miles southeast of Contra Loma Regional Park, project residents would be more likely to use park facilities included in the proposed project.

The proposed project would include a total of 3.9 acres of on-site parks. Parcels B and C, located in the northeastern portion of the site, are anticipated to include a children's play area, picnic areas, a community pool, and a passive play area; however, the ultimate programming of the parks would be determined by the City of Antioch Parks and Recreation Commission. As noted previously, the proposed project may include construction of a new EVA/pedestrian bridge within Parcel C in the northeastern portion of the site. The project would include a new private pedestrian trail connection extending from the proposed residential neighborhood across either the new bridge or the existing PG&E bridge to connect to the Sand Creek Trail currently under construction as part of the Promenade/Vineyards at Sand Creek development to the north of the site. Parcel G, located at the northern edge of the proposed residential neighborhood, would consist of an open meadow with non-irrigated grasses and oak trees. Parcel J, located in the southwestern portion of the site, would include an open meadow area with a concrete pedestrian path, benches, and various other landscaping features.

As noted in Section XIII, Public Services, the proposed project would meet the park dedication requirements established by Section 9-4.1004 of the Antioch Municipal Code, through dedication of parkland, payment of in-lieu park fees, or a combination of both. Therefore, the increase in population associated with the proposed project would not be expected to result in substantial physical deterioration of any existing neighborhood or regional parks or other recreational facilities, and would not result in adverse physical effects related to the construction or expansion of new facilities. Thus, a ***less-than-significant*** 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)?	✖	☐	☐	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	✖	☐	☐	☐
d. Result in inadequate emergency access?	✖	☐	☐	☐

Discussion

a,b. The proposed project would include construction of 220 single-family residential units, resulting in new vehicle trips along existing and planned roadway facilities in the project area. The estimated vehicle trip generation associated with the proposed project, as provided by Fehr & Peers, is summarized in Table 10 below. The vehicle trip generation estimates have been reviewed and approved by the City. As shown in the table, inclusion of age-restricted active adult units for all or a portion of the 220 proposed units would result in reduced vehicle trip generation compared to inclusion of market-rate units only. However, to provide a conservative analysis, this Initial Study assumes the proposed units would be market rate.

Table 10
Vehicle Trip Generation Estimates

Use	Size	Daily	Weekday					
			AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Proposed Project – Market Rate								
Unrestricted Detached Homes[1]	220 Units	2,080	41	122	163	137	81	218
Proposed Project – Active Adult								
Age-Restricted Detached[2]	220 Units	940	17	35	53	40	26	66
Proposed Project – Blended								
Unrestricted Detached Homes[1]	110 Units	1,040	20	61	81	69	40	169
Age-Restricted Detached[2]	110 Units	470	9	18	26	20	13	33
Total	*220 Units*	*1,510*	*29*	*79*	*108*	*89*	*53*	*142*

[1] ITE land use category 210 – Single-Family Homes (Adj Streets, 7-9A, 4-6P):
Daily: (T) = 9.44 (X)
AM Peak Hour: T = 0.74 (X); Enter = 25%; Exit = 75%
PM Peak Hour: T = 0.99 (X); Enter = 63%; Exit = 37%

[2] Based on trip generation study, provided as Appendix D, where:
Daily: (T) = 4.27 (X)
AM Peak Hour: T = 0.24 (X); Enter = 33%; Exit = 67%
PM Peak Hour: T = 0.30 (X); Enter = 60%; Exit = 40%

Source: Fehr & Peers, 2020.

The increase in traffic volume on the surrounding roadway system could exceed, either individually or cumulatively, a level of service standard established by the City's General Plan for roads affected by project traffic, or result in conflicts with other applicable planning

documents related to regional transportation systems, including standards related to VMT. Therefore, a ***potentially significant*** impact could occur.

Further analysis of this impact will be discussed in the Transportation chapter of the Creekside/Vineyards at Sand Creek EIR being prepared for the project.

c,d. As part of the project, Hillcrest Avenue would be extended through the project site within an existing roadway easement. Hillcrest Avenue at the proposed location is identified in the City General Plan. Vehicular ingress and egress to the proposed project would be provided from Hillcrest Avenue by way of a centrally located main entry, and an EVA/secondary entry intersection to the south. A new traffic signal would be installed at the main entry. In addition, an EVA/pedestrian bridge may be constructed adjacent to the existing PG&E bridge spanning Sand Creek in the northeastern portion of the project site. The Hillcrest Avenue bridge over Sand Creek would be constructed in the ultimate width to facilitate two southbound and two northbound lanes. In addition, Phase III of the proposed project would include construction of a southern secondary entry on the west side of Hillcrest Avenue, extending to the western site boundary.

Further analysis is required to ensure that the proposed access improvements would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment), as well as to evaluate emergency access to the project site. In the absence of such additional analysis, a ***potentially significant*** impact could occur.

Further analysis of this impact will be discussed in the Transportation chapter of the Creekside/Vineyards at Sand Creek EIR being prepared for the project.

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. As discussed in Section V, Cultural Resources, of this Initial Study, the project site does not contain any resources listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), and does not contain known resources that could be considered historic pursuant to the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. A search of the NAHC Sacred Lands File did not yield any information regarding the presence of Tribal Cultural Resources within the project site or the immediate area.[31]

In compliance with Assembly Bill (AB) 52 (Public Resources Code Section 21080.3.1), a project notification letter was distributed to the Amah Mutsun Tribal Band of Mission San Juan Bautista, the Indian Canyon Mutsun Band of Costanoan, the Ohlone Indian Tribe, the Wilton Rancheria, and the Ione Band of Miwok Indians. In addition, because the proposed project includes a request for a GPA, in compliance with Senate Bill (SB) 18, the City of Antioch also sent SB 18 notification letters to all the tribes included on the NAHC's tribal consultation list for Contra Costa County. The letters were distributed on January 31, 2020. Wilton Rancheria and the Northern Valley Yokuts Tribe and Nototomne Cultural Preservation provided responses, requesting copies of relevant cultural information and other project information; however, requests to initiate formal consultation were not received from Wilton Rancheria, the Northern Valley Yokuts Tribe and Nototomne Cultural Preservation, or any other of the contacted tribes. The City will continue to engage in discussions with local tribes as necessary throughout the CEQA process.

Based on the above, known Tribal Cultural Resources do not exist within the project site. Nevertheless, the possibility exists that construction of the proposed project could result

[31] Native American Heritage Commission. *Re: Native American Consultation, Pursuant to Senate Bill 18 (SB18), Government Codes §65352.3 and §65352.4, as well as Assembly Bill 52 (AB52), Public Resources Codes §21080.1, §21080.3.1 and §21080.3.2, Creekside/Vineyards at Sand Creek Project, Contra Costa County*. January 22, 2020.

in a substantial adverse change in the significance of a Tribal Cultural Resource if previously unknown cultural resources are uncovered during grading or other ground-disturbing activities. Thus, a ***potentially significant*** impact to tribal cultural resources could occur.

Mitigation Measure(s)

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

XVIII-1 *Implement Mitigation Measures V-1, V-2, and V-3.*

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?	☐	☐	✖	☐
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	✖	☐
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. Water supply, wastewater treatment, stormwater drainage, electric power, natural gas, and telecommunications facilities necessary to serve the proposed project are described in the following sections.

Water Supply

Principal sources of raw water supply to the City of Antioch are the Sacramento/San Joaquin Rivers Delta and the Contra Costa Canal, which are stored in the Antioch Municipal Reservoir. Buildout of the Sand Creek Focus Area, including the project site, is accounted for in the City's Water System Master Plan Update, which provides a detailed analysis of the City's water distribution system. The Water System Master Plan Update included the preparation of a Capital Improvement Program (CIP) that includes improvements necessary to provide safe and reliable water delivery throughout the City based on projected growth and associated increases in demand on the City's distribution system.

Potable water would be distributed to the project site by an extension of the existing 16-inch Zone III trunk line in Hillcrest Avenue. The waterline would be looped back to a Heidorn Ranch Road line by way of a connection over Sand Creek, at the same location as the existing PG&E bridge. The City has also indicated an interest in reserving space in Phase III of the project to facilitate looping of the waterline within Hillcrest Avenue for future residential development to the west of the project site. The water distribution system improvements planned for in the Water System Master Plan Update and associated CIP, as well as the infrastructure improvements included in the proposed project, would be capable of accommodating the increased demand for water supplies associated with buildout of the proposed project.

Per the City's 2015 Urban Water Management Plan (UWMP), adequate water supplies will be available to accommodate buildout of the City under normal year, single year, and multiple-dry year demand scenarios, accounting for mandatory measures included in the City's Water Shortage Contingency Plan. Based on the water demand factors used in the 2015 UWMP for single-family residences the proposed project would result in an overall demand of approximately 77,000 gallons per day (gpd) (220 proposed units X 350 gpd/unit), or approximately 28 million gallons per year (mgy). Although the proposed project is not specifically identified in the City's 2015 UWMP, the Sand Creek Focus Area is included, and the City's growth projections (an additional 16,302 people from 2015 to 2040) and water demand projections (an additional 3,393 MGY from 2015 to 2040) accommodate the proposed project's estimated population of approximately 693 residents and projected water demand of 28 mgy.

Therefore, the proposed project would not require or result in the relocation or construction of new or expanded off-site water facilities, the construction or relocation of which could cause significant environmental effects, and sufficient water supplies would be available to serve the proposed project and reasonably foreseeable future development during normal, dry, and multiple dry years.

Wastewater Conveyance and Treatment

The City maintains and owns the local sewage collection system and is responsible for the collection and conveyance of wastewater to the Delta Diablo Wastewater Treatment Plant (WWTP). Delta Diablo owns and operates the regional interceptors and WWTP. The project site is located within the Delta Diablo service area. The City of Antioch is responsible for the wastewater collection system from the project site to the designated Delta Diablo regional wastewater conveyance facility. An EIR for the expansion of the wastewater treatment plant capacity to an average dry weather flow of 22.7 million gallons per day (mgd) was completed in April 1988. However, the current WWTP NPDES Permit limits average dry weather flow to 19.5 mgd. From October 2014 through May 2019, the plant treated a daily average of approximately 13 mgd; the highest reported average daily flow was 22.1 mgd.[32] Sewage flow to the plant does not fluctuate seasonally, as sewer and storm water systems are separate.[33] Funds for future plant expansion are collected by the City on behalf of Delta Diablo from sewer connection fees.

The General Plan EIR bases anticipated wastewater demand on a generation rate of 220 gallons per day per residence. The proposed project would include the construction of 220 units, and, thus, would be anticipated to generate approximately 48,400 gallons per day of wastewater. Sanitary sewer service would be provided to the project site by an extension of the existing 24-inch sanitary sewer pipe from the Promenade/Vineyards at Sand Creek Project.

An increase of 48,400 gallons per day is relatively minor compared to the 13 mgd of average dry weather flow currently treated by the WWTP, and would not have a substantial impact on the available capacity of the WWTP. The project applicant would be required to pay sewer connection fees, which work to fund needed sewer system improvements. Because the project applicant would pay sewer connection fees, and adequate long-term wastewater treatment capacity is available to serve full build-out of the project, the project

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32 San Francisco Bay Regional Water Quality Control Board. *Order No. R2-2019-0035, NPDES No. CA0038547*. Adopted December 11, 2019.

33 City of Antioch. *Antioch General Plan Update EIR* [pg. 4.12-2]. July 2003.

would not require or result in the relocation or construction of new or expanded off-site wastewater facilities, the construction or relocation of which could cause significant environmental effects. In addition, adequate wastewater treatment capacity is available to serve the project's projected demand in addition to the provider's existing commitments

Stormwater Drainage

The project site is currently undeveloped vacant land with ruderal vegetation. Completion of the proposed project would increase site runoff due to the introduction of impervious surfaces to the site. As discussed in further detail in Section IX, Hydrology and Water Quality, of this Initial Study, the SWCP for the proposed project conforms with the most recent Contra Costa Clean Water Program Stormwater C.3 Guidebook and verifies that the proposed project would comply with all City stormwater requirements. In compliance with the C.3 Guidebook, the proposed project would include on-site detention and bio-retention facilities sized to exceed the minimum volume requirement necessary to adequately manage all runoff from the proposed impervious surfaces. Treated runoff would be discharged directly to Sand Creek. Thus, the project would not require new or expanded off-site stormwater infrastructure.

Electric Power, Natural Gas, and Telecommunications

The proposed project would include new connections to existing electric power, natural gas, and telecommunications facilities located in the project vicinity. Thus, substantial expansion of off-site utilities would not be required to serve the proposed residential development, and associated environmental effects would not occur.

Conclusion

Based on the above, the proposed project would not 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. In addition, sufficient water supplies would be available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years, and adequate wastewater treatment capacity is available to serve the project's projected demand in addition to the provider's existing commitments. Thus, a ***less-than-significant*** impact would occur.

d,e. Republic Services provides solid waste collection, disposal, recycling, and yard waste services to the City, including the project site. Solid waste and recyclables from the City are taken to the Contra Costa Transfer and Recovery Station in Martinez. Solid waste is transferred from the Transfer and Recovery Station to the Keller Canyon Landfill in Pittsburg. The Keller Canyon Landfill site is 1,399 acres, 244 of which comprise the actual current disposal acreage. The landfill is permitted to accept 3,500 tons of waste per day and has a total estimated permitted capacity of approximately 75 million cubic yards. As of March 31, 2016, the most recent date for which capacity information is available, the total remaining capacity of the landfill was 52.93 million cubic yards (approximately 71 percent of total capacity).[34] Due to the substantial amount of available capacity remaining at Keller Canyon Landfill, sufficient capacity would be available to accommodate the project's solid waste disposal needs. Therefore, a ***less-than-significant*** impact related to solid waste would occur as a result of the proposed project.

[34] SWT Engineering. *Joint Technical Document, Keller Canyon Landfill (SWIS NO. 07-AA-0032)* [pg. B.3-1]. May 2016.

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 CAL FIRE Fire and Resource Assessment Program, the proposed project site is not located within a Very High Fire Hazard Severity Zone.[35] In addition, the site is not located in or near a State Responsibility Area. Thus, the proposed project would not be expected to be subject to or result in substantial adverse effects related to wildfires, and a ***less-than-significant*** impact would occur.

[35] California Department of Forestry and Fire Protection. *Contra Costa County, Very High Fire Hazard Severity Zones in LRA*. January 7, 2009.

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 Initial Study, implementation of the proposed project would have the potential to result in adverse effects to special-status plant and wildlife species. In addition, while unlikely, the project could result in impacts related to eliminating important examples of major periods of California history or prehistory associated with undiscovered archeological and/or paleontological resources during project construction. However, the proposed project would be required to comply with applicable City of Antioch General Plan and Municipal Code policies related to biological and cultural resources. In addition, this Initial Study includes mitigation measures that would reduce any potential impacts to less-than-significant levels. With implementation of the mitigation measures required by this Initial Study, as well as compliance with General Plan policies and all applicable sections of the Municipal Code, development of the proposed project would reduce any potential impacts associated with the following: 1) degrade the quality of the environment; 2) substantially reduce or impact the habitat of fish or wildlife species; 3) cause fish or wildlife populations to drop below self-sustaining levels; 4) threaten to eliminate a plant or animal community; 5) reduce the number or restrict the range of a rare or endangered plant or animal; or 6) eliminate important examples of the major periods of California history or prehistory. Therefore, a ***less-than-significant*** impact would occur.

b. The proposed project in conjunction with other development within the City of Antioch could incrementally contribute to cumulative impacts in the area. As discussed in Section III, Air Quality, and Section VIII, Greenhouse Gas Emissions, of this Initial Study, construction activities and increased vehicle trips generated by operation of the proposed project could result in conflicts with applicable standards related to air quality and GHG emissions. In addition, as discussed in Section XVII, Transportation, such vehicle trips could result in conflicts with established operations standards for local roadway facilities contribute to regional VMT. Thus, the proposed project could have impacts that are individually limited, but cumulatively considerable, and a ***potentially significant*** impact could occur.

Further analysis of this impact will be discussed in the Air Quality and Greenhouse Gas Emissions chapter and Transportation chapter of the Creekside/Vineyards at Sand Creek EIR being prepared for the project.

c. As described in this Initial Study, implementation of the proposed project could result in temporary impacts related to excess noise levels. In addition, the project could expose humans to hazards relating to seismic ground shaking and unstable geologic units. However, the proposed project would be required to implement the project-specific mitigation measures within this Initial Study, as well as applicable policies of the City of Antioch General Plan, to reduce associated direct or indirect impacts to human beings. With implementation of the identified mitigation measures, identified project-specific impacts related to such issues would be reduced to less-than-significant levels. However, further analysis is required to ensure that TAC emissions associated with project construction do not result in adverse health effects at nearby sensitive receptors. Thus, a ***potentially significant*** impact could occur.

Further analysis of this impact will be discussed in the Air Quality and Greenhouse Gas Emissions chapter of the Creekside/Vineyards at Sand Creek EIR being prepared for the project.

APPENDIX A

BIOLOGICAL RESOURCE ANALYSIS

REVISED
ADMINISTRATIVE DRAFT
BIOLOGICAL RESOURCE ANALYSIS
CREEKSIDE DEVELOPMENT PROJECT
ANTIOCH, CONTRA COSTA COUNTY, CALIFORNIA

February 13, 2020

Prepared for

GBN Partners, LLC
3820 Blackhawk Road
Danville, California 94506
Attention: Mr. Mathew Beinke

Prepared by

Monk & Associates, Inc.
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
Contact: Mr. Geoff Monk

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Table 3. Known Special-Status Plant Species in the Vicinity of the Creekside Project Site.

Table 4. Known Special-Status Wildlife Species in the Vicinity of the Creekside Project Site.

SHEETS

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Sheet 1. Draft Aquatic Resources Delineation Map: Ginochio Delineation Area.

Sheet A. Plant Communities and Impacts: Creekside Project Site.

ATTACHMENTS

(Behind Tab at Back of Report)

Attachment A. Biological Resources Analysis: Project Description Areas for Creekside, CBG November 7, 2019.

Attachment B. Creekside Impacts Exhibits, CBG July 9, 2019.

1. INTRODUCTION

Monk & Associates, Inc. (M&A) prepared this biological resource analysis for the proposed Creekside Project (herein also referred to as the proposed project) located in Antioch, Contra Costa County, California (Figures 1 and 2). The purpose of our analysis is to provide a description of existing biological resources on the project site and to identify potentially significant impacts that could occur to sensitive biological resources from the construction of a proposed residential development.

Biological resources include common plant and animal species, and special-status plants and animals as designated by the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), National Marine Fisheries Service (NMFS), and other resource organizations including the California Native Plant Society (CNPS). Biological resources also include waters of the United States and State, as regulated by the U.S. Army Corps of Engineers (Corps), California Regional Water Quality Control Board (RWQCB), and the CDFW.

This biological resource analysis includes identification of "potentially significant" and "significant impacts" as defined by the California Environmental Quality Act (CEQA) that could occur to sensitive biological resources. Mitigation measures have been developed for all identified "potentially significant" and "significant" impacts, and upon implementation would reduce the effects of such impacts to levels regarded as less than significant pursuant to the CEQA.

2. PROPERTY LOCATION AND SETTING

The approximate 58.6-acre proposed project site, which is a portion of Assessor's Parcel Number (APN) 057-050-024, is located west of Highway 4 and south of Lone Tree Way in the City of Antioch, Contra Costa County, California (Figures 1 and 2). The site is generally rectangular; however, the northern boundary is an irregular shape, following the alignment of Sand Creek. Sand Creek flows west to east adjacent to the northern boundary of the project site and eventually flows into Marsh Creek in the City of Brentwood. The project site has been dry-land farmed since the 1930s and consists primarily of non-native vegetation, although it is also subject to a number of energy and communication easements and is within the historical boundaries of the Brentwood Oil & Gas Field.

The project site is surrounded by undeveloped land to the east, south, and west. The northern boundary of the project site is located adjacent to a 400-foot wide, 23.7 acre, "Sand Creek Buffer Area" that includes a portion of Sand Creek and approximately 200 feet on either side of the creek's centerline. The area immediately west of the project site is undeveloped and includes approximately 8 acres that are subject to a deed restriction that generally prevents any future disturbance of the 8-acres. The east side of the project site is also generally bordered by undeveloped land. Like the project site, the adjacent undeveloped areas are subject to numerous energy and communication easements and are within the historical boundaries of the Brentwood Oil & Gas Field. Currently, there is one active oil and gas lease area (the "Shellenberger Lease"), which is located near the project site's southeastern border. Old utility access roads and existing pipelines run below ground and cross Sand Creek.

The project site is located in an area of Antioch that is rapidly transitioning from agricultural uses to residential and commercial development. The parcel directly north of the project site is the Vineyards at Sand Creek/Promenade Project Site ("Promenade Project"), a 650-unit residential development that is currently under construction. The "Aviano Development Project," which is also currently under construction is located to the northwest of the project site. To the west is a PG&E facility and privately-owned land planned for future residential development in the City of Antioch's General Plan. Figures 2 and 3 provides an aerial photograph that shows the project site features and the surrounding land uses.

3. PROPOSED PROJECT

The Creekside Project is the second phase of the Vineyards at Sand Creek Residential Community (the first phase being the Promenade Project) and includes the development of approximately 220 single-family units on the approximately 58.6-acre project site. The project will include housing, landscaped areas, roadways, and utility improvements, as illustrated on the attached exhibit entitled: *Biological Resources Analysis: Project Description Areas for Creekside*, prepared by CBG, dated November 7, 2019 (Attachment A).

The main water quality detention basin area is proposed east of the residential area, adjacent to Sand Creek. Two detention basins will collect and treat stormwater for the majority of the residential development. Treated stormwater from these two basins will flow north into Sand Creek via an outfall structure constructed on the south side of the existing outfall facility previously constructed by the Promenade Project.

A second "clean water" outfall into Sand Creek is proposed adjacent to a southern extension of Hillcrest Avenue (bridge, roadway and utilities), north of the residential area. Natural drainage from the northern portion of the adjacent western hillslope will be collected and discharged via this outfall structure. A third "clean water" stormwater outfall (dispersal point) is proposed east of the residential area, at the far southern end of the project site. Natural drainage from the southern portion of the western hillslope will be collected, treated and dispersed.

Dry utilities and water lines will be installed within the proposed Hillcrest Avenue bridge to connect to utilities in Hillcrest Avenue. A second EVA/pedestrian bridge will be constructed adjacent to and 25-feet west of the existing PG&E bridge in the northeastern corner of the site; water, sewer, and dry utilities will be attached to that EVA/pedestrian bridge to connect with existing utilities in Heidorn Ranch Road.

This development also will require offsite grading on approximately 11 acres located adjacent to project site ("Offsite Grading Areas"). The Offsite Grading Areas, shown on Attachment A, will be contoured and hydroseeded.

4. ANALYSIS METHODS

Prior to preparing this biological resource analysis report, M&A researched the most recent version of the CDFW Natural Diversity Database, RareFind 5 application (CNDDB 2019) for historical and recent records of special-status plant and animal species (that is, threatened,

endangered, rare) known to occur within 5 miles of the project site. In addition, M&A conducted a 9 Quadrangle search of the 2020 electronic version of the *CNPS' Inventory of Rare and Endangered Plants of California* (CNPS 2001) for records of special-status plants known in the region of the project site. Finally, M&A reviewed plant species that are considered locally rare as listed in the East Bay Chapter of the CNPS *Database of Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties* for the Marsh Creek/Lone Tree Valley area. All special-status species records were compiled in tables. M&A reviewed all known records and any available biological survey reports to determine if special-status species could occur on the project site or within an area of effect of the development project.

4.1 General Site Surveys

M&A biologists, Ms. Hope Kingma and Ms. Sharon Dulava, conducted a survey of the project site, Offsite Grading Areas, and other adjacent undeveloped areas on January 18, 2019 to record biological resources and to assess the likelihood of agency regulated areas on the project site. The survey involved searching all habitats on the site and recording all plant and wildlife species observed. M&A's site evaluation included a thorough examination of the site to document potential habitats on or adjacent to the project site that could support special-status species and/or waters of the U.S. and state. M&A cross-referenced the habitats found on the project site against the habitat requirements of local or regionally known special-status species to determine if the proposed project could directly or indirectly impact such species.

4.2 Focused Special-Status Plant Surveys

In the spring and summer of 2005 and 2006, M&A completed focused surveys for special-status (that is, rare, threatened, or endangered) plants on the project site. The results of these surveys provide a basis in knowledge about the plant species known from the project site that is far more detailed than any other source of information for the project site, and as discussed in Section 6.2, additional preconstruction surveys for potential special status plants are recommended. The survey findings are also a useful mechanism to alert M&A to the presence of rare plants on the project site in 2005 and 2006 that may not have been previously recorded in the area and they provide a field check of plants previously recorded in the area. As detailed herein, these surveys will be repeated the year prior to development.

M&A's 2005 and 2006 rare plant surveys followed CDFG (2000) and CNPS (2001) published survey guidelines. These guidelines state that special-status surveys should be conducted at the proper time of year when special-status and locally significant plants are both evident and identifiable. These guidelines also state that the surveys be floristic in nature with every plant observed identified to species, subspecies, or variety as necessary to determine their rarity status. Finally, these surveys must be conducted in a manner that is consistent with conservation ethics and accepted plant collection and documentation techniques. Following these guidelines, surveys were conducted during the months when special-status plant species from the region are known to be evident and flowering.

During surveys, all areas of the project site, the Offsite Grading Areas and areas south and east of the project site were examined by walking systematic transects through potential habitat, and by closely examining any existing microhabitats that could potentially support special-status

plants. Nearly all plant species found during the surveys were identified to species. All plants were identified to the level needed to determine their rarity status. A list of all vascular plant taxa encountered during the surveys, including within the project site, was recorded in the field. Plants that needed further evaluation were collected and keyed in the lab. Final determinations for collected plants were made by keying specimens using standard references such as The Jepson Manual, 2nd edition (Baldwin 2012). Updated special-status plant surveys will be conducted the year prior to disturbance of the site, following the current CDFG (2018), USFWS (2000), and CNPS (2001) published survey guidelines. During the surveys, qualified botanists will search for all the plants listed in Table 3 that have potential to occur on the project site, and all plants that are considered locally rare as listed in the East Bay Chapter of the CNPS *Database of Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties* for the Marsh Creek/Lone Tree Valley area.

4.3 Wetland Delineation

On April 8, 2019, M&A biologists, Ms. Kingma and Ms. Dulava, conducted a wetland delineation of the project site, using criteria prescribed in the Corps' 1987 Wetland Delineation Manual (Corps 1987) and the Corps' Regional Supplement for the Arid West Region (Corps 2008). The draft wetland delineation map is provided as Sheet 1 (attached). Sand Creek, an ephemeral drainage channel, and several seasonal wetlands were identified on the project site. Submittal to the Corps for confirmation remains pending.

5. RESULTS OF RESEARCH AND PROJECT SITE ANALYSES

5.1 Topography and Hydrology

The project site is confined to a broad, almost level valley between two hills on the western and eastern sides of the project site (Figure 2). The project site has been disked and planted to wheat or safflower every year dating back to the 1930s. On-going dry-land farming practices have gradually leveled the site over the many decades of agricultural production.

The project site primarily drains to a shallow ephemeral drainage channel adjacent to the eastern edge of the project site. After large storm events the ephemeral drainage channel flows northward to Sand Creek along the base of the eastern hillside (Sheet 1). The ephemeral drainage channel averages 2 to 3 feet between ordinary high-water marks (OHWM) and steeply sloped in most sections. The drainage is incised 3 to 6 feet below the surrounding grade. During M&A's surveys in 2019 several pools of standing water of up to 10 inches deep were observed in the drainage thalweg.

Sand Creek, an intermittent creek, flows west to east near the northern project site boundary (Figure 3). This creek receives urban runoff from developments to the northwest, and from a flood control basin that was constructed upstream of the project site in Sand Creek in 2013-2014. The average distance between OHWMs in Sand Creek is 5 to 15 feet and it is approximately 50 to 125 feet wide between the top-of-banks. Sand Creek is incised approximately 20 feet down below the existing grade of the project site with steeply-sloped banks.

5.2 Plant Communities and Associated Wildlife Habitats

M&A biologists examined the habitats and characterized the vegetation present on the project site and the adjacent currently undeveloped areas. A complete list of plant species observed is presented in Table 1. Most of the project site has been dry-land farmed annually for many decades (dating back to the 1930s) resulting in limited vegetation diversity and an agrestal plant community. Farming practices include disking and planting primarily wheat or safflower typically for two crops per year. There is a remnant area of non-native annual grassland east of the project site, on the western-facing slope of the eastern hillside that is too steep to farm (Figure 3). The ephemeral drainage channel that flows along the base of the eastern hillside to the east of the project site supports scattered upland and wetland (hydrophytic) vegetation. Sand Creek, an intermittent creek, supports sporadically occurring riparian canopy vegetation. Therefore, four plant communities occur on or adjacent to the project site: "agrestal" (farmed), non-native annual grassland, drainage channel, and riparian woodland, as illustrated on Sheet A. Nomenclature used for plant names follows The Jepson Manual, 2nd edition (Baldwin 2012) and changes made to this manual as published on the Jepson Interchange Project website.

5.2.1 "AGRESTAL" PLANT COMMUNITY

An "agrestal" community is a weed dominated community of rural, agricultural areas (Holland & Keil 1995). Agrestal communities form in areas that have been disturbed by cultivation. As the project site has been farmed annually since the 1930s, most of the project site is an agrestal community. Many species of weeds thrive in the same environments as crop plants.

The existing vegetation over most of the proposed project area is classified as agrestal and is the result of long-term ground manipulation and cultivation. Plants introduced by man, generally for agricultural commodity crops, dominate these communities. The cultivation of agricultural fields continually disturbs the soil. As a result, these areas typically do not support native plant species or communities. The dominant plants on the project site are wheat or grain crops. Weeds that grow within the planted wheat fields include non-native grasses such as ripgut grass (*Bromus diandrus*), wall barley (*Hordeum murinum*), and slender wild oat (*Avena barbata*), and other ruderal species such as yellow starthistle (*Centaurea solstitialis*), Italian thistle (*Carduus pycnocephalus* subsp. *pycnocephalus*), black mustard (*Brassica nigra*), and short-podded mustard (*Hirschfeldia incana*). A complete plant list of observed species is provided as Table 1.

In general, agrestal areas do not provide suitable habitat for many wildlife species. The intense disking and manipulation of the soil tend to limit the number of species that occupy or use cropland habitats. Nevertheless, the disked field on the project site provides habitat for species such as California ground squirrel (*Otospermophilus beecheyi*), wintering western burrowing owl (*Athene cunicularia hypugaea*), red-winged blackbird (*Agelaius phoeniceus*), and foraging habitat for species such as coyote (*Canis latrans*), golden eagle (*Aquila chrysaetos*), red-tailed hawk (*Buteo jamaicensis*), and American pipit (*Anthus rubescens*). A complete list of observed wildlife species is included in Table 2.

5.2.2 NON-NATIVE GRASSLAND

Remnant non-native annual grassland is present on a steep slope adjacent to the eastern portion of the project site. The plant community in this area is dominated by non-native grasses such as

ripgut brome and slender wild oat. Several decadent almond trees (*Prunus dulcis*) from a remnant orchard, as well as forbs such as lupine (*Lupinus* sp.) and common vetch (*Vicia sativa*), are also growing on this slope.

Non-native annual grassland provides wildlife with burrowing, denning, and foraging opportunities. Wildlife species observed utilizing this area include California ground squirrel, California meadow vole (*Microtus californicus*), Botta's pocket gopher (*Thomomys bottae*), golden eagle, red-tailed hawk, and western fence lizard (*Sceloporus occidentalis*).

5.2.3 Drainage Channel

The plant community within the ephemeral drainage channel located east of the project site is largely dominated by upland vegetation similar to the adjacent agrestal areas. Several hydrophytic plant species were present within the channel or on the banks, including curly dock (*Rumex crispus*), cocklebur (*Xanthium strumarium*), alkali heath (*Frankenia salina*), Great Valley gumplant (*Grindelia camporum*), and creeping wildrye (*Elymus triticoides*). Two species of tree, blue elderberry (*Sambucus nigra* subsp. *caerulea*) and almond (*Prunus* sp.), were observed growing along a section of the drainage close to Sand Creek.

Ephemeral drainages provide a water source and migration corridors for wildlife species. When drainages have pools that remain inundated for several weeks to two months or longer, they can also provide breeding habitat for amphibians such as Sierran treefrog (*Pseudacris sierra)* and California toad (*Anaxyrus boreas halophilus*), as well as many common invertebrates. No amphibians were observed during M&A's 2019 surveys, but western fence lizard, California meadow vole, California ground squirrel, and raccoon (*Procyon lotor*) (prints) were observed within this ephemeral drainage.

5.2.4 Riparian Woodland

Scattered riparian woodland is associated with Sand Creek, an intermittent creek that runs west to east near the northern border of the project site. Tree species found in the riparian woodland along Sand Creek include valley oak (*Quercus lobata*), California buckeye (*Aesculus californica*), bluegum eucalyptus (*Eucalyptus globulus*), arroyo willow (*Salix lasiolepis*), and big-leaf maple (*Acer macrophyllum*). The open non-canopied habitats within Sand Creek allow for localized occurrences of herbaceous and shrubby understories. California rose (*Rosa californica*) grows in dense thickets along portions of the creek, while sneezeweed (*Helenium puberulum*), California sagebrush (*Artemisia californica*), and California mugwort (*Artemisia douglasiana*) are scattered along the creek banks and at the water line. Annual beardgrass (*Polypogon monspeliensis*), narrow-leaved cattail (*Typha angustifolia*), brown-headed rush (*Juncus phaeocephalus* subsp. *paniculatus*), Baltic rush (*Juncus balticus* subsp. *ater*) and water cress (*Nasturtium officinale*) grow in scattered locations in the creek channel as well.

Wildlife associated with the riparian woodland onsite includes amphibians such as California slender salamander (*Batrachoseps attenuatus*) and Sierran treefrog. Reptiles expected within the riparian community include western terrestrial garter snake (*Thamnophis elegans*), western fence lizard, and northern alligator lizard (*Elgaria coerulea*).

Birds that have been observed in the riparian woodland adjacent to the project site include red-tailed hawk, golden eagle, great horned owl (*Bubo virginianus*), northern flicker (*Colaptes aura*), Nuttall's woodpecker (*Picoides nuttallii*), California scrub jay (*Aphelocoma californica*), oak titmouse (*Baeolophus inornatus*), bushtit (*Psaltriparus minimus*), Anna's hummingbird (*Calypte anna*), yellow-rumped warbler (*Setophaga coronata*), ruby-crowned kinglet (*Regulus calendula*), marsh wren (*Cistothorus palustris*), and California towhee (*Pipilo crissalis*). Some common mammals that occur in the riparian woodland include bobcat (*Lynx rufus*), raccoon, and gray fox (*Urocyon cinereoargenteus*).

Table 2 provides a complete list of wildlife observed and/or heard during the site surveys. It is expected that at different times of the year different animals would be found in the riparian woodland adjacent to the project site, especially during the spring and fall migration months when Neotropical migrants typically use riparian habitats.

5.3 Wildlife Corridors

Wildlife corridors are linear and/or regional habitats that provide connectivity to other natural vegetation communities within a landscape fractured by urbanization and other development. Wildlife corridors have several functions: 1) they provide avenues along which wide-ranging animals can travel, migrate, and breed, allowing genetic interchange to occur; 2) populations can move in response to environmental changes and natural disasters; and 3) individuals can recolonize habitats from which populations have been locally extirpated (Beier and Loe 1992). All three of these functions can be met if both regional and local wildlife corridors are accessible to wildlife. Regional wildlife corridors provide foraging, breeding, and retreat areas for migrating, dispersing, immigrating, and emigrating wildlife populations. Local wildlife corridors also provide access routes to food, cover, and water resources within restricted habitats.

The proposed project will not interfere with the movement of native wildlife as the majority of the project site is a disked agricultural field that has been consistently disturbed for years. Sand Creek near the northern boundary of the project site provides a valuable east/west wildlife corridor with suitable cover, foraging and water resources, and migration pathways that lead to other natural habitats. The project as currently proposed would not adversely impact wildlife movement corridors since the Creekside Project will remain outside of a 400-ft wide (23.7-acre) Sand Creek Buffer Area that is subject to an existing deed restriction that will preserve the Buffer Area in its existing undeveloped condition. The two outfall structures and the two clear span bridges over Sand Creek will not impact the value of this wildlife corridor.

Sand Creek provides a local wildlife corridor for common mammals and birds such as raccoon, bobcat, gray fox, and coyote, to name a few. However, mammals that use the riparian woodland as a wildlife corridor have been discouraged from using the project site for many years since it is routinely disked and planted. As such, medium and large mammal movements along this creek will remain unaffected by the proposed project. Finally, this riparian corridor provides important avian habitat that is used seasonally by migrants and year-round by resident birds; this function will also remain unaffected as nesting bird surveys will be conducted prior to commencement of construction.

While a small portion of the Sand Creek corridor will be impacted during the construction of the Hillcrest Avenue extension along the western side of the project site, the proposed EVA/pedestrian bridge, and the two stormwater outfall structures on the creek banks, the value of this wildlife corridor will be unaffected. In addition, prior to the commencement of construction, a wildlife exclusion fence will be installed along the norther perimeter of the project site to prevent mammals migrating along Sand Creek from entering the project site. Sand Creek is the only wildlife corridor in proximity to the project site and this function will be unaffected by the proposed development project and will continue to serve its function as a wildlife corridor.

An ephemeral drainage channel that flows from south to north along the toe of the hillside just east of the project site also forms a local wildlife corridor. Common mammals use this drainage now to avoid detection in the open farmed fields next to this drainage. This drainage channel is located adjacent to the detention basin area and will remain largely unaffected by the project. As such, the ephemeral drainage channel will continue to be used by common wildlife species even after the project site is developed.

6. SPECIAL-STATUS SPECIES DEFINITION

6.1 Definitions

For purposes of this analysis, special-status species are plants and animals that are subject to the California and federal Endangered Species Acts (CESA and FESA, respectively) and species that are considered rare by the scientific community (for example, the CNPS). Special-status species are defined as:

- plants and animals that are listed or proposed for listing as threatened or endangered under the CESA (Fish and Game Code §2050 *et seq*.; 14 CCR §670.1 *et seq.*) or the FESA (50 CFR 17.12 for plants; 50 CFR 17.11 for animals; various notices in the Federal Register [FR] for proposed species);

- plants and animals that are candidates for possible future listing as threatened or endangered under the FESA (50 CFR 17; FR Vol. 64, No. 205, pages 57533-57547, October 25, 1999); and under the CESA (California Fish and Game Code §2068);

- plants and animals that meet the definition of endangered, rare, or threatened under the California Environmental Quality Act (CEQA) (14 CCR §15380) that may include species not found on either State or Federal Endangered Species lists;

- plants occurring on Ranks 1A, 1B, 2A, 2B, 3, and 4 of CNPS' electronic *Inventory* (CNPS 2001). The CDFW recognizes that Ranks 1A, 1B, 2A and 2B of the CNPS inventory contain plants that, in the majority of cases, would qualify for State listing, and the CDFW requests their inclusion in EIRs. Plants occurring on CNPS Ranks 3 and 4 are "plants about which more information is necessary," and "plants of limited distribution," respectively (CNPS 2001) (more on CNPS Rank species below);

- many of the plants constituting California Rare Plant Rank 3 may meet the definitions of threatened or endangered per the California Endangered Species Act and could be eligible for state listing. Impacts to Rank 3 plant species or their habitats should be analyzed during preparation of environmental documents relating to CEQA, or those considered to be functionally equivalent to CEQA, as they may meet the definition of Rare or Endangered under CEQA Guidelines §15125(c) and/or §15380. Additional plants may be included as special-status species on a case by case basis due to local significance or recent biological information;

- migratory nongame birds of management concern listed by USFWS (Migratory Nongame Birds of Management Concern in the United States: The list 1995; Office of Migratory Bird Management; Washington D.C.; Sept. 1995);

- animals that are designated as "species of special concern" by the CDFW (2016);

- Animal species that are "fully protected" in California (Fish and Game Codes 3511, 4700, 5050, and 5515).

In the paragraphs below, we provide further definitions as they pertain to the special-status species discussed in this report or in the attached tables.

Federal Endangered or Threatened Species. An endangered species under the FESA is any species which is in danger of extinction throughout all or a significant portion of its range. A Threatened species means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. "Take" of an endangered or threatened species, as defined by federal law, is generally prohibited unless authorized by the USFWS.

State Endangered or Threatened Species. "Take" of a species listed as threatened or endangered under the CESA (§2050 of California Fish and Game Code) as defined by state law is to harass, pursue, hunt, shoot, trap, and may be authorized by CDFW pursuant to the California Fish and Game Code.

California Species of Special Concern. These are species in which their California breeding populations are seriously declining and extirpation from all or a portion of their range is possible. This designation affords no legally mandated protection; however, pursuant to the CEQA Guidelines (14 CCR §15380), some species of special concern could be considered "rare" and in accordance with the CEQA Guidelines the potential effects of a proposed project should be considered on rare species as well as any species that are officially designated as threatened or endangered.

CNPS Rank Species. The CNPS maintains an "Inventory" of special-status plant species. This inventory has four lists of plants with varying rarity. These lists are: Rank 1, Rank 2, Rank 3, and Rank 4. Although plants on these lists have no formal legal protection (unless they are also state or federally-listed species), the CDFW requests the inclusion of Rank 1 species in environmental

documents. In addition, other state and local agencies may request the inclusion of species on other lists as well.

The Rank 1 and 2 species are defined below:

- Rank 1A – Presumed extinct in California;
- Rank 1B – Rare, threatened, or endangered in California and elsewhere;
- Rank 2A: Plants presumed extirpated in California, but more common elsewhere;
  Rank 2B: Rare, threatened, or endangered in California, but more common elsewhere.

All of the plants constituting Rank 1B meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (CESA) of the Fish and Game Code and are eligible for state listing (CNPS 2001). Rank 2 species are rare in California, but more common elsewhere. Ranks 3 and 4 contain species about which there is some concern, and are review and watch lists, respectively.

Additionally, in 2006, CNPS updated their lists to include "threat code extensions" for each list. For example, Rank 1B species would now be categorized as Rank 1B.1, Rank 1B.2, or Rank 1B.3. These threat codes are defined as follows:

- .1 is considered "seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)";
- .2 is "fairly endangered in California (20-80% of occurrences threatened)";
- .3 is "not very endangered in California (less than 20% of occurrences threatened or no current threats known)."

Fully Protected Birds. Fully protected birds, such as the white-tailed kite and golden eagle, are protected under California Fish and Game Code (§3511). Fully protected birds may not be "taken" or possessed (i.e., kept in captivity) at any time.

6.2 Potential Special-Status Plants That Could Be Affected by the Project

Figure 4 provides a graphical illustration of known CNDDB records for special-status species within 5 miles of the project site and helps readers visually understand the number of sensitive species that have been recorded in the vicinity of the project site. According to the CDFW's CNDDB and the CNPS 9 Quad search, a total of 56 special-status plant species are known to occur in the vicinity of the project site. However, owing to the farmed conditions of the project site which has been ongoing since the mid-1930s, special-status plants are less likely to occur. The majority of the plants from Table 3 occur in specialized habitats such as chaparral, coastal scrub, chenopod scrub, and/ or inland dunes which do not occur on or near the project site. Plant species occurring in specialized habitats that do not occur on or near the project site were summarily dismissed from consideration as indicated in Table 3.

San Joaquin spearscale (*Extriplex joaquinana*), a CNPS list 1B.2 species, was identified adjacent to the project site in 2006 (CNDDB Occurrence No. 104). In addition, there are several rare plant species that thrive in disturbed areas and have a low potential to occur on the project site. These include big tarplant (*Blepharizonia plumosa*), Congdon's tarplant (*Centromadia parryi*

congdonii), Carquinez goldenbush (*Isocoma arguta*), showy golden madia (*Madia radiata*), large-flowered fiddleneck (*Amsinckia grandiflora*), Hoover's cryptantha (*Cryptantha hooveri*), caper-fruited tropidocarpum (*Tropidocarpum capparideum*), heartscale (*Atriplex cordulata cordulata*), brittlescale (also known as rhomboid bract saltbush) (*Atriplex depressa*), lesser saltbush (*Atriplex minuscula*), alkali milkvetch (*Astragalus tener tener*), Mt. Diablo fairy lantern (*Calochortus pulchellus*), diamond-petaled California poppy (*Eschscholzia rhombipetala*), California alkali grass (*Puccinellia simplex*), shining navarretia (*Navarretia nigelliformis radians*), Mount Diablo buckwheat (*Eriogonum truncatum*), and recurved larkspur (*Delphinium recurvatum*) (Table 3).

None of these species were detected on the project site during 2005/2006 rare plant surveys or surveys conducted in 2019. Regardless, special-status plant surveys will be conducted the year prior to disturbance of the project site, following the current CDFW (2018), USFWS (2000), and CNPS (2001) published rare plant survey guidelines (see Impacts and Mitigation Section).

6.2.1 BIG TARPLANT

Big tarplant is a CNPS Rank 1B.1 species. It has no state or federal status. This annual member of the sunflower family is found in grassland habitats, typically with clay to clay-loam soils. It is most frequently encountered on slopes, and often in burned areas. Big tarplant flowers from July through October. The closest record for big tarplant is 1.5 miles southwest of the project site (CNDDB Occurrence No. 33). It was not detected on the project site in 2019, or during the 2005/2006 focused plant surveys. This species is unlikely to occur on the project site due to the farmed conditions and marginal habitat. Regardless, special-status plant surveys will be conducted the year prior to disturbance of the project site, following the current CDFW (2018), USFWS (2000), and CNPS (2001) published rare plant survey guidelines.

Impacts to big tarplant are regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.2.2 CONGDON'S TARPLANT

Congdon's tarplant is a CNPS Rank 1B.1 species. It has no state or federal status. This annual member of the sunflower family is found in alkaline soils in grassland habitats. It flowers from May through November. It was not detected on the project site in 2019, or during the 2005/2006 focused plant surveys. This species is unlikely to occur on the project site due to the farmed conditions and marginal habitat. Regardless, special-status plant surveys will be conducted the year prior to disturbance of the project site, following the current CDFW (2018), USFWS (2000), and CNPS (2001) published rare plant survey guidelines.

Impacts to Congdon's tarplant are regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.2.3 CARQUINEZ GOLDENBUSH

Carquinez goldenbush is a CNPS List 1B.1 species. It has no state or federal status. This shrub is found in alkaline soils, flats and low hills of Suisun Bay, in the Sacramento Delta. It flowers from August through December. It was not detected on the project site in 2019, or during the 2005/2006 focused plant surveys. This species is unlikely to occur on the project site due to the farmed conditions and marginal habitat. Regardless, special-status plant surveys will be conducted the year prior to disturbance of the project site, following the current CDFW (2018), USFWS (2000), and CNPS (2001) published rare plant survey guidelines.

Impacts to Carquinez goldenbush are regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.2.4 SHOWY GOLDEN MADIA

Showy madia is a CNPS List 1B.1 species. It has no state or federal status. This member of the sunflower family is found in woodland and grassland habitats, most often on adobe clay soils. It can be found in open grassland habitat or among shrubs, where it flowers from March through May. It was not detected on the project site in 2019, or during the 2005/2006 focused plant surveys. This species is unlikely to occur on the project site due to the farmed conditions and marginal habitat. Regardless, special-status plant surveys will be conducted the year prior to disturbance of the project site, following the current CDFW (2018), USFWS (2000), and CNPS (2001) published rare plant survey guidelines.

Impacts to showy madia are regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.2.5 LARGE-FLOWERED FIDDLENECK

Large-flowered fiddleneck is a federally and state listed endangered species and a CNPS Rank 1B.1 species. The large-flowered fiddleneck is a striking annual member of the borage family (Boraginaceae), growing to 50 cm. tall, with bright orange flowers (14-20 mm. long) that bloom from April to May. This plant has been threatened by agriculture, development, grazing, invasive non-native plants, trampling, and altered fire frequency. Large-flowered fiddleneck is found in cismontane woodland and valley and foothill grasslands on various soil types at an elevation of 902 to 1804 feet. Historically, this species was reported from scattered locations throughout the northern Diablo Range in California, ranging from northern Contra Costa County to San Joaquin County. It is currently only known from three populations, one on private rangeland, one on the U.S. Department of Energy's Lawrence Livermore National Laboratory property and one on East Bay Regional Parks Land in Black Diamond Mines Regional Park (CNDDB 2015). *The project site occurs outside of designated critical habitat*.

This plant was not detected on the project site in 2019, or during the 2005/2006 focused plant surveys. This species is unlikely to occur on the project site due to the farmed conditions and its

limited distribution. As such, no impacts to this listed plant are anticipated. Regardless, special-status plant surveys will be conducted the year prior to disturbance of the project site, following the current CDFW (2018), USFWS (2000), and CNPS (2001) published rare plant survey guidelines.

Impacts to large-flowered fiddleneck are regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.2.6 HOOVER'S CRYPTANTHA

Hoover's cryptantha is a CNPS Rank 1A species. This plant is considered to be extirpated (extinct). It has no state or federal status. This annual herb has calyxes for flowers that are 1.5 to 3 millimeters wide. It flowers from March to May. Hoover's cryptantha grass can be found in valley and foothill grassland in sandy soils. It was not detected on the project site in 2019, or during the 2005/2006 focused plant surveys. This species is unlikely to occur on the project site due to the farmed conditions and marginal habitat. Regardless, special-status plant surveys will be conducted the year prior to disturbance of the project site, following the current CDFW (2018), USFWS (2000) and CNPS (2001) published rare plant survey guidelines.

Impacts to Hoover's cryptantha are regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.2.7 CAPER-FRUITED TROPIDOCARPUM

Caper-fruited tropidocarpum is a CNPS List 1B.1 species. It has no state or federal status. It is known from only two occurrences. The species is possibly threatened by grazing, trampling, and non-native plants. Caper-fruited tropidocarpum is found in alkaline hills in valley and foothill grassland. It is an annual herb that blooms from March through April. It was not detected on the project site in 2019, or during the 2005/2006 focused plant surveys. This species is unlikely to occur on the project site due to the farmed conditions and marginal habitat. Regardless, special-status plant surveys will be conducted the year prior to disturbance of the project site, following the current CDFW (2018), USFWS (2000), and CNPS (2001) published rare plant survey guidelines.

Impacts to caper-fruited tropidocarpum are regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.2.8 HEARTSCALE

Heartscale is a CNPS List 1B.2 species. It has no state or federal status. This annual herb is found in chenopod scrub, meadows and seeps, and grassland habitats with sandy, saline, or alkaline soils in the Central Valley from the Sacramento region southward. It flowers from April

through October. It was not detected on the project site in 2019, or during the 2005/2006 focused plant surveys. This species is unlikely to occur on the project site due to the farmed conditions and marginal habitat. Regardless, special-status plant surveys will be conducted the year prior to disturbance of the project site, following the current CDFW (2018), USFWS (2000), and CNPS (2001) published rare plant survey guidelines.

Impacts to heartscale are regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.2.1 Brittlescale

Brittlescale is a CNPS Rank 1B.2 species. It has no state or federal status. This annual saltbush is found in chenopod scrub, meadows, seeps, playas, valley and foothill grasslands and vernal pools with alkaline or clay soils. It flowers from April through October. The closest record for big tarplant is located 0.1-mile immediately south of the project site (CNDDB Occurrence No. 74). It was not detected on the project site in 2019, or during the 2005/2006 focused plant surveys. This species is unlikely to occur on the project site due to the farmed conditions and marginal habitat. Regardless, special-status plant surveys will be conducted the year prior to disturbance of the project site, following the current CDFW (2018), USFWS (2000), and CNPS (2001) published rare plant survey guidelines.

Impacts to brittlescale are regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.2.2 Lesser Saltbush

Lesser saltbush is a CNPS List 1B.1 species. It has no state or federal status. This plant is found in sandy, alkaline soils in chenopod scrub, playas, and grasslands in the southern San Joaquin Valley. It is an annual herb that blooms from May to October. It was not detected on the project site in 2019, or during the 2005/2006 focused plant surveys. This species is unlikely to occur on the project site due to the farmed conditions and marginal habitat. Regardless, special-status plant surveys will be conducted the year prior to disturbance of the project site, following the current CDFW (2018), USFWS (2000), and CNPS (2001) published rare plant survey guidelines.

Impacts to lesser saltbush are regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.2.3 San Joaquin Spearscale

San Joaquin spearscale is a CNPS Rank 1B.2 species. It has no state or federal status. San Joaquin spearscale is found in chenopod scrub, meadows, seeps, playas, and alkaline valley and foothill grasslands. It is an annual herb that blooms from April through October. This plant is threatened by grazing, agriculture, and development.

San Joaquin spearscale was found adjacent to the project site during surveys conducted in 2006 (CNDDB Occurrence No. 104). It was not detected on the project site in 2019, or during the 2005/2006 focused plant surveys. This species is unlikely to occur on the project site due to the farmed conditions and marginal habitat. Regardless, special-status plant surveys will be conducted the year prior to disturbance of the project site, following the current CDFW (2018), USFWS (2000), and CNPS (2001) published rare plant survey guidelines.

Impacts to San Joaquin spearscale are regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.2.4 ALKALI MILKVETCH

Alkali milk-vetch is a CNPS Rank 1B.2 species. It has no state or federal status. This member of the pea family is found in vernal pools with alkaline soils, and in mesic grassland habitats with adobe clay soils. This annual herb blooms from March through June. This plant is threatened by development, competition from non-native plants, and habitat destruction, especially agricultural conversion. It was not detected on the project site in 2019, or during the 2005/2006 focused plant surveys. This species is unlikely to occur on the project site due to the farmed conditions and marginal habitat. Regardless, special-status plant surveys will be conducted the year prior to disturbance of the project site, following the current CDFW (2018), USFWS (2000), and CNPS (2001) published rare plant survey guidelines.

Impacts to alkali milk-vetch are regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.2.5 MT DIABLO FAIRY LANTERN

Mount Diablo fairy-lantern (*Calochortus pulchellus)* is not a federally or California state listed species. It is a CNPS List 1B.2 species. This plant can be found in chaparral, cismontane woodlands, riparian woodlands, and on valley and foothill grasslands in woody and brushy slopes (elevation 600-2400 feet). The flowering period for this bulbiferous herb is from April through June. It was not detected on the project site in 2019, or during the 2005/2006 focused plant surveys. This species is unlikely to occur on the project site due to the farmed conditions and marginal habitat. Regardless, special-status plant surveys will be conducted the year prior to disturbance of the project site, following the current CDFW (2018), USFWS (2000), and CNPS (2001) published rare plant survey guidelines.

Impacts to Mount Diablo fairy-lantern are regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.2.6 DIAMOND-PETALED CALIFORNIA POPPY

Diamond-petaled California poppy is on CNPS List 1B.1. This plant has no state or federal status. This member of the poppy family is found in grassland habitats with alkaline or clay soils, at elevations as high as 975 meters. It flowers between March and April. It was not detected on the project site in 2019, or during the 2005/2006 focused plant surveys. This species is unlikely to occur on the project site due to the farmed conditions and marginal habitat. Regardless, special-status plant surveys will be conducted the year prior to disturbance of the project site, following the current CDFW (2018), USFWS (2000), and CNPS (2001) published rare plant survey guidelines.

Impacts to diamond-petaled California poppy are regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.2.7 CALIFORNIA ALKALI GRASS

California alkali grass is a CNPS Rank 1B.2 species. It has no state or federal status. This annual grass has spikelet stalks 1-18 cm long. It blooms from March to May. California alkali grass can be found in valley grassland, wetland and riparian habitats in alkaline soils. It was not detected on the project site in 2019, or during the 2005/2006 focused plant surveys. This species is unlikely to occur on the project site due to the farmed conditions and marginal habitat. Regardless, special-status plant surveys will be conducted the year prior to disturbance of the project site, following the current CDFW (2018), USFWS (2000) and CNPS (2001) published rare plant survey guidelines.

Impacts to California alkali grass are regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.2.8 SHINING NAVARRETIA

Shining navarretia is a CNPS Rank 1B.2 species. It has no state or federal status. This annual herb has yellow flowers with purple or brown spots, and blooms from May through July, although M&A botanists have also found it flowering in late-April. Shining navarretia occurs in clay depressions in woodlands and grasslands, and also in vernal pools. It was not detected on the project site in 2019, or during the 2005/2006 focused plant surveys. This species is unlikely to occur on the project site due to the farmed conditions and marginal habitat. Regardless, special-status plant surveys will be conducted the year prior to disturbance of the project site, following the current CDFW (2018), USFWS (2000), and CNPS (2001) published rare plant survey guidelines.

Impacts to shining navarretia are regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.2.9 MOUNT DIABLO BUCKWHEAT

Mount Diablo buckwheat is a CNPS Rank 1B.1 species. It has no state or federal status. Mount Diablo buckwheat is found in chaparral, coastal scrub and sandy valley and foothill grasslands. This annual herb blooms from April through November. This plant was previously thought extinct until its 2005 rediscovery on the slopes of Mt. Diablo. It was found in fine, sandy loam on a barren strip between grassland and chaparral. This species is now known from the single extant occurrence in Mount Diablo State Park and is potentially threatened by trampling and non-native plants. It was not detected on the project site in 2019, or during the 2005/2006 focused plant surveys. This species is unlikely to occur on the project site due to the farmed conditions and marginal habitat. Regardless, special-status plant surveys will be conducted the year prior to disturbance of the project site, following the current CDFW (2018), USFWS (2000), and CNPS (2001) published rare plant survey guidelines.

Impacts to Mount Diablo buckwheat are regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.2.10 RECURVED LARKSPUR

Recurved larkspur is a CNPS List 1B.2 species. It has no state or federal status. This showy light blue-flowered perennial blooms from March through June. Recurved larkspur is found in poorly drained, fine alkaline soils in chenopod scrub, woodlands and grasslands. It was not detected on the project site in 2019, or during the 2005/2006 focused plant surveys. This species is unlikely to occur on the project site due to the farmed conditions and marginal habitat. Regardless, special-status plant surveys will be conducted the year prior to disturbance of the project site, following the current CDFW (2018), USFWS (2000), and CNPS (2001) published rare plant survey guidelines.

Impacts to recurved larkspur are regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.3 Potential Special-Status Wildlife Species That Could Be Affected by the Project

Figure 4 provides a graphical illustration of the known CNDDB records for special-status wildlife species within 5 miles of the project site and helps readers visually understand the number of sensitive species that occur in the vicinity of the project site. A total of 18 special-status animal species are known to occur in the vicinity of the project site according to the CDFW's CNDDB records (Table 4), 13 of which are discussed in detail below.

6.3.1 VERNAL POOL FAIRY SHRIMP

Vernal pool fairy shrimp (*Branchinecta lynchi*) was designated as threatened in its entire range on September 19, 1994 (Federal Register 59:48136-48153). Critical habitat for this species was

designated on August 6, 2003 (Federal Register 68: 46683-46867). *The project site is not located within this species' designated critical habitat* (Figure 5).

The vernal pool fairy shrimp is a small aquatic crustacean that ranges in size from ½ to one inch long. Fairy shrimp feed on algae, bacteria, protozoa, rotifers and bits of detritus. The vernal pool fairy shrimp occupies a variety of different vernal pool habitats, from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. It tends to occur in smaller pools (less than 0.05-acre) that are most commonly found in grass or mud bottomed swales, or basalt flow depression pools in unplowed grasslands. It has also been collected in large vernal pools (e.g. 25 acres). Vernal pool fairy shrimp have been collected from early December to early May (USFWS 1994).

The female drops eggs to the pool bottom or the eggs remain in the brood sac until the mother dies and sinks. When the pool dries out, so do the eggs (known as cysts when dry). They remain in the dry pool bed until rains and other environmental stimuli hatch them. Cysts can withstand heat, cold and prolonged desiccation. When the pools refill, some, but not all, of the cysts may hatch. The cyst bank in the soil may contain cysts from several years of breeding. Average time to maturity is only 41 days. In warmer pools, it can be as little as eighteen (Eriksen & Belk 1999).

The vernal pool fairy shrimp is widespread but not abundant. Known populations extend from Shasta County through most of the length of the Central Valley to Tulare County. Along the central coast, they range from northern Solano County to Pinnacles National Monument in San Benito County. Four additional, disjunct populations exist in Southern California. The ephemeral wetlands that support this network of populations are remnants of what was formerly a pristine vernal pool ecosystem, which has been converted to primarily agricultural and urban uses.

There is a 2003 CNDDB record for vernal pool fairy shrimp located 1.6 miles west of the project site (Occurrence No. 353) (Figure 4). In addition, in 2002 vernal pool fairy shrimp were found adjacent to the project site in pools near the top-of-bank of the ephemeral drainage channel adjacent to the eastern site of the project site (Condor Country Consulting 2002). Figure 6 illustrates the pools that currently provide potential habitat for this species. These pools will not be impacted by the project, and Best Management Practices (BMPs) will be implemented to ensure that there are no indirect impacts to these pools that could affect the quality of the potential habitat. Also, the pools known in the past to support vernal pool fairy shrimp derive hydrology from vertical precipitation and do not rely on a watershed that would be impacted by the proposed project. *Accordingly, if vernal pool fairy shrimp are present in these pools, the proposed project will have no impact on the species or its habitat.*

6.3.2 California red-legged frog

The California red-legged frog (*Rana draytonii*) was federally-listed as threatened on May 23, 1996 (Federal Register 61: 25813-25833) and as such is protected pursuant to the FESA. On March 16, 2010 the USFWS issued the final designation for California red-legged frog Critical Habitat (USFWS 2010). The project site is not within mapped critical habitat (Figure 5).

The California red-legged frog is typically found in ponds, slow-flowing portions of perennial and intermittent streams that maintain water in the summer months. This frog is also found in hillside seeps that maintain pool environments or saturated soils throughout the summer months. Populations probably cannot be maintained if all surface water disappears (i.e., no available surface water for egg laying and larval development habitat). Larval California red-legged frogs require 11-20 weeks of deep water to reach metamorphosis (i.e., to change from a tadpole into a frog), in water depths of 10 to 20 inches (USFWS 2002). Riparian vegetation such as willows and emergent vegetation such as cattails are preferred red-legged frog habitats, though not necessary for this species to be present. Populations of California red-legged frog will be reduced in size or eliminated from ponds supporting non-native species such as bullfrog, Centrarchid fish species (such as sunfish, bluegill, or large-mouth bass), and signal and red swamp crayfish (*Pacifastacus leniusculus* and *Procambarus clarkii*, respectively), all of which are known California red-legged frog predators. However, the presence of these non-native species does not preclude the presence of the California red-legged frog.

California red-legged frogs also use upland habitats for migration and dispersal. The USFWS' *Recovery Plan for the California Red-Legged Frog* states that frog's overland excursions via uplands can vary between 0.25-mile up to 3 miles during the course of a wet season, and that frogs "have been observed to make long-distance movements that are straight-line, point to point migrations rather than using corridors for moving in between habitats" (USFWS 2002). The information presented in the USFWS' Recovery Plan was taken from a publication by Bulger et al. (2003) that recounts a study in coastal redwoods in Santa Cruz area. M&A's direct observation are that such overland straight-line migrations are primarily limited to periods of heavy rainfall or during periods when ambient conditions exhibit high moisture levels such as in fog belts along the coast. Working in Pointe Reyes National Seashore on the coast of California, Fellers and Kleeman (2007) found approximately 31 percent of California red-legged frogs moved more than 30 meters from their breeding sites and about 69 percent moved less than 30 meters from their breeding site during seasonal movement periods. Similarly, Bulger et al. (2003) found that 60 percent of their radio tagged frogs stayed within 30 meters of their breeding sites.

In locations that are characterized by hot and seasonally dry climates, the California red-legged frog is inclined to stay closer to its aquatic environments or will not migrate. Tatarian (2005) who studied an inland population of California red-legged frogs in eastern Contra Costa County where the climate is far drier than the coastal environment, found that all movements started after the first 0.5 cm of rain in the fall, with more terrestrial movements being made in the fall pre-breeding season (57%) than in the winter breeding season (32%) or spring post-breeding season (11%). Tatarian (op. cit.) also found that California red-legged frogs moved greater average distances aquatically (84.6 m) than terrestrially (27.7 m). Greater terrestrial distances were moved in the pre-breeding season (35.2 m) than in the breeding season (15.5 m) or post-breeding season (16.3 m) with the majority of movements occurring for only one of the 3-4 day survey periods. The majority of frogs (57%) were position faithful within a pool, indicating they did not migrate at all. These data suggest that long forays across the landscape found in coastal populations are less likely in dry inland locations.

The USFWS' *Recovery Plan for the California Red-Legged Frog* states that populations are "most likely to persist where multiple breeding areas are embedded within a matrix of habitats used for dispersal." "The primary constituent elements for California red-legged frogs are aquatic and upland areas where suitable breeding and non-breeding habitat is interspersed throughout the landscape and is interconnected by unfragmented dispersal habitat" (USFWS 2002).

The closest known CNDDB record of California red-legged frog is a 2005 record located 0.70-mile west of the project site within Sand Creek (CNDDB Occurrence No. 933). In 2013, numerous California red-legged frogs and tadpoles were found within a section of Sand Creek located approximately 0.25-mile to the west of the project site during work associated with the construction of the Upper Sand Creek Detention Basin (from USFWS Biological Opinion for the Vineyards at Sand Creek Development Project). Consequently, the USFWS regards Sand Creek as occupied habitat of the California red-legged frog. Since Sand Creek is regarded as occupied habitat, lands located adjacent to the creek, including the project site, constitute potential upland dispersal habitat for this frog. Therefore, the proposed project will impact potential California red-legged frog dispersal habitat; 58.6 acres will no longer be available as potential dispersal habitat and 11 acres will be temporarily disturbed by grading. In addition, installation of the outfall structures on the banks of Sand Creek may result in impacts to breeding habitat for this species. *Accordingly, the project will impact suitable breeding and upland dispersal habitat for the California red-legged frog. Impacts to California red-legged frog are regarded as significant pursuant to the CEQA.* Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.3.3 California Tiger Salamander

The California tiger salamander (*Ambystoma californiense*) is a federally-listed threatened species. The project site falls into the range of the Central California Distinct Population Segment (DPS) of the California tiger salamander. This DPS of the California tiger salamander was federally-listed as threatened on August 4, 2004. The USFWS designated critical habitat for the California tiger salamander Central California DPS in 2005. The project site is located outside of the closest mapped critical habitat for the Central California DPS which is Critical Habitat Unit 18 designated in Alameda County (Central Valley Geographic Unit 18, Map 14) (Figure 5).

California tiger salamanders occur in grasslands and open oak woodlands that provide suitable over summering and/or breeding habitats. California tiger salamanders spend the majority of their lives underground. They typically only emerge from their subterranean refugia for a few nights each year during the rainy season to migrate to breeding ponds. Adult California tiger salamanders have been observed up to 2,092 meters (1.3 miles) from breeding ponds (USFWS 2004). As such, unobstructed migration corridors are an important component of California tiger salamander habitat.

California tiger salamanders emerge during the first heavy, warm rains of the year, typically in late November and early December. In most instances, larger movements of California tiger salamander do not occur unless it has been raining hard and continuously for several hours.

Typically, for larger movements of California tiger salamander to occur nighttime temperatures also must be above 48° F. California tiger salamander are able to move over, through or around almost all obstacles. Significant obstructions that block California tiger salamander movements include freeways and other major (heavy traffic) roads, rivers, and deep, vertical or near vertical sided, concrete irrigation/flood control ditches.

During the spring, summer, and fall months, most known populations of the California tiger salamander predominately use California ground squirrel burrows as over-summering habitat (Jennings and Hayes 1994; G. Monk personal observation from 30 plus years working with the California tiger salamander). Other secondary subterranean refugia, or primary refugia where California ground squirrels are absent, likely include Botta's pocket gopher burrows, deep fissures in desiccated clay soils, and debris piles (e.g. downed wood, rock piles).

Stock ponds, seasonal wetlands, and deep vernal pools typically provide most of the breeding habitat used by California tiger salamander. In such locations, California tiger salamander attach their eggs to rooted, emergent vegetation, and other stable filamentous objects in the water column. Eggs are gelatinous and are laid singly or occasionally in small clusters. Eggs range in size from about ¾ the diameter of a dime to the full diameter of a dime. Occasionally California tiger salamanders are found breeding in slow-moving, streams or ditches. Ditches and/or streams that are subject to rapid flows, even if only on occasion, typically will not support or sustain California tiger salamander egg attachment through hatching, and thus, are not usually used successfully by California tiger salamander for breeding (G. Monk and S. Lynch, pers. observations). Similarly, streams and/or ditches that support predators of California tiger salamander or their eggs and larvae such as fish, bullfrogs, red swamp crayfish, or signal crayfish, almost never constitute suitable breeding habitat.

Typically, seasonal wetlands that are used for breeding must hold water through the middle of May to allow enough time for larvae to fully metamorphose. In dry years, seasonal wetlands may dry too early to allow enough time for California tiger salamander larvae to successfully metamorphose. Under such circumstances, desiccated California tiger salamander larvae can be found in dried pools. In addition, as pools dry down to very small areas of inundation, California tiger salamander larvae become concentrated and are very susceptible to predation. However, in years exhibiting wet springs, these same pools can remain inundated long enough through continual rewetting to allow California tiger salamander larvae ample time to successfully metamorphose.

California tiger salamander, a state-listed species, is known to occur 0.25-mile south of the project site (CNDDB Occurrence No. 856). It was also found during work being conducted in the Upper Sand Creek Detention Basin located approximately 0.25-mile west of the project site (from USFWS Biological Opinion for the Vineyards at Sand Creek Development Project). While CTS could conceivably disperse or migrate to the project site from these known record locations, the farmed condition of the project site presumably would reduce over-summering opportunities. Regardless, based upon this species known dispersal distances of up to 1.3 miles, CDFW and USFWS will consider the project site as migration/over-summering habitat for the California tiger salamander.

While there is no California tiger salamander breeding habitat on the project site, the proposed project will impact 58.6 acres of potential California tiger salamander migration/over-summering habitat, and offsite grading will result in additional temporary impacts to 11 acres of potential California tiger salamander migration/over-summering habitat.

Impacts to California tiger salamander migration/oversummering habitat is regarded as significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.3.4 Western Pond Turtle

The western pond turtle (*Emys marmorata*) is a California "species of special concern." In April of 2015, the USFWS issued a 90-day finding on a petition to list this species under FESA. In September 2016, M&A spoke with USFWS' Sacramento Field Office and was told that they "hope to finish a 12-month finding in the fiscal year of 2021" (G. Tarr, USFWS, Sacramento Field Office, pers. comm. with S. Lynch of M&A, September 21, 2016). Until the western pond turtle is formally listed it is not afforded the protections of FESA.

The western pond turtle is a habitat generalist, inhabiting a wide range of fresh and brackish, permanent and intermittent water bodies from sea level to about 4,500 feet above sea level (USFWS 1992). Typically, this species is found in ponds, marshes, ditches, streams, and rivers that have rocky or muddy bottoms. This turtle is most often found in aquatic environments with plant communities dominated by watercress (*Rorippa* sp.), cattail (*Typha* sp), and other aquatic vegetation. It is a truly aquatic turtle that usually only leaves the aquatic site to reproduce and to overwinter. Field work has demonstrated that western pond turtles may overwinter on land or in water or may remain active in water during the winter season; this pattern may vary considerably with latitude, water temperature, and habitat type and remains poorly understood (Jennings and Hayes 1994).

The pond turtle also requires upland areas for burrowing habitat where it digs nests and buries its eggs. These nests can extend from 52 feet to 1,219 feet from watercourses (Jennings and Hayes 1994); however, most pond turtles nest in uplands within 250 meters of water (Bury, 2005). Upland nest sites are usually found in areas with sparse vegetation. Sunny, barren, and undisturbed (not disked) land provides optimal habitat, while shady riparian habitat and planted agricultural fields do not provide suitable habitat (op. cit.). Eggs are typically laid from March to August (Zeiner et. al. 1988), with most eggs being laid in May and June. Hatchlings will stay in the nest until the following April (Bury, unpublished). Predators of juvenile pond turtles include the non-native bullfrog (*Lithobates catesbeiana*) and Centrarchid fish (sunfish). This turtle is most visible between April and July when it can be observed basking in the sun. In areas where the water is very warm during these months, however, it will bask in the warm water and will be more difficult to observe. It eats plants, insects, worms, fish and carrion (Stebbins 2003).

The closest CNDDB record for western pond turtle is located 3.5 miles south of the project site in Marsh Creek Reservoir (CNDDB Occurrence No. 131). As Sand Creek is an intermittent creek without large permanent pools it is not optimal habitat for the western pond turtle. It may provide migration habitat for this turtle. Installation of the outfall structures on the banks of Sand

Creek may result in impacts to suitable western pond turtle dispersal habitat. *Accordingly, impacts to western pond turtle are regarded as potentially significant pursuant to the CEQA.* Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.3.5 Golden Eagle

The golden eagle (*Aquila chrysaetos*) is designated as a California species of special concern and is fully protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c). Additionally, its nest, eggs, and young are protected from direct "take" under the California Fish and Game Code (Sections 3503, 3503.5, and 3800).

Golden eagles are found breeding throughout western North America in remote open habitats. Typical habitats in North America include savannah woodland habitats, grasslands, aspen parkland, high and low deserts, and in taiga and zone habitats. Golden eagles feed on fresh carrion or take live prey ranging in size from small rodents to as large as new born fawns. More typical prey include rabbits, hares, and waterfowl. Golden eagles build nests in large trees, often eucalyptus, oaks, or conifers, or on large vertical cliffs. On rare occasions nests are found on the ground, especially in expansive prairie habitats where cliffs and/or trees are scarce. Often this species will return each year to the same nest stacking new sticks on the existing nest structure. Over time, nests can become piled so high with sticks that they topple over leaving huge debris piles beneath trees or at the base of cliffs.

Golden eagles nest from January until September with peak nesting occurring in March through July. One to four eggs are laid, most commonly two. Incubation lasts 44 to 45 days. Usually, one or two eaglets hatch and one eaglet fledges the nest. Family groups usually remain in undisturbed habitats until late summer. These birds are very sensitive to disturbance near the nest site, particularly in remote regions where human activities are minimal.

In 2018 and 2019, golden eagles were identified nesting in a bluegum eucalyptus (*Eucalyptus globulus*) growing along the bank of Sand Creek, immediately to the north of the project site. Since farming activities, including the use of heavy equipment for disking, planting, and harvesting crops often twice per year, has been ongoing for decades right up to the bluegum eucalyptus grove where these eagles nest, it is apparent that these golden eagles are acclimated to these recurring activities. In addition, a residential subdivision has been under construction approximately 1000 feet north of the eagles' nests throughout 2018 and 2019, and yet these eagles fledged one young in 2018, and two young in 2019 (M&A biologist observations). Also, high density residential development activities have been ongoing within a one-mile radius around this nesting tree for over 20 years apparently without any deleterious effects on the nesting eagles.

Nesting surveys will need to be conducted to confirm or negate this species' presence as an active nesting bird on or adjacent to the project site prior to construction. While this pair of golden eagles appears to be well-acclimated to mechanized disturbance, if an active nest is identified within the zone of influence of the development the year that construction commences, it could result in impacts or deleterious disturbance to the nesting golden eagles. Disturbance

could result in: (1) nest abandonment; (2) loss of young; (3) reduced health and vigor of eggs and/or nestlings (resulting in reduced survival rates) and could ultimately result in the take (killing) of nestling or fledgling golden eagles.

Accordingly, impacts to golden eagle are regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.3.6 WHITE-TAILED KITE

The white-tailed kite (*Elanus caeruleus*) is a "Fully Protected" species under the California Fish and Game Code (§3511). Fully protected birds may not be "taken" or possessed (i.e., kept in captivity) at any time. It is also protected under the federal Migratory Bird Treaty Act (50 CFR 10.13). The white-tailed kite is typically found foraging in grassland, marsh, or cultivated fields where there are dense-topped trees or shrubs for nesting and perching. They nest in a wide variety of trees of moderate height and sometimes in tall bushes, such as coyote bush (*Baccharis pilularis*). Native trees used are live and deciduous oaks (*Quercus* spp.), willows (*Salix* spp.), cottonwoods (*Populus* spp.), sycamores (*Platanus* spp.), maples (*Acer* spp.), toyon (*Heteromeles arbutifolia*), and Monterey cypress (*Cupressus macrocarpa*). Although the surrounding terrain may be semi-arid, kites often reside near water sources, where prey is more abundant. The particular characteristics of the nesting site do not appear to be as important as its proximity to a suitable food source (Shuford 1993). Kites primarily hunt small mammals, with California meadow voles accounting from between 50-100% of their diet (Shuford 1993).

The nearest CNDDB record for this species is located 2.1 miles north of the project site (Occurrence No. 87). The trees along Sand Creek provide potentially suitable nesting habitat, and preconstruction nesting bird surveys for this species are included in Mitigation Measure BIO-9 to determine whether this species is present. *Accordingly, impacts to white-tailed kite are regarded as potentially significant pursuant to the CEQA.* Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.3.7 SWAINSON'S HAWK

The Swainson's hawk (*Buteo swainsonii*) is a state-listed threatened species afforded protection pursuant to the CESA. While it has no special federal status, it is protected from direct take under the federal Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711). Swainson's hawks, their nests, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5, §3513, and §3800). Finally, pursuant to CEQA, this hawk would be considered "rare" and impacts to its nest sites would be regarded as significant. Impacts to foraging habitat can be regarded as significant pursuant to the CEQA based upon guidelines provided by the CDFW for this raptor species.

The Swainson's hawk is generally a summer visitor to California. In the fall months, most Swainson's hawks migrate to South America before returning to the United States to breed once again in the late spring. There is a small population of Swainson's hawks that remain residents in California year-round. The nesting population of Swainson's hawks in California was reduced

considerably over historical nesting populations when the species was afforded protections pursuant to the CESA in 1984. Since that time, the nesting population of Swainson's hawk has significantly recovered in California, as have other raptor species that were previously protected both as state and federally-listed species. Both the peregrine falcon (*Falco peregrinus* subsp. *anatum*) and the bald eagle (*Haliaeetus leucocephalus*) were similarly listed species under both the CESA and FESA but have both been delisted owing to population recovery. A Swainson's hawk nesting population now occurs in western Contra Costa County where this species was not known to be actively nesting when it was listed under the CESA. Similarly, eBird records suggest this hawk's population in California has greatly recovered since it was originally listed. Regardless, owing to the absence of a thorough nesting population census in California since near the time that the species was originally listed by the CDFW, the extent of this hawks statewide recovery remains unknown. Thus, this hawk remains protected pursuant to the CESA.

The Swainson's hawk inhabits open to semi-open areas at low to middle elevations in valleys, dry meadows, foothills, and level uplands (Kochert 1986). It nests almost exclusively in trees and will nest in almost any tree species that is at least 10 feet tall (Schmutz et. al. 1984). Nests are constructed in isolated trees that are dead or alive along drainages and in wetlands, or in windbreaks in fields and around farmsteads (Palmer 1988). Swainson's hawks occasionally nest in shrubs, on telephone poles, and on the ground. In the Central Valley of California, the majority of Swainson's hawk nests and territories are associated with riparian systems and nests are commonly found in cottonwoods and oaks (Schlorff et. al. 1984). They have also been documented nesting in eucalyptus (*Eucalyptus* spp.), black walnut (*Juglans hindsii*), black locust (*Robinia pseudoacacia*), almond, Osage orange (*Maclura pomifera*), Arizona cypress (*Cupressus arizonica*), and pine (*Pinus* spp.) (CNDDB records).

Foraging habitats include alfalfa fields, fallow fields, beet, tomato, and other low-growing row or field crops, dry-land and irrigated pasture, and rice land when not flooded (CDFG 1994). The Swainson's hawk generally forages in open habitats with short vegetation containing small mammals, reptiles, birds, and insects. Its primary prey in the Central Valley is California meadow vole. Agricultural areas are often preferred over more natural grassland habitats due to larger prey populations. In addition, agricultural practices (planting, maintenance, harvesting, disking) allow for access to prey, and very likely increases foraging success of Swainson's hawks when farm equipment flushes prey during harvesting (observed many times by G. Monk). During the nesting season, Swainson's hawks usually forage within two miles of their nests. Swainson's hawk does not require habitats that contain many perches because it most often searches for prey aerially; therefore, it can occupy habitats with few or no perches except the nest tree (James 1992).

The closest CNDDB nesting record for the species is 0.10-mile east of the project site (CNDDB Occurrence No. 1681) in a large valley oak tree along Sand Creek. No Swainson's hawks have been detected nesting on or adjacent to the project site during multiple surveys in the vicinity of the project site over the last 4 years by M&A biologists. However, trees growing along Sand Creek provide suitable nesting trees, and preconstruction nesting bird surveys for this species are included in Mitigation Measure BIO-7 to determine whether this species is present. In addition, the project site constitutes foraging habitat that could be used by the Swainson's hawk. *Accordingly, impacts to Swainson's hawk are regarded as potentially significant pursuant to the*

CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.3.8 WESTERN BURROWING OWL

The western burrowing owl is a California "species of special concern." Its nest, eggs, and young are also protected under California Fish and Game Code (§3503, §3503.5, and §3800). The burrowing owl is also protected from direct take under the Migratory Bird Treaty Act (50 CFR 10.13).

Burrowing owl habitat is usually found in annual and perennial grasslands, characterized by low-growing vegetation. Often, the burrowing owl utilizes rodent burrows, typically California ground squirrel burrows, for nesting and cover. They may also on occasion dig their own burrows or use man-made objects such as concrete culverts or rip-rap piles for cover. They exhibit high site fidelity, reusing burrows year after year. Occupancy of suitable burrowing owl habitat can be verified at a site by observation of these owls during the spring and summer months or, alternatively, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement (white wash) at or near a burrow. Burrowing owls typically are not observed in grasslands with tall vegetation or wooded areas because the vegetation obscures their ability to detect avian and terrestrial predators. Since burrowing owls spend the majority of their time sitting at the entrances of their burrows, grazed grasslands seem to be their preferred habitat because it allows them to view the world at 360 degrees without obstructions.

Western burrowing owls were identified 0.8-mile northwest of the project site in 2018 (CNDDB Occurrence No. 623) (Figure 4), and a presumed wintering western burrowing owl was observed onsite during the January 2019 survey. The majority of the project site consists of disked farmed fields; however, there are a limited number of burrows onsite that provide potentially suitable habitat for western burrowing owl, and preconstruction nesting bird surveys for this species are included in Mitigation Measure BIO-6 to determine whether this species is present *Accordingly, impacts to western burrowing owl are regarded as potentially significant pursuant to the CEQA.* Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.3.9 NORTHERN HARRIER

The northern harrier (*Circus hudsonius*) is a California species of special concern. This raptor is also protected under California Fish and Game Code §3503.5 that protects nesting raptors and their eggs/young. The northern harrier is also protected from direct take under the Migratory Bird Treaty Act (50 CFR 10.13). Northern harriers build grass-lined nests on the ground within dense, low-lying vegetation in a variety of habitats, though they are typically found nesting in grassland or marsh habitats. They usually nest on level to near level ground. This species is particularly vulnerable to ground predators such as coyotes (*Canis latrans*), red fox (*Vulpes vulpes*), and various snake species. Ground nesting birds in general are also subject to disturbance by agricultural practices.

The closest CNDDB nesting record for the species is 13.5 miles southwest of the project site (CNDDB Occurrence No. 27). Northern harriers likely forage over the project site and may nest in the remnant area of non-native annual grassland east of the project site that provides suitable nesting habitat for this species. Hence, there is a small possibility that there could be noise impacts associated with construction of the proposed project that could result in: (1) nest abandonment; (2) loss of young; (3) reduced health and vigor of eggs and/or nestlings (resulting in reduced survival rates), and preconstruction nesting bird surveys for this species are included in Mitigation Measure BIO-9 to determine whether this species is present *Accordingly, impacts to northern harriers are regarded as potentially significant pursuant to the CEQA unless appropriate impact avoidance measures are implemented.* Mitigation measures could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.3.10 LOGGERHEAD SHRIKE

The loggerhead shrike (*Lanius ludovicianus*) is a California "species of special concern." It is also protected under the federal Migratory Bird Treaty Act and California Fish and Game Code (§3503 and 3800) that protects birds, their nests, eggs, and young. This small, predaceous bird of open and often arid habitats prefers areas with scattered shrubs, trees, posts, fences, utility lines, and other acceptable perching locations. This shrike preys mostly upon large insects, but also takes small birds, mammals, amphibians, reptiles, fish, carrion, and various invertebrates. It typically constructs a stick nest on a stable branch in a densely foliated tree or shrub. Blackberry (*Rubus* spp.), rose (*Rosa* spp.) and willows (*Salix* spp.) provide nest sites. Site selection is apparently based on the degree of protective cover rather than on a particular plant species (Shuford 1993). Although nest height varies from 1.5 to 30 feet above ground, it is rarely less than three feet (Shuford 1993). There has been a national decline in this species (Burridge 1995). The conversion of rural areas into subdivisions or commercial areas steadily reduces the available habitat for this small, predaceous bird.

The closest CNDDB nesting record for the species is 4.6 miles northeast of the project site (CNDDB Occurrence No. 3). Loggerhead shrikes likely forage over the project site and may nest in in the trees growing along Sand Creek that provide suitable nesting trees. Hence, there is a small possibility that there could be noise impacts associated with construction of the proposed project that could result in: (1) nest abandonment; (2) loss of young; (3) reduced health and vigor of eggs and/or nestlings (resulting in reduced survival rates). Nesting surveys will need to be conducted to confirm or negate this species' presence as an active nesting bird adjacent to the project site prior to construction. *Accordingly, impacts to loggerhead shrikes are regarded as potentially significant pursuant to the CEQA unless appropriate impact avoidance measures are implemented*. Mitigation measures could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.3.11 TRICOLORED BLACKBIRD

The tricolored blackbird (*Agelaius tricolor*) is a State listed threatened species pursuant to the CESA. While it has no special federal status, it is also protected under the federal Migratory Bird

Treaty Act and California Fish and Game Code (§3503 and 3800) that protects birds, their active nests, eggs, and young.

A gregarious species, the tricolored blackbird is typically found near freshwater, particularly near marsh habitat. Loss of wetland habitats is regarded as the principal factor responsible for this species' population decline (Beedy, 1992). Nesting colonies are typically found in stands of cattail (*Typha* spp.) and bulrush (*Scirpus* spp.), although they are also known to utilize blackberry patches (*Rubus* sp.) and thistle clumps (*Cirsium* spp. and *Cynara* spp.) adjacent to water. Flooded lands, margins of ponds, and grassy fields in summer and winter provide typical foraging habitat for this species.

The closest known CNDDB record for this species is located 2 miles southwest of the project site (Occurrence No. 838) in ponds on the Roddy Ranch golf course. Sand Creek provides limited nesting habitat within the creek corridor, but they cannot be discounted as potential nesters in this corridor. Although no tricolored blackbirds have been detected on the site during multiple site surveys in the project vicinity, installation of the outfall structures in Sand Creek could disturb nesting birds, and preconstruction nesting bird surveys for this species are included in Mitigation Measure BIO-8 to determine whether this species is present *Accordingly, impacts to tricolored blackbird are regarded as potentially significant pursuant to the CEQA.* Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

6.3.12 SAN JOAQUIN KIT FOX

The San Joaquin kit fox (*Vulpes macrotis mutica*) is a federally-listed endangered species protected pursuant to the FESA and a state-listed threatened species protected pursuant to the CESA. The San Joaquin kit fox live primarily in the lowlands of the San Joaquin Valley of California but are also known to occur in several counties in the coast mountain ranges including Santa Barbara, San Luis Obispo, Monterey, San Benito, Santa Clara, Contra Costa, and Alameda counties. This fox species is usually found in open grassland and shrub land communities but has also been observed in ruderal plant communities.

The San Joaquin kit fox relies on dens for breeding, and to provide escape cover from potential predators. Dens are excavated in loose-textured soils, generally in areas with low to moderate relief. Kit fox will also utilize existing burrows dug by rabbits, ground squirrels, and on occasion, American badgers (*Taxidea taxus*), and on occasion will use man-made structures for denning such as well-casings, culverts, and abandoned pipes. Typically, dens are small enough to discourage easy predation by coyotes.

The San Joaquin kit fox is carnivorous, usually feeding on small rodents such as San Joaquin pocket mice (*Perognathus inornatus*), deer mice (*Peromyscus maniculatus*), western harvest mice (*Reithrodontomys megalotis*), kangaroo rats (*Dipodomys* spp.), and larger rodents such California ground squirrel. Kit fox also prey upon lagomorphs such as black-tailed jackrabbit (*Lepus californicus*) and Audubon's cottontail (*Sylvilagus audubonii*). Both adults care for pups until they are about four to five months old at which time family bonds begin to dissolve.

The closest CNDDB record for this species was recorded in the 1970s and is located 2.75 miles south of the project site (Occurrence No. 936). More recently, independently conducted surveys cited in *Relative Abundance of Endangered San Joaquin Kit Fox (Vulpes macrotis mutica) Based on Scat-Detection Dog Surveys* (Smith et. al. 2006) were unable to document presence of San Joaquin kit fox in Contra Costa County. Although this report suggests that it is likely that San Joaquin kit fox is extirpated from Contra Costa County, Figure 5-5 in the East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan (ECCCC HCP 2006) indicates that the project site is within the "Suitable Core Habitat" of the San Joaquin kit fox. Suitability does not infer the presence of this fox species, only that the model used indicates there is suitable habitat in which the species could occur.

The on-going disturbance and cultivation of the project site would likely preclude the presence of an occupied den. As such, the federally-listed San Joaquin kit fox is not expected to occur on the project site. Regardless, implementation of avoidance and conservation measures listed in the Impacts and Mitigation Measures that follow in the sections below, will confirm that this species is not present on the project site and will ensure that there is no take of this species. *Accordingly, impacts to San Joaquin kit fox is regarded as potentially significant pursuant to the CEQA.* Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA.

6.3.13 AMERICAN BADGER

The American badger is a California "species of special concern." It has no federal status. This species is found in a variety of habitats, especially in open habitats such as oak-savannah and grasslands where its presence is typically identified by its distinctive, large underground dens (burrows) excavated in friable (loose) soils. This nocturnal mammal is rarely observed. In the region, this animal is uncommon. When present, this animal would be expected to prey upon Botta's pocket gopher, California ground squirrel, and several species of mice common in the area. Except during breeding, badgers are typically highly solitary and have vast home ranges.

This species was identified adjacent to the project site in 2007 (CNDDB Occurrence No. 398). Owing to farming practices the project site provides marginal habitat for this species, but unfarmed edges provide unlikely but suitable foraging habitat. Therefore, development of the project could result in impacts to American badgers. *Thus, impacts to American badger are regarded as potentially significant pursuant to the CEQA.* Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA. The Impacts and Mitigation Measures that follow in the sections below address these impacts.

7. REGULATORY FRAMEWORK FOR NATIVE WILDLIFE, FISH, AND PLANTS

This section provides a discussion of those laws and regulations that are in place to protect native wildlife, fish, and plants. Under each law we discuss their pertinence to the proposed development.

7.1 Federal Endangered Species Act

The FESA forms the basis for the federal protection of threatened or endangered plants, insects, fish and wildlife. FESA contains four main elements, they are as follows:

Section 4 (16 USCA §1533): Species listing, Critical Habitat Designation, and Recovery Planning: outlines the procedure for listing endangered plants and wildlife.

Section 7 (§1536): Federal Consultation Requirement: imposes limits on the actions of federal agencies that might impact listed species.

Section 9 (§1538): Prohibition on Take: prohibits the "taking" of a listed species by anyone, including private individuals, and State and local agencies.

Section 10: Exceptions to the Take Prohibition: non-federal agencies can obtain an incidental take permit through approval of a HCP.

In the case of salt water fish and other marine organisms, the requirements of FESA are enforced by the NMFS. The USFWS enforces all other cases. Below, Sections 9, 7, and 10 of FESA are discussed since they are the sections most relevant to the proposed project.

Section 9 of FESA as amended, prohibits the "take" of any fish or wildlife species listed under FESA as endangered. Under federal regulation, "take" of fish or wildlife species listed as threatened is also prohibited unless otherwise specifically authorized by regulation. "Take," as defined by FESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." "Harm" includes not only the direct taking of a species itself, but the destruction or modification of the species' habitat resulting in the potential injury of the species. As such, "harm" is further defined to mean "an act which actually kills or injures wildlife; such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR 17.3). A December 2001 decision by the 9th Circuit Court of Appeals (Arizona Cattle Growers' Association, Jeff Menges, vs. the U.S. Fish and Wildlife Service and Bureau of Land Management, and the Southwest Center for Biological Diversity) ruled that the USFWS must show that a threatened or endangered species is present on a project site and that it would be taken by the project activities. According to this ruling, the USFWS can no longer require mitigation based on the probability that the species could use the site; rather, they must show that it is actually present.

Section 9 applies to any person, corporation, federal agency, or any local or State agency. If "take" of a listed species is necessary to complete an otherwise lawful activity, this triggers the need to obtain an "incidental take permit" either through a Section 7 Consultation as discussed further below (for federal actions or private actions that are permitted or funded by a federal agency such as the Corps), or through Section 10 of FESA which requires preparation of a HCP (for state and local agencies, or individuals, and projects without a federal "nexus"; for example, projects that do not need a Corps permit).

Section 7(a)(2) of the Act requires that each federal agency consult with the USFWS to ensure that any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of critical habitat for listed species. Critical habitat designations mean: (1) specific

areas within a geographic region currently occupied by a listed species, on which are found those physical or biological features that are essential to the conservation of a listed species and that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a listed species that are determined essential for the conservation of the species.

The Section 7 consultation process only applies to actions taken by federal agencies that are considering authorizing discretionary projects. Section 7 is by and between the NMFS and/or the USFWS and the federal agency contemplating a discretionary approval (that is, the "federal nexus agency," for example, the Corps or the Federal Highway Administration). Private parties, cities, counties, etc. (i.e., applicants) may participate in the Section 7 consultation at the discretion of the federal agencies conducting the Section 7 consultation. The Section 7 consultation process is triggered by a determination of the "action agency" – that is, the federal agency that is carrying out, funding, or approving a project - that the project "may affect" a listed species or critical habitat. If an action is likely to adversely affect a listed species or designated critical habitat, formal consultation between the nexus agency and the USFWS/NMFS is required. As part of the formal consultation, the USFWS/NMFS may resolve any issues informally with the nexus agency or may prepare a formal Biological Opinion assessing whether the proposed action would be likely to result in "jeopardy" to a listed species or if it could adversely modify designated critical habitat. If the USFWS/NMFS prepares a Biological Opinion, it will contain either a "jeopardy" or "non-jeopardy" decision. If the USFWS/NMFS concludes that a proposed project would result in adverse modification of critical habitat or would jeopardize the continued existence of a federally-listed species (that is, it will issue a jeopardy decision), the nexus federal agency would be most unlikely to authorize its discretionary permit. If the USFWS/NMFS prepares a "non-jeopardy" Biological Opinion, the nexus federal agency may authorize the discretionary permit making all conditions of the Biological Opinion conditions of its discretionary permit. A non-jeopardy Biological Opinion constitutes an "incidental take" permit that allows applicants to "take" federally-listed species while otherwise carrying out legally sanctioned projects.

For non-federal entities, for example private parties, cities, counties that are considering a discretionary permit, Section 10 provides the mechanism for obtaining take authorization. Under Section 10 of FESA, for the applicant to obtain an "incidental take permit," the applicant is required to submit a "conservation plan" to the USFWS or NMFS that specifies the impacts that are likely to result to federally-listed species, and the measures the applicant will undertake to minimize and mitigate such impacts, and the funding that will be available to implement those steps. Conservation plans under FESA have come to be known as "habitat conservation plans" or "HCPs" for short. The terms incidental take permit, Section 10 permit, and Section 10(a)(1)(B) permit are used interchangeably by the USFWS. Section 10(a)(2)(B) of FESA provides statutory criteria that must be satisfied before an incidental take permit can be issued.

7.1.1 RESPONSIBLE AGENCY

FESA gives regulatory authority to the USFWS for federally-listed terrestrial species and non-anadromous fish. The NMFS has regulatory authority over federally-listed marine mammals and anadromous fish.

7.1.2 APPLICABILITY TO THE PROPOSED PROJECT

Sand Creek provides known habitat for the California red-legged frog, and the project site provides habitat that would be regarded by the USFWS as suitable migration/over-summering habitat for California tiger salamander. Since the proposed project will result in impacts to waters of the U.S. regulated by the Corps, prior to the time the Corps could issue a permit for the proposed project, the Corps is required to consult with the USFWS pursuant to Section 7 of the FESA if the Corps determines the project "may affect" a federally listed species. With implementation of the proposed mitigation for impacts to federally listed species as detailed below in the Impacts and Mitigation Sections of this report, the USFWS is likely to issue a "non-jeopardy" Biological Opinion to the Corps, authorizing incidental take of FESA listed species.

7.2 Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989) makes it unlawful to "take" (kill, harm, harass, shoot, etc.) any migratory bird listed in Title 50 of the Code of Federal Regulations, Section 10.13, including their nests, eggs, or young. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, swallows, etc.). In a December 22, 2017 Memorandum issued by the U.S. Department of the Interior's Office of the Solicitor, the Department of Interior expressed the view that the Migratory Bird Treaty Act's take prohibitions apply only to "direct and affirmative purposeful actions that reduce migratory birds, their eggs, or their nests, by killing or capturing, to human control."

7.2.1 APPLICABILITY TO PROPOSED PROJECT

Migratory birds, such as birds of prey such as the golden eagle, Swainson's hawk, white-tailed kite, red-tailed hawk, and red-shouldered hawk and many common passerine bird species are known to nest in the region of the project site, and trees along Sand Creek on the project site provide suitable nesting habitat for these species. With the implementation of mitigation measures, discussed in the Impacts and Mitigation Measures that follow in the sections below, no direct mortality of species protected pursuant to this Act are expected to occur and feasible mitigation measures are available to protect active nest sites during construction. Please review specific requirements for avoidance of nest sites for potentially occurring nesting birds in the Impacts and Mitigations section below.

7.3 California Endangered Species Act

In 1984, the state legislated the CESA (Fish and Game Code §2050). The basic policy of CESA is to conserve and enhance endangered species and their habitats. Because CESA does not have a provision for "harm" (see discussion of FESA, above), CDFW considerations pursuant to CESA are limited to those actions that would result in the direct take of a listed species.

If proposed projects would result in take of a state-listed species, a project applicant may secure an "incidental take" permit pursuant to §2081 of the Fish and Game Code CDFW will issue an incidental take permit only if:

1) The authorized take is incidental to an otherwise lawful activity;

2) the impacts of the authorized take are minimized and fully mitigated;

3) measures required to minimize and fully mitigate the impacts of the authorized take:
   a) are roughly proportional in extent to the impact of the taking on the species;
   b) maintain the project applicant's objectives to the greatest extent possible; and,
   c) capable of successful implementation; and,

4) adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with, and the effectiveness of, the measures.

If an applicant is preparing a HCP as part of the federal 10(a) permit process, the HCP might be incorporated into the §2081 permit if it meets the substantive criteria of §2081(b). To ensure that an HCP meets the mitigation and monitoring standards in Section 2081(b), an applicant should involve CDFW staff in development of the HCP. If a final Biological Opinion (federal action) has been issued for the project pursuant to Section 7 of the FESA, it might also be incorporated into the §2081 permit if it meets the standards of §2081(b).

No §2081 permit may authorize the take of a species for which the Legislature has imposed strict prohibitions on all forms of "take." These species are listed in several statutes that identify "fully protected" species and "specified birds." See Fish and Game Code §§ 3505, 3511, 4700, 5050, 5515, and 5517. If a project is planned in an area where a "fully protected" species or a "specified bird" occurs, an applicant must design the project to avoid all take.

Fish and Game Code §2081 allows an applicant who has obtained a "non-jeopardy" federal Biological Opinion pursuant to Section 7 of the FESA, or who has received a federal 10(a) permit (federal incidental take permit) pursuant to the FESA, to submit the federal opinion or permit to CDFW for a determination as to whether the federal document is "consistent" with CESA. If after 30 days CDFW determines that the federal incidental take permit is consistent with state law, and that all state-listed species under consideration have been considered in the federal Biological Opinion, then no further permit or consultation is required under CESA for the project. However, if CDFW determines that the federal opinion or permit is not consistent with CESA, or that there are state-listed species that were not considered in the federal Biological Opinion, then the applicant must apply for a state CESA permit under Section 2081(b). Section 2081(b) is of no use if an affected species is state-listed, but not federally-listed.

7.3.1 Applicability to Proposed Project

California tiger salamander, a state-listed species, is known to occur 0.25-mile south of the project site (CNDDB Occurrence No. 856). It was also found during work being conducted in the Upper Sand Creek Detention Basin located approximately 0.25-mile west of the project site (from USFWS Biological Opinion for the Vineyards at Sand Creek Development Project). While CTS could conceivably disperse or migrate to the project site from these known record locations, the farmed condition of the project site presumably would reduce over-summering opportunities. Regardless, based upon this species known dispersal distances of up to 1.3 miles,

CDFW will consider the project site as migration/dispersal habitat for the California tiger salamander.

While there is no California tiger salamander breeding habitat on the project site, the proposed project will impact 58.6 acres of potential California tiger salamander migration/over-summering habitat, and offsite grading will result in additional temporary impacts to 11 acres of potential California tiger salamander migration/over-summering habitat. In addition, Swainson's hawk, tricolored blackbird, and San Joaquin kit fox are state-listed species; however, the proposed project will not result in direct take of these species, following implementation of the proposed mitigation measures, as detailed in the Impacts and Mitigation section below.

7.4 California Fish and Game Code § 3503, 3503.5, 3511, and 3513

California Fish and Game Code §3503, 3503.5, 3511, and 3513 prohibit the "take, possession, or destruction of birds, their nests or eggs." Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered "take." Such a take would also violate federal law protecting migratory birds (Migratory Bird Treaty Act).

All raptors (that is, hawks, eagles, owls) their nests, eggs, and young are protected under California Fish and Game Code (§3503.5). Additionally, "fully protected" birds, such as the white-tailed kite and golden eagle, are protected under California Fish and Game Code (§3511). "Fully protected" birds may not be taken or possessed (that is, kept in captivity) at any time.

7.4.1 Applicability to the Proposed Project

Raptors that are known to nest in the region of the project site and for which suitable nesting habitat is provided by the project site include Swainson's hawk, golden eagle, white-tailed kite, red-tailed hawk, red shouldered hawk, and western burrowing owl. Many common passerine birds also could nest on the project site. Preconstruction nesting surveys would have to be conducted for nesting birds to ensure that there is no direct take of these birds including their eggs, or young, during the construction of the proposed project. Any active nests that are found during preconstruction surveys would have to be avoided by the proposed project. Suitable non-disturbance buffers should be established around nest sites until the nesting cycle is complete. More specifics on nesting bird surveys and protection buffers are provided below in the Impacts and Mitigations section.

7.5 City of Antioch General Plan Biological Resources Policies

The City of Antioch General Plan Biological Resources Policies:

a. Comply with the Federal policy of no net loss of wetlands through avoidance and clustered development. Where preservation in place is found not to be feasible (such as where a road crossing cannot be avoided, or where shore stabilization or creation of shoreline trails must encroach into riparian habitats), require 1) on-site replacement of wetland areas, 2) off-site replacement, or 3) minimum ratio of one acre of replacement/restoration for each acre of impacted onsite habitat, such that the value of impacted habitat is replaced.

b. Preserve in place and restore existing wetlands and riparian resources along the San Joaquin River and other natural streams in the Planning Area, except where a need for structural flood protection is unavoidable.

c. Require appropriate setbacks adjacent to natural streams to provide adequate buffer areas ensuring the protection of biological resources, including sensitive natural habitat, special-status species habitats and water quality protection.

d. Through the project approval and environmental review processes, require new development projects to protect sensitive habitat areas, including, but not limited to, oak woodlands, riparian woodland, vernal pools, and *native* grasslands. Ensure the preservation in place of habitat areas found to be occupied by state and federally-protected species.

> If impacts to sensitive habitat areas are unavoidable, appropriate compensatory mitigation shall be required off-site within eastern Contra Costa County. Such compensatory mitigation shall be implemented through the provisions of a Resource Management Plan ("RMP") as described in Policy 10.3.2.e, except where, in the discretion of the Community Development Director, an RMP is not necessary or appropriate due to certain characteristics of the site and the project. Among the factors that are relevant to determining whether an RMP is necessary or appropriate for a given project are the size of the project and the project site, the location of the project (e.g., proximity to existing urban development or open space), the number and sensitivity of biological resources and habitats on the project site, and the nature of the project (e.g., density and intensity of development).
>
> Where preserved habitat areas occupy areas that would otherwise be graded as part of a development project facilitate the transfer of allowable density to other, non-sensitive portions of the site.

e. Limit uses within preserve and wilderness areas to resource-dependent activities and other uses compatible with the protection of natural habitats (e.g., passive recreation and public trails).

f. Through the project review process, review, permit the removal of healthy, mature oak trees on a case-by-case basis only where it is necessary to do so.

g. Preserve heritage trees throughout the Planning Area.

h. Within areas adjacent to preserve habitats, require the incorporation of native vegetation and avoid the introduction of invasive species in the landscape plans for new development.

i. Design drainage within urban areas so as to avoid creating perennial flows within intermittent streams to prevent fish and bullfrogs from becoming established within a currently intermittent stream.

j. Whenever a biological resources survey is undertaken to determine the presence or absence of a threatened or endangered species, or of a species of special concern identified by the U.S. Fish

and Wildlife Service or the California Department of Fish and Wildlife, require the survey to follow established protocols for the species in question prior to any final determination that the species is absent from the site.

7.5.1 APPLICABILITY TO THE PROPOSED PROJECT

The project site supports primarily agricultural fields and therefore would not be considered a sensitive habitat area. Consistent with the City of Antioch's Biological Resources Policies listed above, the proposed project is set back from the Sand Creek riparian corridor (separated from Sand Creek by the Sand Creek Buffer Area) and includes free span bridges to avoid filling aquatic resources.

7.6 City of Antioch Tree Ordinance

There are six categories of "trees" defined in the City of Antioch's Tree Ordinance.

ESTABLISHED TREE. This shall be any tree which is at least 10 inches in diameter, as measured four and one half feet above natural or finished grade.

INDIGENOUS TREE. This shall be a naturally growing tree of the following species:

- Blue Oak (*Quercus douglasii*)
- Valley Oak (*Quercus lobata*)
- Coast Live Oak (*Quercus agrifolia*)
- Canyon Live Oak (*Quercus chrysolepis*)
- Interior Live Oak (*Quercus wislizenii*)
- California Buckeye (*Aesculus californica*)
- California Bay (*Umbellularia californica*)

LANDMARK TREE. This shall be any tree which is at least 48 inches in diameter and/or in excess of 40 feet in height.

MATURE TREE. This shall be any tree which is at least 26 inches in diameter, as measured four and one-half feet above natural grade.

PROTECTED TREE. This shall be defined as any of the following:

(a) Any tree required to be preserved as a condition of an approval from a "regular development application" as defined by this section, and/or any tree that is shown to be preserved on an approved development plan as submitted by the applicant and subsequently approved by the city.
(b) All established indigenous trees as defined by this section.
(c) All street trees as defined by this section.
(d) All mature and landmark trees as defined by this section.

STREET TREE. This shall be any tree planted within either the public right-of-way and/or tree planting easement, where applicable.

Approval is required to remove any trees within the City of Antioch, as detailed below:

(A) Permit or development application. Except as provided below, it is unlawful to destroy or remove any established tree on any property within the city without either:

(1) Obtaining a tree removal permit from the Department of Parks, Leisure and Community Services; or

(2) Receiving approval to remove such trees as part of the regular development application process.

(B) Penalty. A person who either removes or destroys an established tree prior to obtaining the required permits and/or approvals, or deliberately damages an established tree so that its removal is then necessitated for public safety, is subject to the penalties of this chapter and code.

(C) Exceptions. The following trees may be removed without either a tree removal permit and/or regular development application:

(1) If the condition of any tree presents an immediate hazard to life and/or property its removal may be authorized by the City Engineer.

(2) Other than for protected trees as defined by this article, trees on developed residential properties may be removed without a permit.

7.6.1 Applicability to the proposed project

Installation of the two outfall structures on the banks of Sand Creek and installation of the two clear span bridges across Sand Creek may require removal of up to 12 trees. If any City protected trees are slated for removal, the project proponent will need to request a tree removal permit as part of the regular development application to the City. Since there are protected trees on the project site along Sand Creek, the following information will be provided with the regular development application to the City:

(1) A site plan showing the existing topography with location of all established trees, clearly labeling those trees which are proposed for either saving or removal.

(2) A description of all established trees on the property, including the size (in diameter), estimated height, species, and relative condition (i.e., healthy vs. in decline).

(3) A written statement requesting permission to remove the subject tree(s) providing the reason for the request.

All trees planted are to be California native trees that are found in Antioch in similar habitats to those habitats present on the project; for example, coast live oaks and valley oaks. *Accordingly, impacts to trees are regarded as potentially significant pursuant to the CEQA.* Mitigation could

be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA.

8. REGULATORY REQUIREMENTS PERTAINING TO WATERS OF THE UNITED STATES AND STATE

This section presents an overview of the criteria used by the Corps, the RWQCB, the State Water Resources Control Board (SWRCB), and the CDFW to determine those areas within a project area that would be subject to their regulation.

8.1 U.S. Army Corps of Engineers Jurisdiction and Permitting

8.1.1 Section 404 of the Clean Water Act

Congress enacted the Clean Water Act (CWA) "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (33 U.S.C. §1251(a)). Pursuant to Section 404 of the CWA (33 U.S.C. 1344), the Corps regulates the disposal of dredged or fill material into "waters of the United States" (33 CFR Parts 328 through 330). This requires project applicants to obtain authorization from the Corps prior to discharging dredged or fill materials into any water of the United States.

In the Federal Register "waters of the United States" are defined as, "...all interstate waters including interstate wetlands...intrastate lakes, rivers, streams (including intermittent streams), wetlands, [and] natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce..." (33 CFR Section 328.3).

Limits of Corps' jurisdiction:

(a) Territorial Seas. The limit of jurisdiction in the territorial seas is measured from the baseline in a seaward direction a distance of three nautical miles. (See 33 CFR 329.12)

(b) Tidal Waters of the United States. The landward limits of jurisdiction in tidal waters:

(1) Extends to the high tide line, or
(2) When adjacent non-tidal waters of the United States are present, the jurisdiction extends to the limits identified in paragraph (c) of this section.

(c) Non-Tidal Waters of the United States. The limits of jurisdiction in non-tidal waters:

(1) In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark, or
(2) When adjacent wetlands are present, the jurisdiction extends beyond the ordinary high water mark to the limit of the adjacent wetlands.
(3) When the water of the United States consists only of wetlands the jurisdiction extends to the limit of the wetland.

Section 404 jurisdiction in "other waters" such as lakes, ponds, and streams, extends to the upward limit of the OHWM or the upward extent of any adjacent wetland. The OHWM on a non-tidal water is:

- the "line on shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR Section 328.3[e]).

Wetlands are defined as: "...those areas that are inundated or saturated by surface or ground water at a frequency and duration to support a prevalence of vegetation adapted for life in saturated soil conditions" (33 CFR Section 328.8 [b]). Wetlands usually must possess hydrophytic vegetation (i.e., plants adapted to inundated or saturated conditions), wetland hydrology (e.g., topographic low areas, exposed water tables, stream channels), and hydric soils (i.e., soils that are periodically or permanently saturated, inundated or flooded) to be regulated by the Corps pursuant to Section 404 of the CWA.

8.1.1.1 Permitting Corps Jurisdictional Areas

To remain in compliance with Section 404 of the CWA, project proponents and property owners (applicants) are required to be permitted by the Corps prior to discharging to waters of the United States. In many cases, the Corps must visit a proposed project area (to conduct a "jurisdictional determination") to confirm the extent of area falling under their jurisdiction prior to authorizing any permit for that project area. Typically, at the time the jurisdictional determination is conducted, applicants (or their representative) will discuss the appropriate permit application that would be filed with the Corps for permitting the proposed impact(s) to "waters of the United States."

Pursuant to Section 404, the Corps normally provides two alternatives for permitting impacts to the type of waters of the United States found in the project area. The first alternative would be to use Nationwide Permit(s) (NWP). The second alternative is to apply to the Corps for an Individual Permit (33 CFR Section 235.5(2)(b)). The application process for Individual Permits is extensive and includes public interest review procedures (i.e., public notice and receipt of public comments) and must contain an "alternatives analysis" that is prepared pursuant to Section 404(b)(1) of the CWA (33 U.S.C. 1344(b)).

NWPs are a type of general permit administered by the Corps and issued on a nationwide basis that authorize minor activities that affect Corps regulated waters. Under NWP, if certain conditions are met, the specified activities can take place without the need for an individual or regional permit from the Corps (33 CFR, Section 235.5[c][2]). In order to use NWP(s), a project must meet 27 general nationwide permit conditions, and all specific conditions pertaining to the NWP being used (as presented at 33 CFR Section 330, Appendices A and C). It is also important to note that pursuant to 33 CFR Section 330.4(e), there may be special regional conditions or modifications to NWPs that could have relevance to individual proposed projects. Finally, pursuant to 33 CFR Section 330.6(a), Nationwide permittees may, and in some cases must,

request from the Corps confirmation that an activity complies with the terms and conditions of the NWP intended for use (*i.e.*, must receive "verification" from the Corps).

Prior to finalizing design plans, the applicant needs to be aware that the Corps maintains a policy of "no net loss" of wetlands (waters of the United States) from project area development. Therefore, it is incumbent upon applicants that propose to impact Corps regulated areas to submit a mitigation plan that demonstrates that impacted regulated areas would be recreated (*i.e.*, impacts would be mitigated). Typically, the Corps requires mitigation to be "in-kind" (i.e., seasonal wetlands would be filled, mitigation would include seasonal wetland mitigation), and at a minimum of a 1:1 replacement ratio (i.e., one acre or fraction there of recreated for each acre or fraction thereof lost). Often a 2:1 replacement ratio is required if the Permittee is responsible for the mitigation. In some cases, the Corps allows "out-of-kind" mitigation if the compensation site has greater value than the impacted site. Finally, there are many Corps approved wetland mitigation banks where wetland mitigation credits can be purchased by applicants to meet mitigation compensation requirements. Mitigation banks have defined service areas and the Corps may only allow their use when a project would have minimal impacts to wetlands.

8.1.2 Applicability to the Proposed Project

On April 8, 2019, M&A biologists conducted a wetland delineation of the project site. The draft wetland delineation map is provided as Sheet 1. Sand Creek, an intermittent creek, flows west to east along the northern boundary of the project site. Sand Creek is a tributary to Marsh Creek, which is a tributary to the San Joaquin River, a Traditional Navigable Water of the U.S. Therefore, Sand Creek would be regulated as "waters of the U.S." pursuant to Section 404 of the CWA.

A small portion of this creek will be affected by the proposed construction of two stormwater outfall structures on the banks of Sand Creek. The two proposed outfall structures will result in permanent impacts (fill) to 600 square feet (0.0137-acre) of Corps regulated other waters in Sand Creek, as illustrated on the Creekside Impacts Exhibits, prepared by CBG dated July 9, 2019 (Attachment B). The remaining portions of Sand Creek will be permanently preserved in the 400-ft wide (23.7-acre) Sand Creek Buffer Area along Sand Creek.

In addition, there is an ephemeral drainage channel and some small pools east of the project site, along the toe of the eastern hillside that would also be regulated as "waters of the U.S." pursuant to Section 404 of the CWA. A culverted road crossing is proposed over this drainage to provide access to the stormwater detention basins in the northeastern corner of the project site. The culverted crossing will result in permanent impacts (fill) to 1,380 square feet (0.0316-acre) of Corps regulated other waters of the U.S., as illustrated on the Creekside Impacts Exhibits, prepared by CBG dated July 9, 2019 (Attachment B).

Since the proposed project will fill less than 0.5-acre of waters of the U.S., the proposed project likely meets conditions to use NWPs as administered by the Corps pursuant to Section 404 of the CWA. The Corps will likely authorize use of NWP 7 (outfalls), NWP 33 (access and dewatering), NWP 14 (Linear transportation projects), and NWP 29 (Residential Development). A notification (i.e., known as a Preconstruction Notice) must be filed with the Corps' District Engineer to obtain authorization to use these NWPs.

8.2 California Regional Water Quality Control Board (RWQCB)

8.2.1 Section 401 of the Clean Water Act

The SWRCB and RWQCB regulate activities in "waters of the State" (which includes wetlands) through Section 401 of the CWA. While the Corps administers a permitting program that authorizes impacts to waters of the United States, including wetlands and other waters, any Corps permit authorized for a proposed project would be inoperative unless it is a NWP that has been certified for use in California by the SWRCB, or if the RWQCB has issued a project specific certification of water quality. Certification of NWPs requires a finding by the SWRCB that the activities permitted by the NWP will not violate water quality standards individually or cumulatively over the term of the permit (the term is typically for five years). Certification must be consistent with the requirements of the federal CWA, the CEQA, the CESA, and the SWRCB's mandate to protect beneficial uses of waters of the State. Any denied (i.e., not certified) NWPs, and all Individual Corps permits, would require a project specific RWQCB certification of water quality.

8.2.2 Applicability to the Proposed Project

Any Section 404 permit authorized by the Corps for the project will be subject to Section 401 water quality certification by the RWQCB, and also may be subject to the state's Porter-Cologne Water Quality Control Act (see below).

8.2.3 Porter-Cologne Water Quality Control Act

The uncontrolled discharge of pollutants into impaired water bodies is considered particularly detrimental. According to the EPA, sediment is one of the most widespread pollutants contaminating U.S. rivers and streams. Sediment runoff from construction sites is 10 to 20 times greater than from agricultural lands and 1,000 to 2,000 times greater than from forest lands (EPA 2005). Consequently, the discharge of stormwater from large construction sites is regulated by the RWQCB under the federal CWA and California's Porter-Cologne Water Quality Control Act.

The Porter-Cologne Water Quality Control Act, Water Code § 13260, requires that any person discharging waste, or proposing to discharge waste, that could affect the waters of the State to file a report of discharge with the RWQCB through an application for waste discharge (Water Code Section 13260(a)(1). The term "waters of the State" is defined as any surface water or groundwater, including saline waters, within the boundaries of the State (Water Code § 13050(e)). It should be noted that pursuant to the Porter-Cologne Water Quality Control Act, the RWQCB also regulates "isolated wetlands," or those wetlands considered to be outside of the Corps' jurisdiction pursuant to the SWANCC decision (see Corps Section above).

The RWQCB generally considers filling in waters of the State to constitute "pollution." Pollution is defined as an alteration of the quality of the waters of the state by waste that unreasonably affects its beneficial uses (Water Code §13050(1)). In practice, the RWQCB's litmus test for determining if a project should be regulated pursuant to the Porter-Cologne Water Quality Control Act is if the action could result in any "threat" to water quality.

The RWQCB requires a complete pre- and post-development Best Management Practices (BMPs) Plan of any portion of the project site that is developed. This means that a water quality treatment plan for the pre- and post-developed project site must be prepared and implemented. Preconstruction requirements must be consistent with the requirements of the National Pollutant Discharge Elimination System (NPDES). That is, a Stormwater Pollution Prevention Plan (SWPPP) must be developed prior to the time that a site is graded (see NPDES section below). In addition, a post-construction BMPs Plan, or a Storm Water Management Plan (SWMP) must be developed and incorporated into any site development plan.

8.2.4 Applicability to The Proposed Project

Since any "threat" to water quality could conceivably be regulated by the RWQCB pursuant to the Porter-Cologne Water Quality Control Act, care will be required when constructing the proposed project to be sure that adequate pre-and post-construction BMPs are incorporated into the project implementation plans.

8.3 California Department of Fish and Wildlife Protections

8.3.1 Section 1602 of California Fish and Game Code

Pursuant to Section 1602 of the California Fish and Game Code: "An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, unless all of the following occur:

(1) CDFW receives written notification regarding the activity in the manner prescribed by CDFW. The notification shall include, but is not limited to, all of the following:
   (A) A detailed description of the project's location and a map.
   (B) The name, if any, of the river, stream, or lake affected.
   (C) A detailed project description, including, but not limited to, construction plans and drawings, if applicable.
   (D) A copy of any document prepared pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.
   (E) A copy of any other applicable local, state, or federal permit or agreement already issued.
   (F) Any other information required by CDFW" (Fish & Game Code 2014).

Please see Section 1602 of the current California Fish and Game Code for further details.

Please also note that while not stated in the regulations above, CDFW typically considers its jurisdiction to include riparian vegetation (that is, the trees and bushes growing along the stream). Thus, any proposed activity in a natural stream channel that would substantially adversely affect an existing fish and/or wildlife resource, including its riparian vegetation, would require advance notification to CDFW and also may include entering into a Streambed Alteration Agreement (SBAA) with CDFW prior to commencing with work in the stream. However, prior to authorizing such permits, CDFW typically reviews an analysis of the expected biological impacts, any

proposed mitigation plans that would be implemented to offset biological impacts and engineering and erosion control plans.

8.3.2 APPLICABILITY TO PROPOSED PROJECT

Any project modifications to Sand Creek and the ephemeral drainage channel that flows into Sand Creek would be subject to CDFW's jurisdiction pursuant to Section 1602 of the California Fish and Game Code. Before making any substantial changes to the bed or bank of Sand Creek or diverting/obstructing the natural flow of the creek or the ephemeral drainage channel, the project proponent will provide CDFW with written notification pursuant to Section 1602 the Fish and Game Code.

It should also be noted that prior to issuance of any permit from the CDFW this agency will require submittal of a Notice of Determination with proof that the Fish and Game Filing Fee was paid, indicating that the City of Antioch completed a review of the proposed project pursuant to CEQA.

9. STATE WATER RESOURCES CONTROL BOARD (SWRCB)/RWQCB – STORM WATER MANAGEMENT

9.1 Construction General Permit

While federal CWA NPDES regulations allow two permitting options for construction related stormwater discharges (individual permits and General Permits), the SWRCB has elected to adopt only one statewide Construction General Permit at this time that will apply to all stormwater discharges associated with construction activity, except from those on Tribal Lands, in the Lake Tahoe Hydrologic Unit, and those performed by the California Department of Transportation (CalTrans).

The Construction General Permit requires all dischargers where construction activity disturbs greater than one acre of land or those sites less than one acre that are part of a common plan of development or sale that disturbs more than one acre of land surface to:

1. Develop and implement a SWPPP which specifies BMPs that will prevent all construction pollutants from contacting stormwater with the intent of keeping all products of erosion from moving off site into receiving waters.

2. Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation. Achieve quantitatively-defined (i.e., numeric) pollutant-specific discharge standards, and conduct much more rigorous monitoring based on the project's projected risk level.

3. Perform inspections of all BMPs.

This Construction General Permit is implemented and enforced by the nine RWQCBs. It is also enforceable through citizens' suits and represents a dramatic shift in the SWRCB's approach to regulating new and redevelopment sites, imposing new affirmative duties and fixed standards on builders and developers.

Types of Construction Activity Covered by the Construction General Permit

- clearing,
- grading,
- disturbances to the ground such as stockpiling, or excavation that results in soil disturbances of at least one acre or more of total land area.

Construction activity that results in soil disturbances to a smaller area would still be subject to this General Permit if the construction activity is part of a larger common plan of development that encompasses greater than one acre of soil disturbance, or if there is significant water quality impairment resulting from the activity.

Construction activity does not include:

- routine maintenance to maintain original line and grade,
- hydraulic capacity, or original purpose of the facility,
- nor does it include emergency construction activities required to protect public health and safety.

The Construction General Permit includes several "post-construction" requirements. These requirements entail that site designs provide no net increase in overall site runoff and match pre-project hydrology by maintaining runoff volume and drainage concentrations. To achieve the required results where impervious surfaces such as roofs and paved surfaces are being increased, developers must implement non-structural off-setting BMPs, such as landform grading, site design BMPs, and distributed structural BMPs (bioretention cells, rain gardens, and rain cisterns). This "runoff reduction" approach is essentially a State Water Board-imposed regulatory requirement to implement Low Impact Development ("LID") design features. Volume that cannot be addressed using non-structural BMPs must be captured in structural BMPs that are approved by the RWQCB.

Improving the quality of site runoff is necessary to improve water quality in impaired and threatened streams, rivers, and lakes (that is, water bodies on the EPA's 303(d) list). The RWQCB prioritizes the water bodies on the 303(d) list according to potential impacts to beneficial uses. Beneficial uses can include a wide range of uses, such as nautical navigation; wildlife habitat; fish spawning and migration; commercial fishing, including shellfish harvesting; recreation, including swimming, surfing, fishing, boating, beachcombing, and more; water supply for domestic consumption or industrial processes; and groundwater recharge, among other uses. The State is required to develop action plans and establish Total Maximum Daily Loads (TMDLs) to improve water quality within these impaired water bodies. The TMDL is the quantity of a pollutant that can be safely assimilated by a water body without violating the applicable water quality standards.

Pursuant to the CWA, the RWQCB regulates construction discharges under the NPDES. The project sponsor of construction or other activities that disturb more than 1 acre of land must

obtain coverage under NPDES Construction General Permit Order 2009-0009-DWQ, administered by the RWQCB[1].

9.1.1 Applicability to The Proposed Project

Since the project will impact greater than one acre of land, it must obtain coverage under the General Construction Permit. To obtain coverage under the SWRCB administered Construction General Permit, the project proponent (typically through its civil engineer) must electronically file a number of permit-related compliance documents (Permit Registration Documents (PRDs), including a Notice of Intent (NOI), a risk assessment, site map, signed certification, SWPPP, Notice of Termination (NOT), NAL exceedance reports, and other site-specific PRDs that may be required. The PRDs must be prepared by a Qualified SWPPP Practitioner (QSP) or Qualified SWPPP Developer (QSD) and filed by a Legally Responsible Person (LRP) on the RWQCB's Stormwater Multi-Application Report Tracking System (SMARTS). (QSDs are typically civil engineers, professional hydrologists, engineering geologists, or landscape architects.) Once filed, these documents become immediately available to the public for review and comment. At a minimum, the SWPPP shall identify BMPs for implementation during project construction that are in accordance with the applicable guidance and procedures contained in the California Stormwater Quality Association's *California Stormwater Best Management Practices Handbook* (2015).

9.2 RWQCB Municipal Storm Water Permitting Programs

The federal CWA was amended in 1987 to address urban stormwater runoff pollution of the nation's waters. In 1990, the EPA promulgated rules establishing Phase 1 of the NPDES stormwater program. The Phase 1 program for Municipal Separate Storm Sewer System (MS4s) requires operators that serve populations of 100,000 or greater to implement a stormwater management program to control polluted discharges from these MS4s. While Phase 1 of the municipal stormwater program has focused on large urban areas, Phase 2 of the municipal stormwater program was promulgated by the EPA for smaller urban areas including non-traditional Small MS4s, which are governmental facilities such as military bases, public campuses, and prison and hospital complexes.

MS4 permits require the discharger (or dischargers that are permitted by the MS4 permittees) to develop and implement a SWMP with the goal of reducing the discharge of pollutants to the maximum extent practicable (MEP). MEP is the performance standard specified in Section 402(p) of the CWA. The management programs specify what BMPs will be used to address certain program areas. The program areas include public education and outreach; illicit discharge detection and elimination; construction and post-construction; and good housekeeping for municipal operations. In general, medium and large municipalities are required to conduct chemical monitoring, though small municipalities are not.

[1] CGP Order 2009-0009-DWQ remains in effect, but has been amended by CGP Order 2009-0014-DWQ, effective February 14, 2011, and CGP Order 2009-0016-DWQ, effective July 17, 2012. The first amendment merely provided additional clarification to Order 2009-0009-DWQ, while Order 2009-0016-DWQ eliminated numeric effluent limits on pH and turbidity (except in the case of active treatment systems), in response to a legal challenge to the original order.

9.2.1 NPDES C.3 REQUIREMENTS

The NPDES C.3 requirements went into effect for any project (public or private) that is "deemed complete" by the City or County (Lead Agency) on or after February 15, 2005, and which will result in the creation or replacement (other than normal maintenance) of at least 10,000 square feet of impervious surface area (roofs, streets, patios, parking lots, etc. Provision C.3 requires the onsite treatment of stormwater prior to its discharge into downstream receiving waters. Note that these requirements are in addition to the existing NPDES requirements for erosion and sedimentation controls during project construction that are typically addressed through acquisition of coverage under the SWRCB administered Construction General Permit. The C.3 requirements are typically required to be implemented by MS4 permittees (and their constituencies).

Projects subject to Provision C3 must include the capture and onsite treatment of all stormwater from the site prior to its discharge, including rainwater falling on building rooftops. Project applicants are required to implement appropriate source control and site design measures and to design and implement stormwater treatment measures in order to reduce the discharge of stormwater pollutants to the *maximum extent practicable.* While the CWA does not define "maximum extent practicable," the Stormwater Quality Management Plans required as a condition of the municipal NPDES permits identify control measures (i.e., BMPs) and, where applicable, performance standards, to establish the level of effort required to satisfy the maximum extent practicable criterion. It is ultimately up to the professional judgment of the reviewing municipal staff in the individual jurisdictions to determine whether a project's proposed stormwater controls will satisfy the maximum extent practicable criterion. However, there are numeric criteria used to ensure that treatment BMPs have been adequately sized to accommodate and treat a site's stormwater. The C3 requirements are quite extensive, and their complete explanation is not provided here. However, the following are minimums that should be understood and adhered to:

- The applicant must provide a detailed and realistic site design *and impervious surface area calculations*. This site design *and calculations* will be used by the Lead Agency (County or City) to determine/*verify* the amount of impervious surface area that is being created or replaced. It should include all proposed buildings, roads, walkways, parking lots, landscape areas, etc., that are being created or redeveloped. If large (greater than 10,000 square feet) lots are being created an effort will need to be made to determine the total impervious surface area that could be created on that parcel. For example, if only a portion of the lot is shown as a "building envelope" then the lead agency will need to consider that a driveway will have to be constructed to access the envelope and that the envelope will then be developed as shown. If the C.3 thresholds are met (creation/redevelopment of 10,000 square feet of impervious surface area), a Storm Water Control Plan (SWCP) (if required by the Lead Agency, or whatever steps for compliance with Provision C3 are required locally) must accompany the application.

- If a SWCP is required by the Lead Agency for the project it must be stamped by a Licensed Civil Engineer, Architect, or Landscape Architect.

9.2.2 APPLICABILITY TO THE PROPOSED PROJECT

The Cities of Contra Costa County are organized as a collaborative to work on some elements of their stormwater permit compliance. This collaborative program is called the Contra Costa Clean Water Program. Each of the Dischargers is individually responsible for adopting and enforcing ordinances, implementing assigned BMPs to prevent or reduce pollutants in stormwater, and providing funds for capital, operation, and maintenance expenditures necessary to implement such BMPs for the storm drain system that it owns and/or operates.

In Contra Costa County, for private development projects such as the proposed project, the Department of Conservation and Development is responsible for determining if the NPDES C.3 thresholds are met. If the C.3 thresholds are met (creation/redevelopment of 10,000 square feet of impervious surface area), a SWCP (based on a checklist) is submitted as part of the project approval process.

Storm drainage from the developed portions of the project site (Hillcrest Avenue and the neighborhoods) will be directed to a detention/water quality basin constructed on the eastern portion of the project site and will discharge into Sand Creek via an outfall structure constructed within the south side of an outfall facility constructed by the Vineyards at Sand Creek Project. The western hillslope drainage will be caught prior to it reaching Hillcrest Avenue and directed to the detention basins to the east.

A SWMP shall be prepared by the project civil engineer and will be submitted to the City of Antioch for their review to verify compliance with the City's NPDES MS4 permit requirements. The SWMP will provide an analysis of post-construction stormwater controls incorporating both hydromodification and treatment analyses, and BMPs that will be constructed to reduce stormwater pollution. The BMPs will ensure that the proposed project does not result in degradation of receiving waters and that it otherwise remains in compliance with the Porter-Cologne Water Quality Control Act/ MS4 requirements. The City of Antioch's NPDES compliance manager will review the SWCP to determine if it is sufficient to meet the proposed project's detention, hydromodification, and water quality requirements.

10. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) REGULATIONS

A CEQA lead agency must determine if a proposed activity constitutes a project requiring further review pursuant to the CEQA. Pursuant to CEQA, a lead agency would have to determine if there could be significant adverse impacts to the environment from a proposed project. Typically, if within the city limits, the city would be the CEQA lead agency. If a discretionary permit (i.e., conditional use permit) would be required for a project (e.g. an occupancy permit must be issued), the lead agency typically must determine if there could be significant environmental impacts. This is usually accomplished by an "Initial Study." If there could be significant environmental impacts, the lead agency must determine an appropriate level of environmental review prior to approving and/or otherwise permitting the impacts. In some cases, there are "Categorical Exemptions" that apply to the proposed activity; thus, the activity is exempt from CEQA. The Categorical Exemptions are provided in CEQA. There are also Statutory Exemptions in CEQA that must be investigated for any proposed project. If the project is not exempt from CEQA, the lowest level of review typically reserved for projects with no

significant effects on the environment would be for the lead agency to prepare a "Negative Declaration." If a proposed project would have only minimal impacts that can be mitigated to a level of no significance pursuant to the CEQA, then a "Mitigated Negative Declaration" is typically prepared by the lead agency. Finally, those projects that may have significant effects on the environment, or that have impacts that can't be mitigated to a level considered less than significant pursuant to the CEQA, typically must be reviewed via an Environmental Impact Report (EIR). All CEQA review documents are subject to public circulation, and comment periods.

Section 15380 of CEQA defines "endangered" species as those whose survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors. "Rare" species are defined by CEQA as those who are in such low numbers that they could become endangered if their environment worsens; or the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in FESA. The CEQA Guidelines also state that a project will normally have a significant effect on the environment if it will "substantially affect a rare or endangered species of animal or plant or the habitat of the species." The significance of impacts to a species under CEQA, therefore, must be based on analyzing actual rarity and threat of extinction to that species despite its legal status or lack thereof.

10.1.1 Applicability to the Proposed Project

This report has been prepared as a Biology Section that is suitable for incorporation by the CEQA lead agency (in this case City of Antioch) into a CEQA review document such as a Mitigated Negative Declaration or an EIR. This document addresses potential impacts to species that would be defined as endangered or rare pursuant to Section 15380 of the CEQA.

11. IMPACTS ANALYSIS

Below the criteria used in assessing impacts to Biological Resources is presented.

11.1 Significance Criteria

A significant impact is determined using CEQA and CEQA Guidelines. Pursuant to CEQA §21068, a significant effect on the environment means a substantial, or potentially substantial, adverse change in the environment. Pursuant to CEQA Guideline §15382, a significant effect on the environment is further defined as 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 historical or aesthetic significance. Other Federal, State, and local agencies' considerations and regulations are also used in the evaluation of significance of proposed actions.

Direct and indirect adverse impacts to biological resources are classified as "significant," "potentially significant," or "less than significant." Biological resources are broken down into four categories: vegetation, wildlife, threatened and endangered species, and regulated "waters of the United States" and/or stream channels.

11.1.1 THRESHOLDS OF SIGNIFICANCE

11.1.1.1 Plants, Wildlife, Waters

In accordance with Appendix G (Environmental Checklist Form) of the CEQA Guidelines, implementing the project would have a significant biological impact if it 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 CDFW or USFWS.

- 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 CDFW or USFWS.

- Have a substantial adverse effect on federally protected "wetlands" as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, 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.

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

11.1.1.2 Waters of the United States and State.

Pursuant to Section 404 of the CWA (33 U.S.C. 1344), the Corps regulates the discharge of dredged or fill material into waters of the United States, which includes wetlands, as discussed in the bulleted item above, and also includes "other waters" (stream channels, rivers) (33 CFR Parts 328 through 330). Substantial impacts to Corps regulated areas on a project site would be considered a significant adverse impact. Similarly, pursuant to Section 401 of the CWA, and to the Porter-Cologne Water Quality Control Act, the RWQCB regulates impacts to waters of the state. Thus, substantial impacts to RWQCB regulated areas on a project site would also be considered a significant adverse impact.

11.1.1.3 Stream Channels

Pursuant to Section 1602 of the California Fish and Game Code, CDFW regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream which CDFW typically considers to include riparian vegetation. Any proposed activity that would result in substantial modifications to a natural stream channel would be considered a significant adverse impact.

12. IMPACT ASSESSMENT AND PROPOSED MITIGATION

In this section we discuss potential impacts to sensitive biological resources including special-status plant species, animal species, and waters of the United States and/or State. We follow each impact with a mitigation prescription that when implemented would reduce impacts to the greatest extent possible.

12.1 Impact BIO-1. Development of the proposed project would have a potentially significant impact on rare plants

No impacts would occur to State or federally listed plant species. San Joaquin spearscale, a CNPS list 1B.2 species, was identified adjacent to the project site in 2006 (CNDDB Occurrence No. 104). In addition, there are several rare plant species that thrive in disturbed areas and have a low potential to occur on the project site. These include big tarplant, Congdon's tarplant, Carquinez goldenbush, showy golden madia, large-flowered fiddleneck, Hoover's cryptantha, caper-fruited tropidocarpum, heartscale, brittlescale, lesser saltbush, alkali milkvetch, Mt. Diablo fairy lantern, diamond-petaled California poppy, California alkali grass, shining navarretia, Mount Diablo buckwheat, and recurved larkspur (Table 3). None of these species were detected on the project site in 2006 or 2019. Regardless, in the absence of current surveys, *impacts to rare plants are regarded as potentially significant pursuant to the CEQA.*

Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to CEQA.

12.2 Mitigation Measure BIO-1. Mitigation for potentially significant impacts to rare plants

The project proponent will have a qualified biologist conduct rare plant surveys within one year of the anticipated groundbreaking for the proposed project. The surveys will be conducted following the CDFW (2018), USFWS (2000), and CNPS (2001), or the most current published survey guidelines. During the surveys, qualified botanists will search for all the plants listed in Table 3 that have potential to occur on the project site, and all plants that are considered locally rare as listed in the East Bay Chapter of the CNPS Database of Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties for the Marsh Creek/Lone Tree Valley area. Project construction shall not be initiated until all special-status plant surveys are completed and the mitigation is implemented, if necessary and required prior to starting construction.

A special-status plant survey report that includes the methods used, survey participants, and findings shall then be prepared and submitted to the City no more than 30 days following the completion of the final site visit. A record of any special-status plant species identified within the project site during the preconstruction surveys must be submitted to the CNDDB. If no special-status plant populations are found on the site during the appropriately timed surveys, then no additional mitigation is required. If construction is not started within two years after the rare plant surveys are completed, the City may require additional rare plant surveys.

If special-status plants are observed on the site during the survey, the populations shall be avoided to the maximum degree possible during project development and a *Mitigation and Monitoring Plan* shall be prepared detailing the measures to be implemented to avoid the plant

population. Measures shall include establishment of appropriate buffers during construction, fencing of the population prior to and during construction, and regular monitoring of the preserved population by a biologist during and after construction activities. The Mitigation and Monitoring Plan shall be implemented prior to the initiation of grading. Applicant will acquire any necessary permits prior to impacting rare or listed plants.

Implementation of these mitigation measures would reduce impacts to special-status plant species to a level considered less than significant pursuant to CEQA.

12.3 Impact BIO-2. Development of the proposed project would have a significant impact on California red-legged frogs

California red-legged frogs are protected pursuant to the FESA as a federally listed threatened species. In 2005, adult California red-legged frogs were observed in Sand Creek 0.7-mile upstream of the project site (CNDDB Occurrence No. 933) and in 2013 numerous California red-legged frogs and tadpoles were found within a section of Sand Creek located approximately 0.25-mile upstream of the project site during work associated with the Upper Sand Creek Detention Basin (from USFWS Biological Opinion for the Vineyards at Sand Creek Development Project). Consequently, the USFWS regards Sand Creek as occupied habitat of the California red-legged frog. As Sand Creek is regarded as occupied, lands adjacent to the creek including the project site constitute potential upland dispersal habitat for this frog. Therefore, the proposed project will impact approximately 58.6 acres of potential California red-legged frog dispersal habitat, and offsite grading will temporarily impact approximately 11 acres of potential California red-legged frog dispersal habitat. In addition, installation of the two stormwater outfall structures on the banks of Sand Creek will result in impacts to known occupied habitat for this species.

Accordingly, impacts to California red-legged frog are regarded as significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA.

12.4 Mitigation Measure BIO-2. Mitigation for significant impacts to California red-legged frogs.

To ensure that implementation of project site grading and the installation of the outfall structures on the banks of Sand Creek will not injure, kill, or harass an individual California red-legged frog, the following mitigation measures will be implemented:

1) An education program will be conducted by a qualified biologist to explain the endangered species concerns to contractors/operators working at the project site. This education/training program will include a description of the frog and its habitat, a review of the Endangered Species Act and the federal listing of the frog, the general protection measures to be implemented to protect the frog and minimize take, and a delineation of the limits of the work area.

2) The work areas adjacent to Sand Creek will be isolated with suitable wildlife exclusion fencing (see below) that would block the movement of California red-legged frogs from

entering the work areas. The wildlife exclusion fence will also prevent mammals migrating along Sand Creek from entering the project site. This fence will be installed along the northern border of the project site, adjacent to the Sand Creek Buffer Area, prior to the time any site grading or vegetation removal activities are implemented. The fence will remain in place during site grading or other construction-related activities and will prevent frogs and wildlife from entering the project site work areas.

While normally California red-legged frog exclusion fencing often consists of silt fencing, owing to the duration of project construction, the project proponent may install a more weather resilient fence that is durable enough to remain in place for the duration of construction, such as a commercially available exclusion fencing (e.g. ERTEC Fence). Fencing will be installed by staking the route of the wildlife exclusion fencing in a 4-inch-deep trench. Then, the bottom of the fence would be firmly seated in the trench. The project proponent may replace the wildlife exclusion fencing during construction with permanent fencing, approved by the City.

3) A qualified biologist will be onsite when grading activities occur within 300 feet of Sand Creek to conduct daily inspections of the fencing and to otherwise ensure that stranded animals are salvaged and relocated back to the stream channel. The biological monitor will be responsible for ensuring that the wildlife exclusion fencing is not compromised and shall notify the onsite contractor representative when fencing needs to be repaired.

4) All construction work in Sand Creek associated with the outfall structures will be scheduled for the dry season (May 15 through October 15) and when Sand Creek is dry or there is reduced flow in this creek. Any necessary in-drainage work when there are flows will be isolated from flows via the installation of temporary coffer dams that have flow-through bypass pipes ensuring that flows pass by the stormwater outfall work areas. Flows will be diverted around isolated work areas either by gravity flow or, if necessary, by pumping water around the work area. No silty water would be allowed to reenter the tributary below any in-drainage work area. Methods and materials will be adapted in the field to match the size, shape, and anticipated flow volume of the drainage, and will be pre-approved by the biological monitor. All diversions will conform to the following provisions:

    - A qualified 10(a)(1)(A) biologist will conduct preconstruction surveys for California red-legged frog prior to isolating any work area within Sand Creek. If any frogs are found in the work area, the USFWS will be notified, and if the USFWS authorizes relocation, the frogs will be moved from the two stormwater outfall work areas, up or downstream in Sand Creek to appropriate aquatic habitats. Upon completion of the survey, if the outfall construction areas must be dewatered, coffer dams may be installed. Any isolated water shall be dip-netted or as appropriate, seined by the biologist to search for frogs prior to pumping water out of the isolated work areas. The project biological monitor will be present during all in-drainage work. Dewatered work areas shall not result in stranded aquatic wildlife.

- Drainage diversion will be practiced only where deemed unavoidable by the proposed project engineer and biological monitor.
- Diversion will be limited to the minimum time period necessary to complete the work and restore the channel.
- Construction equipment will work from above the top-of-bank. There will be no vehicle passage, vehicle parking, or materials storage below the top-of-bank.
- All in-drainage and diversion work plans will reflect and incorporate standard erosion control measures and BMPs as prescribed in the project's SWPPP.
- In certain cases where water seeps into the dewatered area, sump pits may be excavated in the work area and seepage water would then be pumped back upstream behind the coffer dam. All discharged water will be silt free. If silt is a problem, water will be pumped through a silt sock into baker tank(s) prior to discharge back into the channel.
- All downstream flows will be maintained throughout the period that coffer dams are installed.
- The entire work area below the top-of-bank, including the coffer dam location, will be restored to the approximate pre-construction contours and will be stabilized as necessary to withstand the expected high-water flows. All dam materials will be completely removed from the channel when work is complete and will not be disposed of in or near the channel.
- All trash that might attract predators to the project site will be properly contained and removed from the site and disposed of regularly. All construction debris and trash will be removed from the site when construction activities are complete.
- All fueling and maintenance of equipment and vehicles, and staging areas will be at least 60 feet from Sand Creek. The construction personnel will ensure that contamination of California red-legged frog habitat does not occur and will have a plan to promptly address any accidental spills.

5) To mitigate for permanent impacts to 58.6 acres of California red-legged frog dispersal habitat, the project proponent shall preserve dispersal habitat adjacent to occupied California red-legged frog habitat, or as otherwise approved by USFWS, at a minimum of a 1:1 impacts to replacement. Protection shall be via the purchase of the mitigation land in fee title or via recordation of a conservation easement over the mitigation land. In lieu of this mitigation, the project proponent may purchase California red-legged frog credits at a 1:1 ratio from a USFWS-approved mitigation bank.

6) If mitigation credits are not used, prior to the start of construction, the project proponent will record a conservation easement over the mitigation property preserving it in perpetuity as wildlife habitat. The easement will be granted to a qualified conservation organization as defined by Section 815.3 of the California Civil Code. The project proponent will prepare a habitat management plan that addresses management of the mitigation land that inures to the benefit of the California red-legged frog and shall

submit the plan to the City of Antioch prior to the start of construction. The project proponent will also establish an endowment fund, or other funding mechanism to provide for the long-term management, maintenance, and monitoring of the mitigation site.

The project proponent may satisfy this mitigation by providing the City of Antioch with a copy of a biological opinion issued by the USFWS that includes these, or other functionally equivalent, habitat preservation measures.

Implementation of these mitigation measures would reduce impacts to the California red-legged frog to a level considered less than significant pursuant to CEQA.

12.5 Impact BIO-3. Development of the proposed project would have a significant impact on California tiger salamander.

California tiger salamander, a state-listed species, is known to occur 0.25-mile south of the project site (CNDDB Occurrence No. 856). It was also found during work being conducted in the Upper Sand Creek Detention Basin located approximately 0.25-mile west of the project site (from USFWS Biological Opinion for the Vineyards at Sand Creek Development Project). While CTS could conceivably disperse or migrate to the project site from these known record locations, the farmed condition of the project site presumably would reduce over-summering opportunities. Regardless, based upon this species known dispersal distances of up to 1.3 miles, CDFW will consider the project site as migration/dispersal habitat for the California tiger salamander.

While there is no California tiger salamander breeding habitat on the project site, the proposed project will impact up 58.6 acres of potential California tiger salamander migration/over-summering habitat, and offsite grading will result in additional temporary impacts to 11 acres of potential California tiger salamander migration/over-summering habitat.

Impacts to California tiger salamander migration/over-summering habitat is regarded as significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA.

12.6 Mitigation Measure BIO-3. Mitigation for significant impacts to California tiger salamander.

To mitigate for the permanent impacts to 58.6 acres of potential California tiger salamander migration/over-summering habitat, the project proponent shall compensate for impacted California tiger salamander migration/over-summering habitat at a minimum of a 1:1 impacts to replacement ratio. Mitigation land shall be permanently protected land within the Central California DPS range of the California tiger salamander within 1.3 miles of a known breeding site, or as otherwise approved by CDFW and USFWS. Protection shall be via the purchase of the mitigation land in fee title or via recordation of a conservation easement over the mitigation land. In lieu of this mitigation, the project proponent may purchase California tiger salamander credits at a 1:1 ratio from a approved mitigation bank.

If mitigation credits are not used, prior to the start of construction, the project proponent will record a conservation easement over the mitigation property preserving it in perpetuity as

wildlife habitat. The easement will be granted to a qualified conservation organization as defined by Section 815.3 of the California Civil Code. The project proponent will prepare a habitat management plan that addresses management of the mitigation land that inures to the benefit of the California tiger salamander and shall submit the plan to the City of Antioch prior to the start of construction. The project proponent will also establish an endowment fund, or other funding mechanism to provide for the long-term management, maintenance, and monitoring of the mitigation site.

The project proponent may satisfy this mitigation by providing the City of Antioch with a copy of a biological opinion issued by the USFWS and a CDFW incidental take permit or consistency determination that includes these, or other functionally equivalent, habitat preservation measures.

Implementation of the mitigation measures above would reduce potential impacts to California tiger salamander to a level considered less than significant pursuant to CEQA.

12.7 Impact BIO-4. Development of the proposed project would have a potentially significant impact on western pond turtles.

The western pond turtle is a CDFW designated species of special concern. Sand Creek provides potentially suitable dispersal habitat for the western pond turtle. Installation of the outfall structures on the banks of Sand Creek may result in temporary impacts to western pond turtle.

Accordingly, impacts to western pond turtle are regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA.

12.8 Mitigation Measure BIO-4. Mitigation for potentially significant impacts to western pond turtle.

A qualified biologist will conduct a preconstruction survey of the two stormwater outfall work areas in Sand Creek, and if a western pond turtle is identified in the work area, the turtle will be relocated to suitable habitat downstream. The work areas adjacent to Sand Creek will be isolated with exclusion fencing in accordance with Mitigation Measure BIO-2 that will prevent western pond turtle from entering the work site and accidentally being harmed by construction activities.

The deeply incised channel with near vertical side slopes makes it very unlikely that a western pond turtle would climb up onto the project site to nest. As such, no potential nesting sites are likely to be affected by the proposed project. Regardless, preconstruction surveys for turtle nest sites in uplands adjacent to suitable aquatic habitat during spring and summer months will be conducted within 30 days prior to beginning any activities. If no nests are found, no further consideration for western pond turtle nests is warranted. If nest sites are located during preconstruction surveys adjacent to a proposed work area, the nest site plus a 50-foot buffer around the nest site shall be fenced where it intersects a project work area to avoid impacts to the eggs or hatchlings which over-winter at the nest site. In addition, if nest(s) are located during surveys, moth balls (naphthalene) should be sprinkled around the vicinity of the nest (no closer than 10 feet) to mask human scent and discourage predators.

Construction at the nest site and within the 50-foot buffer area shall be delayed until the young leave the nest (this could be a period of many months) or as otherwise advised and directed by a qualified biologist. A qualified CDFW approved biologist, with the concurrence of CDFW, may also relocate young pond turtles.

Implementation of the mitigation measures above would reduce potential impacts to western pond turtle to a level considered less than significant pursuant to CEQA.

12.9 Impact BIO-5. Development of the proposed project would have a potentially significant impact on golden eagle.

The golden eagle is "fully protected" under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c) and California Fish and Game Code §3511. It is also protected under the Federal Migratory Bird Treaty Act (16 U.S.C. 703-711 and 50 CFR 10.13), and its nest, eggs, and young are protected by Fish and Game Code §3505, §3503.5, and §3800.

In 2018 and 2019, golden eagles were identified nesting in a bluegum eucalyptus (*Eucalyptus globulus*) growing along the bank of Sand Creek, immediately to the north of the project site. Since farming activities, including the use of heavy equipment for disking, planting, and harvesting crops often twice per year, has been ongoing for decades right up to the bluegum eucalyptus grove where these eagles nest, it is apparent that these golden eagles are acclimated to these recurring activities. In addition, a residential subdivision has been under construction approximately 1000 feet north of the eagles' nests throughout 2018 and 2019, and yet these eagles fledged one young in 2018, and two young in 2019 (M&A biologist observations). Also, high density residential development activities have been ongoing within a one-mile radius around this nesting tree for over 20 years apparently without any deleterious effects on the nesting eagles. The blue gum grove supporting the eagle's 2018 and 2019 nests is within an existing protected area that is approximately 400-ft wide (23.7-acre) known as the Sand Creek Buffer Area.

Nesting surveys will need to be conducted to confirm or negate this species' presence as an active nesting bird on the project site or within a "zone of influence" determined by qualified biologist prior to construction. While this pair of golden eagles appears to be well-acclimated to mechanized disturbance, if an active nest is identified within the zone of influence of the development project the year that construction commences, it could result in impacts or deleterious disturbance to the nesting golden eagles. Disturbance could result in: (1) nest abandonment; (2) loss of young; (3) reduced health and vigor of eggs and/or nestlings (resulting in reduced survival rates) and could ultimately result in the take (killing) of nestling or fledgling golden eagles.

Accordingly, impacts to golden eagles are regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA.

12.10 Mitigation Measure BIO-5. Mitigation for potentially significant impacts to golden eagle.

An active eagle nest was observed in a blue gum grove immediately north of the project site in 2018 and 2019. One eaglet fledged from the nest in 2018 and two eaglets fledged in 2019. To ensure that there are no significant impacts to nesting golden eagles, preconstruction surveys must be conducted by a qualified raptor biologist on the project site and within a zone of influence (determined by a qualified biologist) of all project-related activities during the golden eagle breeding season (January-August). The zone of influence is affected by geographic barriers that affect direct line of sight from disturbance to the nest site, and/or distances that proposed activities could influence nesting behavior. The zone of influence shall be determined by a qualified raptor biologist. If nesting golden eagles are found nesting within the zone of influence, a qualified raptor biologist will determine an appropriate buffer consistent with the USFWS' 2017 Recommended Buffer Zones for Ground-Based Human Activities Around Nesting Sites of Golden Eagles in California and Nevada.

The USFWS' 2017 Recommended Buffer Zones for Ground-Based Human Activities Around Nesting Sites of Golden Eagles in California and Nevada, recommends buffer zones for active nests. These recommended buffer zones may increase or decrease in size depending on specific site or activity circumstances and local jurisdiction recommendations. For any active nest found within a zone of influence of the project site, the qualified raptor biologist will determine the appropriate buffer size(s) to ensure that project activities do not impact the active nest site. Buffer sizes are likely to be reduced in size when a qualified raptor biologist makes a determination that the nesting golden eagles are acclimated to mechanized activities and disturbances of the like, or the nest is shielded from disturbance by geographic barriers.

If no *active nesting* golden eagles are identified during survey(s), project construction may commence without further regard for protection of nesting eagles. If golden eagles are found nesting in the project vicinity after project construction has commenced, it should be assumed that the golden eagles began nesting while the project site was under construction and thus, that the eagles are habituated to the ambient level of noise and disturbance emanating from the project site.

If active nesting golden eagles are identified during the preconstruction surveys, the qualified biologist will establish a nest protection buffer and no project-related disturbance shall be allowed within any established nesting buffer until the young fledge the nest or the nesting attempt is otherwise complete for the year. The buffer will remain in place until the fledglings become independent of the nesting tree. The young can be considered successfully fledged when the eaglets no longer return to the nesting tree for several consecutive nights. A qualified raptor biologist shall monitor the nesting eagles initially for a period long enough to understand the nesting eagles' response to disturbance, and thereafter on a routine basis (at least once per week) until the nestlings successfully fledge and become independent of the nesting tree.

It should be noted that if the developer initiates grading of the project site in the non-nesting season (September to December) and development disturbance remains continuous through the nesting season, and the golden eagles return and nest, it can be assumed that these golden eagles are sufficiently acclimated to this disturbance. A qualified raptor biologist would be required to

confirm the level of acclimation and would have to monitor the nesting attempt continuously through the nesting season to ensure that the project disturbance is not affecting the golden eagles nesting efforts and behaviors. After commencement of nesting, if the golden eagles respond negatively to the ongoing disturbance, a 600-foot buffer would be immediately established and maintained under the supervision of the raptor biologist until the nesting cycle is completed as determined by a qualified raptor biologist.

Implementation of this mitigation measure would reduce potential impacts to golden eagles to a level considered less than significant pursuant to CEQA.

12.11 Impact BIO-6. Development of the proposed project would have a potentially significant impact on western burrowing owls.

The western burrowing owl is a California "species of special concern." This raptor (that is, bird of prey) is also protected under the Migratory Bird Treaty Act (50 CFR 10.13) and its nest, eggs, and young are protected under California Fish and Game Code Sections 3503, 3503.5. Western burrowing owls were identified on the project site in 2007 (CNDDB Occurrence No. 857), and a presumed wintering western burrowing owl was observed onsite during the January 2019 survey. The majority of the project site consists of disked farmed fields; however, there are a limited number of burrows that provide habitat for western burrowing owl. Therefore, the proposed project will permanently impact 58.6 acres of marginal western burrowing owl habitat, and offsite grading will temporarily impact 11 acres of marginal western burrowing owl habitat.

Accordingly, impacts to western burrowing owl from the proposed project would be regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA**.**

12.12 Mitigation Measure BIO-6. Mitigation for potentially significant impacts to western burrowing owls.

Based on records for western burrowing owl in the proposed project vicinity and the potential habitat found on the project site, a preconstruction survey for burrowing owls should be conducted. The CDFG's *Staff Report on Burrowing Owl Mitigation* (CDFG 2012) states that take avoidance (preconstruction) surveys should be conducted 14 days prior to ground disturbance. As burrowing owls may recolonize a site after only a few days, time lapses between project activities trigger subsequent take avoidance surveys including but not limited to a final survey conducted within 24 hours prior to ground disturbance to ensure absence of the species.

a. Burrowing owl surveys should be conducted by walking the entire project site and (where possible) in areas within 150 meters (approx. 500 feet) of the proposed project impact zone. The 150-meter buffer zone is surveyed to identify burrows and owls outside of the proposed project area which may be impacted by factors such as noise and vibration (heavy equipment) during project construction.

Pedestrian survey transects should be spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines should be 7 meters to 20 meters and should be reduced to account for differences in terrain, vegetation density, and ground surface visibility.

Poor weather may affect the surveyor's ability to detect burrowing owls thus, avoid conducting surveys when wind speed is greater than 20 kilometers per hour and there is precipitation or dense fog. To avoid impacts to owls from surveyors, owls and/or occupied burrows should be avoided by a minimum of 50 meters (approx. 160 ft.) wherever practical to avoid flushing occupied burrows. Disturbance to occupied burrows should be avoided during all seasons.

b. If burrowing owls are detected on the site, the following restricted activity dates and setback distances are recommended per the CDFG's *Staff Report on Burrowing Owl Mitigation* (CDFG 2012).

- From April 1 through October 15, low disturbance and medium disturbance activities should have a 200-meter buffer while high disturbance activities should have a 500-meter buffer from occupied nests.
- From October 16 through March 31, low disturbance activities should have a 50-meter buffer, medium disturbance activities should have a 100-meter buffer, and high disturbance activities should have a 500-meter buffer from occupied nests.
- No earth-moving activities or other disturbance should occur within the afore-mentioned buffer zones of occupied burrows. These buffer zones should be fenced as well. If burrowing owls were found in the proposed project area, a qualified biologist would also need to delineate the extent of western burrowing owl habitat on the site.

The mitigation land used to mitigate impacts to the California tiger salamander would also constitute suitable western burrowing owl mitigation land.

Implementation of the above mitigation measures would reduce impacts to western burrowing owl to a level considered less than significant.

12.13 Impact BIO-7. Development of the proposed project would have potentially significant impacts to Swainson's Hawks.

The Swainson's hawk is a state-listed threatened species. It is also protected from direct take pursuant to the federal Migratory Bird Treaty Act. Active Swainson's hawk nests are also protected pursuant to California Fish and Game Code §3503.5 and 3513. Swainson's hawks are not known to currently nest on the project site. However, in the absence of nesting season surveys that demonstrate that the project will not result in take of the Swainson's hawk, including its eggs and young, impacts to Swainson's hawk are considered potentially significant.

The Swainson's hawk generally forages in open habitats with short vegetation containing small mammals, reptiles, birds, and insects. Foraging habitats include alfalfa fields, fallow fields, beet, tomato, and other low-growing row or field crops, dry-land and irrigated pasture, and rice land when not flooded (CDFG 1994). As a known Swainson's hawk nesting record occurs 0.10-mile east of the project site, the project site constitutes potential foraging habitat of this hawk. Therefore, the proposed project would permanently impact 58.6 acres of potential foraging habitat, and offsite grading will temporarily impact 11 acres of potential foraging habitat.

Accordingly, impacts to Swainson's hawk from the proposed project would be regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA.

12.14 Mitigation Measure BIO-7. Mitigation for potentially significant impacts to Swainson's Hawks.

To avoid impacts to nesting Swainson's hawks, the CDFW has prepared guidelines for conducting surveys for Swainson's hawk entitled: *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (CDFG 2000). These survey recommendations were developed by the Swainson's Hawk Technical Advisory Committee (TAC) to maximize the potential for locating nesting Swainson's hawks, and thus, reduce the potential for nest failures as a result of project activities and/or disturbances. To meet the CDFG's (now CDFW) recommendations for mitigation and protection of Swainson's hawks in this guideline, surveys should be conducted by a qualified raptor biologist for a 0.5-mile radius around all project activities and should be completed for at least two survey periods as is found in the California Department of Fish and Game's (now CDFW) 2000 survey guidelines (CDFG 2000). The guidelines provide specific recommendations regarding the number of surveys based on when the proposed project is scheduled to begin and the time of year the surveys are conducted. A copy of this survey report must be provided to the City of Antioch prior to starting construction.

If the proposed project could result in take of the Swainson's hawk, its nest, or eggs, typically assumed to be the case if a nest is detected within a 0.25-mile of the project site, the project proponent shall prepare a Swainson's Hawk *Monitoring and Habitat Management Plan.* If take of Swainson's hawk eggs, nestlings, fledglings could occur from the proposed activities, as determined by a qualified raptor biologist, protective buffers will be established on the project site that will prevent such take from occurring. The protective buffer around the active nest site shall be maintained until such time that the Swainson's hawks have completed their nesting cycle as determined by a qualified raptor biologist. The nest protection buffer shall be coordinated with the CDFW.

If the preconstruction surveys find Swainson's hawk nests within 0.25 mile of the project site, impacts to its foraging habitat shall be mitigated by preserving 58.6 acres of suitable Swainson's hawk foraging habitat (1:1 mitigation for permanent impacts to foraging habitat). The mitigation land used to mitigate impacts to the California tiger salamander would also constitute suitable Swainson's hawk foraging habitat.

Implementation of these mitigation measures would reduce potential impacts to Swainson's hawk and its foraging habitat to a less than significant level pursuant to CEQA.

12.15 Impact BIO-8. Development of the proposed project would have a potentially significant impact on tricolored blackbirds.

The tricolored blackbird is a State listed threatened species pursuant to the CESA. The closest known CNDDB record for tricolored blackbird is located 2 miles southwest of the project site (Occurrence No. 838) in ponds on the Roddy Ranch golf course. Sand Creek provides limited

nesting habitat within the creek corridor. Although no tricolored blackbirds have been detected on the site during multiple site surveys in the project vicinity, installation of the outfall structures in Sand Creek could disturb nesting birds.

Accordingly, impacts to nesting tricolored blackbird from the proposed project would be regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA.

12.16 Mitigation Measure BIO-8. Mitigation for potentially significant impacts to nesting tricolored blackbird

In order to avoid impacts to nesting tricolored blackbird, a nesting survey shall be conducted prior to commencing with construction if this work would commence between February 1 and August 31.

If nesting tricolored blackbirds are identified during the surveys, a 300-foot radius around the nesting colony must be staked with bright orange lath or other suitable staking. The size of the buffer may be altered if a qualified biologist conducts behavioral observations and determines the nesting tricolored blackbirds are well acclimated to disturbance. If this occurs, the biologist shall prescribe a modified buffer that allows sufficient room to prevent undue disturbance or harassment to the nesting tricolored blackbirds. No construction or earth-moving activity shall occur within the established buffer until it is determined by a qualified biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by August 1. This date may be earlier or later and would have to be determined by a qualified biologist. If a qualified biologist is not hired to watch the nesting tricolored blackbirds, then the buffers shall be maintained in place through the month of August and work within the buffer can commence September 1. If buffers are removed prior to September 1, the qualified biologist monitoring the nesting buffer(s) should prepare and submit a report to the City of Antioch that provides details about the nesting outcome and the removal of buffers. This report should be submitted prior to the time that nest protection buffers are removed if the date is before September 1.

Implementation of these mitigation measures would reduce impacts to nesting tricolored blackbirds to a level considered less than significant pursuant to CEQA

12.17 Impact BIO-9. Development of the proposed project would have a potentially significant impact on other nesting raptors

White-tailed kite, northern harrier, red-tailed hawk, and red shouldered hawk all are known to nest in the project area. All of these raptors (that is, birds of prey) are also protected under the Migratory Bird Treaty Act (50 CFR 10.13) and their eggs and young are protected under California Fish and Game Codes Sections 3503, 3503.5. Any project-related impacts to these species would be considered a significant adverse impact. Potential impacts to these species from the proposed project include disturbance to nesting birds, and possibly death of adults and/or young.

Accordingly, impacts to nesting raptors from the proposed project would be regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA.

12.18 Mitigation Measure BIO-9. Mitigation for potentially significant impacts to nesting raptors

Also see Impacts and Mitigation Bio-6 above for special considerations for golden eagles. In order to avoid impacts to nesting raptors, a nesting survey shall be conducted prior to commencing with construction if this work would commence between February 1 and August 31. The raptor nesting surveys shall include examination of all trees within 300 feet of the entire project site, not just trees slated for removal.

If nesting raptors are identified during the surveys, the dripline of the nest tree must be fenced with orange construction fencing (provided the tree is on the project site), and a 300-foot radius around the nest tree must be staked with bright orange lath or other suitable staking. If the tree is located off the project site, then the buffer shall be demarcated per above where the buffer intersects the project site. *The size of the buffer may be altered if a qualified raptor biologist conducts behavioral observations and determines the nesting raptors are well acclimated to disturbance.* If this occurs, the raptor biologist shall prescribe a modified buffer that allows sufficient room to prevent undue disturbance/harassment to the nesting raptors. No construction or earth-moving activity shall occur within the established buffer until it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by August 1. This date may be earlier or later and would have to be determined by a qualified raptor biologist. If a qualified biologist is not hired to watch the nesting raptors, then the buffers shall be maintained in place through the month of August and work within the buffer can commence September 1. If buffers are removed prior to September 1, the qualified raptor biologist monitoring the nesting buffer should prepare and submit a report to the City of Antioch that provides details about the nesting outcome and the removal of buffers. This report should be submitted prior to the time that nest protection buffers are removed if the date is before September 1.

Implementation of these mitigation measures would reduce impacts to nesting raptors to a level considered less than significant pursuant to CEQA.

12.19 Impact BIO-10. Development of the proposed project would have a potentially significant impact on nesting special-status and common bird species

Special-status birds, such as loggerhead shrike and grasshopper sparrow (CDFW designated species of special concern), and other common birds that could nest on or within a zone of influence of the project site could be impacted by the proposed project. Passerine birds and their nests are protected under the California Fish and Game Code (Sections 3503, 3503.5), and the federal Migratory Bird Treaty Act.

Impacts to nesting birds, their eggs, and/or young caused by implementation of the proposed project would be regarded as potentially significant pursuant to the CEQA. Mitigation could be

implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA.

12.20 Mitigation Measure BIO-10. Mitigation for potentially significant impacts to nesting special-status and common bird species

If project site disturbance associated with the proposed project would commence between March 1 and September 1, a preconstruction nesting survey should be completed in the 15-day period prior to commencing with any proposed project related disturbance on the project site. The nesting survey should be conducted on the project site and within a zone of influence around the project site. The zone of influence includes those areas off the project site where birds could be disturbed by earth-moving vibrations or noise as determined by a qualified ornithologist. Accordingly, the nesting survey(s) must cover the project site and an area around the project site boundary.

If special-status birds are identified nesting on or adjacent to the project site, a non-disturbance buffer of 100 feet should be established or as otherwise prescribed by a qualified ornithologist. If common (that is, not special-status) birds for example, California towhee, California scrub jay, or acorn woodpeckers (*Melanerpes formicivorus*) are identified nesting on or adjacent to the project site, a non-disturbance buffer of 75 feet should be established or as otherwise prescribed by a qualified ornithologist. The buffer should be demarcated with painted orange lath or via the installation of orange construction fencing. Disturbance within the buffer should be postponed until it is determined by a qualified ornithologist that the young have fledged and have attained sufficient flight skills to leave the area or that the nesting cycle has otherwise completed.

Typically, most passerine birds in the region of the project site are expected to complete nesting by August 1. However, many species can complete nesting by the end of June or early to mid-July. Regardless, nesting buffers should be maintained until September 1 unless a qualified ornithologist determines that young have fledged and are independent of their nests at an earlier date.

If nest projection buffers are removed prior to September 1, the qualified biologist conducting the nesting surveys should prepare and submit a report to the City of Antioch that provides details about the nesting outcome and the removal of buffers. This report should be submitted prior to the time that nest protection buffers are removed if the date is before September 1.

Implementation of these mitigation measures would reduce impacts to nesting special-status species and common bird species to a level considered less than significant pursuant to CEQA.

12.21 Impact BIO-11. Development of the proposed project could have a potentially significant impact on San Joaquin kit fox

The closest CNDDB record for this species was recorded in the 1970s and is located 2.75 miles south of the project site (Occurrence No. 936). More recently, independently conducted surveys cited in *Relative Abundance of Endangered San Joaquin Kit Fox (Vulpes macrotis mutica) Based on Scat-Detection Dog Surveys* (Smith et. al. 2006) were unable to document presence of San Joaquin kit fox in Contra Costa County. Although this report suggests that it is likely that San

Joaquin kit fox is extirpated from Contra Costa County, Figure 5-5 in the East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan (ECCCC HCP 2006) indicates that the project site is within the "Suitable Core Habitat" of the San Joaquin kit fox. Suitability does not infer the presence of this fox species, only that the model used indicates there is suitable habitat in which the species could occur.

The on-going disturbance and cultivation of the project site would likely preclude the presence of an occupied San Joaquin kit fox den. As such, the federally-listed San Joaquin kit fox is not expected to reside on the project site. Regardless, implementation of avoidance and conservation measures listed below will confirm that this species is not present from the project site and will ensure that there is no take of this species.

Accordingly, impacts to San Joaquin kit fox is regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA.

12.22 Mitigation Measure BIO-11. Mitigation for potentially significant impacts to San Joaquin kit fox

To confirm that San Joaquin kit fox is not present on the project site and to ensure that there is no take of this species, the project proponent will implement standard avoidance measures to reduce the possibility of impacts to the species:

1) An education program will be conducted by a qualified biologist prior to the start of construction to explain the endangered species concerns to contractors working at the project site. The program will include an explanation of the FESA and CESA and any endangered species concerns in the area.

2) Qualified biologists would conduct preconstruction den surveys no more than 14 days prior to site grading to ensure that potential kit fox dens are not disrupted.

   If "potential dens" are located (potential dens are defined as burrows at least four inches in diameter which open up within two feet), infrared camera stations will be set up and maintained for three (3) consecutive nights at den openings prior to initiation of grading activities to determine the status of the potential dens. If no kit fox is found to be using the den, site grading can proceed unhindered. However, if a kit fox is found using a den site within the project site, the USFWS and the CDFW will be notified and consulted before work activities resume.

3) To prevent harm to San Joaquin kit fox, any steep-walled holes and/or trenches excavated on the project site will be completely covered at the end of each workday or escape ramps will be provided to allow any entrapped animals to escape unharmed. All pipe sections stored at the project site overnight that are four inches in diameter or greater will be inspected for San Joaquin kit fox before the pipes are moved or buried. If San Joaquin kit fox are identified in the work area at any time, the USFWS and/or the CDFW will be notified and consulted before work activities resume. All trash items will be removed

from the site to reduce the potential for attracting predators of San Joaquin kit fox. Contractors will be prohibited from bringing firearms and pets to the job site.

Implementation of these mitigation measures would reduce impacts to San Joaquin kit fox to a level considered less than significant pursuant to CEQA.

12.23 Impact BIO-12. Development of the proposed project would have a potentially significant impact on American badger

The American badger is a CDFW designated species of special concern. The closest known record for this species is located on the project site in 2007 (CNDDB Occurrence No. 398). The project site provides marginal habitat for this species. Therefore, development of the project could result in impacts to American badgers.

Accordingly, impacts to American badger is regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA.

12.24 Mitigation Measure BIO-12. Mitigation for potentially significant impacts to American badger.

To ensure there are no direct impacts to American badger, a qualified biologist will conduct a preconstruction den survey no more than 21 days prior to site grading. If a potential den is located, infrared camera stations will be set up and maintained for three (3) consecutive nights at the potential den openings prior to initiation of grading/work activities to determine the status of the potential dens. If American badger is not found to be using the den, the burrow will be filled, and site grading may proceed in the vicinity of this burrow(s) unhindered. However, if American badger is found to be using a den site within the area of proposed grading, provided it is not a natal den, the badger will be passively and humanely evicted from its den if it could be impacted by grading or other activities. If a natal den is found, the project proponent will consult with CDFW to prepare an eviction plan and shall submit the eviction plan to the City prior to implementation.

Implementation of these mitigation measures would reduce impacts to American badger to a level considered less than significant pursuant to CEQA.

12.25 Impact BIO-13. Development of the proposed project would have a significant impact on Waters of the United States and/or State.

The proposed project will result in impacts to areas that are within the Corps' and RWQCB's jurisdiction pursuant to Sections 404 and 401 of the CWA, respectively. Areas subject to regulation by these two agencies include Sand Creek and an ephemeral drainage channel that flows to Sand Creek. The proposed project will result in permanent impacts to 0.045-acre of waters of the U.S. and/or State from the installation of two stormwater outfalls in Sand Creek and the culverted crossing of an ephemeral drainage channel as illustrated on the Creekside Impacts Exhibits, prepared by CBG dated July 9, 2019 (Attachment B).

Impacts to waters of the United States and/or State would be regarded as significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA.

12.26 Mitigation Measure BIO-13. Mitigation for significant impacts to Waters of the United States and/or State

The project proponent shall mitigate for project-related impacts to 0.045-acre of waters of U.S./State by purchasing seasonal wetland credits from the Cosumnes Mitigation Bank or other wetland mitigation bank that services the project site area as approved by the Corps and the RWQCB. Mitigation credits shall be purchased at no less than 1:1 (replacement : impact) ratio. The Service Area for the Cosumnes Mitigation Bank covers the project site.

Alternatively, the project proponent may create, preserve, and manage new seasonal wetlands on or off of the project site at a 2:1 mitigation ratio (acres created and preserved: acre impacted). A project-specific *Wetland Mitigation and Monitoring Plan* prepared by a qualified wetland restoration ecologist that includes the following information will be provided to the City prior to conducting any activity that would result in the placement of any fill material into a water of the U.S. or water of the State:

1) a description of the impacted water;

2) a map depicting the location of the mitigation site(s) and a description of existing site conditions;

3) a detailed description of the mitigation design that includes: (i) the location of the new seasonal wetlands; (ii) proposed construction schedule; (iii) a planting/vegetation plan; (iv) specific monitoring metrics, and objective performance and success criteria, such as delineation of created area as jurisdictional waters using Corps published methods; and (v) contingency measures if the created wetlands do not achieve the specified success criteria; and

4) short-term and long-term management and monitoring methods.

5) If the wetland mitigation site is a separate mitigation property, the project proponent will grant a conservation easement to a qualified entity, as defined by Section 81.5.3 of the California Civil Code, preserving the created seasonal wetland(s) in perpetuity, and establish an endowment fund to provide for the long-term management, maintenance, and monitoring of the created seasonal wetland(s).

If the proposed project includes placing fill material into jurisdictional waters of the U.S. or waters of the State, the project proponent shall provide the City with a copy of permits issued by the Corps and RWQCB authorizing the fill.

Implementation of the measures described above would reduce significant impacts to waters of the United States/State to a level considered less-than-significant pursuant to the CEQA.

12.27 Impact BIO-14. Development of the proposed project would have a significant impact on CDFW Fish and Game Code Section 1602 jurisdictional areas

Sand Creek and the ephemeral drainage channel on the project site are channels with a bed and bank, and as such are within the CDFW's jurisdiction pursuant to Section 1602 of the California Fish and Game Code. The proposed project will result in impacts to Sand Creek during the construction of two stormwater outfall structures on the banks of Sand Creek, the culverted crossing through the ephemeral drainage channel that flows to Sand Creek, installation of the proposed EVA/pedestrian bridge in the northeastern corner of the site, and construction of the Hillcrest Avenue bridge over Sand Creek, as illustrated on the Creekside Impacts Exhibits, prepared by CBG dated July 9, 2019 (Attachment B).

Impacts to Section 1602 jurisdictional areas would be regarded as significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA.

12.28 Mitigation Measure BIO-14. Mitigation for significant impacts to Section 1602 jurisdictional areas

Impacts to riparian habitat within CDFW's Section 1602 jurisdictional areas, as illustrated on Sheet A, that would occur during the installation of two stormwater outfalls in Sand Creek, construction of the Hillcrest Avenue bridge over Sand Creek, and the installation of the EVA/Pedestrian Bridge over Sand Creek, will be mitigated via planting California native trees/shrubs within the Sand Creek buffer area. Impacted trees and shrubs will be mitigated via a 3:1 (replacement to impacts) ratio. Replacement trees and shrubs will be a minimum of one gallon size trees/shrub replacements.

In addition, the project proponent will implement appropriate BMPs to prevent construction related impacts that could introduce de minimus fill or other pollutants into Sand Creek and the eastern ephemeral channel on the project site. These measures include the installation of wildlife-friendly hay wattles and/or silt fence that will prevent unintended de minimus fill impacts to Sand Creek while the stormwater outfalls are constructed. In addition, orange silt fencing shall be installed at the top-of-bank of Sand Creek to prevent unintended human and equipment traffic adjacent to Sand Creek. Finally, the dripline of all protected trees within the drainages on the project site, if near work areas, shall be protected via the installation of orange construction fencing.

The project proponent may satisfy this mitigation by providing the City of Antioch with a fully executed copy of a SBAA with the CDFW that includes these, or other functionally equivalent, BMPs. The project proponent will implement the conditions of the executed SBAA.

Implementation of these measures would reduce significant impacts to Section 1602 jurisdictional areas, including riparian habitat, to a level considered less-than-significant pursuant to the CEQA.

12.29 Impact BIO-15. Development of the Project would have a potentially significant impact on protected trees (Potentially Significant).

Installation of the two outfall structures on the banks of Sand Creek and installation of the two clear span bridges across Sand Creek may require removal of to up to 12 trees growing on the banks of Sand Creek.

Impacts to protected trees would be regarded as potentially significant pursuant to the CEQA. Mitigation could be implemented to reduce these impacts to levels regarded as less than significant pursuant to the CEQA.

12.30 Mitigation Measure BIO-15. Mitigation for potentially significant impact on protected trees.

If any trees are slated for removal, the project proponent will need to request a tree removal permit as part of the regular development application to the City. Since there are protected trees on the project site along Sand Creek, the following information will be provided with the regular development application to the City:

(1) A site plan showing the existing topography with location of all established trees, clearly labeling those trees which are proposed for either saving or removal.

(2) A description of all established trees on the property, including the size (in diameter), estimated height, species, and relative condition (i.e., healthy vs. in decline).

(3) A written statement requesting permission to remove the subject tree(s) providing the reason for the request.

All trees planted are to be California native trees that are found in Antioch in similar habitats to those habitats present on the project; for example, coast live oaks and valley oaks.

Implementation of these measures would reduce potentially significant impacts to City protected trees to a level considered less-than-significant pursuant to the CEQA.

13. LITERATURE CITED

Baldwin D.H, Goldman D.H., Keil D.J., Patterson R, Rosatti T.J., Wilken D.H. (ed.). 2012. The Jepson Manual Vascular Plants of California: Second Edition. University of California Press, Berkeley. 1568 pps.

Beedy, E.C. 1992. Breeding status, distribution, and habitat associations of the tricolored blackbird (*Agelaius tricolor*), 1850-1991. Paper presented at the Western Section of the Wildlife Society Annual Meeting, February 1992. San Diego, California.

Beier, P. and S. Loe. 1992. "In my experience.." a checklist for evaluating impacts to wildlife movement corridors. Wildlife Society Bulletin Vol. 20(4): 6.

Bulger, J.B., N.J. Scott, Jr., R.B. Seymour. 2003. Terrestrial activity and conservation of adult California red-legged frogs *Rana aurora draytonii* in coastal forests and grasslands. Biological Conservation. Vol. 110. Issue 1. March 2003. pps. 85-95.

Burridge, B. (ed). 1995. Sonoma County breeding bird atlas: detailed maps and accounts for our nesting birds. 216 pp. Madrone Audubon Society, Inc.

Bury, B. 2005. Unpublished presentation given at the Pacific pond turtle workshop. Presented by the SF Bay Area Chapter of The Wildlife Society. April 16, 2005.

CDFG (California Department of Fish and Game). 1994. Staff report regarding mitigation for impacts to Swainson's hawks (*Buteo swainsonii*) in the central valley of California. 14 pps. November 1, 1994.

CDFG (California Department of Fish and Game). 2000. Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. May 31, 2000. 4 pages.

CDFG (California Department of Fish and Game). 2011. Complete List of Amphibian, Reptile, Bird and Mammal Species in California. Published September 2008; February 2011 (updated).

CDFG (California Department of Fish and Game). 2012. Staff report on burrowing owl mitigation. March 7, 2012. 15 pages plus appendices.

CNDDB (California Natural Diversity Data Base). 2019. RareFind 3. Computer printout for special-status species within a 5-mile radius of the project site. California Natural Heritage Division, California Department of Fish and Wildlife, Sacramento, CA.

CNPS (California Native Plant Society). 2001. Inventory of rare and endangered plants of California (sixth edition). Rare plant scientific advisory committee, David P. Tibor, convening editor. California Native Plant Society. Sacramento, CA. 338 pps.

Corps (U.S. Army Corps of Engineers). 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report, Y-87-1.

Corps (U.S. Army Corps of Engineers). 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2). Ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-06-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center. September 2008.

ECCCC HCP. 2006. Final East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan. Volumes I and II. October 2006. Assembled by Jones & Stokes.

Eriksen, C.H., and D. Belk. 1999. Fairy shrimps of California's puddles, pools, and playas, Mad River Press, Eureka, CA.

Fellers, Gary M. and Patrick M. Kleeman. 2007. California Red-Legged Frog *(Rana draytonii)* Movement and Habitat Use: Implications for Conservation. *Western Ecological Research Center, USGS, Point Reyes National Seashore, Point Reyes, California* 94956 *USA.* Journal of Herpetology. Vol. 31, No. 2, Pages 276-286, 2007. Copyright 2007 Society for the Study of Amphibian and Reptiles.

Holland, V.L. & D.J. Keil. 1995. California vegetation. Kendall/Hunt Publishing Company.

James, Paul C. 1992. Urban-nesting of Swainson's hawks in Saskatchewan. Condor. 94: 773-774.

Jennings, M.R., M.P. Hayes, and Research Section, Animal Management Division, Metro Washington Park Zoo. 1994. Amphibian and Reptile Species of Special Concern in California. Final Report Submitted to the California Department of Fish & Game, Inland Fisheries Division. Rancho Cordova, CA. 255 pp. November 1.

Jepson Interchange Project. INTERNET: http://ucjeps.berkeley.edu/interchange/index.html

Jones & Stokes. 2005. Draft East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan. Volumes I and II. June 2005.

Jones & Stokes. 2006. Final East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan. Volumes I and II. October 2006.

Kochert, Michael N. 1986. Raptors. *In:* Cooperrider, Allan Y.; Boyd, Raymond J.; Stuart, Hanson R., eds. Inventory and monitoring of wildlife habitat. Denver, CO: U.S. Department of the Interior, Bureau of Land Management, Denver Service Center: 313-349.

Palmer, Ralph S., editor. 1988. Handbook of North American birds. Volume 5. New Haven, CT: Yale University Press. 463 p.

Schlorff, Ronald W. and Peter H. Bloom. 1984. Importance of riparian systems to nesting Swainson's hawks in the Central Valley of California. In: Warner, Richard E.; Hendrix, Kathleen M., eds. California riparian systems: Ecology, conservation, and productive management: Proceedings of a conference; 1981 September 17-19; Davis, CA. Berkeley, CA: University of California Press: 612-618.

Schmutz, Josef K.; Fyfe, Richard W.; Moore, David A.; Smith, Alan R. 1984. Artificial nests for ferruginous and Swainson's hawks. Journal of Wildlife Management. 48:1009-1013.

Shuford, W.D. 1993. The Marin County Breeding Bird Atlas: A Distributional and Natural History of Coastal California Birds. California Avifauna Series 1. Bushtit Books, Bolinas, California.

Smith, D.A., K. Ralls, B.L. Cypher, H.O. Clark Jr., P.A. Kelly, D.F. Williams, and J.E. Maldonado. 2006. Relative abundance of endangered San Joaquin kit foxes (*Vulpes macrotis mutica*) based on scat-detection dog surveys. The Southwestern Naturalist 51 (2): 210-219.

Stebbins, R.C. 2003. Western reptiles and amphibians. Third edition. Houghton Mifflin Company, New York, NY. 533 pps.

Tatarian, P. J. 2005. Movement Patterns of the California Red-legged Frogs (*Rana Aurora Draytonii*) in an Inland California Environment (Master's Thesis, Sonoma State University).

USFWS (U.S. Fish & Wildlife Service). 1992. Endangered and threatened wildlife and plants; commencement of status review for a petition to list the western pond turtle and California red-legged frog. Federal Register, Vol. 57, No. 193, pp. 45761-45762.

USFWS (U.S. Fish & Wildlife Service). 1994. Final Rule. Endangered and threatened wildlife and plants; determination of endangered status for the Conservancy fairy shrimp, longhorn fairy shrimp, and the vernal pool tadpole shrimp; and threatened status for the vernal pool fairy shrimp. Federal Register. September 19, 1994.

USFWS (U.S. Fish & Wildlife Service). 2002. Recovery plan for the California red-legged frog (*Rana aurora draytonii*). U.S. Fish and Wildlife Service, Portland, Oregon. Viii + 173 pps.

USFWS (U.S. Fish & Wildlife Service). 2004. Endangered and threatened wildlife and plants; determination of threatened status for the California tiger salamander; and special rule exemption for existing routine ranching activities; Final Rule. Federal Register Vol 69, No 149 pps. 47212-47248. August 4, 2004.

USFWS (U.S. Fish & Wildlife Service). 2004. Endangered and threatened wildlife and plants; designation of critical habitat for the California tiger salamander, central population; proposed rule (50 CFR Part 17, August 10, 2004).

USFWS (U.S. Fish & Wildlife Service). 2008. Endangered and Threatened Wildlife and Plants; Revised Critical Habitat for the California Red-Legged Frog (*Rana aurora draytonii*) 50 CFR Part 17 Proposed Rule. Federal Register Volume 73, Number 180, pp. 53491-53540. September 16.

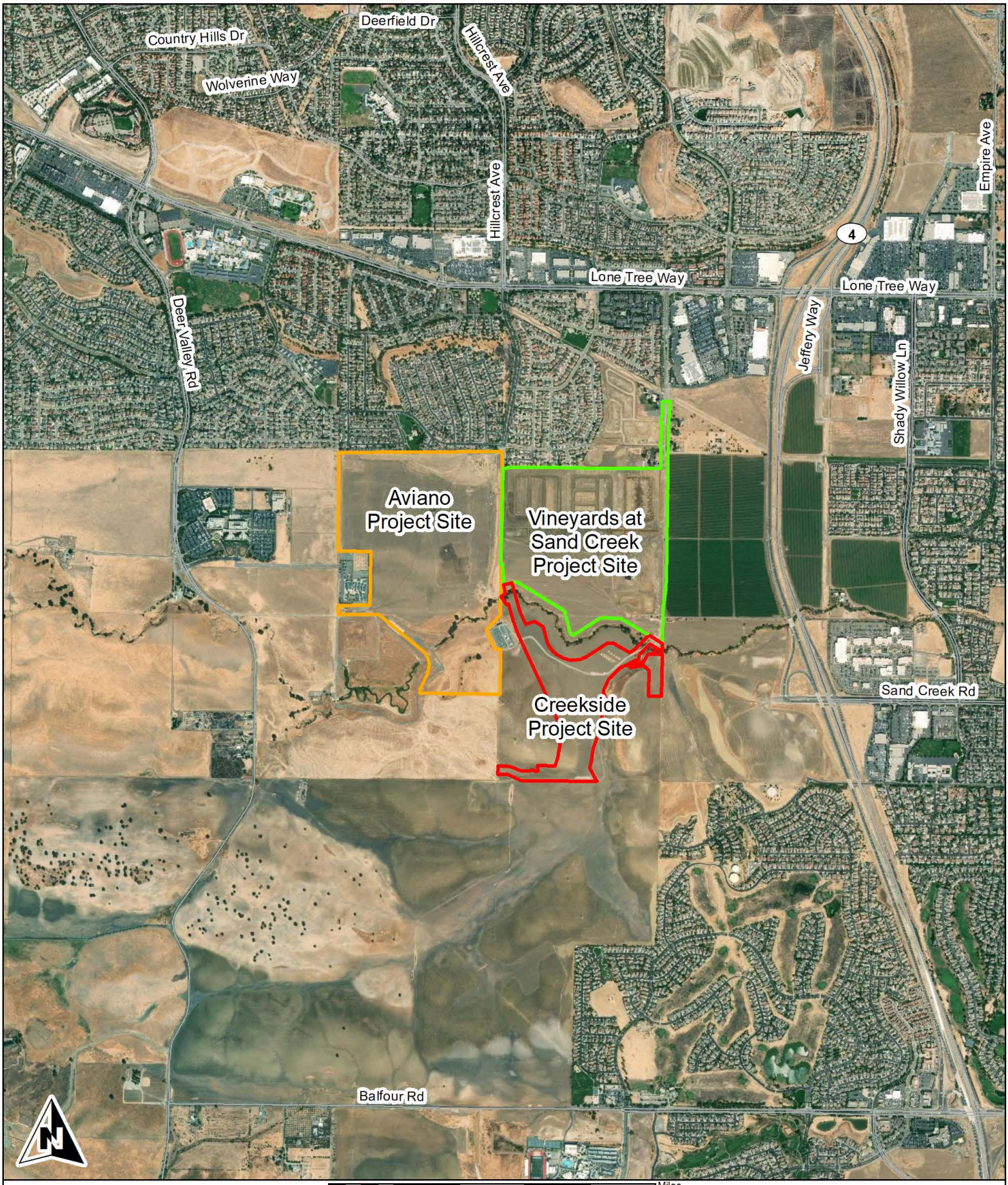
USFWS (U.S. Fish and Wildlife Service) 2010. Endangered and Threatened Wildlife and Plants: Revised Designation of Critical Habitat for California Red-Legged Frog; Final Rule. Federal Register 50 CFR Part 17 March 17, 2010 (Volume 75, Number 51) Page 12815-12864

Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White. 1988. California's wildlife, volume I, amphibians and reptiles. State of California, the Resources Agency, Department of Fish and Game, Sacramento, California.

Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Figure 1. Creekside Project Site
Regional Map
Antioch, California

County: Contra Costa
Map Preparation Date: November 20, 2019

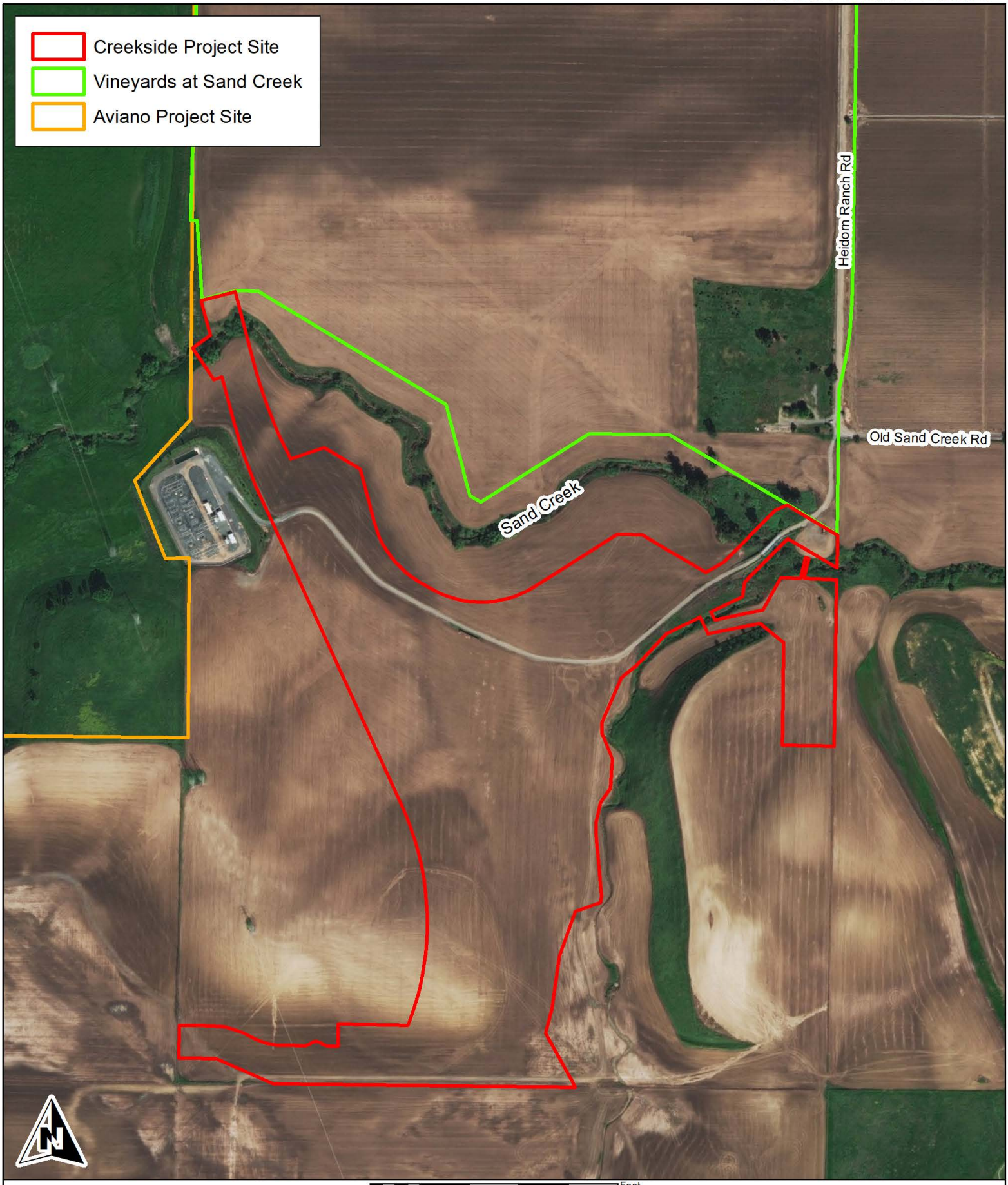


0 0.1 0.2 0.4 0.6 0.8 1 Miles

Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Figure 2. Creekside Project Site
Location Map
Antioch, California

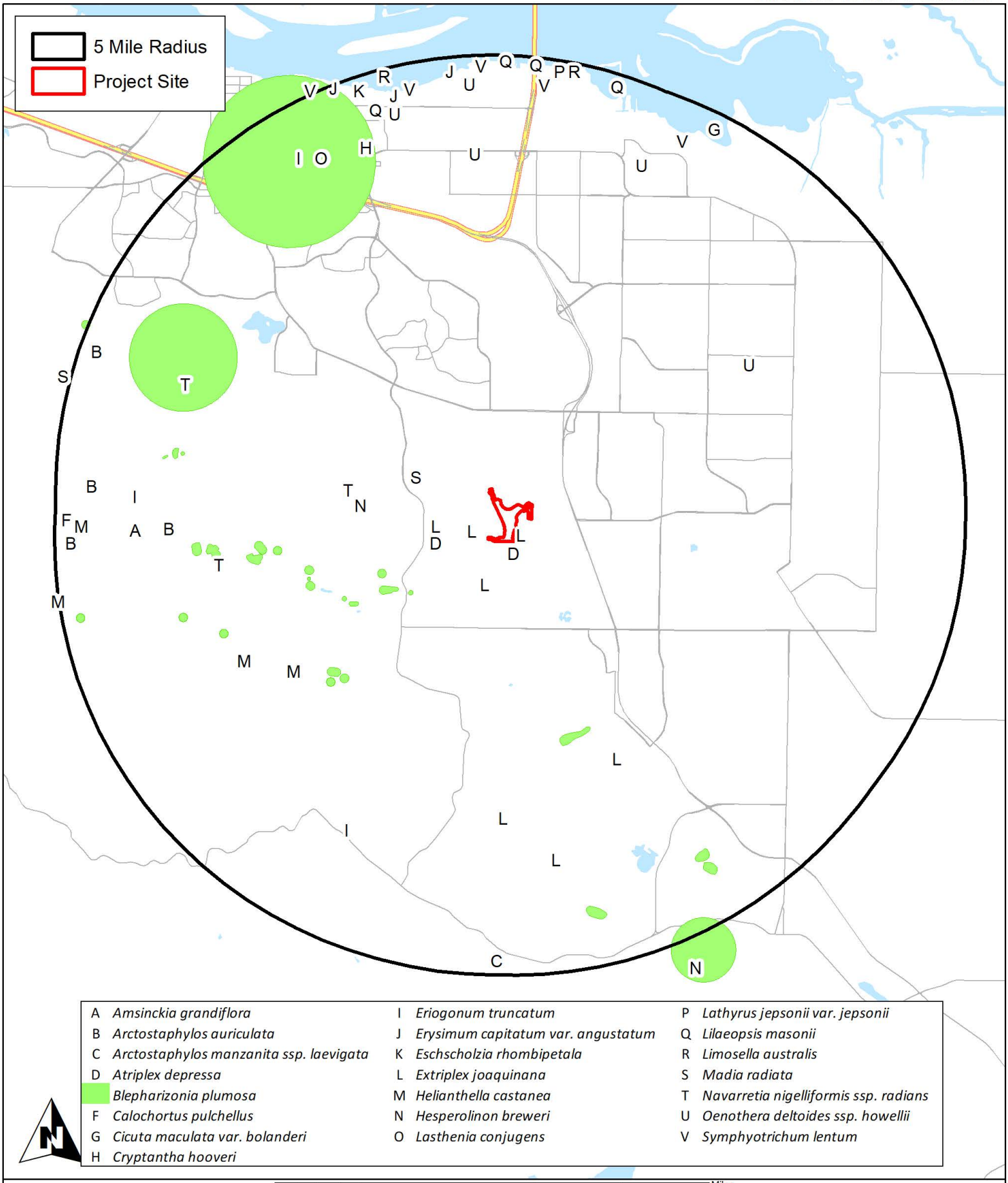
37.943112 -121.755134
7.5-Minute Antioch South quadrangle
Section 9: T1N R2E
Aerial Photograph Source: ESRI
Map Preparation Date: November 20, 2019



Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Figure 3. Aerial Photograph of the Creekside Project Site
Antioch, California

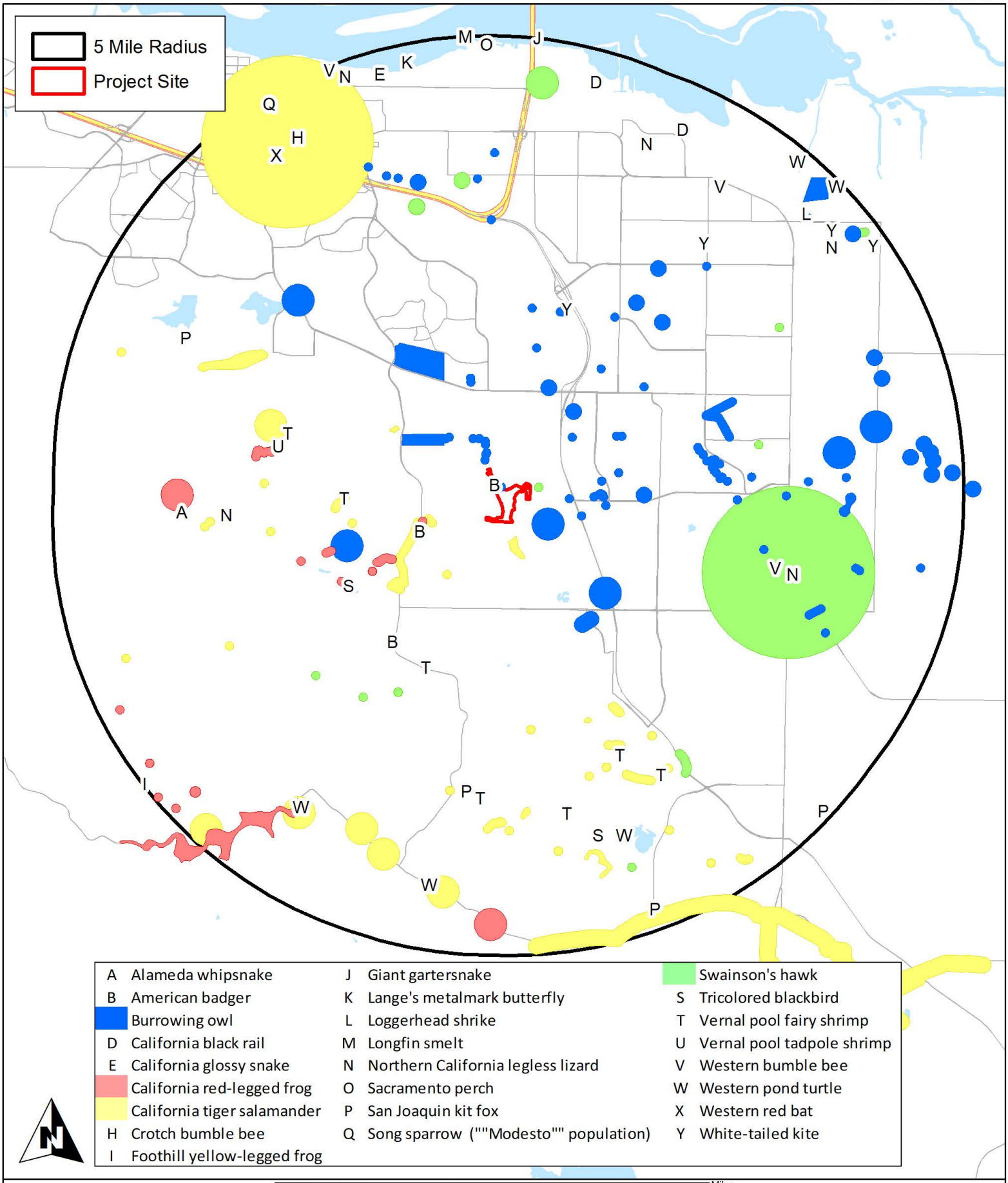
Aerial Photograph Source: ESRI
Map Preparation Date: November 20, 2019



Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Figure 4A. Known CNDDB Special-Status Plant Species Records Within 5 Miles of the Creekside Project Site

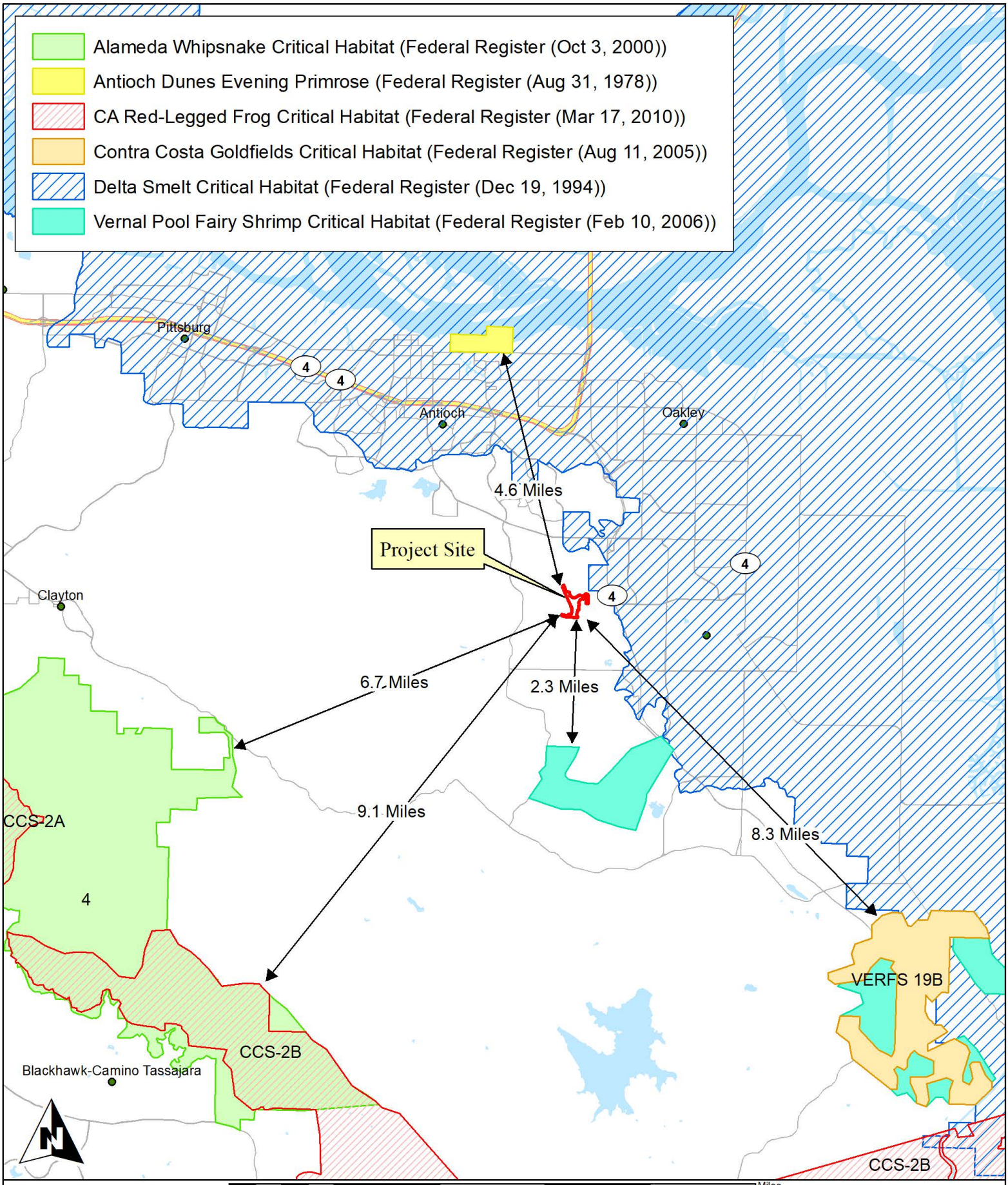
Map Preparation Date:
February 7, 2020
5-Mile Radius
Source: CDFW, California Natural Diversity Data Base, 2020



Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Figure 4B. Known CNDDB Special-Status Wildlife Species Records Within 5 Miles of the Creekside Project Site

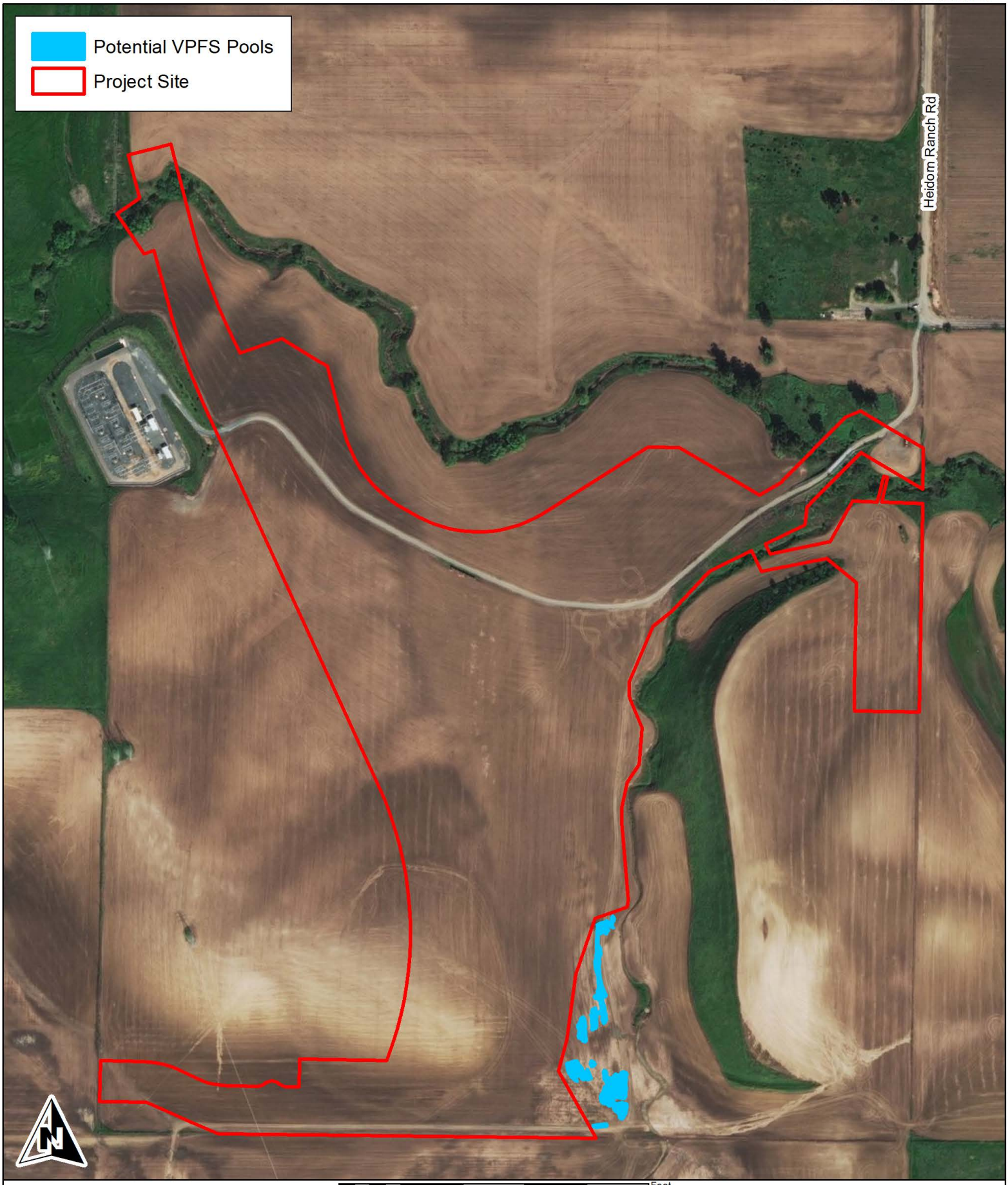
Map Preparation Date:
February 7, 2020
5-Mile Radius
Source: CDFW, California Natural Diversity Data Base, 2020



Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Figure 5. USFWS Critical Habitat in the Vicinity of the Creekside Project Site

Source: USFWS
Map Preparation Date: November 20, 2019



Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Figure 6. Potential Fairy Shrimp Habitat
on the
Creekside Project Site

Aerial Photograph Source: ESRI
Map Preparation Date: November 20, 2019

Table 1

Plant Species Observed on the Creekside Project Site in 2019

Angiosperms - Dicots

Adoxaceae

Sambucus nigra subsp. caerulea	Blue elderberry

Asteraceae

Artemisia californica	California sagebrush
Artemisia douglasiana	California mugwort
Baccharis pilularis subsp. pilularis	Baccharis
**Carduus pycnocephalus subsp. pycnocephalus*	Italian thistle
**Centaurea solstitialis*	Yellow starthistle
**Cirsium vulgare*	Bull thistle
Cynara cardunculus	Artichoke thistle
**Dittrichia graveolens*	Stinkwort
Grindelia camporum	Great Valley gumplant
Helenium puberulum	Sneezeweed
**Silybum marianum*	Milk thistle
Xanthium strumarium	Cocklebur

Boraginaceae

Amsinckia sp.	Fiddleneck

Brassicaceae

**Brassica nigra*	Black mustard
**Hirschfeldia incana*	Short-podded mustard
**Lepidium latifolium*	Broadleaf pepperweed
**Sinapis arvensis*	Wild mustard

Caryophyllaceae

**Stellaria media*	Common chickweed

Chenopodiaceae

**Salsola tragus*	Russian-thistle

Fabaceae

Lupinus bicolor	Bicolored lupine
**Vicia sativa*	Common vetch

Fagaceae

Quercus lobata	Valley oak

Frankeniaceae

Frankenia salina	Alkali heath

Geraniaceae

**Geranium dissectum*	Cut-leaf geranium

Montiaceae

Claytonia parviflora	Miner's lettuce

Myrtaceae

**Eucalyptus globulus*	Blue gum

* Indicates a non-native species

Table 1

Plant Species Observed on the Creekside Project Site in 2019

Polygonaceae	
**Rumex crispus*	Curly dock
Rosaceae	
Heteromeles arbutifolia	Toyon
**Prunus dulcis*	Almond tree
Rosa californica	California rose
Salicaceae	
Salix laevigata	Red willow
Salix lasiolepis	Arroyo willow
Sapindaceae	
Aesculus californica	California buckeye
Solanaceae	
**Nicotiana glauca*	Tree tobacco
**Solanum sp.*	Nightshade
Angiosperms -Monocots	
Cyperaceae	
Cyperus eragrostis	Tall flatsedge
Schoenoplectus americanus	Olney's bulrush
Poaceae	
**Avena barbata*	Slender wild oat
**Bromus diandrus*	Ripgut grass
**Bromus hordeaceus*	Soft chess
Elymus triticoides	Creeping wildrye
**Hordeum murinum*	Wall barley
Typhaceae	
Typha angustifolia	Narrow-leaved cattail

* Indicates a non-native species

Table 2
Wildlife Species Observed on the Creekside Project Site in 2019

Fish	
Mosquito fish	*Gambusia affinis*
Amphibians	
California newt	*Taricha torosa*
California slender salamander	*Batrachoseps attenuatus*
California toad	*Anaxyrus boreas halophilus*
Sierran treefrog	*Pseudacris sierra*
Reptiles	
Western pond turtle **	*Emys marmorata*
Western fence lizard	*Sceloporus occidentalis*
Pacific gopher snake	*Pituophis catenifer catenifer*
Western aquatic garter snake	*Thamnophis couchii*
Birds	
Northern flicker	*Colaptes auratus*
Turkey vulture	*Cathartes aura*
Mallard	*Anas platyrhynchos*
White-tailed kite	*Elanus leucurus*
Red-tailed hawk	*Buteo jamaicensis*
Golden eagle	*Aquila chrysaetos*
American kestrel	*Falco sparverius*
Wild turkey	*Meleagris gallopavo*
California quail	*Callipepla californica*
Killdeer	*Charadrius vociferus*
Rock pigeon	*Columba livia*
Mourning dove	*Zenaida macroura*
Great horned owl	*Bubo virginianus*
Western burrowing owl	*Athene cunicularia hypugaea*
Anna's hummingbird	*Calypte anna*
Nuttall's woodpecker	*Picoides nuttallii*
Black phoebe	*Sayornis nigricans*
Say's phoebe	*Sayornis saya*
Ash-throated flycatcher	*Myiarchus cinerascens*
Western kingbird	*Tyrannus verticalis*
Loggerhead shrike	*Lanius ludovicianus*
California scrub jay	*Aphelocoma californica*
American crow	*Corvus brachyrhynchos*
Common raven	*Corvus corax*
Oak titmouse	*Baeolophus inornatus*
Bushtit	*Psaltriparus minimus*
White-breasted nuthatch	*Sitta carolinensis*
Marsh wren	*Cistothorus palustris*
Ruby-crowned kinglet	*Regulus calendula*
Northern mockingbird	*Mimus polyglottos*
European starling	*Sturnus vulgaris*

Table 2
Wildlife Species Observed on the Creekside Project Site in 2019

American pipit	*Anthus rubescens*
Yellow-rumped warbler	*Setophaga coronata*
Wilson's warbler	*Cardellina pusilla*
California towhee	*Pipilo crissalis*
Lark sparrow	*Chondestes grammacus*
Savannah sparrow	*Passerculus sandwichensis*
White-crowned sparrow	*Zonotrichia leucophrys*
Golden-crowned sparrow	*Zonotrichia atricapilla*
Red-winged blackbird	*Agelaius phoeniceus*
Western meadowlark	*Sturnella neglecta*
Brewer's blackbird	*Euphagus cyanocephalus*
House finch	*Haemorhous mexicanus*
House sparrow	*Passer domesticus*
Mammals	
Fox squirrel	*Sciurus niger*
Audubon's cottontail	*Sylvilagus audubonii*
California ground squirrel	*Otospermophilus beecheyi*
Botta's pocket gopher	*Thomomys bottae*
California meadow vole	*Microtus californicus*
Coyote	*Canis latrans*
Raccoon	*Procyon lotor*
Striped skunk	*Mephitis mephitis*
Bobcat	*Lynx rufus*

Table 3

Known Special Status Plant Species in the Vicinity of the Creekside Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Adoxaceae					
Viburnum ellipticum Western viburnum	Fed: - State: - CNPS: Rank 2B.3	May-July	Chaparral; cismontane woodland; lower montane coniferous forest.	CNPS Nine Quad Search	None. No suitable habitat. No impacts expected.
Apiaceae					
Cicuta maculata bolanderi Bolander's waterhemlock	Fed: - State: - CNPS: Rank 2B.1	July-September	Marshes and swamps (coastal, fresh, or brackish). 0 to 200 meters.	Record for this species located 4.7 miles northeast from the project site (Occurrence No. 15).	None. No suitable habitat. No impacts expected.
Eryngium jepsonii Button-celery	Fed: State: CNPS: Rank 1B.2	April-August	Occurs on clay in vernal pools and grassland	CNPS Nine Quad Search	None. No wetlands within impact area. No impacts expected.
Lilaeopsis masonii Mason's lilaeopsis	Fed: - State: CR CNPS: Rank 1B.1	April-October	Marshes and swamps (brackish or freshwater); riparian scrub.	Record for this species located 4.8 miles north of the project site (Occurrence No. 1).	None. No suitable habitat. No impacts expected.
Sanicula saxatilis Rock sanicle	Fed: - State: CR CNPS: Rank 1B.2	April-May	Broad-leaf upland forest; chaparral; valley and foothill grassland; [rocky].	CNPS Nine Quad Search	Unlikely. However, surveys will be conducted the year prior to development.
Asteraceae					
Blepharizonia plumosa Big tarplant	Fed: - State: - CNPS: Rank 1B.1	July-October	Valley and foothill grassland.	Record for this species located 1.5 miles southwest from the project site in 2013 (Occurrence No. 33).	Low. Surveys will be conducted the year prior to development.

Table 3

Known Special Status Plant Species in the Vicinity of the Creekside Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Centromadia parryi congdonii Congdon's tarplant	Fed: - State: - CNPS: Rank 1B.2	May-November	Valley and foothill grassland (alkaline).	CNPS Nine Quad Search	Unlikely. However, surveys will be conducted the year prior to development.
Helianthella castanea Diablo helianthella	Fed: - State: - CNPS: Rank 1B.2	March-June	Broadleafed upland forest; chaparral; cismontane woodland; coastal scrub; riparian woodland; valley and foothill grassland.	Record for this species located 2.7 miles southwest of the project site (Occurrence No. 71).	None. No suitable habitat within impact area. No impacts expected.
Isocoma arguta Carquinez goldenbush	Fed: - State: - CNPS: Rank 1B.1	August-December	Valley and foothill grassland (alkaline).	CNPS Nine Quad Search	Unlikely. However, surveys will be conducted the year prior to development.
Lasthenia conjugens Contra Costa goldfields	Fed: FE State: - CNPS: Rank 1B.1	March-June	Valley and foothill grassland (mesic); vernal pools.	Record for this species located 4.2 miles northwest of the project site (Occurrence No. 8).	None. No pools within impact area. No impact expected.
Madia radiata Showy golden madia	Fed: - State: - CNPS: Rank 1B.1	March-May	Cismontane woodland; valley and foothill grassland.	Record for this species located 1.0 miles west of the project site in 1941 (Occurrence No. 25).	Low. Surveys will be conducted the year prior to development.
Monolopia gracilens Small-flowered monolopia	Fed: State: CNPS: Rank 1B.2	March-July	Coniferous and broadleafed upland forest openings, chaparral openings, and serpentine valley and foothill grassland. Elevation 100-1200 m.	CNPS Nine Quad Search	None. No suitable habitat. No impacts expected.

Table 3

Known Special Status Plant Species in the Vicinity of the Creekside Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Senecio aphanactis Chaparral ragwort	Fed: - State: - CNPS: Rank 2B.2	January-April	Foothill woodland; coastal scrub; (alkaline).	CNPS Nine Quad Search	None. No suitable habitat. No impacts expected.
Symphyotrichum lentum Suisun Marsh aster	Fed: - State: - CNPS: Rank 1B.2	August-November	Marshes and swamps (brackish and fresh water)	Record for this species located 4.8 miles north of the project site (Occurrence No. 8).	None. No suitable habitat. No impacts expected.
Boraginaceae					
Amsinckia grandiflora Large-flowered fiddleneck	Fed: FE State: CE CNPS: Rank 1B.1	April-May	Cismontane woodland, Valley and foothill grassland	Record for this species located 3.9 miles west of the project site in 1887; surveys in 1969 resulted in presuming extirpation (Occurrence No. 2).	Low. Surveys will be conducted the year prior to development.
Cryptantha hooveri Hoover's cryptantha	Fed: - State: - CNPS: Rank 1A	April-May	Valley and foothill grassland (sandy).	Record for this species located 4.2 miles north of the project site in 1908 (Occurrence No. 4).	Unlikely. Believed extirpated. However, surveys will be conducted the year prior to development.
Phacelia phacelioides Mount Diablo phacelia	Fed: - State: - CNPS: Rank 1B.2	April-May	Chaparral; cismontane woodland; [rocky]; occasionally serpentine soils.	CNPS Nine Quad Search	None. No suitable habitat, no rocky soils or serpentinite. No impacts expected.
Plagiobothrys hystriculus Bearded-nut popcornflower	Fed: - State: - CNPS: Rank 1B.1	April-May	Valley and foothill grasslands (mesic); vernal pools.	CNPS Nine Quad Search	None. No pools within impact area. No impacts expected.

Table 3

Known Special Status Plant Species in the Vicinity of the Creekside Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Brassicaceae					
Erysimum capitatum angustatum Contra Costa wallflower	Fed: FE State: CE CNPS: Rank 1B.1	March-July	Inland dunes.	Record for this species located 4.7 miles north of the project site (Occurrence No. 2).	None. No suitable habitat. No impacts expected.
Streptanthus albidus peramoenus Uncommon jewelflower	Fed: - State: - CNPS: Rank 1B.2	April-June	Chaparral; valley and foothill grassland; [serpentinite].	CNPS Nine Quad Search	None. No serpentinite within impact area. No impacts expected.
Streptanthus hispidus Mount Diablo jewelflower	Fed: - State: - CNPS: Rank 1B.3	March-June	Chaparral; valley and foothill grassland; [rocky].	CNPS Nine Quad Search	None. No rocky habitat within impact area. No impacts expected.
Tropidocarpum capparideum Caper-fruited tropidocarpum	Fed: - State: - CNPS: Rank 1B.1	March-April	Valley and foothill grassland (alkaline hills).	CNPS Nine Quad Search	Unlikely. However, surveys will be conducted the year prior to development.
Campanulaceae					
Campanula exigua Chaparral harebell	Fed: - State: - CNPS: Rank 1B.2	May-June	Chaparral (rocky, usually serpentinite).	CNPS Nine Quad Search	None. No suitable habitat; no serpentinite. No impacts expected.
Downingia pusilla Dwarf downingia	Fed: - State: - CNPS: Rank 2.2	March-May	Valley and foothill grassland (mesic); vernal pools.	CNPS Nine Quad Search	None. No wetlands within impact area. No impacts expected.

Table 3

Known Special Status Plant Species in the Vicinity of the Creekside Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Caryophyllaceae					
Spergularia macrotheca longistyla Long-styled sand-spurrey	Fed: - State: - CNPS: Rank 1B.2	February-May	Alkaline marshes, mud flats, meadows, hot springs. Occurs at elevations less than 200 M.	CNPS Nine Quad Search	None. No suitable habitat. No impacts expected.
Chenopodiaceae					
Atriplex cordulata cordulata Heartscale	Fed: - State: - CNPS: Rank 1B.2	April-October	Meadows and seeps; chenopod scrub; valley and foothill grassland (sandy); [saline or alkaline].	CNPS Nine Quad Search	Unlikely. However, surveys will be conducted the year prior to development.
Atriplex depressa Brittlescale	Fed: - State: - CNPS: Rank 1B.2	May-October	Chenopod scrub; playas; valley and foothill grassland; [alkaline or clay].	Record for this species located 0.1 mile south of the project site in 2006 (Occurrence No. 74).	Unlikely. However, surveys will be conducted the year prior to development.
Atriplex minuscula Lesser saltbush	Fed: - State: - CNPS: Rank 1B.1	May-October	Chenopod scrub; playas; valley and foothill grassland [alkaline].	CNPS Nine Quad Search	Unlikely. However, surveys will be conducted the year prior to development.
Extriplex joaquinana San Joaquin spearscale	Fed: - State: - CNPS: Rank 1B.2	April-October	Chenopod scrub; meadows; valley and foothill grassland; [alkaline].	Record for this species located adjacent to the project site in 2006 (Occurrence No. 104).	Unlikely due to farming. However, surveys will be conducted the year prior to development. No impact expected.
Ericaceae					
Arctostaphylos auriculata Mount Diablo manzanita	Fed: - State: - CNPS: Rank 1B.3	January-March	Chaparral (sandstone).	Record for this species located 3.6 miles west of the project site (Occurrence No. 18).	None. No suitable habitat. No manzinatas onsite. No impacts expected.

Table 3

Known Special Status Plant Species in the Vicinity of the Creekside Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Arctostaphylos manzanita laevigata Contra Costa manzanita	Fed: - State: - CNPS: Rank 1B.2	January-February	Chaparral (rocky),	Record for this species located 4.9 miles south of the project site (Occurrence No. 10).	None. No suitable habitat. No manzinatas onsite. No impacts expected.
Fabaceae					
Astragalus tener tener Alkali milkvetch	Fed: - State: - CNPS: Rank 1B.2	March-June	Playas; mesic grasslands (adobe clay), vernal pools (alkaline).	CNPS Nine Quad Search	Unlikely. However, surveys will be conducted the year prior to development.
Lathyrus jepsonii jepsonii Delta tule pea	Fed: - State: - CNPS: Rank 1B.2	May-September	Marshes and swamps (freshwater and brackish).	CNPS Nine Quad Search	None. No suitable habitat. No impacts expected.
Lamiaceae					
Monardella antonina antonina San Antonio HIlls monardella	Fed: - State: - CNPS: Rank 3	June-August	Chaparral; cismontane woodland.	CNPS Nine Quad Search	None. No suitable habitat. No impacts expected.
Liliaceae					
Calochortus pulchellus Mt. Diablo fairy lantern	Fed: - State: - CNPS: Rank 1B.2	April-June	Chaparral; cismontane woodland; valley and foothill grassland.	CNPS Nine Quad Search	Unlikely. However, surveys will be conducted the year prior to development.
Fritillaria liliacea Fragrant fritillary	Fed: - State: - CNPS: Rank 1B.2	February-April	Coastal prairie; coastal scrub; valley and foothill grassland; [often serpentinite].	CNPS Nine Quad Search	None. No suitable habitat. No impacts expected.

Table 3

Known Special Status Plant Species in the Vicinity of the Creekside Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Linaceae					
Hesperolinon breweri Brewer's western flax	Fed: - State: - CNPS: Rank 1B.2	May-July	Chaparral; cismontane woodland; valley and foothill grassland; [mostly serpentinite].	Record for this species located 2.0 miles north of the project site (Occurrence No. 32).	None. No suitable habitat. No impact expected.
Malvaceae					
Hibiscus lasiocarpos occidentalis Woolly rose-mallow	Fed: - State: - CNPS: Rank 1B.2	June-September	Marshes and swamps (freshwater).	CNPS Nine Quad Search	None. No suitable habitat. No impacts expected.
Malacothamnus hallii Hall's bush mallow	Fed: - State: - CNPS: Rank 1B.2	May-September	Chaparral.	CNPS Nine Quad Search	None. No suitable habitat. No impacts expected.
Onagraceae					
Oenothera deltoides howellii Antioch dunes evening-primrose	Fed: FE State: CE CNPS: Rank 1B.1	March-September	Interior dunes.	Record for this species located 3.8 miles north from the project site (Occurrence No. 3).	None. No suitable habitat. No impacts expected.
Orobanchaceae					
Chloropyron molle molle Soft bird's-beak	Fed: FE State: CR CNPS: Rank 1B.2	July-September	Marshes and swamps (coastal salt).	CNPS Nine Quad Search	None. No suitable habitat. No impacts expected.

Table 3

Known Special Status Plant Species in the Vicinity of the Creekside Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Cordylanthus nidularius Mount Diablo bird's-beak	Fed: FC State: CR CNPS: Rank 1B.1	July-August	Chaparral (serpentinite).	CNPS Nine Quad Search	None. No suitable habitat. No impacts expected.
Papaveraceae					
Eschscholzia rhombipetala Diamond-petaled California poppy	Fed: - State: - CNPS: Rank 1B.1	March-April	Valley and foothill grassland (clay).	Record for this species located 4.7 miles north of the project site in 1994 (Occurrence No. 3).	Low. Surveys will be conducted the year prior to development.
Poaceae					
Neostapfia colusana Colusa grass	Fed: FT State: CE CNPS: Rank 1B.1	May-August	Vernal pools	CNPS Nine Quad Search	None. No suitable habitat. No impacts expected.
Puccinellia simplex California alkali grass	Fed: State: CNPS: Rank 1B.2	March-June	Meadows and seeps, chenopod scrub, valley and foothill grasslands, vernal pools. Alkaline, vernally mesic. Sinks, flats, and lake margins. 1-915 m.	CNPS Nine Quad Search	Low. Surveys will be conducted the year prior to development.
Polemoniaceae					
Eriastrum ertterae Lime Ridge eriastrum	Fed: State: - CNPS: Rank 1B.1	June-July	Alkaline or semi-alkaline, sandy. Chaparral (openings or edges)	CNPS Nine Quad Search	None. No suitable habitat. No impacts expected.
Navarretia gowenii Lime Ridge navarretia	Fed: - State: - CNPS: Rank 1B.1	May-June	Chaparral.	CNPS Nine Quad Search	None. No suitable habitat. No impacts expected.

Table 3

Known Special Status Plant Species in the Vicinity of the Creekside Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Navarretia nigelliformis radians Shining navarretia	Fed: - State: - CNPS: Rank 1B.2	May-June	Cismontane woodland; valley and foothill grassland; slightly mesic depressions.	Record for this species located 1.5 miles west of the project site in 2015 (Occurrence No. 81).	Unlikely. However, surveys will be conducted the year prior to development.
Polygonaceae					
Eriogonum nudum psychicola Antioch Dunes buckwheat	Fed: State: CNPS: Rank 1B.1	June-October	Deltaic Great Central Valley Elevation: 0-66 ft Coastal strand, foothill woodland, chaparall, valley grassland [sandy].	CNPS Nine Quad Search	None. No suitable habitat. No impacts expected.
Eriogonum truncatum Mount Diablo buckwheat	Fed: - State: - CNPS: Rank 1B.1	April-September	Chaparral; coastal scrub; valley and foothill grassland; [sandy].	Record for this species located 3.6 miles southwest of the project site from 1903 (Occurrence No. 3).	Unlikely. However, surveys will be conducted the year prior to development.
Potamogetonaceae					
Potamogeton zosteriformis Eel-grass pondweed	Fed: - State: - CNPS: Rank 2B.2	June-July	Marshes and swamps (assorted freshwater).	CNPS Nine Quad Search	None. No suitable habitat. No impacts expected.
Stuckenia filiformis alpina Slender-leaved pondweed	Fed: - State: - CNPS: Rank 2.2	May-July	Marshes and swamps (assorted shallow freshwater).	CNPS Nine Quad Search	None. No suitable habitat. No impacts expected.
Ranunculaceae					
Delphinium californicum interius Hospital Canyon larkspur	Fed: - State: - CNPS: Rank 2.2	April-June	Cismontane woodland (mesic).	CNPS Nine Quad Search	None. No suitable habitat. No impacts expected.

Table 3

Known Special Status Plant Species in the Vicinity of the Creekside Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Delphinium recurvatum Recurved larkspur	Fed: - State: - CNPS: Rank 1B.2	March-June	Chenopod scrub; cismontane woodland; valley and foothill grassland; [alkaline].	CNPS Nine Quad Search	Low. Surveys will be conducted the year prior to development.
Scrophulariaceae					
Limosella australis Delta mudwort	Fed: - State: - CNPS: Rank 2.1	May-August	Marshes and swamps; intertidal mudflats.	Record for this species located 4.8 miles north of the project site (Occurrence No. 41).	None. No suitable habitat. No impacts expected.
Thymelaeaceae					
Dirca occidentalis Western leatherwood	Fed: - State: - CNPS: Rank 1B.2	January-April	Chaparral; riparian, broadleaf, and coniferous woodlands and forests; [mesic locations].	CNPS Nine Quad Search	None. No suitable habitat. No impacts expected.

Table 3

Known Special Status Plant Species in the Vicinity of the Creekside Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CC - California Candidate
CSC - California Species of Special Concern

CNPS:
Rank 1A - Presumed extinct in California
Rank 1B - Plants rare, threatened, or endangered in California and elsewhere
Rank 1B.1 - Seriously endangered in California (over 80% occurrences threatened/ high degree and immediacy of threat)
Rank 1B.2 - Fairly endangered in California (20-80% occurrences threatened)
Rank 1B.3 - Not very endangered in California (<20% of occurrences threatened or no current threats known)

CNPS Continued:
Rank 2 - Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 2A - Extirpated in California, common elsewhere
Rank 2B.1 - Seriously endangered in California, but more common elsewhere
Rank 2B.2 - Fairly endangered in California, but more common elsewhere
Rank 2B.3 - Not very endangered in California, but more common elsewhere
Rank 3 - Plants about which we need more information (Review List)
Rank 3.1 - Plants about which we need more information (Review List) Seriously endangered in California
Rank 3.2 - Plants about which we need more information (Review List) Fairly endangered in California
Rank 4 - Plants of limited distribution - a watch list

Table 4

Known Special Status Wildlife Species in the Vicinity of the Creekside Project Site

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Invertebrates				
Vernal pool fairy shrimp *Branchinecta lynchi*	Fed: FT State: - Other:	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains. Inhabit static rain-filled/vernal pools, small, clear water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression	2003 CNDDB Record for this species located 1.6 miles west of the project site (Occurrence No. 353).	Condor County Consulting also found vernal pool fairy shrimp in 2002 in shallow pools adjacent to dranaige channel outside project area. See text.
Vernal pool tadpole shrimp *Lepidurus packardi*	Fed: FE State: - Other:	Inhabits large vernal pools with turbid and/or silty water. Mud substrate typical.	Record for this species located 2.4 miles west of the project site (Occurrence No. 177).	None. No large vernal pools on project site.
Insects				
Crotch bumble bee *Bombus crotchii*	Fed: State: CC Other:	Inhabits grassland and scrub areas, with select food plants: Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogum. Nests underground, often in abandoned rodent dens.	Record for this species located 4.3 miles northwest of the project site (Occurrence No. 14).	None. Farmed conditions would preclude presence on project site.
western bumble bee *Bombus occidentalis*	Fed: State: CC Other:	Inhabits grassland with select food plants: Melilotus, Cirsium, Trifolium, Centaurea, Chrysothamnus, and Eriogonum. Typically nests underground in abandoned rodent burrows or other cavities.	Record for this species located 3.1 miles east of the project site (Occurrence No. 211).	None. Farmed conditions would preclude presence on project site.
Lange's metalmark butterfly *Apodemia mormo langei*	Fed: FE State: - Other:	Found in stabilized sand dunes along the San Joaquin River at Antioch (Contra Costa County). Buckwheat (Eriogonum nudum var. auriculatum) is the host plant. Nectars on other wildflowers as well as the buckwheat.	Record for this species located 4.9 miles north of the project site (Occurrence No. 1).	None. No dune habitat on the project site.

Table 4

Known Special Status Wildlife Species in the Vicinity of the Creekside Project Site

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Fish				
Longfin smelt *Spirinichus thaleichthys*	Fed: -- State: CT Other:	Endemic to the Sacramento-San Joaquin River system. Inhabits open waters in the Delta and Suisun Bay. After spawning, larvae are carried downstream to brackish nursery areas.	Record for this species located 4.9 miles north of the project site (Occurrence No. 33).	None. No rivers on the project site.
Amphibians				
California tiger salamander (Cnt Vly DPS) *Ambystoma californiense*	Fed: FT State: CT Other:	Found in grassland habitats of the valleys and foothills. Requires burrows for aestivation and standing water until late spring (May) for larvae to metamorphose.	Record for this species located 0.25-mile south of the project site (Occurrence No. 856). Eggs and larvae observed in 2002 in a pond.	Low potential to occur however, oversummering habitat is assumed to be present. See text.
Western spadefoot *Spea hammondii*	Fed: -- State: CSC Other:	Found primarily in grassland habitats, but may occur in valley and foothill woodlands. Requires vernal pools, seasonal wetlands, or stock ponds for breeding and egg laying. Eggs are typically laid in March. Eggs hatch and larval metamorphose quickly.	Record for this species located 18.3 miles south of the project site (Occurrence No. 404).	None. No suitable habitat onsite.
California red-legged frog *Rana draytonii*	Fed: FT State: CSC Other:	Occurs in lowlands and foothills in deeper pools and streams, usually with emergent wetland vegetation. Requires 11-20 weeks of permanent water for larval development.	Record for this species located 0.7-mile west of the project site in Sadn Creek (Occurrence No. 933). 6 adults were observed within Sand Creek in 2005.	Species is known to occur in Sand Creek. See text.
Foothill yellow-legged frog *Rana boylii*	Fed: -- State: CC Other:	Found in partially shaded, shallow streams with rocky substrates. Requires perenial pools or flowing water. Needs some cobble-sized rocks as a substrate for egg laying. Requires water for 15 weeks for larval transformation.	Record for this species located 4.9 miles southwest of the project site (Occurrence No. 787).	None. No suitable stream habitat onsite.

Table 4

Known Special Status Wildlife Species in the Vicinity of the Creekside Project Site

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Reptiles				
California glossy snake *Arizona elegans occidentalis*	Fed: State: CSC Other:	Found at elevations from sea level to 6000 ft. Nocturnal. Lives in burrows. Habitats: barren desert, creosote flats, sagebrush flats, coastal sage, chaparral, grasslands, oak or pine woodlands. Generally prefers open areas with soft or loamy soil.	Record for this species located 4.7 miles north of the project site (Occurrence No. 259).	None. No suitable habitat onsite.
Western pond turtle *Emys marmorata*	Fed: - State: CSC Other:	Inhabits ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Needs suitable basking sites and upland habitat for egg laying. Occurs in the Central Valley and Contra Costa County.	Record for this species located 3.9 miles southwest of the project site (Occurrence No. 109).	Low to moderate: Sand Creek provides potentially suitable habitat. Preconstruction surveys will be conducted.
Northern California legless lizard *Anniella pulchra*	Fed: - State: CSC Other:	Occurs from the southern edge of the San Joaquin River in northern Contra Costa County south to Ventura County. Inhabit sandy soil/dune area with bush lupine and mock heather as dominant plants. Moist soil is essential.	Record for this species located 3.1 miles west of the project site (Occurrence No. 6).	None. No suitable sandy or dune habitats on or adjacent to the project site.
Alameda Whipsnake *Masticophis lateralis euryxanthus*	Fed: FT State: CT Other:	Coastal scrub and chaparral habitats of Contra Costa and Alameda Counties. Prefers south-facing slopes with a mosaic of shrubs, trees, and grassland.	Record for this species located 3.5 miles west of the project site (Occurrence No. 68).	None. No core scrub habitats on or ajacent to site.
Giant gartersnake *Thamnophis gigas*	Fed: FT State: CT Other:	Inhabits freshwater marshes and low gradient streams. Also found in drainage canals and irrigation ditches.	Record for this species located 4.9 miles north of the project site (Occurrence No. 47).	None. No suitable stream habitat on site.

Table 4

Known Special Status Wildlife Species in the Vicinity of the Creekside Project Site

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Birds				
Song Sparrow (Modesto Population) *Melospiza melodia mailliardi*	Fed: State: CSC Other:	Endemic to California, residing only in the north-central portion of the Central Valley. Inhabits emergent freshwater marsh. vegetated irragation canals and levees dominated by tules/cattails, and blackberry. Nests in riparian willows and valley oak.	Record for this species located 4.9 miles northwest of the project site (Occurrence No. 91).	Unlikely to occur. Preconstruction surveys will be conducted.
White-tailed kite *Elanus leucurus*	Fed: State: FP Other:	Found in lower foothills and valley margins with scattered oaks and along river bottomlands or marshes adjacent to oak woodlands. Nests in trees with dense tops.	2005 record for this species located 2.1 miles north of the project site (Occurrence No. 87).	Low to moderate: Nesting habitat exist within riparian area of Sand Creek. Preconstruction surveys will be conducted.
Northern harrier *Circus hudsonius*	Fed: - State: CSC Other:	Nests on the ground or in shrubby vegetation typically in grasslands, fallow farm lands, near freshwater and salt water marshes.	Record for this species located 13.5 miles southwest of the project site (Occurrence No. 27).	Low. May nest in habitats adjacent to project site. Preconstruction surveys will be conducted.
Swainson's hawk *Buteo swainsoni*	Fed: - State: CT Other:	Migratory and resident raptor that breeds in open areas with scattered trees. Prefers riparian and sparse oak woodland habitats for nesting. Requires nearby grasslands, grain fields, or alfalfa for foraging.	Record for this species located 0.1-mile east of the project site (Occurrence No. 1681). Nest found in a large valley oak along Sand Creek in 2007.	Low to moderate: Nesting habitat exist within riparian area of Sand Creek. Preconstrction surveys will be conducted.
Golden eagle *Aquila chrysaetos*	Fed: - State: FP Other:	Found in rolling foothill grassland with scattered trees. Nests on cliffs and in large trees in open areas.	Observed onsite and nesting immediately north of site.	Observed nesting along Sand Creek in 2018 and 2019. See text.
California black rail *Laterallus jamaicensis coturniculus*	Fed: -- State: CT Other:	Inhabits salt marshes bordering larger bays. Prefers tidal salt marshes of pickleweed.	Record for this species located 4.5 miles northeast of the project site (Occurrence No. 109).	None. No marsh habitats on site.

Table 4

Known Special Status Wildlife Species in the Vicinity of the Creekside Project Site

Species	*Status	Habitat	Closest Locations	Probability on Project Site
Western burrowing owl *Athene cunicularia hypugaea*	Fed: -- State: CSC Other:	Found in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Record for this species located 0.8 mile from the project site (Occurrence No. 623). 2 individuals observed at active burrow site in 2018.	Observed in 2018. California ground squirrels present on property. Preconstruction surveys will be conducted.
Loggerhead shrike *Lanius ludovicianus*	Fed: -- State: CSC Other:	Found in broken woodlands, shrubland, and other habitats. Prefers open country with scattered perches for hunting and fairly dense brush for nesting.	Record for this species located 4.6 miles northeast of the project site (Occurrence No. 3).	Low. May nest in habitats adjacent to project site. Preconstruction surveys will be conducted.
Grasshopper sparrow *Ammodramus savannarum*	Fed: -- State: CSC Other:	Dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs, and scattered shrubs. Loosely colonial when nesting.	Record for this species located 13.1 miles south of the project site (Occurrence No. 21).	Low. May nest in habitats adjacent to project site.Preconstruction surveys will be conducted.
Tricolored blackbird *Agelaius tricolor*	Fed: - State: CC Other: CSC	Colonial nester in dense cattails, tules, brambles or other dense vegetation. Requires open water, dense vegetation, and open grassy areas for foraging.	Record for this species located 2 miles southwest of the project site (Occurrence No. 838). About 30 birds observed near 3 ponds on Roddy Ranch golf course in 2015.	Low to moderate: Limited nesting habitat exists within riparian area of Sand Creek. Preconstruction surveys will be conducted.
Mammals				
Pallid bat *Antrozous pallidus*	Fed: - State: CSC Other:	Occurs in deserts, grasslands, shrublands, woodlands, and forests. Most common in dry habitats with rocky areas for roosting. Roosts in caves, crevices, mines, and occasionally hollow trees. Night roosts in open areas such as porches and open buildings.	Record for this species located 7 miles southwest of the project site (Occurrence No. 140). Record from 1929.	None. No impacts will occur to any potential roosting habitat.
San Joaquin kit fox *Vulpes macrotis mutica*	Fed: FE State: CT Other:	Inhabits open grasslands with scattered shrubs. Needs loose-textured sand soils for burrowing.	Record for this species located 3.1 miles south of the project site (Occurrence No. 936).	Unlikely to occur. Considered extripated from Contra Costa County. Regardless, preconstruction surveys will be conducted.

Table 4

Known Special Status Wildlife Species in the Vicinity of the Creekside Project Site

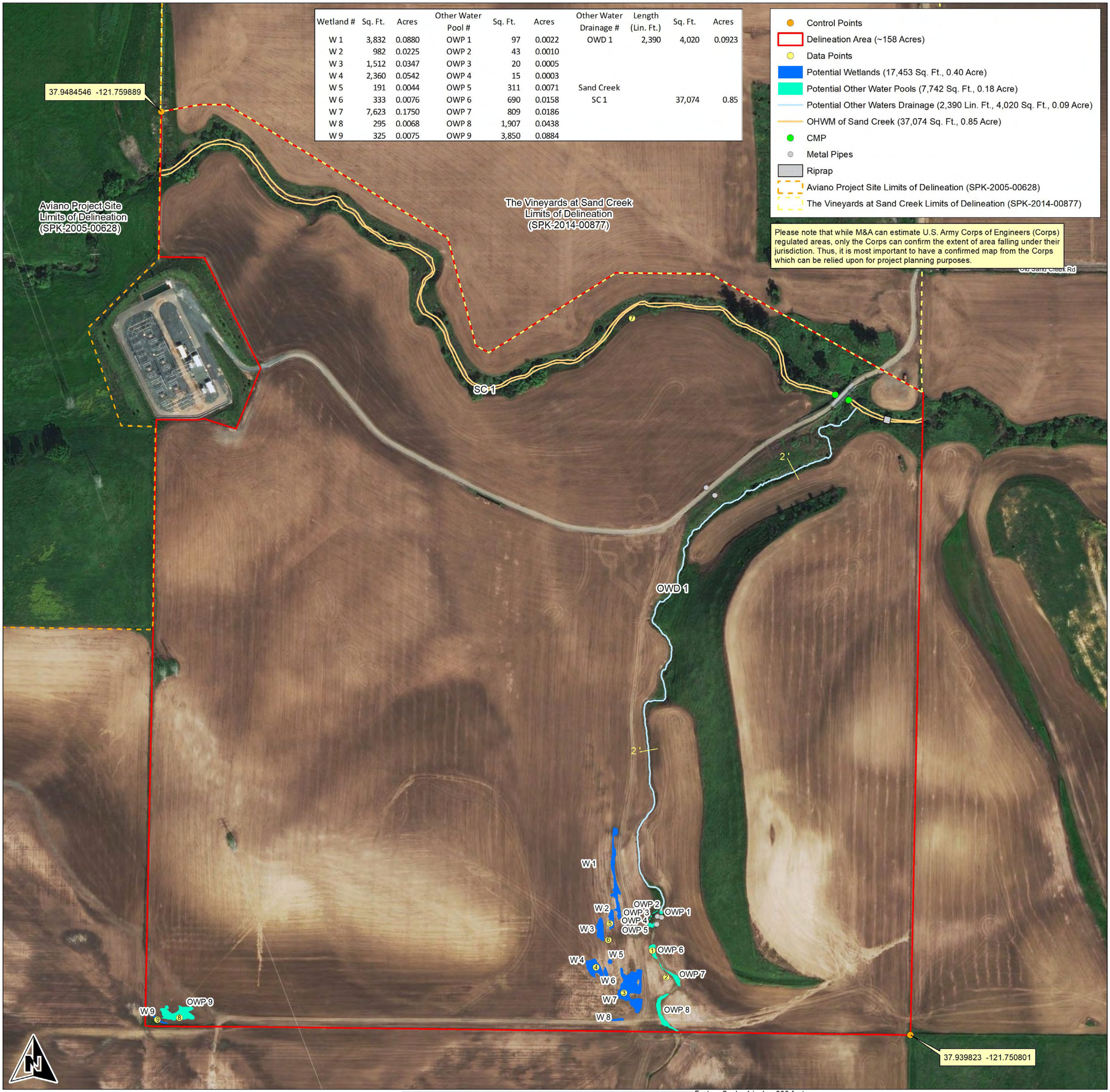
Species	*Status	Habitat	Closest Locations	Probability on Project Site
American badger *Taxidea taxus*	Fed: - State: CSC Other:	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Need sufficient food, friable soils & open, uncultivated ground. Prey on burrowing rodents. Dig burrows.	Record for this species located on the project site (Occurrence No. 398). Burrow was observed in 2007.	Low potential to occur. Site has long history of farming. Preconstruction surveys will be conducted. See text.

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate
FPD - Federally Proposed for delisting

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CC - California Candidate
CSC - California Species of Special Concern
FP - Fully Protected
WL - Watch List. Not protected pursuant to CEQA

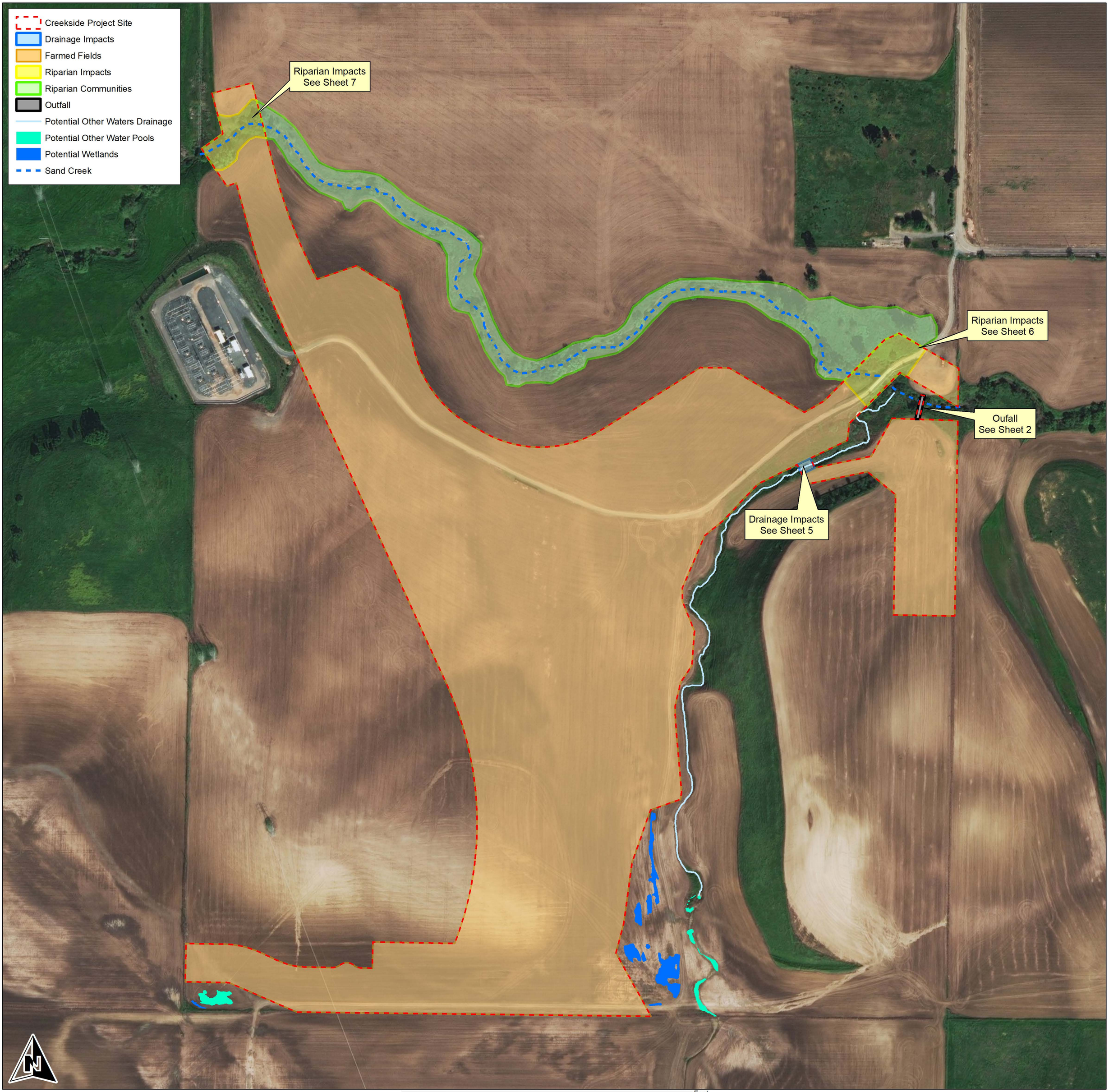
Wetland #	Sq. Ft.	Acres	Other Water Pool #	Sq. Ft.	Acres	Other Water Drainage #	Length (Lin. Ft.)	Sq. Ft.	Acres
W 1	3,832	0.0880	OWP 1	97	0.0022	OWD 1	2,390	4,020	0.0923
W 2	982	0.0225	OWP 2	43	0.0010				
W 3	1,512	0.0347	OWP 3	20	0.0005				
W 4	2,360	0.0542	OWP 4	15	0.0003				
W 5	191	0.0044	OWP 5	311	0.0071	Sand Creek			
W 6	333	0.0076	OWP 6	690	0.0158	SC 1		37,074	0.85
W 7	7,623	0.1750	OWP 7	809	0.0186				
W 8	295	0.0068	OWP 8	1,907	0.0438				
W 9	325	0.0075	OWP 9	3,850	0.0884				



Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Sheet 1. Draft Aquatic Resources Delineation Map
Ginocchio Delineation Area
Antioch, California

Delineation Conducted on: April 8, 2019
Delineation Conducted by: Hope Kingma & Sharon Dulava
Aerial Photograph Source: ESRI
Map Preparation Date: February 10, 2020



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Environmental Consultants
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Walnut Creek, California 94595
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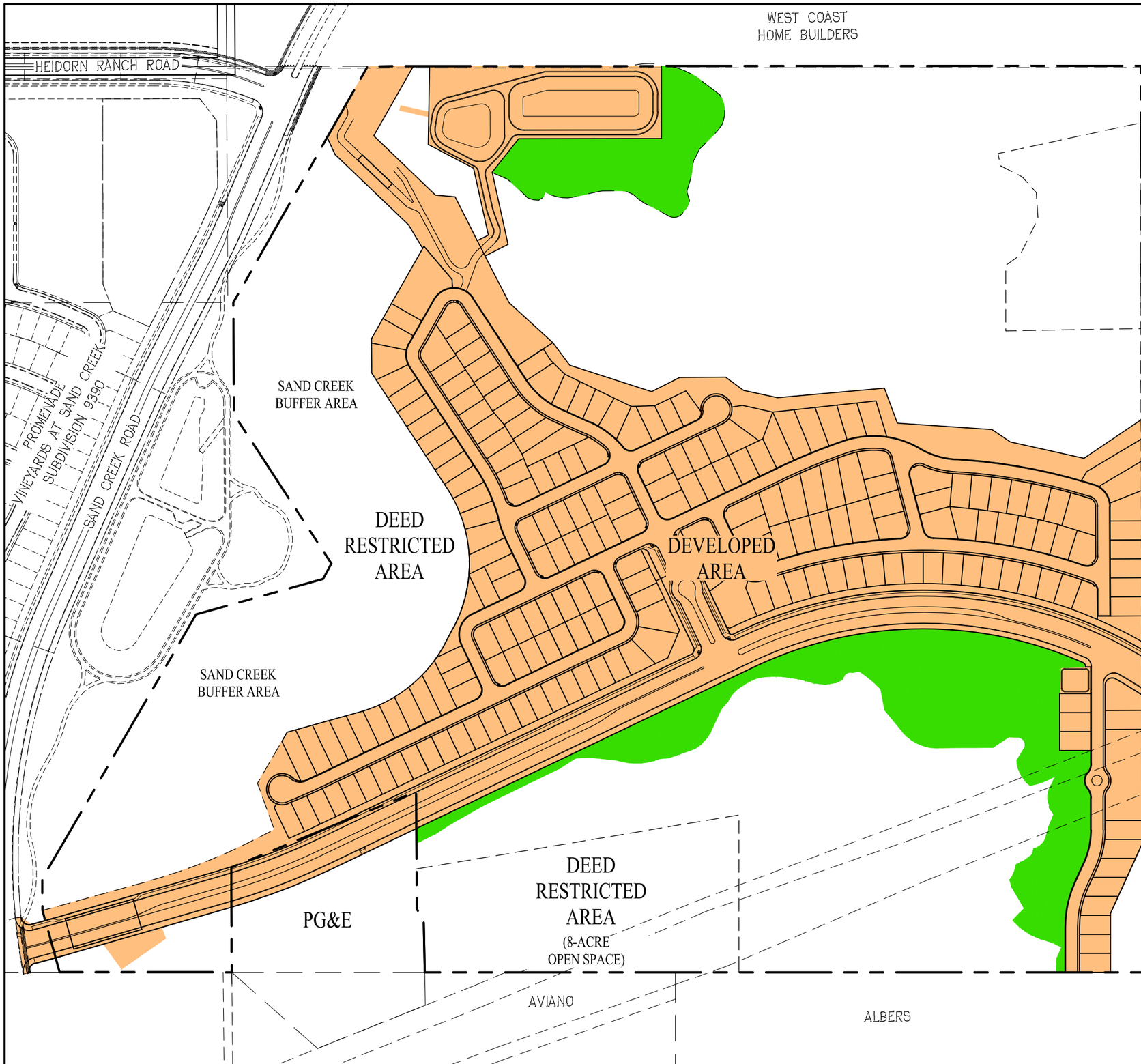
Sheet A. Vegetation Communities and Impacts
Creekside Project Site
Antioch, California

Aerial Photograph Source: ESRI
Map Preparation Date: February 10, 2020



LEGEND

OFFSITE (NO IMPACT)	(58.3 AC)
OFFSITE GRADING/ TEMPORARY IMPACT	(11.0± AC)
DEED RESTRICTED AREA	(31.7± AC)
DEVELOPED AREA	(58.6± AC)

BIOLOGICAL RESOURCES ANALYSIS: PROJECT DESCRIPTION AREAS

CREEKSIDE

CITY OF ANTIOCH CONTRA COSTA COUNTY CALIFORNIA

DATE: NOVEMBER 7, 2019 SCALE: 1"=300'

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EXISTING 48" & 60" OUTFALL
PROPOSED OUTFALL (SEE SHEET 7)
PROPOSED BRIDGE (HILLCREST EXTENSION)
PROPOSED ROCK SLOPE PROTECTION
TOP OF BANK
TOP OF BANK
SHELL WESTERN E&P, INC
HEIDORN RANCH ROAD
OLD SAND CREEK
SAND CREEK ROAD
TOP OF BANK
SUBDIVISION BOUNDARY
PG&E
TOP OF BANK
EXISTING PG&E BRIDGE
LIMIT OF DEED RESTRICTED AREA
PROPOSED PEDESTRIAN BRIDGE (SEE SHEET 6)
SAND CREEK
DEED RESTRICTED AREA (23.6± AC)
TOP OF BANK
EXISTING 60" OUTFALL (NORTH) AND ROCK SLOPE PROTECTION
PROPOSED ROCK SLOPE PROTECTION
PROPOSED CULVERTED ROAD CROSSING (SEE SHEET 5)
WATER QUALITY BASIN
PROPOSED DETENTION BASIN OUTFALL (SEE SHEET 2)
UNNAMED TRIBUTARY
DETENTION BASIN
SUBDIVISION BOUNDARY
WEST COAST HOME BUILDERS INC.

OVERVIEW

CREEKSIDE

CITY OF ANTIOCH CONTRA COSTA COUNTY CALIFORNIA

DATE: JULY 9, 2019 SCALE: 1"=200'

DRAFT

0' 200' 600' 800'

SCALE: 1" = 200'

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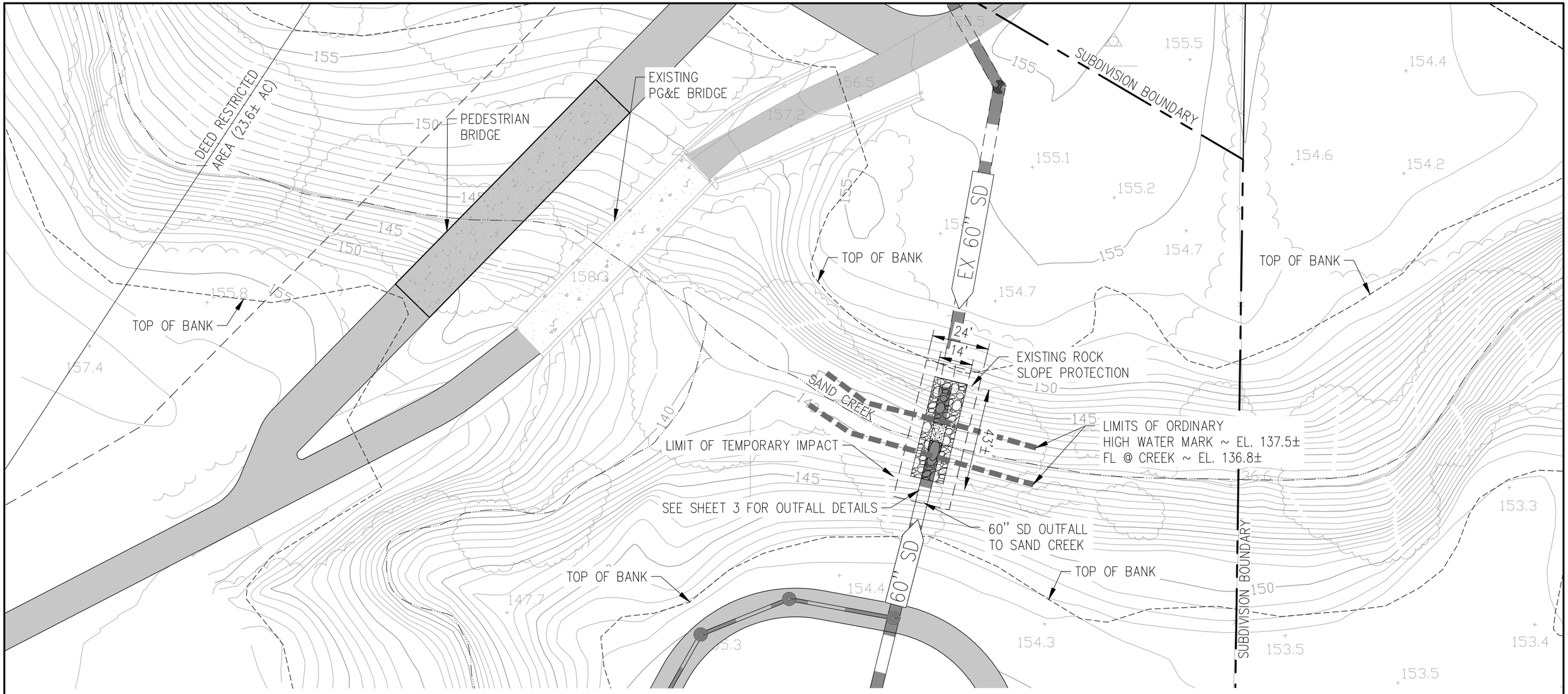

DRAFT

DETENTION BASIN AND PROPOSED OUTFALL TO SAND CREEK

CREEKSIDE

CITY OF ANTIOCH CONTRA COSTA COUNTY CALIFORNIA

DATE: JULY 9, 2019 SCALE: 1"=40'

OUTFALL IMPACTS		PERMANENT	TEMPORARY
BELOW TOP OF BANK	SF	1,200	1,800
BELOW HIGH WATER MARK	SF	300	500
VOLUME OF FILL BELOW TOP OF BANK	CY	180	–
VOLUME OF FILL BELOW HIGH WATER MARK	CY	60	–

NOTE:

THE TEMPORARY IMPACT AREA INCLUDES THE PERMANENT IMPACT AREA SQUARE FOOTAGE.

THE PERMANENT AREA BELOW TOP OF BANK INCLUDES THE AREA OF FILL BELOW THE HIGH WATER MARK.

THE VOLUME OF FILL BELOW TOP OF BANK INCLUDES THE VOLUME OF FILL BELOW THE HIGH WATER MARK.

0' 40' 120' 160'

SCALE: 1" = 40'

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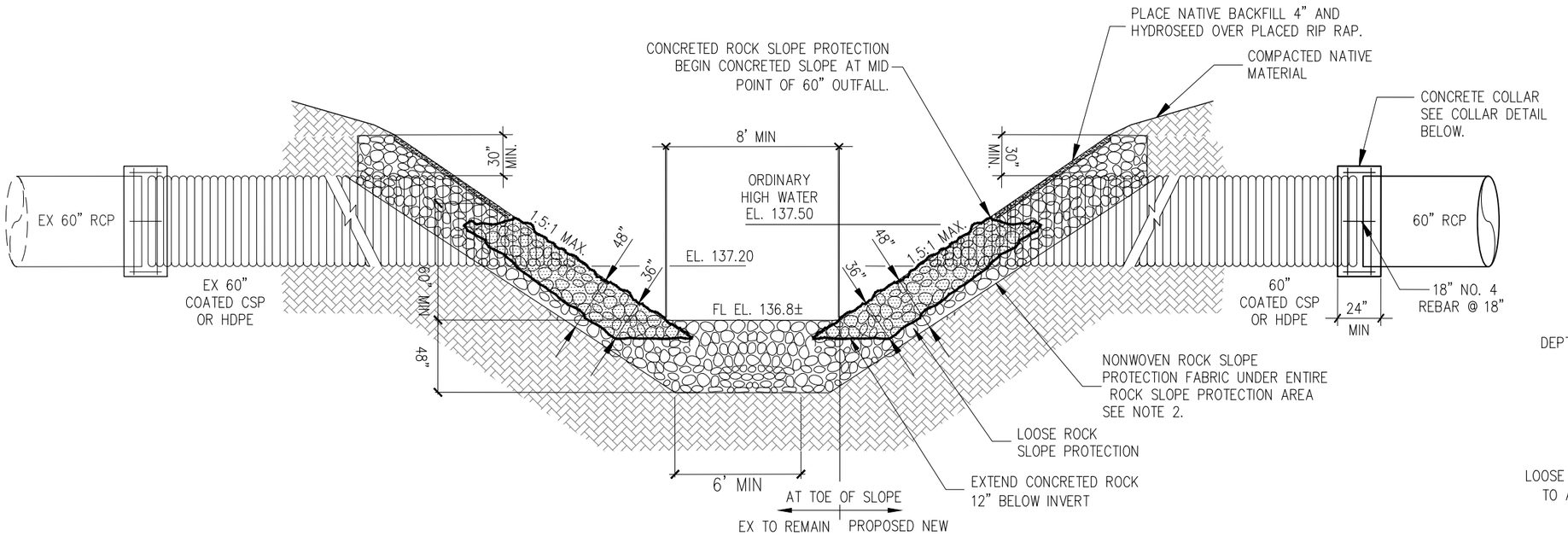
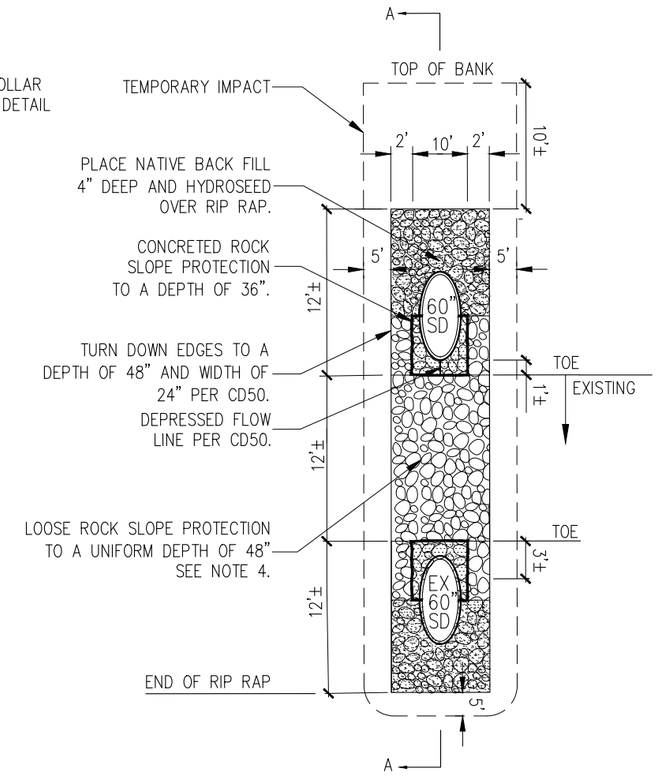


SECTION A-A

N.T.S.



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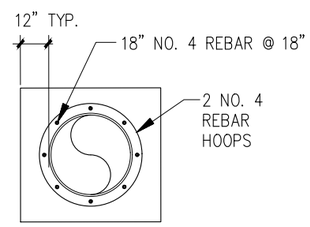

COLLAR DETAIL

N.T.S.

NOTES:

1. CONCRETED-ROCK SLOPE PROTECTION AND LOOSE ROCK SLOPE PROTECTION SHALL CONFORM TO THE STATE STANDARD SPECIFICATIONS. UNLESS OTHERWISE SPECIFIED, THE ROCK CLASS SHALL BE ¼ TON.
2. ROCK SLOPE PROTECTION FABRIC SHALL COMPLY WITH STATE STANDARD SPECIFICATIONS 72-2 "ROCK SLOPE PROTECTION". LAP ROCK SLOPE PROTECTION FABRIC IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS.
3. CONCRETE SHALL BE PLACED IN ACCORDANCE WITH STATE STANDARD SPECIFICATIONS.
4. ALL LOOSE ROCK SLOPE PROTECTION SHALL BE BACKFILLED WITH NATIVE SOIL.

DRAFT

MODIFIED CONTRA COSTA COUNTY CD50 OUTFALL DETAIL

OUTFALL IMPACTS		PERMANENT	TEMPORARY
BELOW TOP OF BANK	SF	1,200	1,800
BELOW HIGH WATER MARK	SF	300	500
VOLUME OF FILL BELOW TOP OF BANK	CY	180	–
VOLUME OF FILL BELOW HIGH WATER MARK	CY	60	–

NOTE:

THE TEMPORARY IMPACT AREA INCLUDES THE PERMANENT IMPACT AREA SQUARE FOOTAGE.

THE PERMANENT AREA BELOW TOP OF BANK INCLUDES THE AREA OF FILL BELOW THE HIGH WATER MARK.

THE VOLUME OF FILL BELOW TOP OF BANK INCLUDES THE VOLUME OF FILL BELOW THE HIGH WATER MARK.

PROPOSED OUTFALL STRUCTURE TO SAND CREEK

CREEKSIDE

CITY OF ANTIOCH CONTRA COSTA COUNTY CALIFORNIA

DATE: JULY 9, 2019 SCALE: NTS

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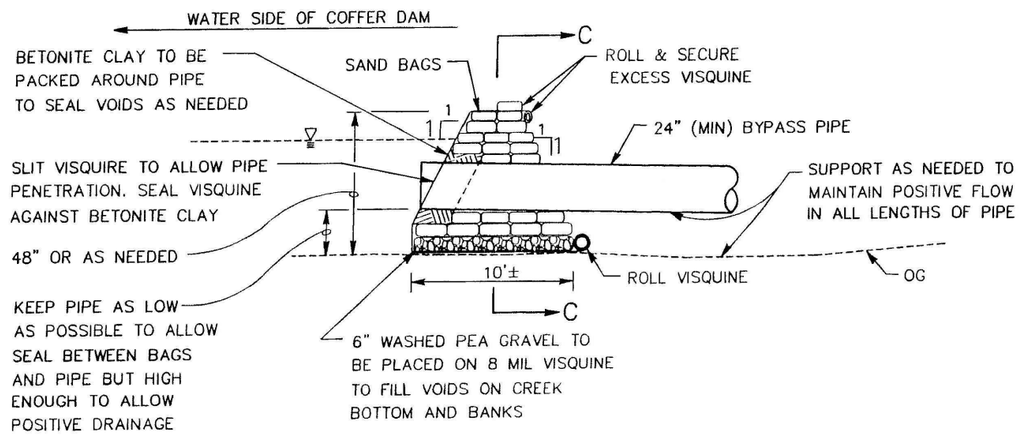
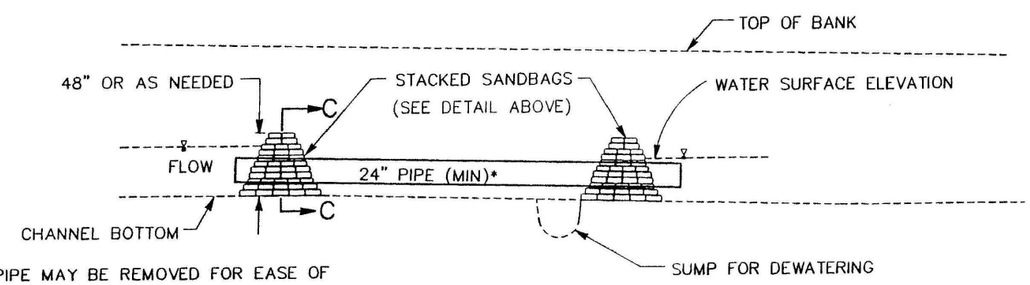


COFFER DAM DETAIL

NTS

NOTE: 1. DEWATER USING PUMPS AS NEEDED. DISCHARGE SILTY WATER PER PERMIT REQUIREMENTS. ANY WATER REMOVED FROM WORK AREA MUST BE PUMPED TO THE TOP OF BANK AND DESILTED PRIOR TO RETURNING TO THE CREEK.

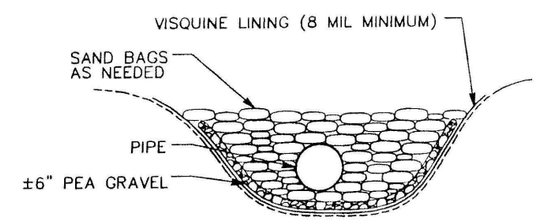
2. IF OVERLAPPING OF VISQUINE IS NEEDED, OVERLAP 4 FEET MINIMUM AND SEAL SEAM WITH APPROPRIATE SEALER OR METHODS.



*NOTE: PIPE MAY BE REMOVED FOR EASE OF CONSTUCTION IF WEATHER SHOWS LONG TERM CHANCE OF PRECIPITATION TO BE LOW. PUMPING LOW FLOWS AROUND SITE ARE ALLOWED DURING THESE TIMES.

PROFILE

NTS



SECTION C-C

COFFER DAM CROSS
NTS

PROPOSED COFFER DAM DETAIL

CREEKSIDE

CITY OF ANTIOCH CONTRA COSTA COUNTY CALIFORNIA

DATE: JULY 9, 2019

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SHEET NO. 4 OF 8 SHEETS

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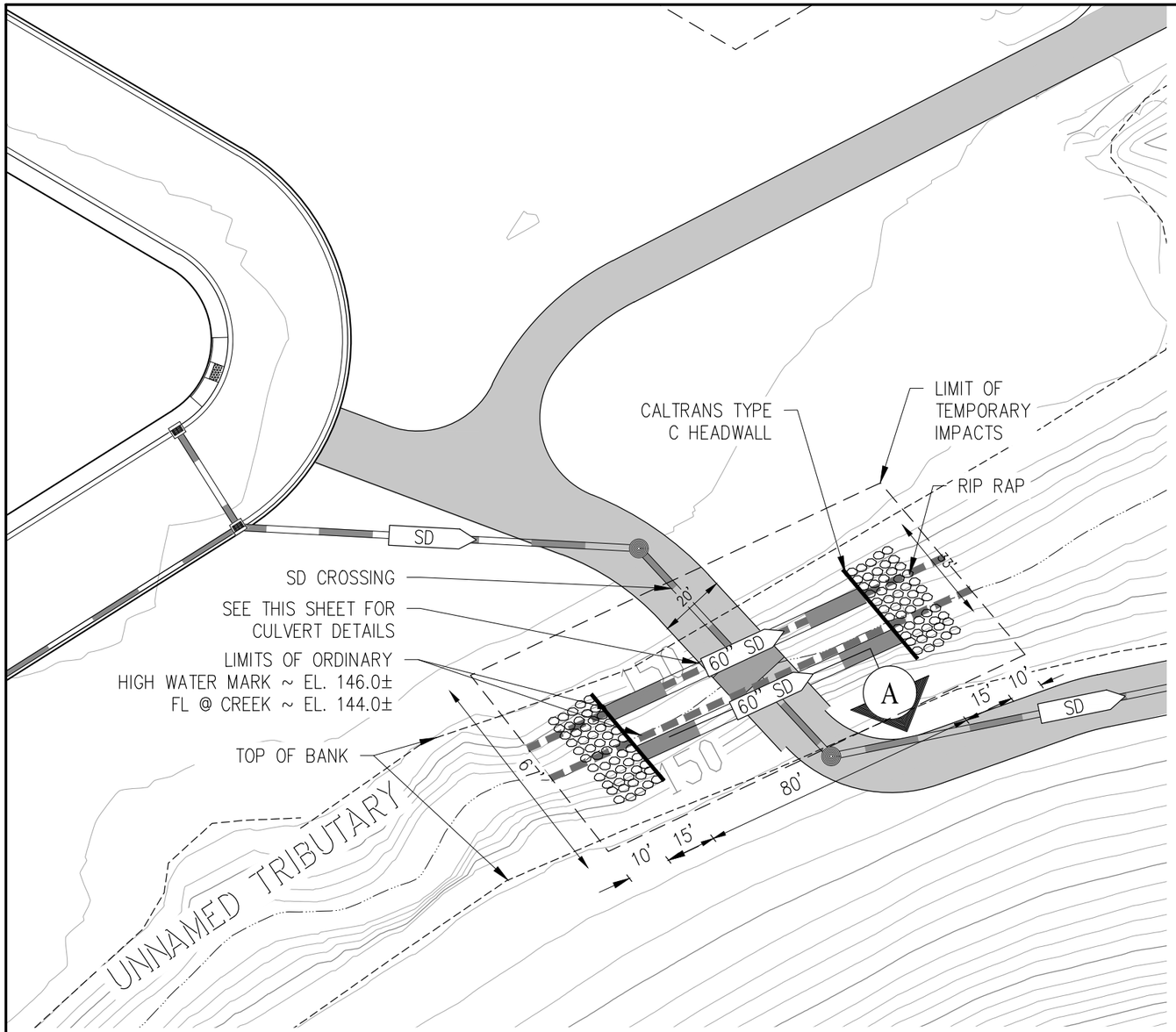

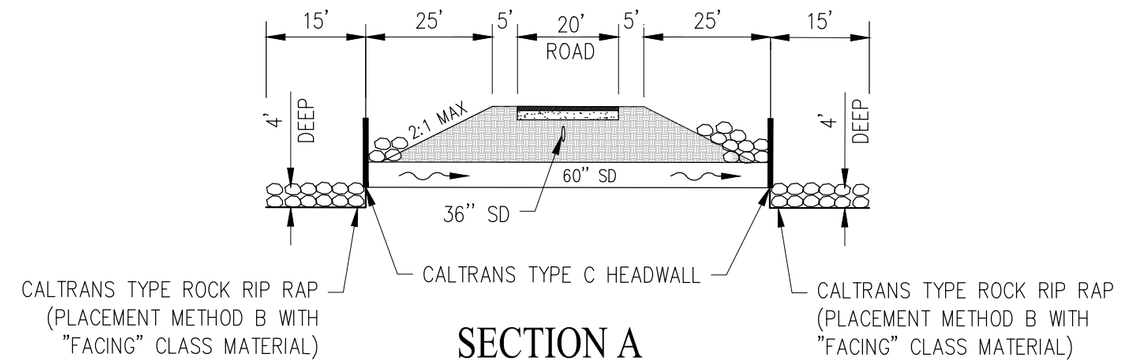

SECTION A

NOT TO SCALE

NOTE:

1. ROCK SLOPE PROTECTION FABRIC SHALL COMPLY WITH STATE STANDARD SPECIFICATIONS 72-2 "ROCK SLOPE PROTECTION". LAP ROCK SLOPE PROTECTION FABRIC IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS.

DRAFT

CULVERT IMPACTS		PERMANENT	TEMPORARY
BELOW TOP OF BANK	SF	6,200	6,700
BELOW HIGH WATER MARK	SF	1,380	1,800
VOLUME OF FILL BELOW TOP OF BANK	CY	2,500	–
VOLUME OF FILL BELOW HIGH WATER MARK	CY	1,350	–

NOTE:

THE TEMPORARY IMPACT AREA INCLUDES THE PERMANENT IMPACT AREA SQUARE FOOTAGE.

THE PERMANENT AREA BELOW TOP OF BANK INCLUDES THE AREA OF FILL BELOW THE HIGH WATER MARK.

THE VOLUME OF FILL BELOW TOP OF BANK INCLUDES THE VOLUME OF FILL BELOW THE HIGH WATER MARK.

TWIN 60" SD CULVERT ROAD CROSSING

CREEKSIDE

CITY OF ANTIOCH CONTRA COSTA COUNTY CALIFORNIA

DATE: JULY 9, 2019 SCALE: 1"=40'

0' 40' 120' 160'

SCALE: 1" = 40'

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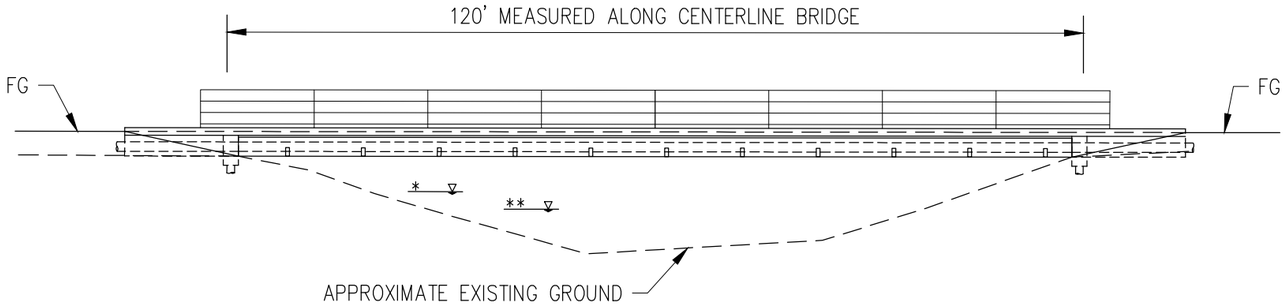
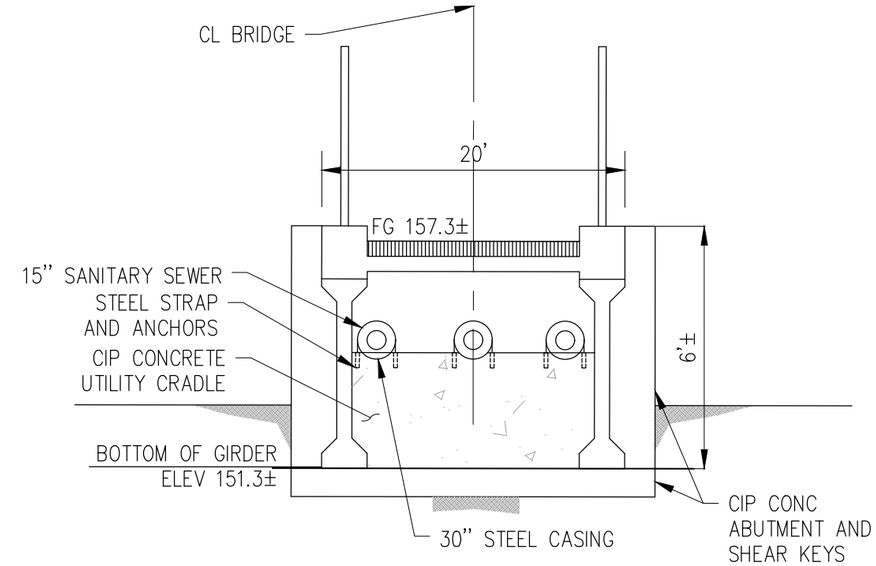
DRAFT



ELEVATION

NOT TO SCALE

* APPROXIMATE 100 YR NON-MITIGATED WSE 149.1±
** APPROXIMATE 100 YR MITIGATED WSE 147.7±



TYPICAL SECTION

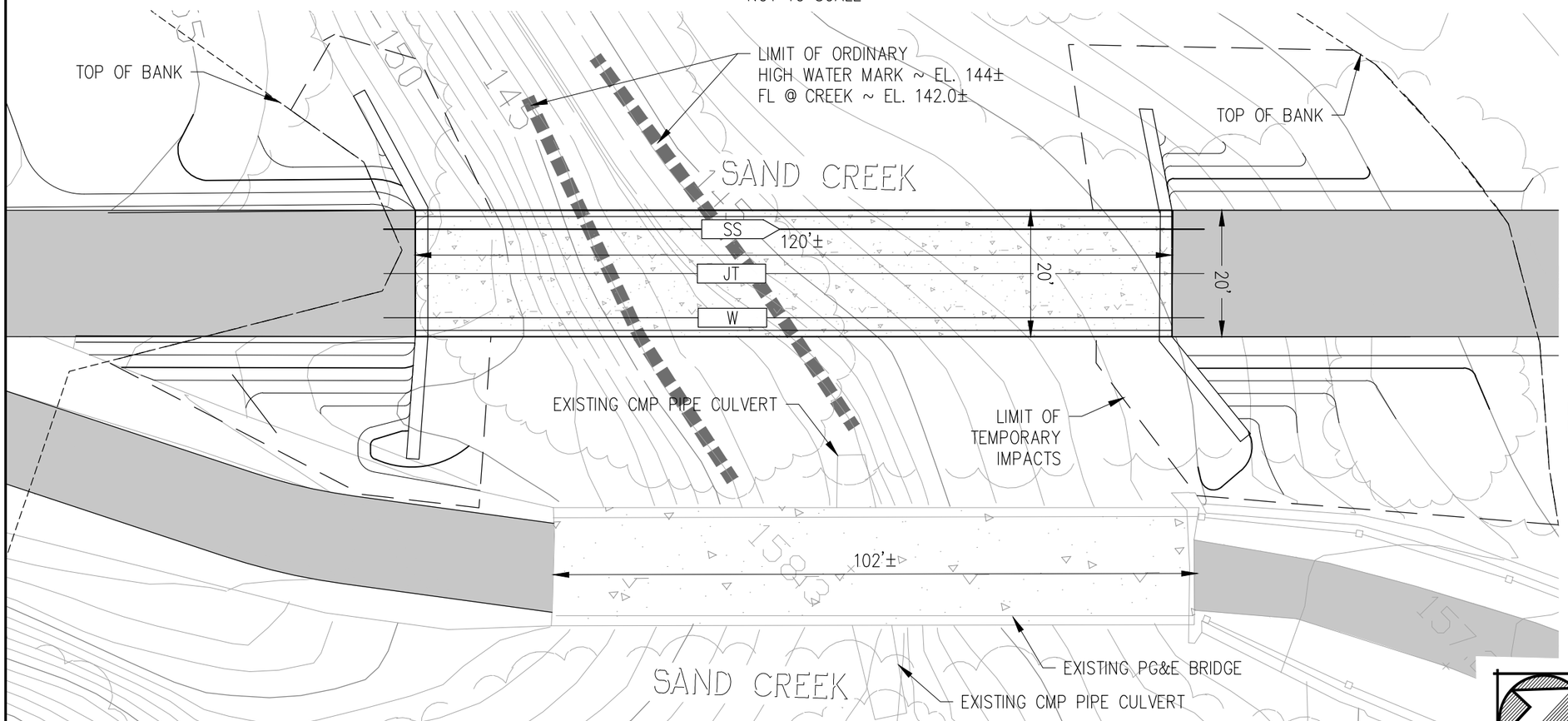
NOT TO SCALE

BRIDGE IMPACTS		PERMANENT	TEMPORARY
BELOW TOP OF BANK	SF	6,500	8,400
BELOW HIGH WATER MARK	SF	0	0
VOLUME OF FILL BELOW TOP OF BANK	CY	450	–
VOLUME OF FILL BELOW HIGH WATER MARK	CY	0	–

NOTE:
THE TEMPORARY IMPACT AREA INCLUDES THE PERMANENT IMPACT AREA SQUARE FOOTAGE.

THE PERMANENT AREA BELOW TOP OF BANK INCLUDES THE AREA OF FILL BELOW THE HIGH WATER MARK.

THE VOLUME OF FILL BELOW TOP OF BANK INCLUDES THE VOLUME OF FILL BELOW THE HIGH WATER MARK.



PLAN VIEW

NOT TO SCALE

PEDESTRIAN BRIDGE CROSSING

CREEKSIDE

CITY OF ANTIOCH CONTRA COSTA COUNTY CALIFORNIA

DATE: JULY 9, 2019 SCALE: 1"=40'

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SHEET NO. 6 OF 8 SHEETS

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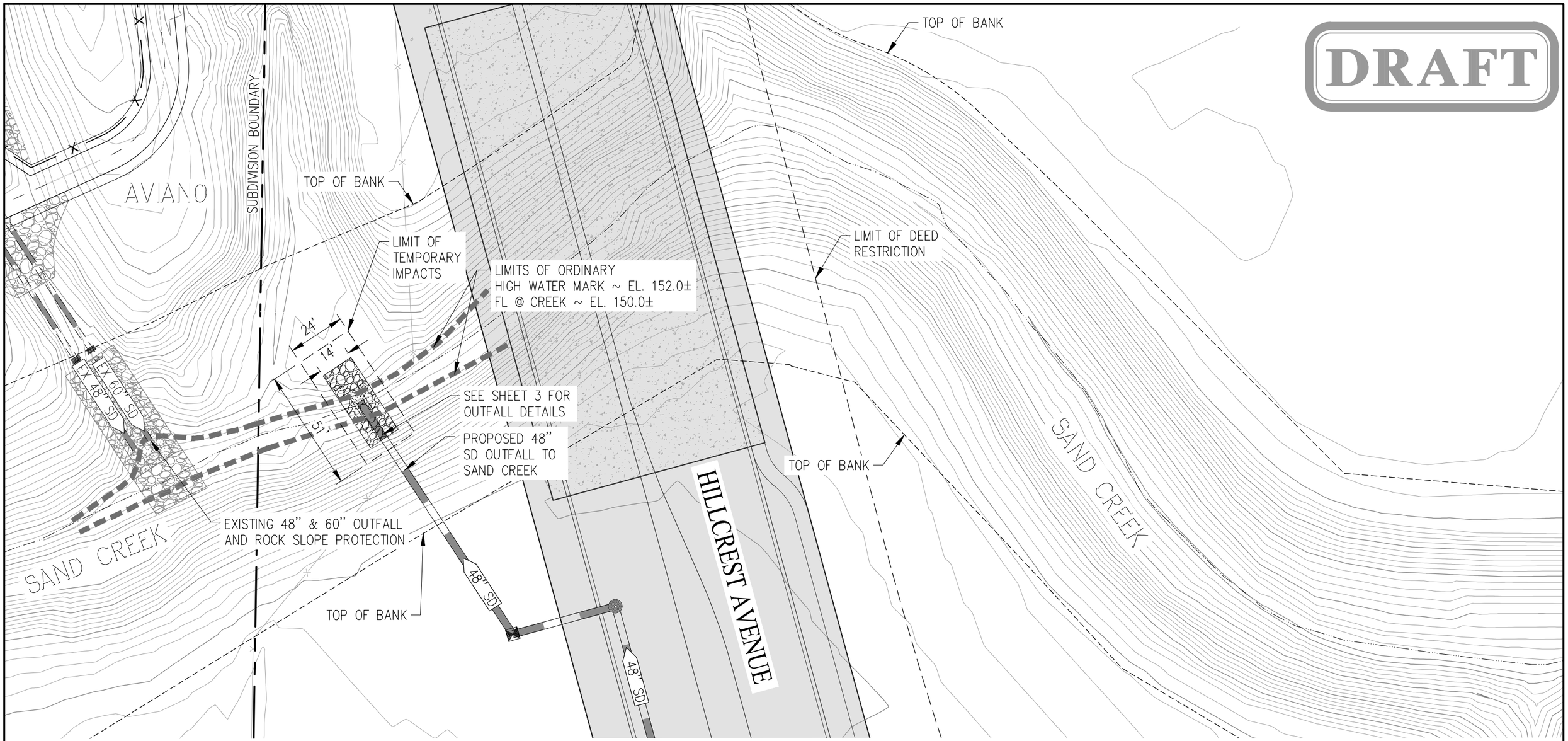

PROPOSED OUTFALL TO SAND CREEK

CREEKSIDE

CITY OF ANTIOCH CONTRA COSTA COUNTY CALIFORNIA

DATE: JULY 9, 2019 SCALE: 1"=200'

OUTFALL IMPACTS		PERMANENT	TEMPORARY
BELOW TOP OF BANK	SF	1,200	1,800
BELOW HIGH WATER MARK	SF	300	450
VOLUME OF FILL BELOW TOP OF BANK	CY	180	–
VOLUME OF FILL BELOW HIGH WATER MARK	CY	50	–

NOTE:

THE TEMPORARY IMPACT AREA INCLUDES THE PERMANENT IMPACT AREA SQUARE FOOTAGE.

THE PERMANENT AREA BELOW TOP OF BANK INCLUDES THE AREA OF FILL BELOW THE HIGH WATER MARK.

THE VOLUME OF FILL BELOW TOP OF BANK INCLUDES THE VOLUME OF FILL BELOW THE HIGH WATER MARK.

0' 40' 120' 160'

SCALE: 1" = 40'

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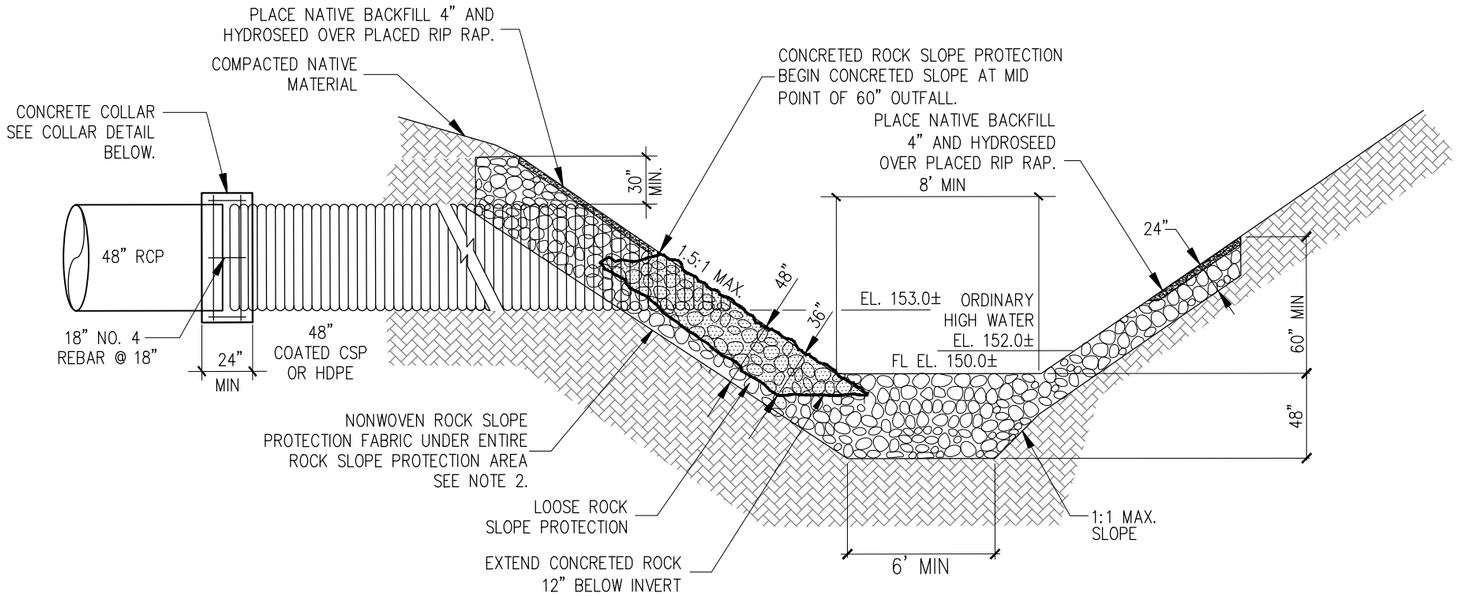
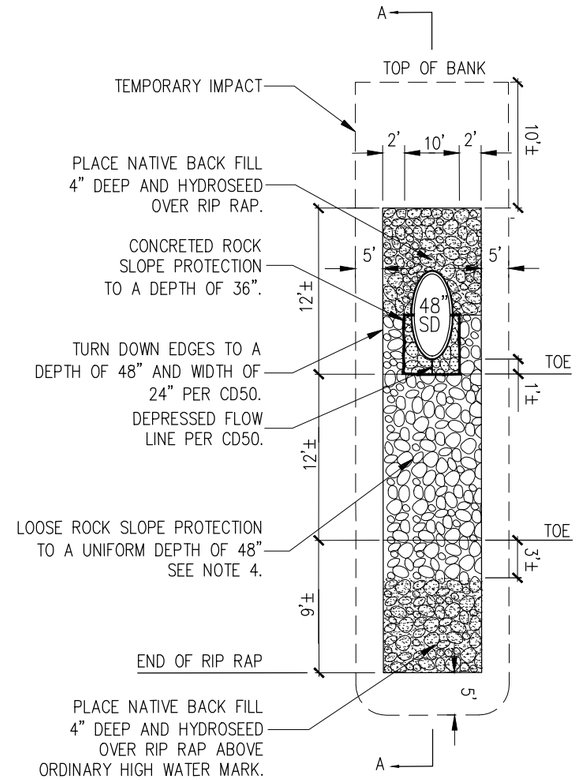
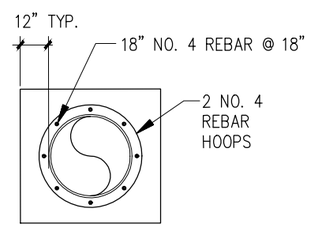


SECTION A-A

N.T.S.



N.T.S.



COLLAR DETAIL

N.T.S.

NOTES:

1. CONCRETED-ROCK SLOPE PROTECTION AND LOOSE ROCK SLOPE PROTECTION SHALL CONFORM TO THE STATE STANDARD SPECIFICATIONS. UNLESS OTHERWISE SPECIFIED, THE ROCK CLASS SHALL BE ¼ TON.
2. ROCK SLOPE PROTECTION FABRIC SHALL COMPLY WITH STATE STANDARD SPECIFICATIONS 72-2 "ROCK SLOPE PROTECTION". LAP ROCK SLOPE PROTECTION FABRIC IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS.
3. CONCRETE SHALL BE PLACED IN ACCORDANCE WITH STATE STANDARD SPECIFICATIONS.
4. ALL LOOSE ROCK SLOPE PROTECTION SHALL BE BACKFILLED WITH NATIVE SOIL.

MODIFIED CONTRA COSTA COUNTY CD50 OUTFALL DETAIL

OUTFALL IMPACTS		PERMANENT	TEMPORARY
BELOW TOP OF BANK	SF	1,200	1,800
BELOW HIGH WATER MARK	SF	300	450
VOLUME OF FILL BELOW TOP OF BANK	CY	180	–
VOLUME OF FILL BELOW HIGH WATER MARK	CY	50	–

NOTE:

THE TEMPORARY IMPACT AREA INCLUDES THE PERMANENT IMPACT AREA SQUARE FOOTAGE.

THE PERMANENT AREA BELOW TOP OF BANK INCLUDES THE AREA OF FILL BELOW THE HIGH WATER MARK.

THE VOLUME OF FILL BELOW TOP OF BANK INCLUDES THE VOLUME OF FILL BELOW THE HIGH WATER MARK.

DRAFT

PROPOSED OUTFALL STRUCTURE TO SAND CREEK

CREEKSIDE

CITY OF ANTIOCH CONTRA COSTA COUNTY CALIFORNIA

DATE: JULY 9, 2019 SCALE: NTS

cbg
SAN RAMON (925) 866-0322
SACRAMENTO (916) 375-1877
WWW.CBANDG.COM
CIVIL ENGINEERS ▪ SURVEYORS ▪ PLANNERS

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APPENDIX B

GEOTECHNICAL SUMMARY REPORT

CREEKSIDE
ANTIOCH, CALIFORNIA

PRELIMINARY GEOTECHNICAL SUMMARY REPORT

SUBMITTED TO
Ms. Lisa Borba
GBN Partners, LLC
5006 Blackhawk Drive
Danville, CA 94506

PREPARED BY
ENGEO Incorporated

February 27, 2019
Revised March 4, 2019

PROJECT NO.
4894.002.001

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Expect Excellence

GEOTECHNICAL
ENVIRONMENTAL
WATER RESOURCES
CONSTRUCTION SERVICES

Project No.
4894.002.001

February 27, 2019
Revised March 4, 2019

Ms. Lisa Borba
GBN Partners, LLC
5006 Blackhawk Drive
Danville, CA 94506

Subject: Creekside
Antioch, California

PRELIMINARY GEOTECHNICAL SUMMARY REPORT

Dear Ms. Borba:

With your authorization, ENGEO has completed this preliminary geotechnical summary report for the proposed residential development located in Antioch, California. The accompanying preliminary geotechnical summary report compiles our previous field exploration together with our preliminary conclusions and recommendations regarding development within the study area as well as recommendations for a design-level study.

We believe that the project site is suitable for the proposed development provided the recommendations of this report are incorporated into the project design and implemented during construction.

We are pleased to have been of service to you on this project and will continue to consult with you and your design team as the project planning progresses. If you have any questions regarding the information included in the report, please do not hesitate to contact us.

Sincerely,

ENGEO Incorporated

Connor Dunn
cd/sdh/jf

Steve Harris, GE

REGISTERED PROFESSIONAL ENGINEER
STEVE HARRIS
No. 2804
GEOTECHNICAL
STATE OF CALIFORNIA

17278 Golden Valley Parkway, Lathrop CA 95330 • (209) 835-0610 • Fax (888) 279-2698
www.engeo.com

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1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

ENGEO prepared this preliminary geotechnical summary report for preliminary design of the proposed residential development in Antioch, California. We prepared this preliminary report as outlined in our agreement dated January 24, 2019. GBN Partners, LLC authorized ENGEO to conduct the following scope of services:

- Review of available literature and geologic maps.
- Review of previous geotechnical reports by ENGEO.
- Data analysis and conclusions.
- Report preparation.

We reviewed geotechnical reports previously completed by ENGEO for the subject property, which included explorations on and nearby the property. These reports are cited in our selected references.

We prepared this report exclusively for GBN Partners, LLC and their design team consultants. ENGEO should review any changes made in the character, design or layout of the development to modify the conclusions and recommendations contained in this report, as necessary. This document may not be reproduced in whole or in part by any means whatsoever, nor may it be quoted or excerpted without the express written consent of ENGEO.

1.2 PROJECT LOCATION AND DESCRIPTION

We observed the existing site conditions on February 22, 2019, in conjunction with our environmental site assessment site walk. Figure 1 displays a Site Vicinity Map. The property is approximately 158 acres in area and is identified as Assessor's Parcel Number (APN) 057-050-024. Sand Creek borders the property to the north and vacant land used for agriculture and grazing to the east, south and west. An electrical substation also borders the site near the northwest corner. The property currently consists of vacant agricultural land with electrical transmission lines running across the southwestern portion of the site. Figure 2 shows the site boundaries and our previous exploratory locations.

The conceptual site plan prepared by Carlson, Barbee & Gibson, Inc. dated September 12, 2018, shows the proposed development to include 220 single-family units, a community use site, a water quality/bio area, a detention basin, interior subdivision roads, and utilities servicing the development. The preliminary grading plan shows cuts of up to approximately 30 feet. Structural loads are yet to be determined; however, we assume that structural loads will be representative for this type of construction.

2.0 FINDINGS

2.1 PREVIOUS FIELD EXPLORATION

Our previous field exploration included conducting two solid flight auger borings and four test pits onsite as well as one solid flight auger boring just north of Sand Creek at the locations shown on the Site Plan, Figure 2. We performed our previous field exploration between October 23, 2001, and November 1, 2001. The locations of our explorations are approximate.

2.1.1 Borings

An ENGEO representative observed the drilling and logged the subsurface conditions at each boring location. We retained a truck-mounted Mobile B-24 drill rig equipped with 4-inch-diameter solid flight augers. The borings were advanced to a maximum depth of approximately 38½ feet below existing grade.

Soil samples were collected at frequent intervals using either a 3-inch outside-diameter (O.D.) California-type split-spoon sampler fitted with 6-inch-long brass liners, or a 2-inch O.D. Standard Penetration Test (SPT) split-spoon sampler. The samplers were advanced with a 140-pound hammer with a 30-inch drop, employing a rope-and-cathead hammer system. The penetration of the sampler was field recorded as the number of blows needed to drive the sampler 18 inches in 6-inch increments. The boring log shows the number of blows required for the last 1 foot of penetration, or the number of blows per depth of penetration for samples that met driving refusal. The blow counts depicted on the boring log have not been converted using any correction factors.

We used the field logs to develop the final logs presented in Appendix A. The logs depict the subsurface conditions within the borings at the time the exploration was conducted. Subsurface conditions at other locations may differ from conditions noted at these locations. The passage of time may result in altered subsurface conditions. In addition, stratification lines represent the approximate boundaries between soil types, and the transitions may be gradual.

2.1.2 Test Pits

An ENGEO representative observed the test pit excavations and logged the subsurface conditions at each location. We retained a rubber-tired backhoe to excavate the test pits using a 24-inch-wide bucket. The maximum depth penetrated by the test pits was approximately 16 feet. We obtained bulk soil samples from the test pits using hand-sampling techniques.

Test pit excavations were loosely backfilled with the excavated material. During site grading, the loosely backfilled soils within our exploratory test pits in structural areas should be removed and recompacted in accordance with Section 5.8. The depth of removal of these materials should be determined by ENGEO in the field at the time of grading.

We used the field logs to develop the final logs presented in Appendix A. The logs depict the subsurface conditions within the test pits at the time the exploration was conducted. Subsurface conditions at other locations may differ from conditions noted at these locations. The passage of time may result in altered subsurface conditions. In addition, stratification lines represent the approximate boundaries between soil types and the transitions may be gradual.

2.2 SITE BACKGROUND AND EXISTING IMPROVEMENTS

We reviewed historic aerial photographs and topographic maps of the site dating back to 1957. After review of this data, it appears that the majority of the site consisted primarily of open space, with some gas well production since at least 1957. There were four oil/gas wells identified on the property that were drilled from 1962 through 1987 and have since been plugged and abandoned. It appears that the electrical substation bordering the northwest corner of the site was constructed between 2007 and 2008.

2.3 GEOLOGY AND SEISMICITY

2.3.1 Regional Geology

The site is located in the Coast Ranges geomorphic province on the eastern side of the Diablo Range. The regional geology in this area has been mapped by Crane (1985) and Dibblee (1980), as shown on Figure 3. The geology of the low-lying areas consists of alluvial deposits from the Quaternary Period. The upland areas are underlain by sandstone and shale of the Tertiary age Markley formation.

2.3.1.1 Soil Stratigraphy and Bedrock

2.3.1.1.1 Residual Soil

Residual natural soils, derived by in-place weathering of the underlying parent bedrock, were encountered in test pits excavated in the hillside portions of the site. The residual soils consisted of dark brown sandy clays and clayey sands. The residual soil cover encountered in the test pits ranges from approximately 3½ to 4 feet thick over bedrock. The site residual soils encountered in the test pits have low to moderate plasticity.

2.3.1.1.2 Colluvial Deposits

Colluvium (Qc) has been mapped by ENGEO along the base of the slopes and within hollows or ravines as shown on Figure 3. Colluvial deposits are typically deposited as a result of soil creep and are low to moderately compressible and weak. These deposits consist of dark brown silty clay with lesser amounts of sand and gravel and are noteworthy because of their susceptibility to landsliding on slopes. The typical thickness of these deposits varied from approximately 3½ to 14 feet. In general, colluvial deposits in the site vicinity have low to high plasticity characteristics and may be considered high to very highly expansive when subjected to fluctuations in moisture content.

2.3.1.1.3 Alluvial Deposits

Pleistocene to Holocene-age alluvium “Qal” and “Qt” has been mapped in the main drainages, and on the gently sloping plains of the site (Figure 3). Alluvial deposits typically consist of unconsolidated sand, silt, gravel and clay with varying amounts of weathered bedrock fragments. The site alluvium is derived from Sand Creek, which drains from west to east across the northern portion of the site. The soil encountered in the previous borings consists of silty to sandy clay in the upper 5 feet interbedded with layers of clayey to silty sand and sandy to clayey silt at depth. With the exception of the disked soil at the surface, the clayey soils are typically very stiff to hard, and the sandy deposits are typically medium dense to dense in consistency.

2.3.1.1.4 Landslide Deposits

Areas of potential landslide deposits “Qls” were mapped by Nilsen (1975) and identified by ENGEO on the west-facing slope located in the southeastern portion of the site (Figure 3). This landslide deposit consists of multiple shallow earthflows and slumpflow-type failures apparently caused by erosion at the toe of slope.

2.3.1.1.5 Bedrock

Bedrock in the hilly portions of the site consists of Eocene-age Markley Sandstone (Tkm) (Crane 1995). Markley Sandstone is described as massive with a distinctive component of mica and also contains claystone and siltstone interbeds. The bedrock is mapped as trending to the northwest and dipping to the northeast. Excavation of the test pits exposed sandy clays and clayey sands over claystone and siltstone bedrock in Test Pit 12 and over sandstone bedrock in Test Pits 13, 14 and 15. The claystone bedrock was moderately strong with thin bedding and moderately weathered. The sandstone bedrock was fine to medium grained, massive and moderately to deeply weathered.

2.3.1.1.6 Aerial Photograph Review

Black-and-white stereo-paired aerial photographs were used for the purpose of observing natural landforms on the site. These photographs were used to study geomorphic features, interpret the relationships between landforms and the underlying bedrock, soil and geologic structures, and observe the presence, character and activity of slope failures on or adjacent to the site. Our air photo interpretations were used in conjunction with the field reconnaissance and literature review to produce the Geologic Map presented as Figure 3.

2.3.2 Seismicity

The site is located in an area of moderate seismicity. No known active faults cross the site and the property is not located within an Alquist-Priolo Earthquake Fault Zone; however, large (>M_W7) earthquakes have historically occurred in the Bay Area to the west and along the margins of the Central Valley and many earthquakes of low magnitude occur every year. According to the 2008 National Seismic Hazard Maps Spatial Query, the two nearest earthquake faults zoned as active by the State of California Geological Survey are the Greenville Connected fault, located approximately 6.0 miles southwest, and the Great Valley fault, located approximately 7.0 miles northwest. An active fault is defined by the State Mining and Geology Board as one that has had surface displacement within Holocene time (about the last 11,000 years) (California Geological Survey, 2007). Other active faults in the region are summarized in the table below. Figure 4 shows the approximate locations of these faults and significant historic earthquakes recorded within the San Francisco Bay Region.

TABLE 2.3.2-1: Active Faults Capable of Producing Significant Ground Shaking at the Site

FAULT NAME	DISTANCE FROM SITE (MILES)	DIRECTION FROM SITE	MAXIMUM MOMENT MAGNITUDE
Greenville Connected	6.0	Southwest	7.0
Great Valley 5	7.0	Northwest	6.7
Green Valley Connected	13.2	Northwest	6.8
Mount Diablo Thrust	13.6	Southwest	6.7
Calaveras	16.4	Southwest	6.9
North San Andreas	43.4	Northwest	8.0

Portions of the Great Valley fault are considered seismically active blind thrust faults; however, since the Great Valley fault segments are not known to extend to the ground surface, the State of California has not defined Earthquake Fault Zones around postulated traces. The Great Valley

fault is considered capable of causing significant ground shaking at the site, but the recurrence interval is believed longer than for more distant, strike-slip faults. Recent studies suggest that this boundary fault may have been the cause of the Vacaville-Winters earthquake sequence of April 1892 (Eaton, 1986; Wong and Biggar, 1989; Moores and others, 1991).

2.4 SURFACE CONDITIONS

We reviewed publically available regional topographic maps. The topography at the site is variable and consists of two steeply graded hills on the east and west sides of the property with a flat valley in the center. The topography ranges from approximately 320 feet (NAVD88) at the crest of the western hill to 150 feet in the northeast corner of the site. We observed the following site features during our reconnaissance:

- The majority of the site is covered in short grass.
- There is a gravel access road running along the northern end of the site with a bridge crossing Sand Creek.
- Sand Creek runs along the northern edge of the property with several large trees along its alignment.
- Landslide scarps can be seen on the west-facing slope on the eastern side of the property.
- There is a creek channel running along the base of the slope of the eastern side of the property.
- Electrical transmission lines run across the southwestern portion of the site.

2.5 SUBSURFACE CONDITIONS

The soils encountered in our previous borings on the northern edge of the site generally consisted of clays with varying amounts of sand to a maximum depth of approximately 21 feet below ground surface underlain by silty sand, clayey sand and clayey silt to the maximum depth explored of 38½ feet. The soils encountered in our test pits on the topographically elevated portions of the site generally consisted of sandy lean clay underlain by clayey sand underlain by claystone/siltstone/sandstone bedrock to the maximum depth explored of 16 feet. The near-surface site soils generally consisted of moderately expansive lean clays.

Consult the Site Plan and previous exploration logs for specific subsurface conditions at each location. We include our previous exploration logs in Appendix A. The logs contain the soil type, color, consistency, and visual classification in general accordance with the Unified Soil Classification System. The logs graphically depict the subsurface conditions encountered at the time of the exploration.

2.6 GROUNDWATER CONDITIONS

We observed static groundwater in two of our subsurface explorations. We summarize our observations for explorations on the property and in the surrounding vicinity in the table below:

TABLE 2.6-1: Groundwater Observations

EXPLORATION LOCATION	APPROX. DEPTH TO GROUNDWATER (FEET)
B-7	25
B-8	29

Fluctuations in the level of groundwater may occur due to variations in rainfall, irrigation practice, and other factors not evident at the time measurements were made.

2.7 PREVIOUS LABORATORY TESTING

We previously performed laboratory tests on selected soil samples to evaluate their engineering properties. For this project, we performed moisture contents, unit weights, sieve analysis and corrosion testing. Percent passing the #200 sieve, moisture contents and unit weights are recorded on the previous exploration logs in Appendix A. Particle size distribution reports and corrosion test results are included in Appendix B.

3.0 PRELIMINARY CONCLUSIONS

From a geotechnical engineering standpoint, in our opinion, the site is suitable for the proposed development, provided the preliminary geotechnical recommendations in this report are properly incorporated into the design plans and specifications. The primary geotechnical concern that could affect development on the site is expansive soil. We summarize our preliminary conclusions below.

Other geotechnical matters addressed in this report include site preparation and grading, preliminary foundation design recommendations, underground utilities, and drainage. ENGEO should be retained to provide supplemental recommendations and modifications to preliminary geotechnical recommendations presented herein as part of a design level geotechnical exploration.

3.1 EXPANSIVE SOIL

We observed potentially expansive lean clay near the surface of the site in our explorations. These soils exhibit low to moderate shrink/swell potential with variations in moisture content. Expansive soils shrink and swell as a result of moisture changes, which can cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations. Building damage due to moisture changes in expansive soils can be reduced by appropriate grading practices and using post-tensioned slab foundations or similarly stiffened foundation systems, which are designed to resist the deflections associated with soil expansion. Our recommendations for mitigation of this potential hazard are presented in the following sections of this report.

Successful performance of structures on expansive soils requires special attention during construction. It is imperative that exposed soils be kept moist prior to placement of concrete for foundation construction. It can be difficult to remoisturize clayey soils without excavation, moisture conditioning, and recompaction.

We have also provided specific grading recommendations for compaction of clay soil at the site. The purpose of these recommendations is to reduce the swell potential of the clay by compacting

the soil at a high moisture content and controlling the amount of compaction. Expansive soil mitigation recommendations are presented in the following sections of this report.

3.2 EXISTING FILL

Non-engineered fills can undergo excessive settlement, especially under new fill or building loads. Existing known fills at the site include grading for well exploration pads and gravel road base. In general, the existing fills have been derived from onsite soils and bedrock materials; however, since the fills are not known to have been engineered, they may contain unsuitable debris. From a geotechnical standpoint, if the existing fill materials are cleared of any significant organics, debris and/or any deleterious matter, the materials can be reused as engineered fill.

Our previous explorations did not encounter any non-engineered fill; however, it is possible that undocumented fill may exist elsewhere in the project area. If undocumented fills are encountered, they should be removed and replaced throughout the site with engineered fill. In addition, any loose surface soils should be removed if greater than 12 inches in depth and replaced as engineered fill. We present fill removal recommendations in Section 5.

3.3 SEISMIC HAZARDS

Potential seismic hazards resulting from a nearby moderate to major earthquake can generally be classified as primary and secondary. The primary seismic hazard is ground rupture, also called surface faulting. The common secondary seismic hazards include ground shaking, liquefaction, and ground lurching. The following sections present a discussion of these hazards as they apply to the site. Based on topographic and lithologic data, the risk of regional subsidence or uplift is considered low to negligible at the site.

3.3.1 Ground Rupture

Since there are no known active faults crossing the property and the site is not located within an Earthquake Fault Special Study Zone, it is our opinion that ground rupture is unlikely at the subject property.

3.3.2 Ground Shaking

An earthquake of moderate to high magnitude generated within the San Francisco Bay Region could cause considerable ground shaking at the site, similar to that which has occurred in the past. To mitigate the shaking effects, all structures should be designed using sound engineering judgment and the 2016 California Building Code (CBC) requirements, as a minimum. Seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure, combined with the gravity forces of dead-and-live loads. The code-prescribed lateral forces are generally considered to be substantially smaller than the comparable forces that would be associated with a major earthquake. Therefore, structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage. Conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake; however, it is reasonable to expect that a well-designed and well-constructed structure will not collapse or cause loss of life in a major earthquake (SEAOC, 1996).

3.3.3 Liquefaction

Soil liquefaction results from loss of strength during cyclic loading, such as imposed by earthquakes. Soils most susceptible to liquefaction are clean, loose, saturated, uniformly graded fine sands below the groundwater table. Empirical evidence indicates that loose silty sands are also potentially liquefiable. When seismic ground shaking occurs, the soil is subjected to cyclic shear stresses that can cause excess hydrostatic pressures to develop. If excess hydrostatic pressures exceed the effective confining stress from the overlying soil, the sand may undergo deformation. If the sand undergoes virtually unlimited deformation without developing significant resistance, it is said to have liquefied, and if the sand consolidates or vents to the surface during and following liquefaction, ground settlement and surface deformation may occur. The borings located on the northern edge of the site encountered medium-dense to dense sands below the groundwater table beginning as shallow as 25 feet below ground surface. Based on the previous liquefaction analysis by ENGEO (ENGEO, 2002), it appears that the subsurface sands may have the potential to liquefy during a design-level seismic event.

3.3.4 Liquefaction-Induced Settlement

Deformation of the ground surface is a common result of liquefaction. Vertical settlement may result from densification of the deposit or volume loss from venting to the ground surface. Densification occurs as excess pore pressures dissipate, resulting as vertical settlement at the ground surface.

Based on the previous liquefaction analysis performed by ENGEO, we can expect the total liquefaction-based settlement to vary over the entirety of the site. We estimate total liquefaction-induced settlements to be up to approximately 2 inches in areas where the sand thickness is approximately 10 feet, such as in Borings B-7 and B-8. Design-level exploration should further characterize liquefaction potential on the project site.

3.3.5 Lateral Spreading

Lateral spreading is a failure within a nearly horizontal soil zone (possibly due to liquefaction) which causes the overlying soil mass to move toward a free face or down a gentle slope. The potential for lateral spreading in the vicinity of Sand Creek should be evaluated in more detail during future design-level geotechnical studies.

3.3.6 Dynamic Densification

Densification of loose granular soils above the groundwater table can cause settlement due to earthquake-induced vibrations. Due to the presence of generally plastic soils within the surficial soils, we consider the potential for dynamic densification above the groundwater table to be negligible.

3.3.7 Ground Lurching

Ground lurching is a result of the rolling motion imparted to the ground surface during energy released by an earthquake. Such rolling motion can cause ground cracks to form in weaker soils. The potential for the formation of these cracks is considered greater at contacts between deep alluvium and bedrock. Such an occurrence is possible at the site as in other locations in the Bay Area, but based on the site location, it is our opinion that the offset is expected to be very

minor. We provide recommendations for foundations in this report that are intended to reduce the potential for adverse impacts from lurch cracking.

3.3.8 Seismically Induced Landslides

Seismically induced landslides are triggered by earthquake ground shaking. The risk of this hazard is greatest in the late winter when groundwater levels are highest and hillside colluvium is saturated. As with all slopes in the region, this risk is also present at the site to varying degrees depending on the slope conditions and time of year. Properly engineered stabilization of landslides or creation of sufficient buffers between the colluvial deposits and development areas can mitigate the hazard of seismically induced landslides to the proposed structures.

3.3.9 Compressible Colluvial Deposits

Structural areas in the southwestern portion of the site may be located in colluvial deposits. Excessive total and differential settlement at the site may result from settlement of foundation elements supported directly over these compressible colluvial deposits. To reduce settlement resulting from these deposits, it is recommended that these deposits be overexcavated to expose stiff in-place materials and grades restored with properly compacted engineered fill material as discussed in Section 5 of this report. It is anticipated that these deposits may be reused as fill material.

Portions of the proposed basin in the northeastern corner of the site are also located in colluvial deposits; however, we do not foresee the colluvial deposits posing any risks to the basin.

3.3.10 Bedrock Rippability and Suitability

Some well-cemented, thickly bedded sandstone layers may exist in the hillside portions of the site. In general, we anticipate that conventional heavy-duty grading equipment should be able to rip these bedrock units, although some well-cemented beds or lenses may be encountered that will be very difficult to rip. Most of the bedrock is considered trenchable, although, as previously noted, localized well-cemented beds or lenses may be very difficult or require special excavation techniques. During mass grading, zones of hard rock exposed near finished grade should be identified; overexcavation in these areas may be appropriate to facilitate installation of utilities. Also, in these hard rock areas, it may be appropriate to overexcavate cut lots and transition lots to facilitate foundation installation.

If rocks greater than 8 inches in diameter are generated or encountered during grading, these should be broken down such that their maximum dimension is less than 8 inches, removed from the site or placed in a designated rock disposal fill area.

3.3.11 Landsliding

The identified landslide area has a relatively high likelihood of experiencing future instability unless suitable mitigation measures are carried out. Appropriate measures to mitigate potential landslide hazards are dependent on the distance of the landslide to the proposed development. The currently mapped landslide area is located outside the area of planned development. If landslides do not have the potential to adversely impact the proposed development, they may be left in place. Landslides adversely affecting the proposed development may be mitigated during

grading by removal and replacement, setbacks, debris benches, or other stabilizing methods. This will need to be further evaluated during a design level geotechnical report.

3.3.12 Soil Creep

Soils on steeper natural slopes are subject to soil creep. Soil creep is the slow downslope movement of soil that occurs with the annual cycle of wetting and drying under the influence of gravity. The potential for adverse impacts from soil creep are negligible since development is not planned on the steep slopes.

3.3.13 Coal Mining

The subject site is located northeast of an area of historic coal mining. Mine openings and workings in the site vicinity are typically found in the Domegine Sandstone Formation, which is mapped offsite to the southwest. During our reconnaissance and geologic mapping, no features indicative of mining or mining related activities were observed onsite; therefore, it is our opinion that it is unlikely that any mining activities were performed at the site.

3.3.14 Abandoned Oil and Gas Wells

Four abandoned oil and gas wells were documented on the site. Activities associated with the well drilling may have included temporary excavations for mud pits or other uses. Areas impacted by the well-drilling activities can be mitigated by removal and replacement of the affected material, capping the well drilling area with a sufficient thickness of fill material, and/or avoidance of the area.

3.3.15 Soil Erosion

Based on our observations at the site, the soils and bedrock at the site may be erodible. We estimate that erosion control measures in the form of seeding, planting and possibly erosion control fabric will be necessary on all cut slopes in order to mitigate the hazard of erosion during winter rains. In addition to vegetated cover, viable erosion mitigation measures may include concrete or asphalt-lined drainage facilities. The purpose of the drainage facilities is to intercept and divert the surface water runoff from the slopes.

In the design of slopes, consideration should be given to surface drainage and the potential for slope degradation by erosion. Common practice has been to provide drainage benches at regular intervals on graded slopes that are steeper than 3:1 (horizontal:vertical) and higher than 30 feet for control of surface drainage. Typical requirements are included in Section 7012 of the Uniform Building Code (UBC). It is our opinion that with proper erosion protection, drainage ditches are not necessary on 3:1 (horizontal to vertical) or flatter slopes.

3.3.16 Basin Seepage/Slope Stability

Due to the proximity of the proposed basin to Sand Creek, there may be potential stability issues associated with the basin and creek slopes. During our design-level report, we will complete a slope stability and seepage analysis for the basin adjacent to Sand Creek to check for any stability issues.

3.4 FLOODING

Based on a review of the FEMA flood zone map for the subject site, the majority of the site is designated as Flood Zone X, an area of minimal flood hazard. The areas immediately surrounding Sand Creek are designated Flood Zone A, an area subject to flooding by the 1% annual chance flood with a base flood elevation of approximately 147 feet. The Civil Engineer should review pertinent information relating to possible flood levels for the subject site based on final pad elevations and provide appropriate design measures for development of the project, if necessary.

3.5 CBC SEISMIC DESIGN PARAMETERS

The 2016 CBC utilizes design criteria set forth in the 2010 ASCE 7 Standard. Based on the subsurface conditions encountered, we characterized the site as Site Class D in accordance with the 2016 CBC. We provide the 2016 CBC seismic design parameters in Table 3.5-1 below, which include design spectral response acceleration parameters based on the mapped Risk-Targeted Maximum Considered Earthquake (MCER) spectral response acceleration parameters.

TABLE 3.5-1: 2016 CBC Seismic Design Parameters, Latitude: 37.943134° **Longitude:** -121.754993°

PARAMETER	DESIGN VALUE
Site Class	D
Mapped MCE_R Spectral Response Acceleration at Short Periods, S_S (g)	1.50
Mapped MCE_R Spectral Response Acceleration at 1-second Period, S_1 (g)	0.56
Site Coefficient, F_A	1.00
Site Coefficient, F_V	1.50
MCE_R Spectral Response Acceleration at Short Periods, S_{MS} (g)	1.50
MCE_R Spectral Response Acceleration at 1-second Period, S_{M1} (g)	0.84
Design Spectral Response Acceleration at Short Periods, S_{DS} (g)	1.00
Design Spectral Response Acceleration at 1-second Period, S_{D1} (g)	0.56
Mapped MCE Geometric Mean (MCE_G) Peak Ground Acceleration, PGA (g)	0.50
Site Coefficient, F_{PGA}	1.00
MCE_G Peak Ground Acceleration adjusted for Site Class effects, PGA_M (g)	0.50
Long period transition-period, T_L	8 seconds

3.6 SOIL CORROSION POTENTIAL

According to the previous laboratory results and conclusions by CERCO analytical, the site soils are classified as “corrosive.” CERCO recommends that all buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron should be properly protected against corrosion depending upon the critical nature of the structure. CERCO also recommends that all buried metallic pressure piping such as ductile iron firewater pipelines should be protected against corrosion. If additional corrosion evaluation is required, we recommend contacting a corrosion engineer.

4.0 CONSTRUCTION MONITORING

Our experience and that of our profession clearly indicate that the risk of costly design, construction, and maintenance problems can be significantly lowered by retaining the design geotechnical engineering firm to:

1. Review the final grading and foundation plans and specifications prior to construction to evaluate whether our recommendations have been implemented, and to provide additional or modified recommendations, as needed. This also allows us to check if any changes have occurred in the nature, design or location of the proposed improvements and provides the opportunity to prepare a written response with preliminary recommendations.

2. Perform construction monitoring to check the validity of the assumptions we made to prepare this report. Earthwork operations should be performed under the observation of our representative to check that the site is properly prepared, the selected fill materials are satisfactory, and that placement and compaction of the fills has been performed in accordance with our recommendations and the project specifications. Sufficient notification to us prior to earthwork is important.

If we are not retained to perform the services described above, then we are not responsible for any party's interpretation of our report (and subsequent addenda, letters, and verbal discussions).

5.0 EARTHWORK RECOMMENDATIONS

The relative compaction and optimum moisture content of soil and aggregate base referred to in this report are based on the most recent ASTM D1557 test method. Compacted soil is not acceptable if it is unstable. It should exhibit only minimal flexing or pumping, as observed by an ENGEO representative.

As used in this report, the term "moisture condition" refers to adjusting the moisture content of the soil by either drying if too wet or adding water if too dry.

We define "structural areas" in Section 5 of this report as any area sensitive to settlement of compacted soil. These areas include, but are not limited to building pads, sidewalks, pavement areas, and retaining walls.

5.1 EXISTING FILL AND COLLUVIAL MATERIAL REMOVAL

Undocumented fills located in the vicinity of the previous well exploration pads as well as under the gravel access road, colluvial soils located in structural areas in the southwest portion of the site and any other colluvial soils or undocumented fills encountered during grading should be removed to competent native soil, as determined in the field by ENGEO. These materials should be subexcavated and reworked as engineered fill as recommended in Section 5.8, provided the materials are free of deleterious matter.

5.2 DEMOLITION AND STRIPPING

Site development should begin with removal of existing vegetation, all undocumented fills and colluvial soils. Following clearing, we recommend that the surface vegetation be mowed as close

to the ground as possible and removed from the site. The remaining vegetation should then be thoroughly disked into the upper 12 inches of the site until approved by ENGEO.

All excavations from demolition and stripping below design grades should be cleaned to a firm undisturbed soil surface determined by an ENGEO representative. Backfill excavations extending below the planned finished site grades with suitable material compacted as engineered fill.

5.3 SITE PREPARATION

After the site has been properly cleared and disked, the upper 12 inches should be scarified, then the scarified material should be moisture conditioned and compacted in accordance with the engineered fill recommendations presented below.

5.4 OVER-OPTIMUM SOIL MOISTURE CONDITIONS

The contractor should anticipate encountering excessively over-optimum (wet) soil moisture conditions during winter or spring grading, or during or following periods of rain. Wet soil can make proper compaction difficult or impossible. Wet soil conditions can be mitigated by:

1. Frequent spreading and mixing during warm dry weather.
2. Mixing with drier materials.
3. Mixing with a lime or cement product; or
4. Stabilizing with aggregate, geotextile stabilization fabric, or both.

Options 3 and 4 should be evaluated and approved by ENGEO prior to implementation.

5.5 CUT SLOPES

It is anticipated that the cut slopes at the site will expose bedrock units that consist of poorly- to well-cemented interbedded sandstone, siltstone and claystone. In general, cut slopes exceeding 10 feet should be constructed at slope gradients no steeper than 3:1, provided geologic bedding conditions exposed in these cuts are favorable. Cut slopes less than 10 feet may be constructed at slope gradients no steeper than 2:1. The stability of cut slopes in bedrock materials is largely dependent on the planned cut location and the orientation of the cut slope with respect to the bedrock structure or other planes of geologic weakness. Cut slopes 3:1 or flatter do not require benches; however, it is recommended that where these slopes, as well as natural slopes steeper than 5:1, are located above lots, a debris bench should be constructed.

All cut slopes should be viewed by the Engineering Geologist during grading for unsuspected stability conditions that might be detrimental to slope stability. If adverse bedrock structure or other zones of geologic weakness are encountered in the cut slopes during grading, it is anticipated that remedial measures such as flattening or constructing slope buttresses may be needed. Appropriate remedial alternatives should be provided during grading.

All cut slopes should be revegetated with hydroseed consisting of deep-rooted, fast-growing vegetation prior to the first rainy season to reduce erosion.

5.6 CUT/FILL TRANSITION OR CUT LOTS

Building pads constructed in cuts may encounter variably expansive subsurface conditions in the near-surface soil and rock; these pads may therefore be subject to damaging differential soil

movements. Building pads that transition from cut to fill within the building pad area also can experience differential soil movements.

We recommend such building pads be reconstructed to create uniform subgrade conditions. This can be accomplished by subexcavating the soil on the building pads to a minimum depth of 2 feet below finished pad grade on cut lots or lots constructed over cut-and-fill transitions and replacing the subexcavated material with uniformly mixed compacted fill. The subexcavation should be performed over the entire flat pad area. Compacted fill used to replace subexcavated soil should be placed in accordance with Section 5.8.

5.7 ACCEPTABLE FILL

Onsite material is suitable as fill material provided it is processed to remove concentrations of organic material, debris, and particles greater than 8 inches in maximum dimension.

Imported fill materials should meet the above requirements and have a plasticity index equal to or less than the onsite material. Allow ENGEO to sample and test proposed imported fill materials at least 5 days prior to delivery to the site.

5.8 ENGINEERED FILL COMPACTION

5.8.1 Grading in Structural Areas

Perform subgrade compaction prior to fill placement, following cutting operations, and in areas left at grade as follows.

1. Scarify to a depth of at least 12 inches.

2. Moisture condition soil to at least 3 percentage points over the optimum moisture content; **and**

3. Compact the soil to a minimum of 90 percent relative compaction. Compact the upper 6 inches of finish pavement subgrade to at least 95 percent relative compaction prior to aggregate base placement.

After the subgrade has been compacted, place and compact acceptable fill as follows:

1. Spread fill in loose lifts that do not exceed 12 inches.

2. Moisture condition lifts to at least 3 percentage points over the optimum moisture content; **and**

3. Compact fill to a minimum of 90 percent relative compaction; compact the upper 6 inches of fill in pavement areas to at least 95 percent relative compaction prior to aggregate base placement.

Compact the pavement Caltrans Class 2 Aggregate Base section to at least 95 percent relative compaction (ASTM D1557). Moisture condition aggregate base to or slightly above the optimum moisture content prior to compaction.

5.8.2 Underground Utility Backfill

The contractor is responsible for conducting all trenching and shoring in accordance with CALOSHA requirements. Project consultants involved in utility design should specify pipe-bedding materials. Where utility trenches are located beside foundation areas, careful backfill operations are recommended. Utility trenches should be constructed parallel to foundations entirely above a plane extending down from the lower edge of the footing at an angle of 45 degrees. Utility companies and Landscape Architects should be supplied with this information. Utility trenches in paved areas should be constructed in accordance with City of Antioch requirements.

We recommend using well-graded import or native material less than ¾ inch in maximum dimension for pipe zone backfill (i.e. material beneath and immediately surrounding the pipe). We recommend using native soil for trench zone backfill (i.e. material placed between the pipe zone backfill and the ground surface). Compact backfill in accordance with the recommendations provided above for engineered fill. Use fine- to medium-grained sand or a well-graded mixture of sand and gravel for pipe zone backfill import material. Avoid using this material within 2 feet of finish grades. In general, avoid using uniformly graded gravel for pipe or trench zone backfill due to the potential for migration of: (1) soil into the relatively large void spaces present in this type of material and (2) water along trenches backfilled with this type of material. Where utility trenches cross underneath buildings, we recommend that a plug be placed within the trench backfill to help prevent the normally granular bedding materials from acting as a conduit for water to enter beneath the building. The plug should be constructed using a sand cement slurry (minimum 28-day compressive strength of 500 psi) or relatively impermeable native soil for pipe bedding and backfill. We recommend that the plug extend for a distance of at least 3 feet in each direction from the point where the utility enters the building perimeter.

Jetting of backfill is not an acceptable means of compaction.

5.9 SITE DRAINAGE

The project civil engineer is responsible for designing surface drainage improvements. With regard to geotechnical engineering issues, we recommend that finish grades be sloped away from buildings and pavements to the maximum extent practical. The latest California Building Code Section 1804.4 specifies minimum slopes of 5 percent away from foundations. Where development conditions restrict meeting this slope requirement, we recommend that specific drainage requirements be developed. As a minimum, we recommend the following:

1. Discharge roof downspouts into closed conduits and direct away from foundations and pavements to appropriate drainage devices.
2. Do not allow water to pond near foundations, pavements, or exterior flatwork.

6.0 PRELIMINARY FOUNDATION RECOMMENDATIONS

We developed preliminary structural improvement recommendations using data obtained from our previous field exploration, previous laboratory test results, and engineering analysis.

6.1 POST-TENSIONED MAT FOUNDATIONS

Due to the presence of near-surface expansive soils at the site as well as potentially liquefiable subsurface soils, we recommend that the proposed residential structures be supported on post-tensioned (PT) concrete mat foundations founded on engineered fill or compacted subgrade.

We recommend that PT mats be a minimum of 10 inches thick and have a thickened edge at least 2 inches greater than the mat thickness. The Structural Engineer should determine the actual PT mat thickness using the geotechnical recommendations in this report; we defer to the professional judgment of the Structural Engineer on the necessary mat thickness. ENGEO should be retained to review the PT mat foundation design.

The 2016 CBC requires post-tensioned (PT) mat foundation design criteria be determined in accordance with the Post Tensioning Institute's (PTI) "Design of Post-Tensioned Slabs-on-Ground, Third Edition" (2004). The following post-tensioned mat soil design parameters were developed according to methods recommended in PTI's "Design of Post-Tensioned Slabs-on-Ground, Third Edition" (2004), in accordance with Addendum 3, "Standard Requirements for Analysis of Shallow Concrete Foundations on Expansive Soils" (2007):

TABLE 6.1-1: Post-Tensioned Mat Foundation Design Criteria

CONDITION	CENTER LIFT	EDGE LIFT
Edge Moisture Variation Distance, e_m (feet)	7.5	4.0
Differential Soil Movement, y_m (inches)	0.5	1.5

PT mats may be designed for an average allowable bearing pressure of up to 1,000 pounds per square foot (psf) for dead-plus-live loads with maximum localized bearing pressures of 1,500 psf at column or wall loads. Lateral loads may be resisted by friction along the base of the mat using an allowable coefficient of friction of 0.30.

In addition, based on our previous liquefaction analysis, on a preliminary basis the post-tensioned mat foundations should be designed for a total liquefaction-induced settlement of up to 2 inches and up to 1 inch of liquefaction-induced differential settlement acting over 50 feet.

Underlay PT mats with a moisture reduction system as recommended below. In addition, moisture conditioning of the building foundation subgrade should be to a moisture content at least 3 percentage points above optimum immediately prior to foundation construction. The subgrade should not be allowed to dry prior to concrete placement. We also recommend that ENGEO be retained to observe the pre-pour moisture conditions to check that our report recommendations have been followed.

6.1.1 Slab Moisture Vapor Reduction

When buildings are constructed with post-tensioned mats, water vapor from beneath the mat will migrate through the concrete and into the building. This water vapor can be reduced but not stopped. Vapor transmission can negatively affect floor coverings and lead to increased moisture within a building.

When water vapor migrating through the slab would be undesirable, we recommend the following to reduce, but not stop, water vapor transmission upward through the post-tensioned mat foundation.

1. Install a vapor retarder membrane directly beneath the slab. Seal the vapor retarder at all seams and pipe penetrations. Vapor retarders shall conform to Class A in the current ASTM E 1745 “Standard Specification for Plastic Water Vapor Retarders used in Contact with Soil or Granular Fill under Concrete Slabs”.
2. Concrete shall have a concrete water-cement ratio of no more than 0.50.
3. Provide inspection and testing during concrete placement to check that the proper concrete and water cement ratio are used.

The structural engineer should be consulted as to the use of a layer of clean sand or pea gravel (less than 5 percent passing the U.S. Standard No. 200 Sieve) placed on top of the vapor retarder membrane to assist in concrete curing.

7.0 PRELIMINARY PAVEMENT DESIGN

Based on our previous borings, we note that the majority of the surficial soils within the site consist of lean clays. In our experience, these soils generally provide low subgrade support for pavement sections; we therefore consider an R-Value of 5 to be appropriate for design. Using estimated traffic indices for various pavement loading requirements, we developed the following recommended pavement sections using Topic 633 of the Caltrans Highway Design Manual (including the asphalt factor of safety), presented in the table below.

We should note that mixing with sandy soils or selective grading may increase the R-Value of the subgrade soils, and potentially reduce the design pavement section. To reduce the pavement section, we recommend collecting soil samples of the subgrade materials during mass grading to evaluate the subgrade properties.

TABLE 7.0-1: Recommended Asphalt Concrete Pavement Sections

TRAFFIC INDEX	PAVEMENT SECTION	
	ASPHALT CONCRETE (INCHES)	CLASS 2 AGGREGATE BASE (INCHES)
4	2.5	8
5	3.0	10
6	3.5	13
7	4.0	16
8	5.0	18
9	5.5	21

The civil engineer should determine the appropriate traffic indices based on the estimated traffic loads and frequencies.

Compact finish subgrade and aggregate base in accordance with Section 5.8. Aggregate Base should meet the requirements for ¾-inch maximum Class 2 AB in accordance with Section 26-1.02B of the latest Caltrans Standard Specifications.

8.0 RECOMMENDATIONS FOR DESIGN-LEVEL STUDY

As previously discussed, a site-specific design-level geotechnical exploration should be performed once details of the project have been defined. Preliminary conclusions and recommendations presented herein are based on limited site exploration data. Based on our preliminary findings in this study, we recommend the design-level geotechnical exploration to include supplemental borings, surface samples, Cone Penetration Tests (CPTs) and laboratory soil testing to address the following geotechnical concerns:

- Liquefaction-induced settlement risks, lateral spreading risks and design considerations.
- Detailed foundation design criteria based on building types and surficial soil material properties.
- Identification of any undocumented fill located on the property.

The goal of the exploration is to allow for more detailed evaluations of the geotechnical issues discussed in this report and afford the opportunity to provide recommendations regarding techniques and procedures to be implemented during construction to mitigate potential geotechnical/geological hazards.

9.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

This report presents preliminary geotechnical recommendations for design of the improvements discussed in Section 1.2 for the Creekside project. If changes occur in the nature or design of the project, we should be allowed to review this report and provide additional recommendations, if any. It is the responsibility of the owner to transmit the information and recommendations of this report to the appropriate organizations or people involved in design of the project, including but not limited to developers, owners, buyers, architects, engineers, and designers. The conclusions and recommendations contained in this report are solely professional opinions and are valid for a period of no more than 2 years from the date of report issuance.

We strived to perform our professional services in accordance with generally accepted geotechnical engineering principles and practices currently employed in the area; no warranty is expressed or implied. There are risks of earth movement and property damages inherent in building on or with earth materials. We are unable to eliminate all risks; therefore, we are unable to guarantee or warrant the results of our services.

This report is based upon field and other conditions discovered at the time of report preparation. We developed this report with limited subsurface exploration data. We assumed that our subsurface exploration data are representative of the actual subsurface conditions across the site. Considering possible underground variability of soil and groundwater, additional costs may be required to complete the project. We recommend that the owner establish a contingency fund to cover such costs. If unexpected conditions are encountered, ENGEO must be notified immediately to review these conditions and provide additional and/or modified recommendations, as necessary.

Our services did not include excavation sloping or shoring, soil volume change factors, flood potential, or a geohazard exploration. In addition, our geotechnical exploration did not include work to determine the existence of possible hazardous materials. If any hazardous materials are encountered during construction, the proper regulatory officials must be notified immediately.

This document must not be subject to unauthorized reuse, that is, reusing without written authorization of ENGEO. Such authorization is essential because it requires ENGEO to evaluate the document's applicability given new circumstances, not the least of which is passage of time.

Actual field or other conditions will necessitate clarifications, adjustments, modifications or other changes to ENGEO's documents. Therefore, ENGEO must be engaged to prepare the necessary clarifications, adjustments, modifications or other changes before construction activities commence or further activity proceeds. If ENGEO's scope of services does not include onsite construction observation, or if other persons or entities are retained to provide such services, ENGEO cannot be held responsible for any or all claims arising from or resulting from the performance of such services by other persons or entities, and from any or all claims arising from or resulting from clarifications, adjustments, modifications, discrepancies or other changes necessary to reflect changed field or other conditions.

We determined the lines designating the interface between layers on the exploration logs using visual observations. The transition between the materials may be abrupt or gradual. The exploration logs contain information concerning samples recovered, indications of the presence of various materials such as clay, sand, silt, rock, existing fill, etc., and observations of groundwater encountered. The field logs also contain our interpretation of the subsurface conditions between sample locations. Therefore, the logs contain both factual and interpretative information. Our recommendations are based on the contents of the final logs, which represent our interpretation of the field logs.

SELECTED REFERENCES

1. American Society of Civil Engineers, 2011, *Minimum Design Loads for Buildings and other Structures ASCE 7-10*. Reston: American Society of Civil Engineers.

2. California Building Standards Commission, *2016 California Building Code,* Volumes 1 and 2, Sacramento, California.

3. California Department of Transportation, 2008, *Highway Design Manual*.

4. California Geological Survey, by Bryant, W.A., and Hart, E.W., *Fault-Rupture Hazard Zones in California*; Special Publication 42, Interim Revision 2007.

5. Carlson, Barbee & Gibson; Conceptual Site Plan, Preliminary Grading Plan and Landscape Concept; Creekside, Vineyards at Sand Creek; Antioch, California; September 12, 2018; Job No. 974-51.

6. Crane, R. C., 1988, *Field Trip Guide to the Geology of the San Ramon Valley and Environs Guidebook*; Northern California Geological Society.

7. Crane, R. C., 1995*, Preliminary Geologic Map of the Antioch South Quadrangle, Contra Costa County, California*; Draft available from H. & L. Hendry, Concord, California.

8. Dibblee, T. W., Jr., 1980, *Preliminary Geologic Map of the Antioch South Quadrangle, Contra Costa County, California*; USGS Open-file report 80-536.

9. Eaton J., 1986, *Tectonic Environment of the 1892 Vacaville/Winters Earthquakes and the Potential of Large Earthquakes along the Western Edge of the Sacramento Valley*; U.S. Geological Survey Open-File Report 86-370.

10. ENGEO; Preliminary Geotechnical Exploration; Vineyards FUA1; Antioch, California; January 3, 2002; Project No. 4894.5.002.01.

11. Moores, E. M., Unruh, J. R., and Verosub, K. L., 1991, *Quaternary Blind Thrusting and Potential Seismic Hazards in the S.W. Sacramento Valley, California*; GSA Conference, May 29, 1991

12. Nilsen, T. H., 1975, *Preliminary Photointerpretation Map of Landslide and Other Surficial Deposits of the Antioch South 7½' Quadrangle, Contra Costa County, California*; USGS Open-file map.

13. Petersen, M. D., et al., 2008, *Documentation for the 2008 Update of the United States National Seismic Hazard Maps*; U.S. Geological Survey Open-File Report 2008–1128, 61 p.

14. SEAOC, 1996, *Recommended Lateral Force Requirements and Tentative Commentary*.

15. U.S. Geological Survey, *Seismic Design Map*, http://earthquake.usgs.gov/designmaps/us/application.php.

SELECTED REFERENCES (Continued)

16. U.S. Geological Survey, 2008 National Seismic Hazard Maps - Source Parameters, https://earthquake.usgs.gov/cfusion/hazfaults_2008_search/query_results.cfm.

17. Wong, I. G. and Biggar, N. E., 1989, *Seismicity of eastern Contra Costa County, San Francisco Bay Region, California*; Bulletin of the Seismological Society of America, v. 79.

FIGURES

FIGURE 1: Vicinity Map
FIGURE 2: Site Plan
FIGURE 3: Geologic Map
FIGURE 4: Regional Faulting and Seismicity Map

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BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE

ENGEO
Expect Excellence

VICINITY MAP
CREEKSIDE
ANTIOCH, CALIFORNIA

PROJECT NO.: 4894.002.001	FIGURE NO.
SCALE: AS SHOWN	1
DRAWN BY: JV / CHECKED BY: SDH	

G:\Drafting\DRAFTING2_Dwg\4894\04894002001-GEX-0219\04894002001-1-VICMAP-0219.dwg Plot Date: 2-21-19 JVergara

ORIGINAL FIGURE PRINTED IN COLOR

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EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

TP-15 TEST PIT (ENGEO, 2001)

B-8 BORING (ENGEO, 2001)

BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE AND CARLSON, BARBEE AND GIBSON

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SITE PLAN
CREEKSIDE
ANTIOCH, CALIFORNIA

PROJECT NO.: 4894.002.001	FIGURE NO.
SCALE: AS SHOWN	2
DRAWN BY: JV / CHECKED BY: SDH	

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ORIGINAL FIGURE PRINTED IN COLOR

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EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

TP-15 TEST PIT (ENGEO, 2001)

B-8 BORING (ENGEO, 2001)

GEOLOGIC CONTACT

Qls LANDSLIDE

Qc COLLUVIUM

Qal STREAM DEPOSITED SAND, SILT, CLAY AND GRAVEL

Qt ALLUVIAL DEPOSIT

Tkm MARKLEY FORMATION

N

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FEET

BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE

ENGEO Expect Excellence

GEOLOGIC MAP
CREEKSIDE
ANTIOCH, CALIFORNIA

PROJECT NO.: 4894.002.001	FIGURE NO. 3
SCALE: AS SHOWN	
DRAWN BY: JV	CHECKED BY: SDH

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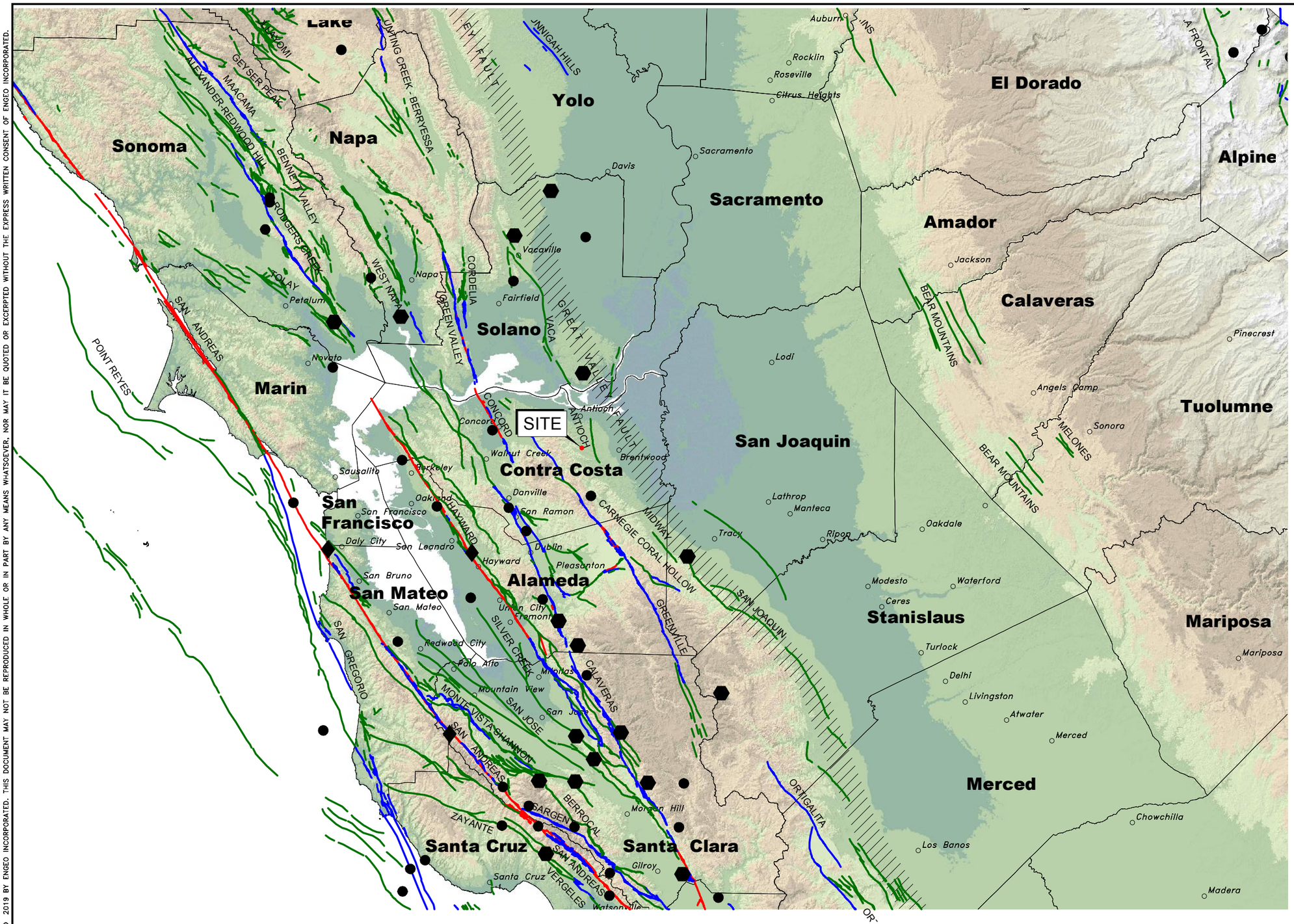

BASE MAP SOURCE:
COLOR HILLSHADE IMAGE BASED ON THE NATIONAL ELEVATION DATASET (NED) AT 30 METER RESOLUTION
U.S.G.S. QUATERNARY FAULT DATABASE, NOVEMBER, 2010
U.S.G.S. HISTORIC EARTHQUAKE DATABASE (1800–2000)

ENGEO Expect Excellence

REGIONAL FAULTING AND SEISMICITY
CREEKSIDE
ANTIOCH, CALIFORNIA

PROJECT NO.: 4894.002.001	FIGURE NO. 4
SCALE: AS SHOWN	
DRAWN BY: JV	CHECKED BY: SDH

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APPENDIX A

BORING LOG KEY
PREVIOUS EXPLORATION LOGS

KEY TO BORING LOGS

MAJOR TYPES			DESCRIPTION
COARSE-GRAINED SOILS MORE THAN HALF OF MAT'L LARGER THAN #200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	CLEAN GRAVELS WITH LESS THAN 5% FINES	GW - Well graded gravels or gravel-sand mixtures GP - Poorly graded gravels or gravel-sand mixtures
		GRAVELS WITH OVER 12 % FINES	GM - Silty gravels, gravel-sand and silt mixtures GC - Clayey gravels, gravel-sand and clay mixtures
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LESS THAN 5% FINES	SW - Well graded sands, or gravelly sand mixtures SP - Poorly graded sands or gravelly sand mixtures
		SANDS WITH OVER 12 % FINES	SM - Silty sand, sand-silt mixtures SC - Clayey sand, sand-clay mixtures
FINE-GRAINED SOILS MORE THAN HALF OF MAT'L SMALLER THAN #200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50 % OR LESS		ML - Inorganic silt with low to medium plasticity CL - Inorganic clay with low to medium plasticity OL - Low plasticity organic silts and clays
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50 %		MH - Elastic silt with high plasticity CH - Fat clay with high plasticity OH - Highly plastic organic silts and clays
	HIGHLY ORGANIC SOILS		PT - Peat and other highly organic soils

For fine-grained soils with 15 to 29% retained on the #200 sieve, the words "with sand" or "with gravel" (whichever is predominant) are added to the group name.

For fine-grained soil with >30% retained on the #200 sieve, the words "sandy" or "gravelly" (whichever is predominant) are added to the group name.

GRAIN SIZES

U.S. STANDARD SERIES SIEVE SIZE				CLEAR SQUARE SIEVE OPENINGS			
200	40	10	4	3/4 "		3"	12"
SILTS AND CLAYS	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		

RELATIVE DENSITY

SANDS AND GRAVELS	BLOWS/FOOT (S.P.T.)
VERY LOOSE	0-4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	OVER 50

CONSISTENCY

SILTS AND CLAYS	STRENGTH*
VERY SOFT	0-1/4
SOFT	1/4-1/2
MEDIUM STIFF	1/2-1
STIFF	1-2
VERY STIFF	2-4
HARD	OVER 4

SAMPLER SYMBOLS

- Modified California (3" O.D.) sampler
- California (2.5" O.D.) sampler
- S.P.T. - Split spoon sampler
- Shelby Tube
- Dames and Moore Piston
- Continuous Core
- Bag Samples
- Grab Samples
- NR No Recovery

MOISTURE CONDITION

DRY	Dusty, dry to touch
MOIST	Damp but no visible water
WET	Visible freewater

LINE TYPES

Solid - Layer Break

Dashed - Gradational or approximate layer break

GROUND-WATER SYMBOLS

Groundwater level during drilling

Stabilized groundwater level

(S.P.T.) Number of blows of 140 lb. hammer falling 30" to drive a 2-inch O.D. (1-3/8 inch I.D.) sampler

* Unconfined compressive strength in tons/sq. ft., asterisk on log means determined by pocket penetrometer

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DATE OF BORING: October 23, 2001

SURFACE ELEVATION: Approx. 173 feet (53 meters)

DEPTH (FEET)	DEPTH (METERS)	SAMPLE NUMBER	LOG, LOCATION AND TYPE OF SAMPLE	DESCRIPTION	BLOWS/FT.	qu UNCON STRENGTH (TSF) *FIELD PENET. APPROX.	IN PLACE DRY UNIT WEIGHT (PCF)	IN PLACE MOIST. CONTENT % DRY WEIGHT
0				Disced surface. SILTY CLAY (CL), black, loose, dry, disced clods of stiff clay,				
		6-1C		SILTY CLAY (CL), black, very stiff to hard, slightly moist,	41			
	1	6-2C		SILTY CLAY (CL), dark brown, hard, slightly moist.	52			
5				Same as above, wtih gypsum.				
	2	6-3C			100		111	14.8
				SILTY CLAY with sand (CL), reddish brown, hard, slightly moist, with trace gravel.				
10	3							
		6-4C			56			
	4							
15								
	5	6-5C			54			
	6							
20								
		6-6C		SILTY SAND (SM), reddish brown, dense, dry to moist.	53			
	7							
25								
	8	6-7C		Percent Passing #200 Sieve = 25.8	24			
				Bottom of boring at approximately 26 $^{1}/_{2}$ feet. Groundwater not encountered during drilling.				
	9							
30								
	10							

0541 4894A.GPJ 1/2/02

ENGEO INCORPORATED
1971 - 2001 * 30 YEARS OF EXCELLENCE

VINEYARDS FUA1

ANTIOCH, CALIFORNIA

BORING NO.: B-6

LOGGED BY: C. Jensen

PROJ. NO.: 4894.5.002.01

CHECKED BY DRM

FIGURE NO. A-1

DATE OF BORING: October 24, 2001

SURFACE ELEVATION: Approx. 158 feet (48 meters)

DEPTH (FEET)	DEPTH (METERS)	SAMPLE NUMBER	LOG, LOCATION AND TYPE OF SAMPLE	DESCRIPTION	BLOWS/FT.	qu UNCON STRENGTH (TSF) *FIELD PENET. APPROX.	IN PLACE DRY UNIT WEIGHT (PCF)	IN PLACE MOIST. CONTENT % DRY WEIGHT
0				1 foot disced. SANDY CLAY (CL), olive brown, hard, dry to moist.				
		7-1C			58	+5.0*		
	1	7-2C			34	+5.0*	91	9.6
5				Same as above, with calcium carbonates.				
	2	7-3C			48	+5.0*		
				SILTY CLAY (CL), light olive brown, very stiff to hard, moist.				
10	3	7-4C			42			
	4			SILTY SAND (SM), reddish brown, medium dense, damp, very fine grained to fine grained.				
15	5	7-5C			16			
		7-6C		Same as above, medium grained layer.	12			
20	6							
		7-7C		Same as above, moist.	9			13.4
	7							
25				▽				
	8	7-8C		Same as above, wet, medium-grained sand.	22			
				Percent Passing #200 Sieve = 25.9				
		7-9C			15			
				Bottom of boring at approximately 28 feet. Groundwater encountered at 25 feet during drilling.				
30	9							
	10							

0541 4894A.GPJ 1/2/02

ENGEO INCORPORATED
1971 - 2001 * 30 YEARS OF EXCELLENCE

VINEYARDS FUA1

ANTIOCH, CALIFORNIA

BORING NO.: B-7

LOGGED BY: C. Jensen

PROJ. NO.: 4894.5.002.01

CHECKED BY DRM

FIGURE NO. A-2

DATE OF BORING: October 24, 2001

SURFACE ELEVATION: Approx. 163 feet (50 meters)

DEPTH (FEET)	DEPTH (METERS)	SAMPLE NUMBER	LOG, LOCATION AND TYPE OF SAMPLE	DESCRIPTION	BLOWS/FT.	qu UNCON STRENGTH (TSF) *FIELD PENET. APPROX.	IN PLACE DRY UNIT WEIGHT (PCF)	IN PLACE MOIST. CONTENT % DRY WEIGHT
0				1 foot surface, loose. SANDY CLAY (CL), dark brown, medium stiff, dry to moist, with rootlets in upper 3 feet.				
		8-1C	NR		15		90	9.8
	1	8-2C	NR		13			
5				SILTY CLAY (CL), dark brown, hard, moist, with carbonate.				
	2	8-3C			48			
				SILTY CLAY (CL), reddish brown, hard, moist, with sand.				
10	3	8-4C			55			
	4			CLAYEY SAND (SC), reddish brown, medium dense, moist.				
15	5	8-5C			17			
				SILTY SAND (SM), reddish brown, medium dense, moist.				
20	6	8-6C		CLAYEY SILT (ML), reddish brown, stiff, moist, with carbonate filaments.	24	1.5*		
	7							
25	8	8-7C		SILTY SAND (SM), reddish brown, medium dense, moist, very fine grained.	13			
	9			Same as above, reddish brown with olive gray zones, very fine grained to silt.				
30		8-8C			16			
	10							

ENGEO INCORPORATED
1971 - 2001 * 30 YEARS OF EXCELLENCE

VINEYARDS FUA1

ANTIOCH, CALIFORNIA

BORING NO.: B-8

LOGGED BY: C. Jensen

PROJ. NO.: 4894.5.002.01

CHECKED BY DRM

FIGURE NO. A-3

0541 4894A.GPJ 1/2/02

DATE OF BORING: October 24, 2001

SURFACE ELEVATION: Approx. 163 feet (50 meters)

DEPTH (FEET)	DEPTH (METERS)	SAMPLE NUMBER	LOG, LOCATION AND TYPE OF SAMPLE	DESCRIPTION	BLOWS/FT.	qu UNCON STRENGTH (TSF) *FIELD PENET. APPROX.	IN PLACE DRY UNIT WEIGHT (PCF)	IN PLACE MOIST. CONTENT % DRY WEIGHT
35	11	8-9C		Same as above, reddish brown, medium-grained sand. Percent Passing #200 Sieve = 12.2	15			
		8-10C		Same as above, gravel caving in hole.				
40	12			Bottom of boring at approximately 38 $^1/_2$ feet. Groundwater encountered at 29 feet during drilling.				
45	13							
	14							
50	15							
	16							
55	17							
	18							
60	19							
65	20							

ENGEO INCORPORATED
1971 - 2001 * 30 YEARS OF EXCELLENCE

VINEYARDS FUA1

ANTIOCH, CALIFORNIA

BORING NO.: B-8

LOGGED BY: C. Jensen

PROJ. NO.: 4894.5.002.01

CHECKED BY DRM

FIGURE NO. A-3

0541 4894A.GPJ 1/2/02

TEST PIT LOGS

Test Pit Number	Depth (Feet)	Description
TP-12	0 – 0.5	Sandy CLAY (CL), dark brown, medium stiff, dry, with abundant organics and roots.
	0.5 – 1.5	Sandy CLAY (CL), dark brown, medium stiff, dry, with rootlets and krotovina.
	1.5 – 5	Clayey SAND (SC), reddish brown, dense, dry, with carbonate ghosting and bioturbation.
	5 – 14	Clayey SAND (SC), reddish brown, dense, dry, bioturbated with claystone fragments at 13 feet.
	14 – 16	CLAYSTONE/SILTSTONE, olive and reddish brown, moderately strong, thin bedding, moderately weathered, with small (< 1 inch) leaf imprint fossils.
		Bottom at 16 feet. No free groundwater encountered.
TP-13	0 – 0.5	Sandy CLAY (CL), dark brown, loose, dry, disced surface with organics and krotovina.
	0.5 – 4	Sandy CLAY (CL), dark brown, stiff, moist, with occasional subrounded orange gravel. Qc
	4 – 8	Sandy CLAY (CL), reddish brown, stiff, moist, with carbonate and bioturbation.
	8 – 12	Clayey SAND (SC), reddish brown, dense to very dense, moist.
	12 – 14	Clayey SAND (SC), reddish brown, dense to very dense, moist, with abundant carbonate.
	14 – 16	SANDSTONE, olive and reddish brown, moist, weak to friable, very closely fractured, massive, deeply weathered.

TEST PIT LOGS

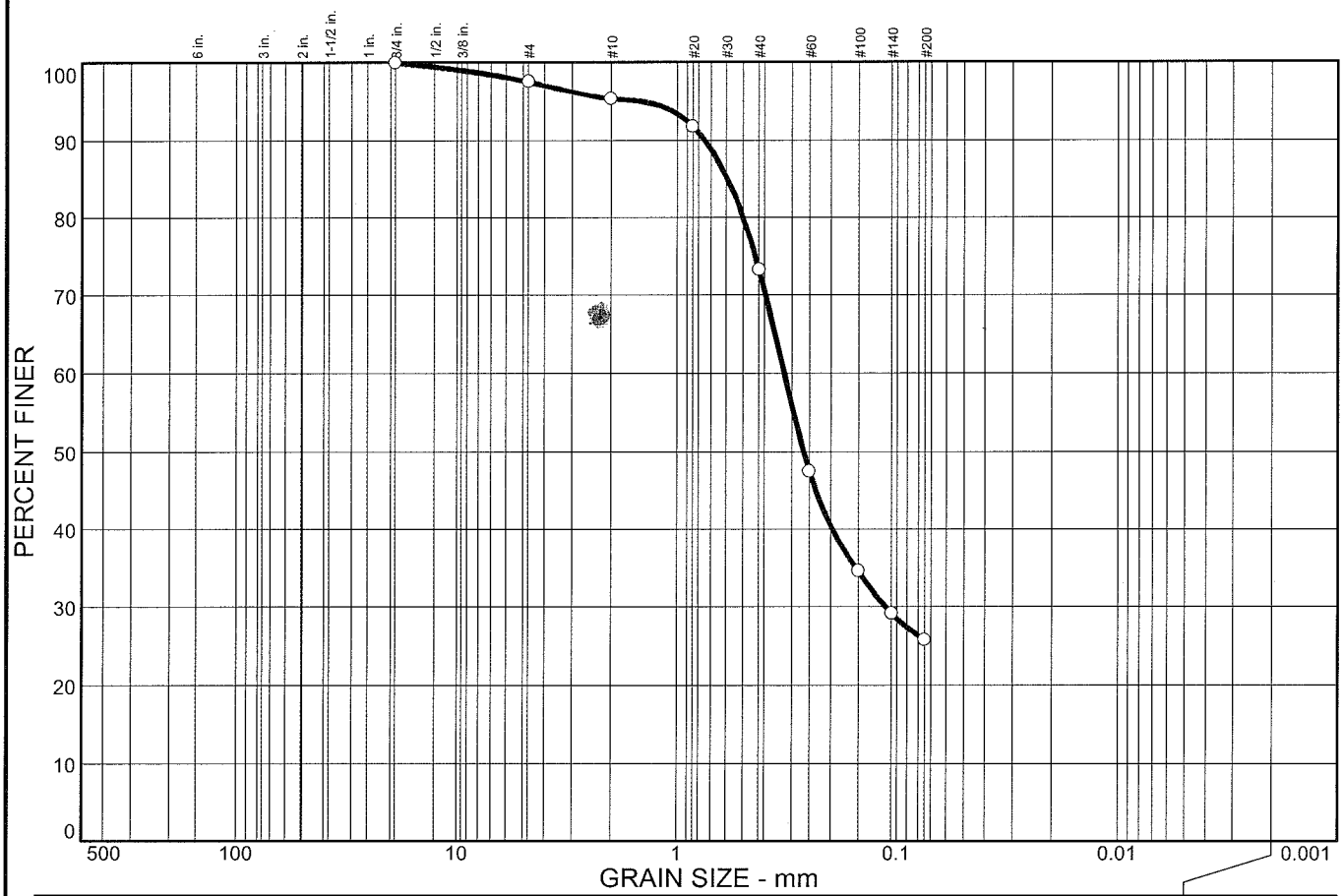
Test Pit Number	Depth (Feet)	Description
		Bottom at 16 feet. No free groundwater encountered.
TP- 14	0 – 0.25	Sandy CLAY (CL), dark brown, stiff, dry, with abundant organics.
	0.25 – 2	Sandy CLAY (CL) dark brown, very stiff, dry, with rootlets and desiccation cracks.
	2 – 3.5	Sandy CLAY (CL) dark reddish brown, very stiff, dry, with carbonate and some desiccation cracks.
	3.5 – 5	SANDSTONE, olive and white, dry, friable, moderately fractured, massive, deeply weathered, with abundant carbonate zones.
	5 – 7	SANDSTONE, olive, dry, friable, massive, moderately weathered, fine to medium grained.
		Bottom at 7 feet. No free groundwater encountered.
TP-15	0 – 0.25	Clayey SAND (SC), brown, loose, dry, with abundant organics.
	0.25 – 1.5	Clayey SAND (SC), brown, medium dense, dry, with rootlets.
	1.5 – 4	Clayey SAND, (SM/SC), brown and olive, dense, dry, with carbonate ghosting and sandstone blocks.
	4 – 6	SANDSTONE, olive, dry, friable to moderately strong, moderately fractured, thin bedding, moderately weathered, with carbonate and interbedded claystone layers.
		Bottom at 6 feet. No free groundwater encountered.

APPENDIX B

PREVIOUS LABORATORY TEST DATA

Particle Size Distribution Reports
Corrosion Test Results

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	2.4	2.2	22.1	47.5	25.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75 in.	100.0		
#4	97.6		
#10	95.4		
#20	91.8		
#40	73.3		
#60	47.5		
#100	34.6		
#140	29.2		
#200	25.8		

* (no specification provided)

Soil Description

Yellowish brown silty Sand

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.593 D_{60}= 0.326 D_{50}= 0.265
D_{30}= 0.113 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

F.M.=0.68

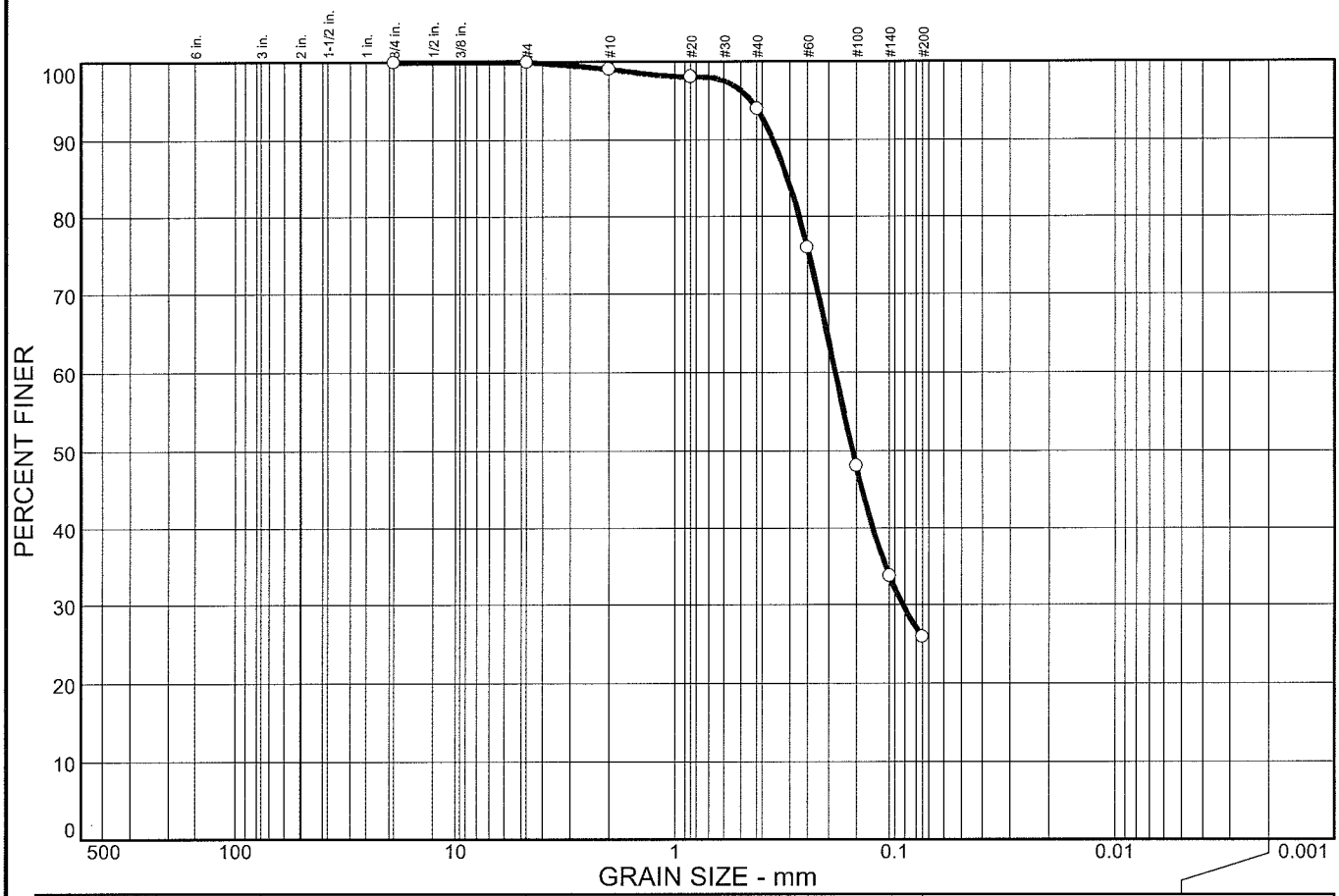
Sample No.: 6-7 **Source of Sample:** Grad. **Date:** 12-12-01
Location: **Elev./Depth:** 26 ft.

ENGEO INCORPORATED
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
MATERIALS TESTING

Client: Nunn Farms
Project: Vineyards FUA1, Antioch, CA
Project No: 4894.5.002.01

Figure C-2

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.9	5.1	68.1	25.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75 in.	100.0		
#4	100.0		
#10	99.1		
#20	98.1		
#40	94.0		
#60	76.0		
#100	48.1		
#140	33.8		
#200	25.9		

* (no specification provided)

Soil Description

Dark yellowish brown silty Sand

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.308 D_{60}= 0.186 D_{50}= 0.156
D_{30}= 0.0918 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

F.M.=0.52

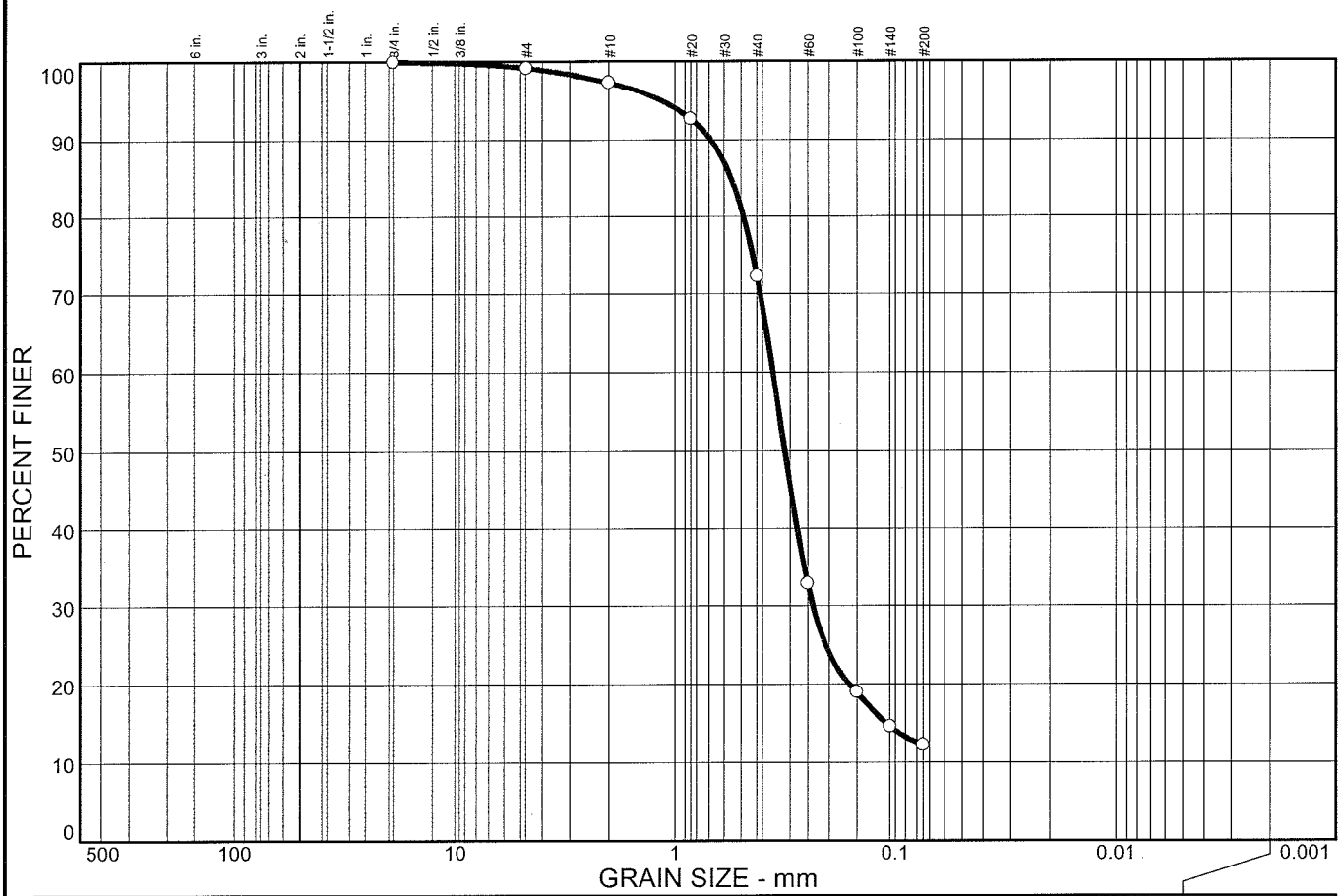
Sample No.: 7-9 **Source of Sample:** Grad. **Date:** 12-12-01
Location: **Elev./Depth:** 27 ft.

ENGEO INCORPORATED
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
MATERIALS TESTING

Client: Nunn Farms
Project: Vineyards FUA1, Antioch, CA
Project No: 4894.5.002.01

Figure C-3

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.8	1.8	25.1	60.1	12.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75 in.	100.0		
#4	99.2		
#10	97.4		
#20	92.7		
#40	72.3		
#60	32.9		
#100	19.0		
#140	14.6		
#200	12.2		

* (no specification provided)

Soil Description

Dark yellowish brown poorly graded Sand with silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.557 D_{60}= 0.359 D_{50}= 0.318
D_{30}= 0.236 D_{15}= 0.110 D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

F.M.=0.82

Sample No.: 8-9 **Source of Sample:** Grad. **Date:** 12-12-01
Location: **Elev./Depth:** 36 ft.

ENGEO INCORPORATED
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
MATERIALS TESTING

Client: Nunn Farms
Project: Vineyards FUA1, Antioch, CA
Project No: 4894.5.002.01

Figure C-4

California State Certified Laboratory No.2153

C E R C O
analytical, inc.

20 December, 2001

Job No.0111225
Cust. No.10169

3942-A Valley Avenue
Pleasanton, CA 94566-4715
Tel: 925.462.2771
Fax: 925.462.2775

Mr. Casey Lee Jones
ENGEO Inc.
2401 Crow Canyon Rd., Ste 200
San Ramon, CA 94583

Subject: Project No.: 4894.5.001.01
Project Name: Vineyard
Corrosivity Analysis – ASTM Test Methods

Dear Mr. Jones:

Pursuant to your request, CERCO Analytical has analyzed the soil samples submitted on November 21, 2001. Based on the analytical results, a brief corrosivity evaluation is enclosed for your consideration.

Based upon the resistivity measurements, both samples are classified as "corrosive". All buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron should be properly protected against corrosion depending upon the critical nature of the structure. All buried metallic pressure piping such as ductile iron firewater pipelines should be protected against corrosion.

The chloride ion concentrations reflect none detected with a detection limit of 15 mg/kg.

The sulfate ion concentrations range from none detected to 15 mg/kg and are determined to be insufficient to damage reinforced concrete structures and cement mortar-coated steel at these locations.

The pH of both samples is 6.6, which does not present corrosion problems for buried iron, steel, mortar-coated steel and reinforced concrete structures.

The redox potentials range from 490 to 540-mV, which is indicative of aerobic soil conditions.

This corrosivity evaluation is based on general corrosion engineering standards and is non-specific in nature. For specific long-term corrosion control design recommendations or consultation, please call *JDH Corrosion Consultants, Inc. at (925) 927-6630.*

We appreciate the opportunity of working with you on this project. If you have any questions, or if you require further information, please do not hesitate to contact us.

Very truly yours,
CERCO ANALYTICAL, INC.

J. Darby Howard, Jr., P.E.
President

JDH/jdl
Enclosure

CERCO Analytical, Inc.

3942-A Valley Avenue, Pleasanton, CA 94566-4715 (925) 462-2771 Fax (925) 462-2775

FINAL RESULTS

Client: ENGEO Incorporated
Client's Project No.: 4894.5.001.01
Client's Project Name: Vineyard
Authorization: Signed Chain of Custody

Date Sampled: 10/31 & 11/01/01
Date Received: 21-Nov-2001
Date of Report: 19-Dec-2001
Matrix: Soil

Job/Sample No.	Sample I.D.	Redox (mV)	pH	Conductivity (umhos/cm)*	Resistivity (100% Saturation) (ohms-cm)	Sulfide (mg/kg)*	Chloride (mg/kg)*	Sulfate (mg/kg)*
0111225-001	3-1	490	6.6	-	2,000	-	N.D.	N.D.
0111225-002	7-1	540	6.6	-	1,900	-	N.D.	15

Method:	ASTM D1498	ASTM D4972	ASTM D1125M	ASTM G57	ASTM D4658M	ASTM D4327	ASTM D4327
Detection Limit:	-	-	10	-	50	15	15
Date Analyzed:	12-Dec-2001	13-Dec-2001	-	14-Dec-2001	-	13-Dec-2001	13-Dec-2001

Cheryl McMillen
Laboratory Director

* Results Reported on "As Received" Basis
N.D. - None Detected

Quality Control Summary - All laboratory quality control parameters were found to be within established limits

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APPENDIX C

PHASE I ENVIRONMENTAL SITE ASSESSMENT

CREEKSIDE
ANTIOCH, CALIFORNIA

PHASE I ENVIRONMENTAL SITE ASSESSMENT

SUBMITTED TO
Ms. Lisa Borba
GBN Partners LLC
3820 Blackhawk Drive
Danville, CA 94506

PREPARED BY
ENGEO Incorporated

March 1, 2019

PROJECT NO.
4894.002.001

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ENGEO
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Project No.
4894.002.001

March 1, 2019

Ms. Lisa Borba
GBN Partners LLC
3820 Blackhawk Drive
Danville, CA 94506

Subject: Creekside
Antioch, California

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Dear Ms. Borba:

ENGEO is pleased to present our phase I environmental site assessment of the subject property (Property), located in Antioch, California. The attached report includes a description of the site assessment activities, along with ENGEO's findings, opinions, and conclusions regarding the Property.

ENGEO has the specific qualifications based on education, training, and experience to assess the nature, history, and setting of the Property, and has developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312 and the American Standard Testing Method (ASTM) Practice E1527-13. We declare that, to the best of our professional knowledge and belief, the responsible charge for this study meets the definition of Environmental Professional as defined in Section 312.10 of 40 CFR Part 312 and ASTM E1527-13.

We are pleased to be of service to you on this project. If you have any questions concerning the contents of our report, please contact us.

Sincerely,

ENGEO Incorporated

Victoria Drake, EIT
vd/sm/jf

Shawn Munger, CHG

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EXECUTIVE SUMMARY

ENGEO conducted a phase I environmental site assessment for the Property located southwest of the intersection of Heidorn Ranch Road and Old Sand Creek Road in Antioch, California. The approximately 158-acre Property is identified as APN 057-050-024.

The Property is currently undeveloped, except for an unpaved access road within the northern portion of the Property, generally trending west to east. Historically, the Property has been used for dry land farming, cattle grazing, and oil production, the latter of which has since been abandoned. Four abandoned oil/gas wells are located within the Property boundaries. An electrical transmission line extends through the southwestern portion of the Property, trending northwest to southeast. Review of historical records indicates that the Property has remained undeveloped, apart from oil and gas production wells, since 1939.

This assessment included a review of local, state, tribal, and federal environmental record sources, standard historical sources, aerial photographs, fire insurance maps and physical setting sources. A reconnaissance of the Property was conducted to review site use and current conditions to check for the storage, use, production or disposal of hazardous or potentially hazardous materials and interviews with persons knowledgeable about current and past site use.

The site reconnaissance and records review did not find documentation or physical evidence of soil or groundwater impairments associated with the use or past use of the Property. A review of regulatory databases maintained by county, state, tribal, and federal agencies found no documentation of hazardous materials violations or discharge on the Property and did not identify contaminated facilities within the appropriate American Society for Testing and Materials (ASTM) search distances that would reasonably be expected to impact the Property.

Based on the findings of this assessment, no Recognized Environmental Conditions (RECs), no historical RECs, and no controlled RECs were identified for the Property.

Based on the review of regulatory databases and site reconnaissance, we present information on features of potential environmental concern that were either contained in the databases or observed on the Property. These features were not considered to be RECs. We briefly discuss each feature below.

<u>Former Oil/Gas Wells</u>

Four abandoned oil/gas wells are located within the Property boundaries. The following is recommended to address the past oil/gas production activities:

- Based on anecdotal information, we understand the oil/gas pipelines have been removed; however, if remnant pipelines are encountered during site development work, they should be removed in accordance with applicable regulations.

- If indicators of apparent soil contamination (soil staining, odors, debris fill material, etc.) are encountered at the Property, specifically in the vicinity of abandoned oil/gas wells, or during removal of abandoned oil pipelines, the impacted area(s) should be isolated from surrounding, non-impacted areas. The project environmental professional shall obtain samples of the potentially impacted soil for analysis of the contaminants of concern and comparison with applicable regulatory residential screening levels. If soil contaminant concentrations exceed

the applicable regulatory residential screening levels, the impacted soil shall be excavated and disposed of offsite at a licensed landfill facility.

- Prior to final map approval, the project applicant shall submit to the City of Antioch Engineering Department, for review and approval, plans which show that future inhabited structures will not be located over the four abandoned oil/gas wells. The plans shall be completed in compliance with the Division Of Oil, Gas And Geothermal Resources (DOGGR) Construction Site Review Program, which includes guidelines and recommendations for setbacks and mitigation measures for venting systems.

- If grading is proposed proximate to the four abandoned well locations, DOGGR should be consulted to determine if the wells will require modification in casing height. In addition, DOGGR should be consulted to determine if the well abandonment procedures are consistent with current requirements.

- The specific location of the wells should be determined and surveyed in the field.

ENGEO has performed a phase I environmental site assessment in general conformance with the scope and limitations of ASTM E1527-13 and the standards and practices of the All Appropriate Inquiry – Final Rule (40 Code of Federal Regulations Part 312).

ENGEO recommends no further environmental studies at this time.

1.0 INTRODUCTION

1.1 SITE LOCATION AND DESCRIPTION

ENGEO conducted a phase I environmental site assessment for the Property located southwest of the intersection of Heidorn Ranch Road and Old Sand Creek Road in Antioch, California (Figures 1 and 2). The approximately 158-acre Property is identified as APN 057-050-024 (Figure 3) and is primarily undeveloped land.

1.2 CURRENT USE OF PROPERTY AND ADJOINING PROPERTIES

The Property is currently undeveloped, except for an unpaved access road within the northern portion of the Property, generally trending west to east. Historically, the Property has been used for dry land farming, cattle grazing, and oil production, the latter of which has since been abandoned. Four abandoned oil/gas wells are located within the Property boundaries. An electrical transmission line extends through the southwestern portion of the Property, trending northwest to southeast.

Adjoining properties land use includes an electric substation along the northwest perimeter and dryland farming/cattle grazing to the north, east, south, and west.

1.3 SITE AND VICINITY CHARACTERISTICS

According to published topographic maps, the Property consists of varied topography and ranges in elevation from approximately 150 feet above mean sea level (msl) to approximately 320 feet above msl. Review of the Dibblee Geologic Map (2006) found that the Property is underlain by surficial sediments and the Kreyenhagen Formation. Specifically, the Property is underlain by alluvial pebble gravel, sand and clay of valley areas (Qa) and Markley Sandstone Member, and light gray to tan, semi-friable, bedded fine- to medium-grained arkosic (Tkm).

In 2001, ENGEO conducted a geotechnical exploration on the Property. The exploration included drilling two exploratory borings and excavating four test pits at various locations on the Property. Soil samples were collected at frequent intervals for visual classification and laboratory testing. Near-surface site soils generally consisted of moderately expansive lean clays. The soils encountered in our previous borings along the northern portion of the Property generally consisted of clay with varying amounts of sand to a maximum depth of approximately 21 feet below ground surface, underlain by silty sand, clayey sand, and clayey silt to the maximum depth explored of 38½ feet. Soils encountered in our test pits located on the topographically elevated portions of the Property generally consisted of sandy lean clay underlain by clayey sand underlain by claystone/siltstone/sandstone bedrock to the maximum depth explored of 16 feet.

Geocheck – Physical Setting Source Summary of the Environmental Resources Data report (Appendix A) indicated no Federal United States Geological Survey (USGS) wells, Federal FRDS Public Water Supply System information, or State Database wells are located within 1 mile of the Property.

We reviewed the Department of Water Resources On-line Water Data Library for depth to water in the vicinity of the Property. The website did not identify any wells within 1 mile of the Property.

During ENGEO's 2001 exploration, static groundwater was observed in the two borings. The groundwater observations from our exploration on the Property is presented in Table 1.3-1 below.

TABLE 1.3-1: Local Groundwater Conditions

EXPLORATION LOCATION	APPROX. DEPTH TO GROUNDWATER (FEET)
B-7	25
B-8	29

The site-specific depth to groundwater and direction of groundwater flow was not determined as part of this assessment. Fluctuations in groundwater levels may occur seasonally and over a period of years due to variations in precipitation, temperature, irrigation and other factors.

We reviewed the Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) website and map database to determine if any historic oil and/or gas wells were located within the Property. 80 wells were mapped within 1 mile of the Property, including the four onsite plugged oil production wells. Further information regarding the abandoned wells is provided in Section 3.5.

1.4 PURPOSE OF PHASE I ENVIRONMENTAL SITE ASSESSMENT

This assessment was performed at the request of GBN Partners LLC for the purpose of environmental due diligence during property acquisition. The objective of this phase I environmental site assessment is to identify Recognized Environmental Conditions (RECs) associated with the Property. As defined in the ASTM Standard Practice E1527-13, an REC is "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment."

1.5 DETAILED SCOPE OF SERVICES

The scope of services performed included the following:

- A review of previous environmental reports prepared for the Property.
- A review of publicly available and practically reviewable standard local, state, tribal, and federal environmental record sources.
- A review of publicly available and practically reviewable standard historical sources, aerial photographs, fire insurance maps and physical setting sources.
- A reconnaissance of the Property to review site use and current conditions. The reconnaissance was conducted to check for the storage, use, production or disposal of hazardous or potentially hazardous materials.
- Interviews with owners/occupants and public sector officials.
- Preparation of this report with our findings, opinions, and conclusions.

1.6 LIMITATIONS AND EXCEPTIONS OF ASSESSMENT

The professional staff at ENGEO strives to perform its services in a proper and professional manner with reasonable care and competence but is not infallible. The recommendations and conclusions presented in this report were based on the findings of our study, which were developed solely from the contracted services. The findings of the report are based in part on contracted database research, out-of-house reports and personal communications. The opinions formed by ENGEO are based on the assumed accuracy of the relied upon data in conjunction with our relevant professional experience related to such data interpretation. ENGEO assumes no liability for the validity of the materials relied upon in the preparation of this report.

This document must not be subject to unauthorized reuse; that is, reuse without written authorization of ENGEO. Such authorization is essential because it requires ENGEO to evaluate the document's applicability given new circumstances, not the least of which is passage of time. The findings from a phase I environmental site assessment are valid for one year after completion of the report. Updates of portions of the assessment may be necessary after a period of 180 days after completion.

This phase I environmental site assessment is not intended to represent a complete soil or groundwater characterization, nor define the depth or extent of soil or groundwater contamination. It is intended to provide an evaluation of potential environmental concerns associated with the use of the Property. A more extensive assessment that would include a subsurface exploration with laboratory testing of soil and groundwater samples could provide more definitive information concerning site-specific conditions. If additional assessment activities are considered for the Property and if other entities are retained to provide such services, ENGEO cannot be held responsible for any and all claims arising from or resulting from the performance of such services by other persons or entities. ENGEO can also not be held responsible from any and all claims arising or resulting from clarifications, adjustments, modifications, discrepancies or other changes necessary to reflect changed field or other conditions.

1.7 SPECIAL TERMS AND CONDITIONS

ENGEO has prepared this report for the exclusive use of our client, GBN Partners LLC. It is recognized and agreed that ENGEO has assumed responsibility only for undertaking the study for the client. The responsibility for disclosures or reports to a third party and for remedial or mitigative action shall be solely that of the Client.

Laboratory testing of soil or groundwater samples was not within the scope of the contracted services. The assessment did not include an asbestos survey, an evaluation of lead-based paint, an inspection of light ballasts for polychlorinated biphenyls (PCBs), a radon evaluation, or a mold survey.

This report is based upon field and other conditions discovered at the time of preparation of ENGEO's assessment. Visual observations referenced in this report are intended only to represent conditions at the time of the reconnaissance. ENGEO would not be aware of site contamination, such as dumping and/or accidental spillage, that occurred subsequent to the reconnaissance conducted by ENGEO personnel.

2.0 USER-PROVIDED INFORMATION

2.1 PROPERTY RECORDS

2.1.1 Title Report/Ownership

The Title Report lists recorded land title detail, ownership fees, leases, land contracts, easements, liens, deficiencies, and other encumbrances attached to or recorded against a subject property. Laws and regulations pertaining to land trusts vary from state to state and the detail of information presented in a Title Report can vary greatly by jurisdiction. As a result, ENGEO utilizes a Title Report, when provided to us, as a supplement to other historical record sources.

A Preliminary Title Report for the Property, prepared by First American Title Company and dated December 18, 2018, and updated December 28, 2018, was provided for our review. The Property title is vested in Peter Eugene Ginochio, Joanne M. Baker, John R. Ginochio, III, Ronald S. Ginochio, Sally N. Ginochio, Anna M. Ginochio, Edward M. Ginochio, Paul L. Ginochio, Angelina Ginochio, Stephen M. Ginochio, Antionette Ginochio, Patty Ginochio, Gina Ginochio-Robichaud, James Martin Ginochio, John R. Ginochio, IV, Shanon W. Ginochio, Gina L. Ginochio, and Louis E. Ginochio.

Notifications of easement/right-of-ways for PG&E, Shell Oil, and Chevron Pipe Line Company are listed in the report. In addition, there are several notifications of oil/gas and mineral right deeds in this report.

No references to environmental liens, deed restrictions or other potential environmental issues were noted. This report is included in Appendix D.

2.1.2 Environmental Liens and Activity Use Limitations

The referenced Preliminary Title Report did not include references to environmental liens, or any activity use restrictions.

2.2 USER KNOWLEDGE OF PROPERTY

Ms. Lisa Borba of GBN Partners LLC completed two environmental site assessment questionnaires pertaining to applicable past and present uses and physical characteristics of the Property and surrounding properties. In the questionnaire, Ms. Borba identified that the Property is located within historic Brentwood Oil Fields. Ms. Borba indicated that the Property has been used for oil and gas exploration, dryland farming, and grazing. Due to the Property's historic use for oil and gas explorations, Ms. Borba noted that vent pipes may exist on the Property. The questionnaires are presented in their entirety in Appendix G.

Mr. Bob Nunn, President of Sunset Exploration, Inc., completed a key site manager based environmental site assessment questionnaire pertaining to applicable past and present uses and physical characteristics of the Property and surrounding properties. In the questionnaire, Mr. Nunn identified that the Property has historically been used for oil and gas production, as well as for agricultural purposes. Mr. Nunn stated that four former oil/gas wells exist on the Property and that these wells are all listed as abandoned. Prior surveys of the Property indicated that in addition to oil and gas production wells, the Property also had several oil and gas pipeline easements within the boundaries. Mr. Nunn was not able to provide any documentation regarding the removal of

pipelines within the Property. However, based on his knowledge of the adjacent properties and prior practices, it is to the best of his knowledge that all oil and gas related facilities have been removed from the Property. The questionnaire is presented in its entirety in Appendix G.

Ms. Borba also provided for our review a Land Title Survey prepared by Carlson, Barbee, and Gibson, Inc. (CBG), dated April 2006 (Figure 4). The survey indicates several pipeline easements cross the Property. As shown in Figure 4, a Pacific Gas and Electric Company (PG&E) pipeline easement crosses the northeast corner of the Property and Shell Oil pipeline easements cross the north, east, and south portions of the Property.

3.0 RECORDS REVIEW

3.1 PREVIOUS ENVIRONMENTAL REPORTS

ENGEO, Phase One Environmental Site Assessment, Ginochio Property, Brentwood, California, Project No. 4894.3.001.01, August 11, 2000.

ENGEO performed a phase I environmental site assessment for the Property and adjacent parcels north, south, and west of the Property. The site reconnaissance and records research did not find documentation or physical evidence of soil or groundwater impairments associated with the use of the properties. A review of regulatory databases maintained by county, state, and federal agencies found no record of hazardous materials violations or discharge on the properties. A review of aerial photographs and available historical records found the parcels have consisted primarily of open space, with some gas well production since at least 1957.

ENGEO documented three pipelines that share an easement that traverses an adjacent parcel south of the Property. The easement is located from Balfour Road to Deer Valley Road, generally trending southeast to northwest. The easement contains three pipelines maintained by Chevron (crude oil), Kinder Morgan (multi-purpose/refined product), and Pacific Gas and Electric (natural gas). In addition, one Shell petroleum pipeline conveying crude oil is located on the parcel north of the Property. Although there is no record of release, ENGEO indicated it was conceivable that subsurface impacts may have occurred associated with the Kinder Morgan (multi-purpose) pipeline. Based on the distances and regional topographic gradient, it is unlikely that the aforementioned pipelines pose an environmental risk to the Property.

The Conservation Department, Division of Oil and Gas (DOGGR), identified oil/gas wells located within the vicinity of the site. The identified wells included four wells on the Property, as shown in Figure 2, and an additional 13 wells located on adjacent parcels to the north, south, and west. The wells identified on the Property and adjacent parcels were drilled from 1962 through 1987 and have since been plugged and abandoned. ENGEO indicated there could be a potential for subsurface impacts associated with well improvements from condensate tanks, compressor units and drilling sumps.

Based on the findings of the assessment, ENGEO provided the following recommendations for the Property.

- *ENGEO recommends the exact location of the individual wells and their associated improvements be determined. A limited subsurface assessment can be undertaken to determine if the former gas well operations have impacted site soil and/or groundwater. ENGEO also recommends the depth of grout seal for each well be determined.*

3.2 HISTORICAL RECORD SOURCES

The purpose of the historical record review is to develop a history of the previous uses or occupancies of the Property and surrounding area in order to identify those uses or occupancies that are likely to have led to recognized environmental conditions on the Property.

3.2.1 Historical Topographic Maps

Historical USGS topographic maps were reviewed to determine if discernible changes in topography or improvements pertaining to the Property had been recorded. The following maps were provided to us through an EDR Historical Topographic Map Report, presented in Appendix C.

TABLE 3.2.1-1: Historical Topographic Maps

QUAD	YEAR	DESCRIPTION
Mt. Diablo	1896, 1898	Property: The Property ranges in elevation from approximately 200 to 340 feet above msl. There is an unimproved road crossing the center of the Property, generally trending southwest to northeast. The unimproved road connects to a light duty road in the northeast corner of the Property. Intermittent streams are visible trending west-to-east and north-to-south across the Property. Adjoining: There are some structures, unimproved and light duty roads, and streams visible on adjacent properties. Deer Creek is shown south of the Property.
Mt. Diablo, Byron, Lone Tree Valley, Brentwood	1912, 1914, 1916, 1940, 1943	Property: An electric transmission line is shown extending southeast-to-northwest through the western portion of the Property. The intermittent stream shown on the Property is now identified as Sand Creek. The elevation of the Property varies from approximately 150 to 325 feet above msl. Adjoining: A structure is visible in the adjacent parcel to the north of the Property. Several major roads are shown in adjacent parcels.
Antioch South, Brentwood	1953, 1954	Property: The unimproved road on the Property is now shown extending to the peak on the eastern portion of the Property. Two oil or gas wells are shown on the Property, one in the northern portion and the other near the eastern peak. Adjoining: The names of major roads in adjacent parcels are now visible. Intermittent ponds and oil and gas wells are also shown in adjacent parcels to the south.
Antioch South, Brentwood	1968, 1973	Property: The well on the eastern portion of the Property is no longer visible. Adjoining: Adjoining properties appear unchanged from previous maps.

QUAD	YEAR	DESCRIPTION
Antioch South, Brentwood	1978, 1980	Property: The well on the eastern portion of the Property is visible again. Topographic contours are not shown on the Property or surrounding properties. Adjoining: The area in the vicinity of the Property is labeled as Brentwood Gas Field. A pump station is shown southeast of the Property.
Antioch South, Brentwood	2012	Property: Topographic contours are visible again. Individual structures and wells are no longer shown. The Property appears unchanged from previous maps. Adjoining: Residential developments are shown to the north, east, and southeast of the Property.

3.2.2 Aerial Photographs

The following aerial photographs, provided by EDR, were reviewed for information regarding past conditions and land use at the Property and in the immediate vicinity. These photographs are presented in Appendix E.

TABLE 3.2.2-1: Aerial Photographs

YEAR	DESCRIPTION
1939, 1949, 1950, 1958	Property: The Property is primarily undeveloped land. An electric transmission line is shown crossing the southwestern portion of the Property, trending northwest-to-southeast. A creek is shown along the northern border of the Property. A drainage channel is observed crossing the eastern portion of the Property, generally trending northeast-to-southwest. Adjoining: The surrounding land is mostly undeveloped, with some small structures visible on the parcel to the north of the Property. An orchard is visible northeast of the Property.
1963	Property: Unpaved access roads are visible in the northern, central, and southern portions of the Property. The roads appear to be leading to the historic onsite oil and gas well locations. Adjoining: The adjoining properties appear unchanged from previous years.
1966, 1979, 1982, 1984, 1993, 1998	Property: The Property appears unchanged from previous years. Adjoining: Two ponds are visible along the southern perimeter of the Property.
2006, 2009, 2012, 2016	Property: An access road connecting the substation to the intersection of Heidorn Ranch Road is shown crossing the northern portion of the Property. Adjoining: A residential development is visible southeast of the Property. In 2009, the substation along the northwest perimeter of the Property is visible.

3.2.3 Fire Insurance Maps

EDR prepared a Sanborn Fire insurance map search for the Property and surrounding properties. EDR reported that no maps were available for the Property and surrounding properties.

3.2.4 City Directory

City Directories, published since the 18th century for major towns and cities, list the name of the resident or business associated with each address. A city directory search conducted by EDR is located in Appendix F. The city directory search found residences and businesses that are located within 1 mile of the Property. No listings were identified for the Property.

3.3 ENVIRONMENTAL RECORD SOURCES

EDR performed a search of federal, tribal, state, and local databases regarding the Property and nearby properties. Details regarding the databases searched by EDR are provided in Appendix A. A list of the facilities documented by EDR within the approximate minimum search distance of the Property is provided below.

3.3.1 Standard Environmental Records

3.3.1.1 Subject Property

The Property is not listed on the Standard Environmental Record source databases.

3.3.1.2 Other Properties

The following databases include facilities listed within the appropriate ASTM search distances of the Property on Standard Environmental Records sources.

TABLE 3.3.1.2-1

FACILITY	STREET	DATABASES
Shell Yard	3052 Heidorn Ranch Road	SLIC
Loma Vista Elementary Classroom Addition	2210 San Jose Avenue	ENVIROSTOR

3.3.2 Additional Environmental Records

3.3.2.1 Subject Property

The Property is not listed on the Additional Environmental Record source databases.

3.3.2.2 Other Properties

The following databases include facilities listed within the appropriate ASTM search distances of the Property on the Additional Environmental Record sources.

TABLE 3.3.2.2-1

FACILITY	STREET	DATABASES
Shell Yard	3052 Heidorn Ranch Rd	FINDS
Area Energy	3052 Heidorn Ranch Rd	HAZNET
Shell Yard	3052 Heidorn Ranch Rd	CDL, CERS
Sand Creek Station	Heidorn Ranch Rd and Sand Creek	CONTRA COSTA COUNTY SITE LIST
Loma Vista Elementary Classroom Addition	2210 San Jose Avenue	SCH

Shell Yard (S106230274)

The Shell Yard site is a 10-acre lot located approximaltey 500 feet northeast of the Property that was formerly used as an office and maintenance yard for pipeline operations, with secondary use as a support area for oil and gas production operations. Between 1997 and 2009, OXY USA identified petroleum hydrocarbon contamination at the site. Contaminated soil was removed using excavation and biotreatment. After remedial action, a No Further Action letter was issued on February 27, 2011. The site would not be expected to pose an environmental risk to the Property.

Based on the distances to the identified database sites, regional topographic gradient, and the EDR findings, it is unlikely that the above-stated database sites pose an environmental risk to the Property. Properties that are on the "Orphan Summary" list appear to be located beyond the ASTM recommended radius search criteria.

3.4 REGULATORY AGENCY FILES AND RECORDS

The following agencies were contacted pertaining to possible past development and/or activity at the Property.

TABLE 3.4-1: Regulatory Agency Records

NAME OF AGENCY	RECORDS REVIEWED
Contra Costa County Health Services and Hazardous Materials Program	No pertinent environmental records were found.
Contra Costa County Environmental Health Department	No pertinent environmental records were found.
East Contra Costa County Fire Protection District	No pertinent environmental records were found.
Contra Costa County Fire Protection District	No pertinent environmental records were found.
Contra Costa County Assessor's Office	No pertinent environmental records were found.
City of Antioch City Clerk	No pertinent environmental records were found.
California State Water Resources Control Board	The Geotracker website listed the Shell Yard site, which is located just northeast of the Property. Additional information regarding the facility is presented in Section 3.3.
Department of Toxic Substances Control	The Envirostor website listed the Loma Vista Elementary Classroom Addition site. The school investigation required no action.

3.5 DIVISION OF OIL, GAS AND GEOTHERMAL RESOURCES (DOGGR)

Records reviewed on the DOGGR web site provided the following information regarding the four abandoned oil/gas wells:

TABLE 3.5-1 DOGGR Records

WELL ID#	STATUS/TYPE	DEPTH (FT)	DATE DRILLED	DATE ABANDONED	PLUG SEAL (DEPTH BGS FT)
4-9	Abandoned Oil/Gas	4307	1962	1986	3275
43-9	Abandoned Injection	4108	1963	1985	3362
41-9	Abandoned Dry Hole	4939	1963	1991	3233
42-9	Abandoned Oil/Gas	4100	1963	1991	3233

4.0 SITE RECONNAISSANCE

4.1 METHODOLOGY

ENGEO conducted a reconnaissance of the Property on February 22, 2019. The reconnaissance was performed by Connor Dunn, a Staff Engineer of ENGEO. The Property was viewed for hazardous materials storage, superficial staining or discoloration, debris, stressed vegetation, or other conditions that may be indicative of potential sources of soil or groundwater contamination. The Property was also checked for evidence of fill/ventilation pipes, ground subsidence, or other evidence of existing or preexisting underground storage tanks. Photographs taken during the site reconnaissance are presented in Figure 5.

4.2 GENERAL SITE SETTING

The Property is currently undeveloped, except for an unpaved access road within the northern portion of the Property, generally trending west to east. Historically, the Property has been used for dry land farming, cattle grazing, and oil production, the latter of which has since been abandoned. Four abandoned oil/gas wells are located within the Property boundaries. An electric transmission line extends through the southwestern portion of the Property, trending northwest-to-southeast. An access road was observed crossing the northern portion of the Property, trending west to east. The access road connected the electric substation to the west to Heidorn Ranch Road to the northeast.

Adjoining properties consisted of an electric substation along the northwest perimeter and dryland farming/cattle grazing to the north, east, south, and west.

4.3 SITE OBSERVATIONS

The following table summarizes our observations during the reconnaissance:

TABLE 4.3-1: Site Observations

FEATURE TYPE	OBSERVATIONS
Structures	None observed at the time of the site reconnaissance.
Hazardous Substances and Petroleum Products/Containers	None observed at the time of the site reconnaissance.
Storage Tanks (underground and above-ground)	None observed at the time of the site reconnaissance.
Odors	None noted at the time of the site reconnaissance.
Pools of Potentially Hazardous Liquid	None observed at the time of the site reconnaissance.
Drums	None observed at the time of the site reconnaissance.
Polychlorinated Biphenyls (PCBs)	None observed at the time of the site reconnaissance.
Pits, Ponds, and Lagoons	None observed at the time of the site reconnaissance.
Stained Soil/Pavement	None observed at the time of the site reconnaissance.
Stressed Vegetation	None observed at the time of the site reconnaissance.
Solid Waste/Debris	Small piles of debris and rubbish were observed throughout the Property.
Stockpiles/Fill Material	None observed at the time of the site reconnaissance.

FEATURE TYPE	OBSERVATIONS
Wastewater	No evidence of wastewater systems were observed on the Property at the time of the site reconnaissance.
Wells	Four abandoned oil and gas production wells exist within the Property. The approximate locations of the former wells are shown in Figure 2. Details regarding the wells are provided in Section 3.5.
Septic Systems	No evidence of any septic systems were observed on the Property at the time of the site reconnaissance.

4.4 ASBESTOS-CONTAINING MATERIALS AND LEAD-BASED PAINT

No structures are currently located on the Property.

4.5 INDOOR AIR QUALITY

An evaluation of indoor air quality, mold, or radon was not included as part of the contracted scope of services. The California Department of Health Services has conducted studies of radon risks throughout the state, sorted by zip code. Results of the studies indicate that two tests were conducted within the Property zip code, with no tests exceeding the current EPA action level of 4 picocuries per liter (pCi/L)[1].

In accordance with ASTM E2600-15 (Tier 1) (*Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions*); there are no potential petroleum hydrocarbon sources for vapor intrusion within 1/10 mile of the Property or volatile organic compound (VOCs) sources within 1/3 mile of the Property.

5.0 EVALUATION

5.1 OPINIONS AND DATA GAPS

It is our opinion that the findings of this study are based on a sufficient level of information obtained during our contracted scope of services to render a conclusion as to whether additional appropriate investigation is required to identify the presence or likely presence of a REC. No data gaps were encountered during our assessment.

5.2 FINDINGS AND CONCLUSIONS

The study included a review of local, state and federal environmental record sources, standard historical sources, aerial photographs, fire insurance maps and physical setting sources; a reconnaissance of the Property to review site use and current conditions to check for the storage, use, production or disposal of hazardous or potentially hazardous materials; and interview with persons knowledgeable about current and past site use.

The site reconnaissance and records review did not find documentation or physical evidence of soil or groundwater impairments associated with the use of the Property. A review of regulatory

[1] California Department of Public Health – Radon Program– (https://www.cdph.ca.gov/Programs/CEH/DRSEM/CDPH%20Document%20Library/EMB/Radon/Radon%20Test%20Results.pdf).

databases maintained by county, state, and federal agencies found no documentation of hazardous materials violations or discharge on the Property. A review of regulatory agency records and available databases did not identify contaminated facilities within the appropriate ASTM search distances that would be expected to impact the Property.

Based on the findings of this assessment, no Recognized Environmental Conditions (RECs), no historical RECs, and no controlled RECs were identified for the Property.

Based on the review of regulatory databases and site reconnaissance, we present information on features of potential environmental concern that were either contained in the databases or observed on the Property. These features were not considered to be RECs. We briefly discuss each feature below.

Former Oil/Gas Wells

Four abandoned oil/gas wells are located within the Property boundaries. The following is recommended to address the past oil/gas production activities:

- Based on anecdotal information, we understand the oil/gas pipelines have been removed; however, if remnant pipelines are encountered during site development work, they should be removed in accordance with applicable regulations.

- If indicators of apparent soil contamination (soil staining, odors, debris fill material, etc.) are encountered at the Property, specifically in the vicinity of abandoned oil/gas wells, or during removal of abandoned oil pipelines, the impacted area(s) should be isolated from surrounding, non-impacted areas. The project environmental professional shall obtain samples of the potentially impacted soil for analysis of the contaminants of concern and comparison with applicable regulatory residential screening levels. If soil contaminant concentrations exceed the applicable regulatory residential screening levels, the impacted soil shall be excavated and disposed of offsite at a licensed landfill facility.

- Prior to final map approval, the project applicant shall submit to the City of Antioch Engineering Department, for review and approval, plans which show that future inhabited structures will not be located over the four abandoned oil/gas wells. The plans shall be completed in compliance with the DOGGR Construction Site Review Program, which includes guidelines and recommendations for setbacks and mitigation measures for venting systems.

- If grading is proposed proximate to the four abandoned well locations, DOGGR should be consulted to determine if the wells will require modification in casing height. In addition, DOGGR should be consulted to determine if the well abandonment procedures are consistent with current requirements.

- The specific location of the wells should be determined and surveyed in the field.

ENGEO has performed a phase I environmental site assessment in general conformance with the scope and limitations of ASTM E1527-13 and the standards and practices of the All Appropriate Inquiry – Final Rule (40 Code of Federal Regulations Part 312). This assessment has revealed no evidence of Recognized Environmental Conditions in connection with the Property.

ENGEO recommends no further environmental studies at this time.

SELECTED REFERENCES

California Department of Conservation (DOGGR) (http://maps.conservation.ca.gov/doms/doms-app.html)

California Department of Public Health – Radon Program– (https://www.cdph.ca.gov/Programs/CEH/DRSEM/CDPH%20Document%20Library/EMB/Radon/Radon%20Test%20Results.pdf).

California Department of Water Resources (http://www.water.ca.gov/waterdatalibrary/)

Carlson, Barbee, & Gibson, Inc. (CBG), ALTA/ACSM Land Title Survey, Ginochio Property, City of Antioch, Contra Costa County, California, April 2006.

Dibblee, T.W.; 2006, Geologic Map of the Antioch South and Brentwood Quadrangles, Contra Costa County, California; Dibblee Geology Center Map #DF-193.

ENGEO, Phase One Environmental Site Assessment, Ginochio Property, Brentwood, California, Project No. 4894.3.001.01, August 11, 2000.

First American Title Company, Preliminary Title Report, APN 057-050-024, Antioch, CA, December 18, 2018, Updated December 28, 2018.

Google Maps (http://maps.google.com)

FIGURES

FIGURE 1: Vicinity Map
FIGURE 2: Site Plan
FIGURE 3: Assessor's Parcel Map
FIGURE 4: Land Title Survey
FIGURE 5: Site Photographs

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BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE

ENGEO
Expect Excellence

VICINITY MAP
CREEKSIDE
ANTIOCH, CALIFORNIA

PROJECT NO.: 4894.002.001	FIGURE NO.
SCALE: AS SHOWN	1
DRAWN BY: JV / CHECKED BY: SPM	

G:\Drafting\DRAFTING2_Dwg\4894\4894002001-ESA-0219\04894002001-1-VICMAP-0219.dwg Plot Date: 2-26-19 JVergara

ORIGINAL FIGURE PRINTED IN COLOR

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EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

TP-15 TEST PIT (ENGEO, 2001)

B-8 BORING (ENGEO, 2001)

43-9 PLUGGED OIL AND GAS WELL

BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE AND CARLSON, BARBEE AND GIBSON

ENGEO
Expect Excellence

SITE PLAN
CREEKSIDE
ANTIOCH, CALIFORNIA

PROJECT NO.: 4894.002.001	FIGURE NO.
SCALE: AS SHOWN	2
DRAWN BY: JV / CHECKED BY: SPM	

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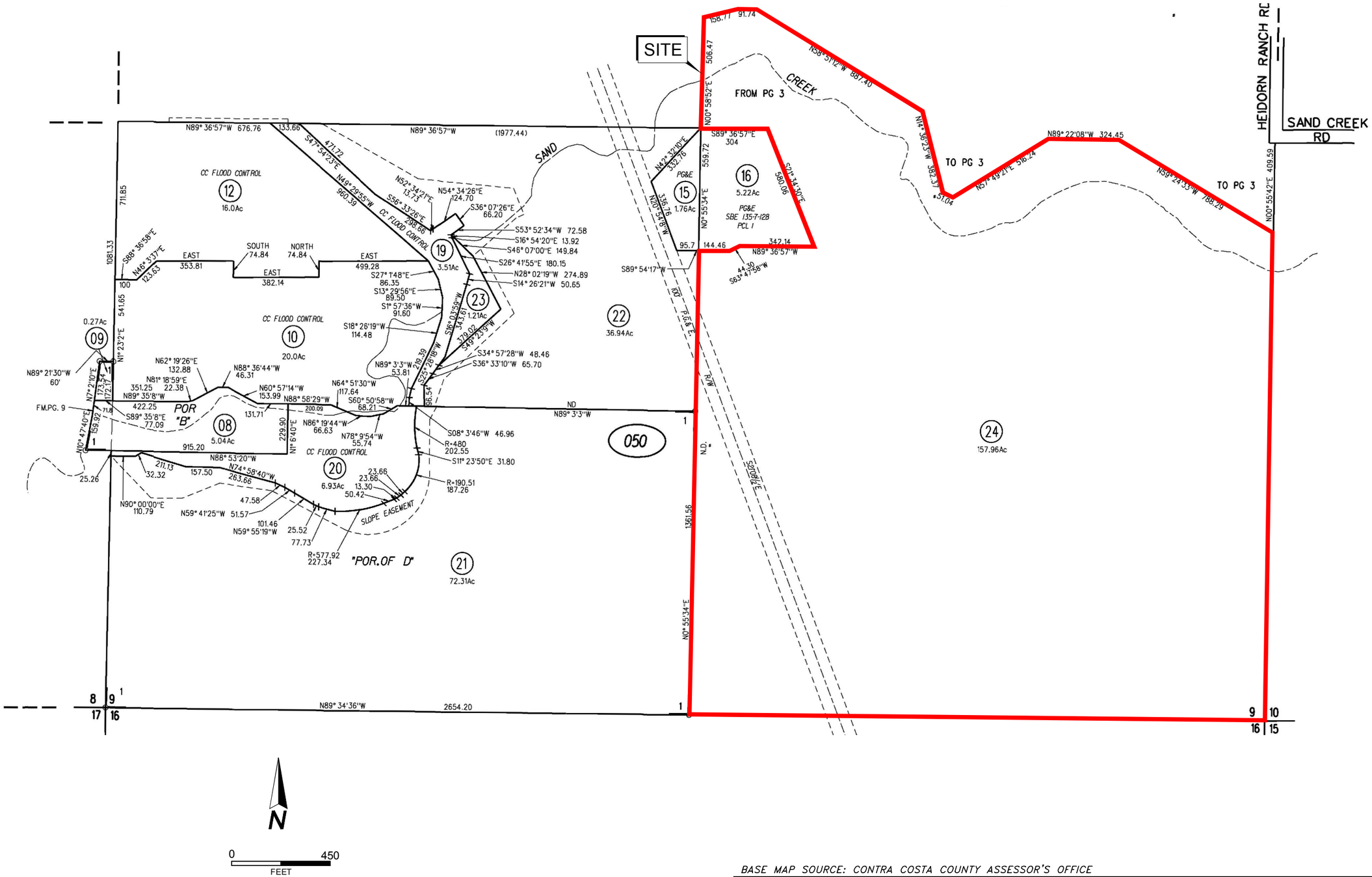

BASE MAP SOURCE: CONTRA COSTA COUNTY ASSESSOR'S OFFICE

ENGEO Expect Excellence

ASSESSOR'S PARCEL MAP
CREEKSIDE
ANTIOCH, CALIFORNIA

PROJECT NO.: 4894.002.001	FIGURE NO. 3
SCALE: AS SHOWN	
DRAWN BY: JV	CHECKED BY: SPM

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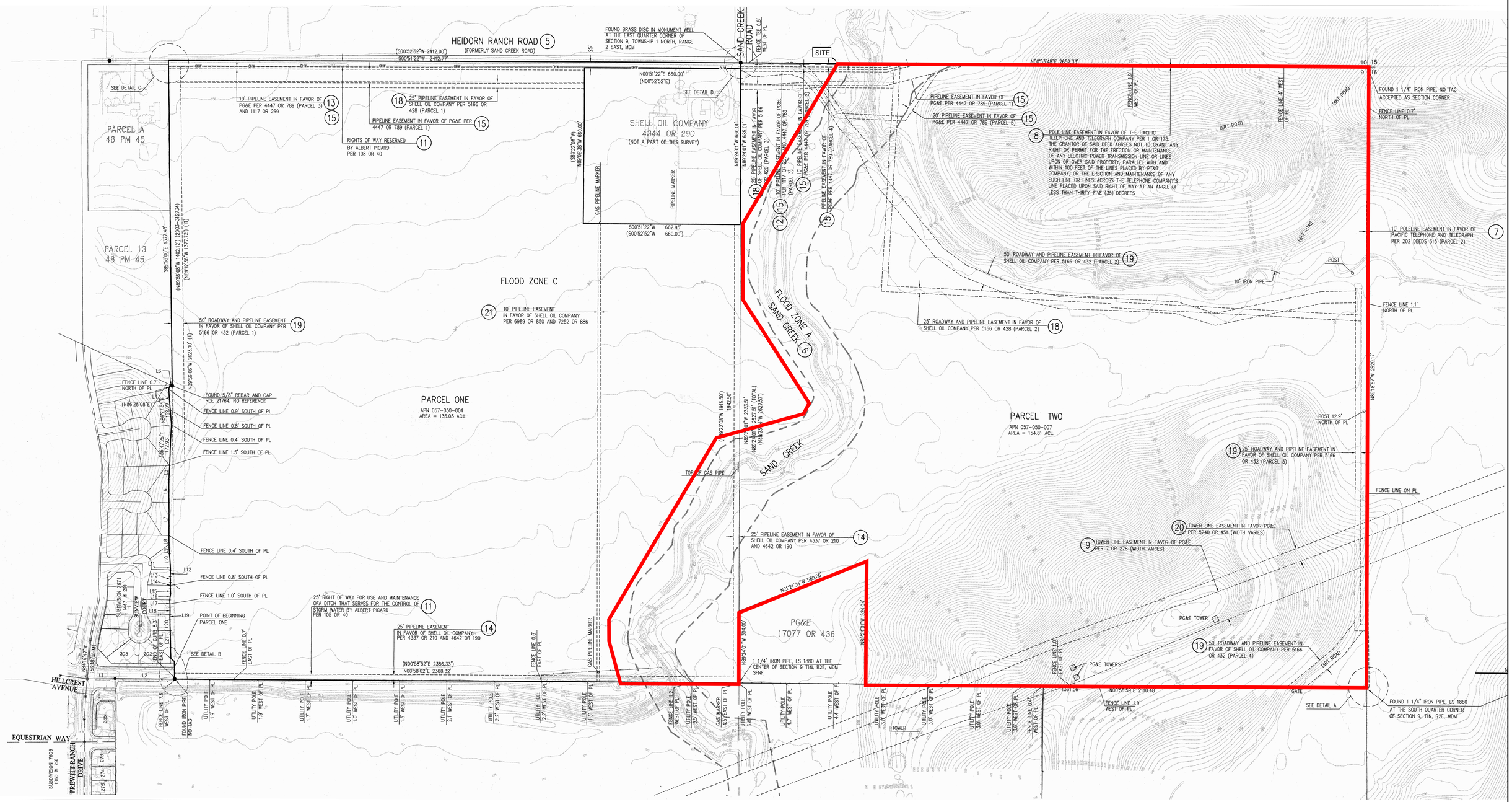

BASE MAP SOURCE: CARLSON, BARBEE AND GIBSON

ENGEO Expect Excellence	LAND TITLE SURVEY CREEKSIDE ANTIOCH, CALIFORNIA	PROJECT NO.: 4894.002.001 SCALE: AS SHOWN DRAWN BY: JV CHECKED BY: SPM	FIGURE NO. 4

ORIGINAL FIGURE PRINTED IN COLOR

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VIEW FROM ACCESS ROAD ALONG NORTH PORTION OF THE PROPERTY, LOOKING SOUTHWEST

VIEW OF DRAINAGE CHANNEL ALONG EAST PORTION OF PROPERTY, LOOKING SOUTH

VIEW FROM SOUTHEAST PORTION OF PROPERTY, LOOKING NORTH

ENGEO Expect Excellence	SITE PHOTOGRAPHS CREEKSIDE ANTIOCH, CALIFORNIA	PROJECT NO.: 4894.002.001	FIGURE NO.
		SCALE: NO SCALE	5A
		DRAWN BY: JV / CHECKED BY: SPM	

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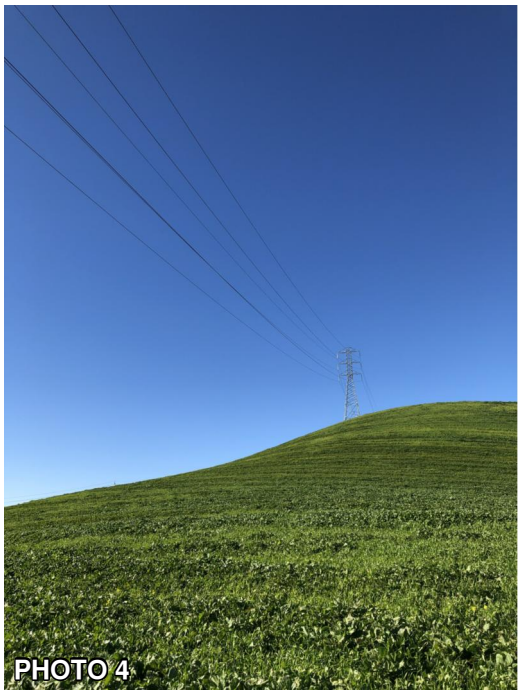
ORIGINAL FIGURE PRINTED IN COLOR



VIEW FROM SOUTHWEST PORTION OF PROPERTY, LOOKING NORTHWEST

VIEW FROM NORTH PORTION OF PROPERTY, LOOKING SOUTHWEST

VIEW FROM NORTHWEST PORTION OF PROPERTY, LOOKING SOUTHEAST

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SITE PHOTOGRAPHS
CREEKSIDE
ANTIOCH, CALIFORNIA

PROJECT NO.: 4894.002.001	FIGURE NO. 5B
SCALE: NO SCALE	
DRAWN BY: JV	CHECKED BY: SPM

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ORIGINAL FIGURE PRINTED IN COLOR

APPENDIX A

ENVIRONMENTAL DATA RESOURCES, INC.

Radius Map Report

Creekside
3052 Heidorn Ranch Rd
Antioch, CA 94531

Inquiry Number: 05569243.2r
February 21, 2019

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	8
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Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
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Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-12
Physical Setting Source Map Findings	A-14
Physical Setting Source Records Searched	PSGR-1

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

3052 HEIDORN RANCH RD
ANTIOCH, CA 94531

COORDINATES

Latitude (North):	37.9434990 - 37˚ 56' 36.59''
Longitude (West):	121.7550600 - 121˚ 45' 18.21''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	609391.1
UTM Y (Meters):	4200071.5
Elevation:	169 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5640044 ANTIOCH SOUTH, CA
Version Date:	2012
East Map:	5640376 BRENTWOOD, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140606
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
3052 HEIDORN RANCH RD
ANTIOCH, CA 94531

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	SHELL YARD	3052 HEIDORN RANCH R	FINDS		TP
A2	AERA ENERGY	3052 HEIDORN RANCH R	HAZNET		TP
A3	SHELL YARD	3052 HEIDORN RANCH R	CPS-SLIC, CDL, CERS		TP
4	SAND CREEK STN	HEIDORN RANCH & SAND	CONTRA COSTA CO. SITE LIST	Lower	470, 0.089, NE
5	LOMA VISTA ELEMENTAR	2110 SAN JOSE AVENUE	ENVIROSTOR, SCH	Lower	4129, 0.782, ESE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
SHELL YARD 3052 HEIDORN RANCH R ANTIOCH, CA 94531	FINDS Registry ID:: 110066336593	N/A
AERA ENERGY 3052 HEIDORN RANCH R ANTIOCH, CA 94509	HAZNET GEPAID: CAC002649034	N/A
SHELL YARD 3052 HEIDORN RANCH R ANTIOCH, CA 94531	CPS-SLIC Database: CPS-SLIC, Date of Government Version: 12/10/2018 Database: SLIC REG 5, Date of Government Version: 04/01/2005 Facility Status: Completed - Case Closed Global Id: SL0601369421 CDL Facility Id: 2000-11-134 CERS	N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
NPL LIENS..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL..... National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY..... Federal Facility Site Information listing
SEMS..... Superfund Enterprise Management System

EXECUTIVE SUMMARY

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE..... Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG..... RCRA - Large Quantity Generators
RCRA-SQG..... RCRA - Small Quantity Generators
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS..... Land Use Control Information System
US ENG CONTROLS..... Engineering Controls Sites List
US INST CONTROL..... Sites with Institutional Controls

Federal ERNS list

ERNS..... Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE..... State Response Sites

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... Solid Waste Information System

State and tribal leaking storage tank lists

LUST..... Geotracker's Leaking Underground Fuel Tank Report
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

FEMA UST..... Underground Storage Tank Listing
UST..... Active UST Facilities
AST..... Aboveground Petroleum Storage Tank Facilities
INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

INDIAN VCP..... Voluntary Cleanup Priority Listing
VCP..... Voluntary Cleanup Program Properties

State and tribal Brownfields sites

BROWNFIELDS..... Considered Brownfieds Sites Listing

EXECUTIVE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT..... Waste Management Unit Database
SWRCY..... Recycler Database
HAULERS..... Registered Waste Tire Haulers Listing
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
ODI..... Open Dump Inventory
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS..... Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL..... Delisted National Clandestine Laboratory Register
HIST Cal-Sites..... Historical Calsites Database
SCH..... School Property Evaluation Program
CERS HAZ WASTE..... CERS HAZ WASTE
Toxic Pits..... Toxic Pits Cleanup Act Sites
US CDL..... National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

SWEEPS UST..... SWEEPS UST Listing
HIST UST..... Hazardous Substance Storage Container Database
CERS TANKS..... California Environmental Reporting System (CERS) Tanks
CA FID UST..... Facility Inventory Database

Local Land Records

LIENS..... Environmental Liens Listing
LIENS 2..... CERCLA Lien Information
DEED..... Deed Restriction Listing

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System
CHMIRS..... California Hazardous Material Incident Report System
LDS..... Land Disposal Sites Listing
MCS..... Military Cleanup Sites Listing
SPILLS 90..... SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR..... RCRA - Non Generators / No Longer Regulated
FUDS..... Formerly Used Defense Sites
DOD..... Department of Defense Sites
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR..... Financial Assurance Information

EXECUTIVE SUMMARY

EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
TSCA	Toxic Substances Control Act
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
ROD	Records Of Decision
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PRP	Potentially Responsible Parties
PADS	PCB Activity Database System
ICIS	Integrated Compliance Information System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
ABANDONED MINES	Abandoned Mines
ECHO	Enforcement & Compliance History Information
DOCKET HWC	Hazardous Waste Compliance Docket Listing
UXO	Unexploded Ordnance Sites
FUELS PROGRAM	EPA Fuels Program Registered Listing
CA BOND EXP. PLAN	Bond Expenditure Plan
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
EMI	Emissions Inventory Data
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing
ICE	ICE
HIST CORTESE	Hazardous Waste & Substance Site List
HWP	EnviroStor Permitted Facilities Listing
HWT	Registered Hazardous Waste Transporter Database
MINES	Mines Site Location Listing
MWMP	Medical Waste Management Program Listing
NPDES	NPDES Permits Listing
PEST LIC	Pesticide Regulation Licenses Listing
PROC	Certified Processors Database
Notify 65	Proposition 65 Records
UIC	UIC Listing
UIC GEO	UIC GEO (GEOTRACKER)
WASTEWATER PITS	Oil Wastewater Pits Listing
WDS	Waste Discharge System
MILITARY PRIV SITES	MILITARY PRIV SITES (GEOTRACKER)
PROJECT	PROJECT (GEOTRACKER)

EXECUTIVE SUMMARY

WDR..... Waste Discharge Requirements Listing
CIWQS..... California Integrated Water Quality System
WIP..... Well Investigation Program Case List
NON-CASE INFO..... NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS..... OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS..... PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT..... SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ..... Well Stimulation Project (GEOTRACKER)

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP..... EDR Proprietary Manufactured Gas Plants
EDR Hist Auto..... EDR Exclusive Historical Auto Stations
EDR Hist Cleaner..... EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF..... Recovered Government Archive Solid Waste Facilities List
RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 10/29/2018 has revealed that there is

EXECUTIVE SUMMARY

1 ENVIROSTOR site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
LOMA VISTA ELEMENTAR Facility Id: 7820007 Status: No Action Required	***2110 SAN JOSE AVENUE***	***ESE 1/2 - 1 (0.782 mi.)***	***5***	***10***

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

CONTRA COSTA CO. SITE LIST: Lists includes sites from the Underground Tank Program, Hazardous Waste Generator Program & Business Plan 12185 Program

A review of the CONTRA COSTA CO. SITE LIST list, as provided by EDR, and dated 11/26/2018 has revealed that there is 1 CONTRA COSTA CO. SITE LIST site within approximately 0.25 miles of the target property.

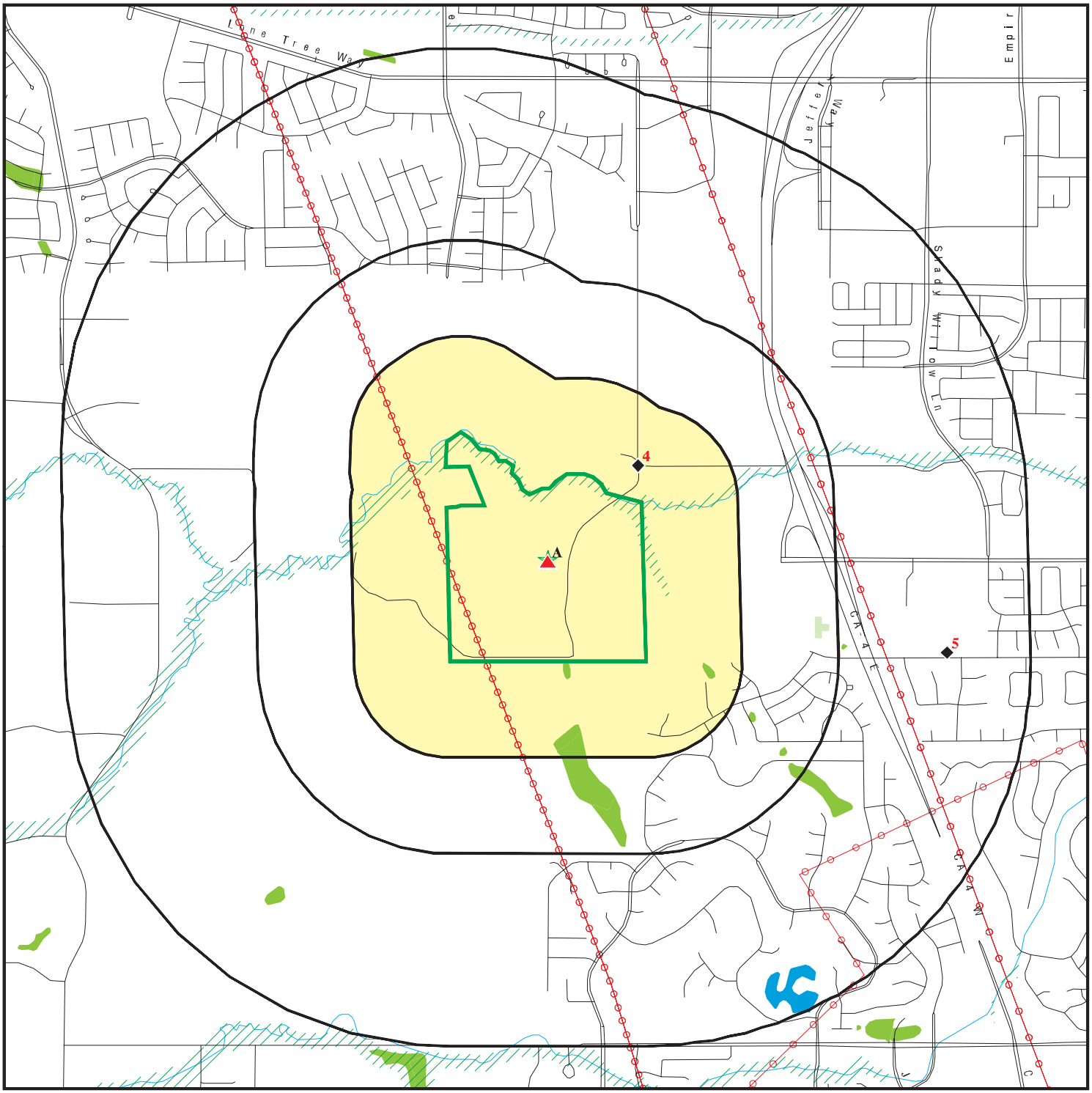
Lower Elevation	Address	Direction / Distance	Map ID	Page
SAND CREEK STN Facility Id: FA0030922	HEIDORN RANCH & SAND	NE 0 - 1/8 (0.089 mi.)	4	10

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 3 records.

Site Name	Database(s)
KMEP HILLCREST RELEASE	CPS-SLIC
THE TERMO COMPANY	CPS-SLIC
SHEA HOMES PROPERTY (FORMERLY GERM	CPS-SLIC

OVERVIEW MAP - 05569243.2R



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Creekside	CLIENT: Engeo Inc.
ADDRESS: 3052 Heidorn Ranch Rd Antioch CA 94531	CONTACT: Victoria Drake INQUIRY #: 05569243.2r
LAT/LONG: 37.943499 / 121.75506	DATE: February 21, 2019 3:30 pm

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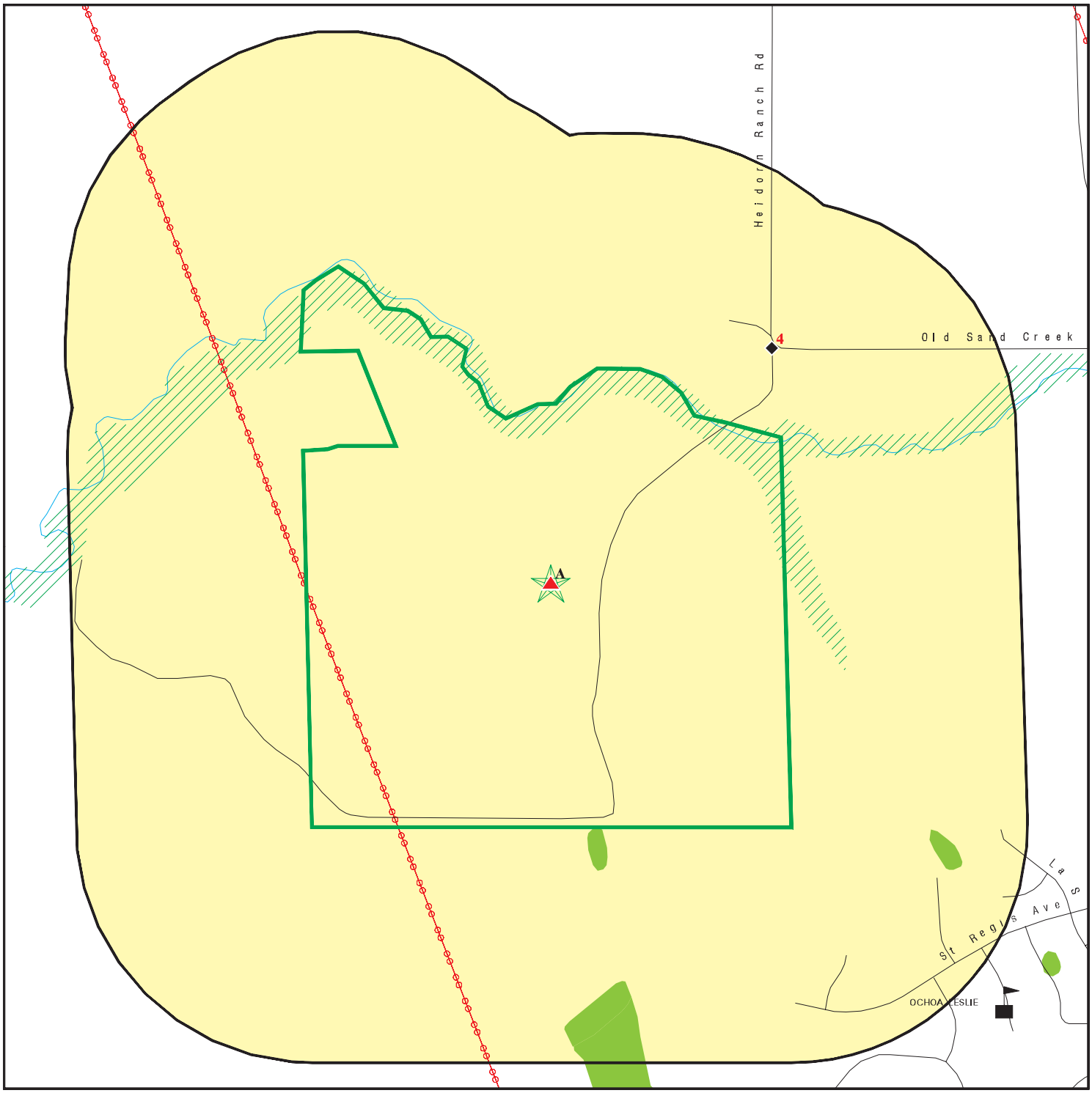
DETAIL MAP - 05569243.2R



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Creekside	CLIENT: Engeo Inc.
ADDRESS: 3052 Heidorn Ranch Rd Antioch CA 94531	CONTACT: Victoria Drake
LAT/LONG: 37.943499 / 121.75506	INQUIRY #: 05569243.2r
	DATE: February 21, 2019 3:31 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	0.001		0	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	1	NR	1
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500	1	0	0	0	NR	NR	1
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001	1	0	NR	NR	NR	NR	1
CERS HAZ WASTE	0.250		0	0	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
CERS TANKS	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0
LIENS 2	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	0.001		0	NR	NR	NR	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.001		0	NR	NR	NR	NR	0
FINDS	0.001	1	0	NR	NR	NR	NR	1
ECHO	0.001		0	NR	NR	NR	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		0	0	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001	1	0	NR	NR	NR	NR	1
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	0	NR	NR	0
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.001		0	NR	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
CONTRA COSTA CO. SITE LIST	0.250		1	0	NR	NR	NR	1
UIC	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
PROJECT	0.001		0	NR	NR	NR	NR	0
WDR	0.001		0	NR	NR	NR	NR	0
CIWQS	0.001		0	NR	NR	NR	NR	0
CERS	0.001	1	0	NR	NR	NR	NR	1
WIP	0.250		0	0	NR	NR	NR	0
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		5	1	0	0	1	0	7

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 Target Property | **SHELL YARD**
3052 HEIDORN RANCH RD
ANTIOCH, CA 94531 | **FINDS** | **1023338370**
N/A

Site 1 of 3 in cluster A

Actual: 169 ft.

FINDS:

Registry ID: 110066336593

Environmental Interest/Information System
STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

A2 Target Property | **AERA ENERGY**
3052 HEIDORN RANCH RD
ANTIOCH, CA 94509 | **HAZNET** | **S112981713**
N/A

Site 2 of 3 in cluster A

Actual: 169 ft.

HAZNET:

envid:	S112981713
Year:	2009
GEPAID:	CAC002649034
Contact:	RON CHAMBERS
Telephone:	6616655641
Mailing Name:	Not reported
Mailing Address:	PO BOX 11164
Mailing City,St,Zip:	BAKERSFIELD, CA 933891164
Gen County:	Not reported
TSD EPA ID:	CAD044429835
TSD County:	Not reported
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.03
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Contra Costa

A3 Target Property | **SHELL YARD**
3052 HEIDORN RANCH RD
ANTIOCH, CA 94531 | **CPS-SLIC**
CDL
CERS | **S106230276**
N/A

Site 3 of 3 in cluster A

Actual: 169 ft.

CPS-SLIC:

Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	02/17/2011
Global Id:	SL0601369421
Lead Agency:	CENTRAL VALLEY RWQCB (REGION 5S)
Lead Agency Case Number:	Not reported
Latitude:	37.94806
Longitude:	-121.751851

SHELL YARD (Continued) **S106230276**

Case Type:	Cleanup Program Site
Case Worker:	KAS
Local Agency:	Not reported
RB Case Number:	SL0601369421
File Location:	Regional Board
Potential Media Affected:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	* Petroleum - Automotive gasolines, * Petroleum - Diesel fuels, * Petroleum - Waste oil
Site History:	The Site is at the intersection of Heidorn Ranch Road and Sand Creek Road in Antioch. The 10-acre lot was formerly used as an office and maintenance yard for pipeline operations, with secondary use as a support area for oil and gas production operations. The Site is bounded on all sides by agricultural fields.

Click here to access the California GeoTracker records for this facility:

SLIC REG 5:

Region:	5
Facility Status:	Preliminary Assessment
Unit:	Facility is a Spill or site
Pollutant:	TPH g,d, BTEX
Lead Agency:	MES
Date Filed:	/ /
Report Date:	/ /
Date Added:	Not reported
Date Closed:	Not reported

CDL:

Facility ID:	2000-11-134
Date:	11/26/2000
Labtype:	Abandoned Drug Lab
Lab Type:	Abandoned Drug Lab Waste (A) - location away from an actual illegal drug lab where drug lab waste and/or equipment were abandoned.

CERS TANKS:

Site ID:	206713
CERS ID:	SL0601369421
CERS Description:	Cleanup Program Site

Affiliation:

Affiliation Type Desc:	Regional Board Caseworker
Entity Name:	KRISTIN SHELTON - CENTRAL VALLEY RWQCB (REGION 5S)
Entity Title:	Not reported
Affiliation Address:	11020 SUN CENTER DRIVE #200
Affiliation City:	RANCHO CORDOVA
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

4
NE
< 1/8
0.089 mi.
470 ft.

SAND CREEK STN
HEIDORN RANCH & SAND CREE
BRENTWOOD, CA 94513

CONTRA COSTA CO. SITE LIST

S105850335
N/A

Relative:
Lower

Actual:
152 ft.

CONTRA COSTA CO. SITE LIST:

Facility ID:	FA0030922
Billing Status:	INACTIVE, NON-BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HMBP GENERAL
Region:	CONTRA COSTA
Cupa Number:	707518

Facility ID:	FA0030922
Billing Status:	INACTIVE, NON-BILLABLE
Program Status:	CONTRA COSTA CO. SITE LIST
Program/Elements:	HWG GENERAL
Region:	CONTRA COSTA
Cupa Number:	707518

5
ESE
1/2-1
0.782 mi.
4129 ft.

LOMA VISTA ELEMENTARY CLASSROOM ADDITION
2110 SAN JOSE AVENUE
BRENTWOOD, CA 94513

ENVIROSTOR
SCH

S118757485
N/A

Relative:
Lower

Actual:
124 ft.

ENVIROSTOR:

Facility ID:	7820007
Status:	No Action Required
Status Date:	05/31/2001
Site Code:	204078
Site Type:	School Investigation
Site Type Detailed:	School
Acres:	54
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Kamili Siglowide
Supervisor:	Charles Ridenour
Division Branch:	Northern California Schools & Santa Susana
Assembly:	11
Senate:	07
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	School District
Latitude:	37.94052
Longitude:	-121.7355
APN:	019110043
Past Use:	SCHOOL - ELEMENTARY
Potential COC:	NONE SPECIFIED No Contaminants found
Confirmed COC:	NONE SPECIFIED
Potential Description:	NMA
Alias Name:	Not reported
Alias Type:	Not reported

Completed Info:

Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported

LOMA VISTA ELEMENTARY CLASSROOM ADDITION (Continued) **S118757485**

Completed Document Type:	Not reported
Completed Date:	Not reported
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

SCH:

Facility ID:	7820007
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	54
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Cleanup Program
Project Manager:	Kamili Siglowide
Supervisor:	Charles Ridenour
Division Branch:	Northern California Schools & Santa Susana
Site Code:	204078
Assembly:	11
Senate:	07
Special Program Status:	Not reported
Status:	No Action Required
Status Date:	05/31/2001
Restricted Use:	NO
Funding:	School District
Latitude:	37.94052
Longitude:	-121.7355
APN:	019110043
Past Use:	SCHOOL - ELEMENTARY
Potential COC:	NONE SPECIFIED, No Contaminants found
Confirmed COC:	NONE SPECIFIED
Potential Description:	NMA
Alias Name:	Not reported
Alias Type:	Not reported

Completed Info:

Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported

LOMA VISTA ELEMENTARY CLASSROOM ADDITION (Continued) **S118757485**

Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

Count: 3 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
ANTIOCH	S123185288	KMEP HILLCREST RELEASE	HILLCREST AVENUE AND SUNSET DR		CPS-SLIC
BRENTWOOD	S105982781	THE TERMO COMPANY	SAN JOSE AVE., SW END		CPS-SLIC
BRENTWOOD	S106707856	SHEA HOMES PROPERTY (FORMERLY GERM	SAN JOSE AVE AND SAN JOSE RD		CPS-SLIC

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/12/2018	Source: EPA
Date Data Arrived at EDR: 12/28/2018	Telephone: N/A
Date Made Active in Reports: 01/11/2019	Last EDR Contact: 02/15/2019
Number of Days to Update: 14	Next Scheduled EDR Contact: 04/15/2019
	Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1 Telephone 617-918-1143	EPA Region 6 Telephone: 214-655-6659
EPA Region 3 Telephone 215-814-5418	EPA Region 7 Telephone: 913-551-7247
EPA Region 4 Telephone 404-562-8033	EPA Region 8 Telephone: 303-312-6774
EPA Region 5 Telephone 312-886-6686	EPA Region 9 Telephone: 415-947-4246
EPA Region 10 Telephone 206-553-8665	

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 12/12/2018	Source: EPA
Date Data Arrived at EDR: 12/28/2018	Telephone: N/A
Date Made Active in Reports: 01/11/2019	Last EDR Contact: 02/15/2019
Number of Days to Update: 14	Next Scheduled EDR Contact: 04/15/2019
	Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/12/2018
Date Data Arrived at EDR: 12/28/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 14

Source: EPA
Telephone: N/A
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/07/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 92

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 01/04/2019
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 12/12/2018
Date Data Arrived at EDR: 12/28/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 14

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 12/13/2018
Date Data Arrived at EDR: 12/28/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 14

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 12/03/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/03/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/03/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/03/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/03/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 10/17/2018
Date Data Arrived at EDR: 10/25/2018
Date Made Active in Reports: 12/07/2018
Number of Days to Update: 43

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/07/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 07/31/2018
Date Data Arrived at EDR: 08/28/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 17

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/04/2019
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 07/31/2018
Date Data Arrived at EDR: 08/28/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 17

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/04/2019
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 45

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 02/08/2019
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 10/29/2018
Date Data Arrived at EDR: 10/30/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 44

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 10/29/2018
Date Data Arrived at EDR: 10/30/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 44

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/12/2018
Date Data Arrived at EDR: 11/14/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 29

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/12/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)
Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 12/11/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 04/10/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 04/25/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/24/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/13/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/01/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/08/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)
Military ust sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases
UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/16/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 12/11/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 04/01/2019
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 04/25/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/13/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/10/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/24/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/01/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 10/29/2018
Date Data Arrived at EDR: 10/30/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 44

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 12/19/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 10/15/2018
Number of Days to Update: 20

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 12/21/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/17/2018
Date Data Arrived at EDR: 12/18/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 24

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 12/18/2018
Next Scheduled EDR Contact: 04/01/2019
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: No Update Planned

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 34

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 09/28/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 34

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 02/12/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/13/2019
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 02/01/2019
Next Scheduled EDR Contact: 05/13/2019
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 09/21/2018
Date Data Arrived at EDR: 09/21/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 49

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program
This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 10/29/2018
Date Data Arrived at EDR: 10/30/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 44

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs
A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/12/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 55

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites
Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 01/24/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Quarterly

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/21/2018
Date Data Arrived at EDR: 09/21/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 49

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Quarterly

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 12/04/2018
Date Data Arrived at EDR: 12/06/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing

Aboveground storage tank sites

Date of Government Version: 09/11/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/11/2018
Number of Days to Update: 29

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CERS TANKS: California Environmental Reporting System (CERS) Tanks

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 01/24/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Quarterly

Local Land Records

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 11/29/2018
Date Data Arrived at EDR: 12/04/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 12/12/2018
Date Data Arrived at EDR: 12/28/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 14

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 12/03/2018
Date Data Arrived at EDR: 12/05/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 37

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 12/05/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/26/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 73

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 02/08/2019
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 51

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 01/24/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)
Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)
Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/03/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 01/11/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/11/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 08/31/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 02/04/2019
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 02/08/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/08/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/21/2018
Next Scheduled EDR Contact: 04/01/2019
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 01/10/2018
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 2

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/20/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 12/12/2018
Date Data Arrived at EDR: 12/28/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 14

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 10/26/2018
Date Data Arrived at EDR: 11/06/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 66

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/22/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 36

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 09/14/2018
Date Data Arrived at EDR: 10/11/2018
Date Made Active in Reports: 12/07/2018
Number of Days to Update: 57

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/11/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 01/22/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 12/05/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 12/03/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 10/02/2018
Date Data Arrived at EDR: 10/03/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/03/2019
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 10/01/2018
Date Data Arrived at EDR: 10/30/2018
Date Made Active in Reports: 01/18/2019
Number of Days to Update: 80

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 09/30/2018
Date Data Arrived at EDR: 10/12/2018
Date Made Active in Reports: 12/07/2018
Number of Days to Update: 56

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 12/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations.

Date of Government Version: 12/12/2018
Date Data Arrived at EDR: 12/28/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 14

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites
A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/01/2018
Date Data Arrived at EDR: 08/29/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 37

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 11/30/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing
This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 11/30/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 11/30/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 12/19/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 11/15/2018
Date Data Arrived at EDR: 12/05/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 37

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/02/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 9

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 71

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 11/30/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 06/19/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 87

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 01/14/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 08/22/2018
Date Data Arrived at EDR: 08/22/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 44

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 10/16/2018
Number of Days to Update: 21

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 12/21/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing
list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 08/28/2018
Date Data Arrived at EDR: 08/30/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 63

Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 02/11/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Varies

CUPA SAN FRANCISCO CO: CUPA Facility Listing
Cupa facilities

Date of Government Version: 09/11/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 7

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 11/13/2018
Date Data Arrived at EDR: 12/04/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 42

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Varies

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 10/04/2018
Date Data Arrived at EDR: 10/05/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 27

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 08/30/2018
Date Data Arrived at EDR: 09/27/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 35

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Annually

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/20/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 47

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 12/21/2018
Next Scheduled EDR Contact: 04/01/2019
Data Release Frequency: Varies

ENF: Enforcement Action Listing
A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 11/01/2018
Date Data Arrived at EDR: 11/02/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 41

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 10/19/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 11/18/2018
Date Data Arrived at EDR: 11/19/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 53

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/11/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 37

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 11/19/2018
Date Data Arrived at EDR: 11/19/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 53

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 02/20/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 11/19/2018
Date Data Arrived at EDR: 11/19/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 53

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/20/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 10/09/2018
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 01/08/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 34

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 11/09/2018
Date Data Arrived at EDR: 12/05/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 37

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 12/05/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 11/12/2018
Date Data Arrived at EDR: 11/14/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 29

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/12/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 12/03/2018
Date Data Arrived at EDR: 12/05/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 37

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 12/05/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 34

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 09/19/2018
Date Data Arrived at EDR: 09/20/2018
Date Made Active in Reports: 10/19/2018
Number of Days to Update: 29

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 04/01/2019
Data Release Frequency: No Update Planned

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 04/27/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 34

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 07/11/2018
Date Made Active in Reports: 09/13/2018
Number of Days to Update: 64

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 01/11/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Quarterly

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing
In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/18/2019
Number of Days to Update: 37

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

CIWQS: California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 12/03/2018
Date Data Arrived at EDR: 12/04/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 38

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 12/04/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 01/24/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 12/19/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)

Produced water ponds sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)
Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 10/05/2018
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 22

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 10/05/2018
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 23

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 07/01/2018
Date Data Arrived at EDR: 07/24/2018
Date Made Active in Reports: 08/20/2018
Number of Days to Update: 27

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 01/04/2019
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 10/31/2018
Date Data Arrived at EDR: 12/04/2018
Date Made Active in Reports: 12/12/2018
Number of Days to Update: 8

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 12/21/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 05/23/2018
Date Data Arrived at EDR: 05/24/2018
Date Made Active in Reports: 07/13/2018
Number of Days to Update: 50

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 11/26/2018
Date Data Arrived at EDR: 11/30/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 46

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 08/16/2018
Date Data Arrived at EDR: 11/06/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 8

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 12/13/2018
Date Data Arrived at EDR: 12/18/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 28

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 10/16/2018
Date Data Arrived at EDR: 10/18/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 27

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 12/26/2018
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 12/11/2018
Date Data Arrived at EDR: 12/13/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 33

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/25/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 20

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INYO COUNTY:

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

KERN COUNTY:

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 11/02/2018
Date Data Arrived at EDR: 11/07/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 37

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 11/21/2018
Date Data Arrived at EDR: 11/27/2018
Date Made Active in Reports: 12/12/2018
Number of Days to Update: 15

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 11/07/2018
Date Data Arrived at EDR: 11/08/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 6

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 01/14/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 10/15/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 22

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: N/A
Telephone: N/A
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 04/01/2019
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 09/20/2018
Date Data Arrived at EDR: 10/12/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 35

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 10/15/2018
Date Data Arrived at EDR: 10/16/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 31

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 01/15/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2018
Date Data Arrived at EDR: 05/01/2018
Date Made Active in Reports: 05/14/2018
Number of Days to Update: 13

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 01/15/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 07/01/2018
Date Data Arrived at EDR: 10/16/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 31

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 02/01/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 01/14/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Semi-Annually

UST LONG BEACH: City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/09/2017
Date Data Arrived at EDR: 03/10/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 54

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Annually

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 10/02/2018
Date Data Arrived at EDR: 10/05/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 28

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 11/26/2018
Date Data Arrived at EDR: 11/27/2018
Date Made Active in Reports: 12/12/2018
Number of Days to Update: 15

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 01/14/2019
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/29/2018
Date Data Arrived at EDR: 08/31/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 19

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 12/07/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/24/2019
Number of Days to Update: 44

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 12/06/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 10/29/2018
Date Data Arrived at EDR: 11/01/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 15

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 12/27/2018
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 11/21/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 11/28/2018
Date Data Arrived at EDR: 11/30/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 14

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 11/06/2018
Date Data Arrived at EDR: 11/08/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 6

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 10/04/2018
Date Data Arrived at EDR: 11/14/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 29

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/04/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 10/04/2018
Date Data Arrived at EDR: 11/14/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 29

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/04/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 10/04/2018
Date Data Arrived at EDR: 11/06/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 38

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/05/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 11/29/2018
Date Data Arrived at EDR: 12/04/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 38

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 07/19/2018
Date Data Arrived at EDR: 07/25/2018
Date Made Active in Reports: 09/05/2018
Number of Days to Update: 42

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 10/10/2018
Date Data Arrived at EDR: 10/12/2018
Date Made Active in Reports: 10/16/2018
Number of Days to Update: 4

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/17/2018
Next Scheduled EDR Contact: 04/01/2019
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 10/10/2018
Date Data Arrived at EDR: 10/12/2018
Date Made Active in Reports: 11/05/2018
Number of Days to Update: 24

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/17/2018
Next Scheduled EDR Contact: 04/01/2019
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 08/03/2018
Date Data Arrived at EDR: 10/02/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 30

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/04/2019
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 08/23/2018
Date Data Arrived at EDR: 10/02/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 31

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 12/28/2018
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List
Cupa facility list

Date of Government Version: 11/15/2018
Date Data Arrived at EDR: 11/16/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 27

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 11/28/2018
Date Data Arrived at EDR: 11/30/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 42

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 02/19/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 12/03/2018
Date Data Arrived at EDR: 12/05/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 37

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 12/05/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 56

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing

A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

SAN DIEGO CO. SAM: Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

LUST SAN FRANCISCO: Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

UST SAN FRANCISCO: Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/05/2018
Date Data Arrived at EDR: 11/06/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 38

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 04/01/2019
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 11/14/2018
Date Data Arrived at EDR: 11/15/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 28

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 12/03/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 34

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 12/13/2018
Date Data Arrived at EDR: 12/18/2018
Date Made Active in Reports: 01/23/2019
Number of Days to Update: 36

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/10/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 11/16/2018
Date Data Arrived at EDR: 11/16/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 27

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 11/21/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Annually

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/01/2018
Date Data Arrived at EDR: 11/06/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 38

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 11/29/2018
Date Data Arrived at EDR: 12/04/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 38

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 11/29/2018
Date Data Arrived at EDR: 12/04/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 10

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 12/21/2018
Date Data Arrived at EDR: 12/27/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 19

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 12/19/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 10/02/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 10/25/2018
Number of Days to Update: 21

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 12/11/2018
Date Data Arrived at EDR: 12/13/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 33

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 12/13/2018
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 09/18/2018
Date Data Arrived at EDR: 09/20/2018
Date Made Active in Reports: 10/25/2018
Number of Days to Update: 35

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 12/13/2018
Date Data Arrived at EDR: 12/18/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 28

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/25/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 20

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 12/26/2018
Date Data Arrived at EDR: 12/27/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 19

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/25/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 36

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/22/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/26/2018
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Annually

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/07/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Quarterly

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 09/25/2018
Date Data Arrived at EDR: 10/25/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 36

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 01/22/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 11/26/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/16/2019
Number of Days to Update: 35

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 12/26/2018
Date Data Arrived at EDR: 01/03/2019
Date Made Active in Reports: 01/16/2019
Number of Days to Update: 13

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 12/26/2018
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 11/05/2018
Date Data Arrived at EDR: 11/07/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 7

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 11/12/2018
Date Data Arrived at EDR: 11/14/2018
Date Made Active in Reports: 12/04/2018
Number of Days to Update: 20

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/12/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 07/13/2018
Date Made Active in Reports: 08/01/2018
Number of Days to Update: 19

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 01/30/2019
Date Made Active in Reports: 02/14/2019
Number of Days to Update: 15

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 01/30/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/27/2018
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 01/11/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 04/09/2018
Number of Days to Update: 45

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/19/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/15/2018
Date Made Active in Reports: 07/09/2018
Number of Days to Update: 24

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 12/07/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

CREEKSIDE
3052 HEIDORN RANCH RD
ANTIOCH, CA 94531

TARGET PROPERTY COORDINATES

Latitude (North):	37.943499 - 37˚ 56’ 36.60’’
Longitude (West):	121.75506 - 121˚ 45’ 18.22’’
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	609391.1
UTM Y (Meters):	4200071.5
Elevation:	169 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5640044 ANTIOCH SOUTH, CA
Version Date:	2012
East Map:	5640376 BRENTWOOD, CA
Version Date:	2012

EDR’s GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

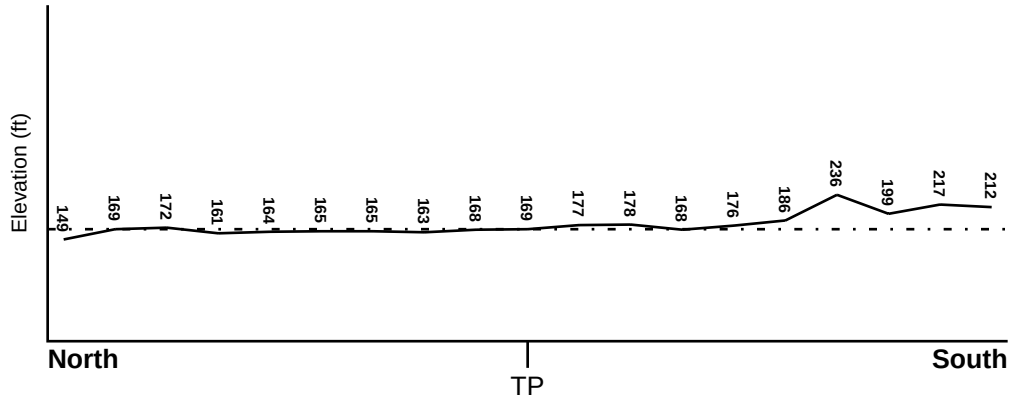
TOPOGRAPHIC INFORMATION

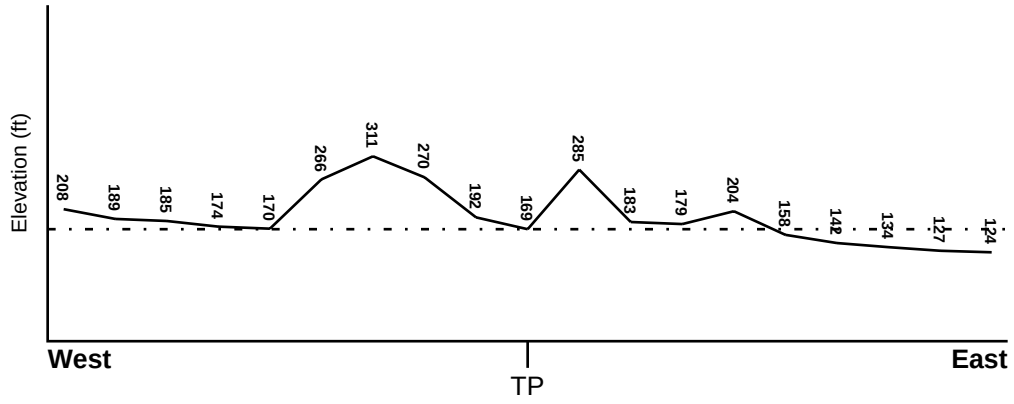
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General East

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 169 ft.

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06013C0335F	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06013C0353F	FEMA FIRM Flood data
06013C0345F	FEMA FIRM Flood data
06013C0361F	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
ANTIOCH SOUTH	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

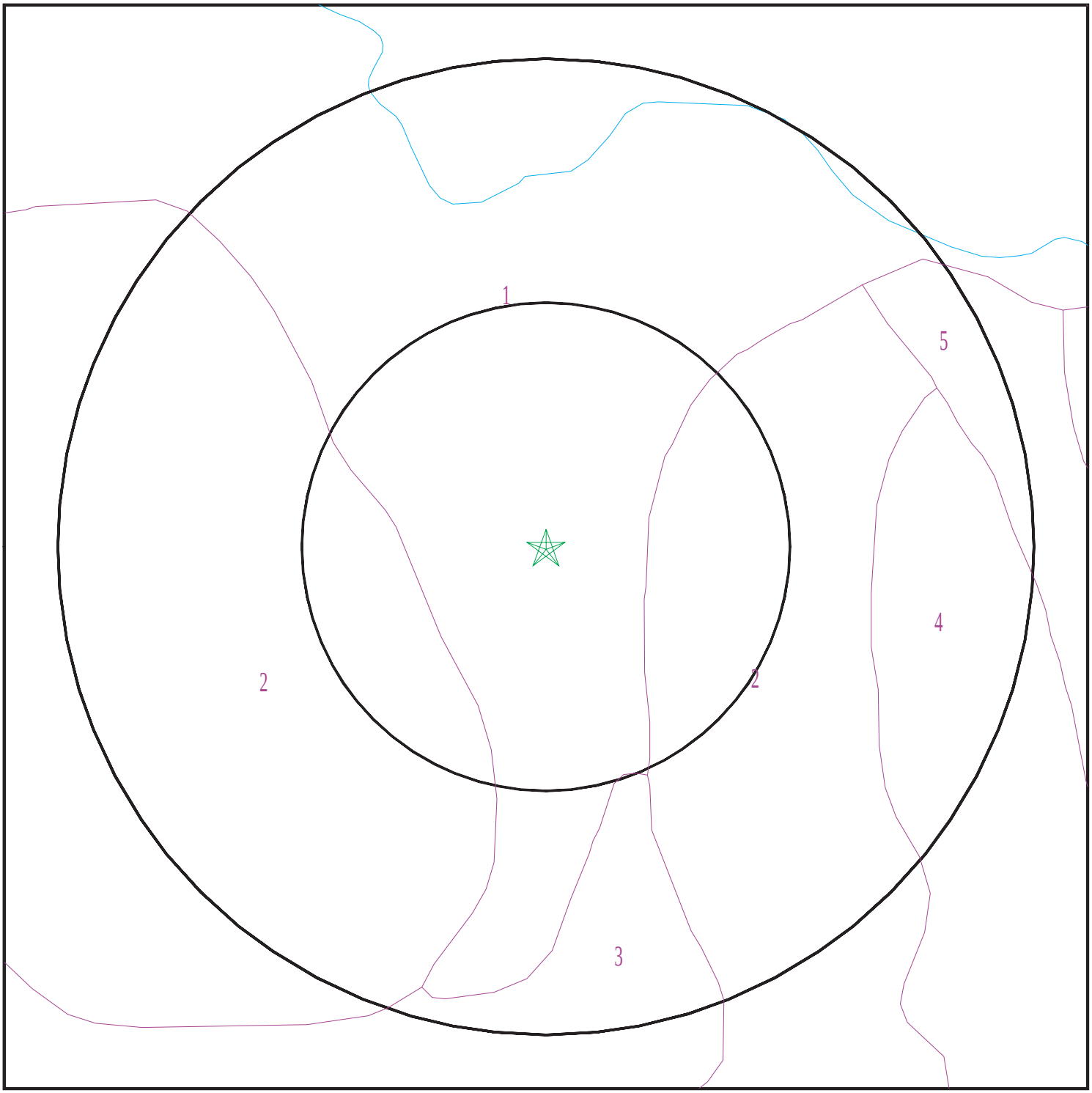
Era:	Cenozoic
System:	Tertiary
Series:	Eocene
Code:	Te *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 05569243.2r



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME: Creekside ADDRESS: 3052 Heidorn Ranch Rd Antioch CA 94531 LAT/LONG: 37.943499 / 121.75506	CLIENT: Engeo Inc. CONTACT: Victoria Drake INQUIRY #: 05569243.2r DATE: February 21, 2019 3:31 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: RINCON

Soil Surface Texture: clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 7.9
2	11 inches	29 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 7.9
3	29 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 7.9

Soil Map ID: 2

Soil Component Name: ALTAMONT

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	25 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: 1.4 Min: 0	Max: Min:
2	25 inches	48 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: 1.4 Min: 0	Max: Min:
3	48 inches	51 inches	weathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: 1.4 Min: 0	Max: Min:

Soil Map ID: 3

Soil Component Name: PESCADERO

Soil Surface Texture: clay loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Poorly drained

Hydric Status: All hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 168 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 9 Min: 7.9
2	5 inches	42 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 9 Min: 7.9
3	42 inches	66 inches	stratified silt loam to silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 9 Min: 7.9

Soil Map ID: 4

Soil Component Name: ALTAMONT

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	25 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: 1.4 Min: 0	Max: Min:
2	25 inches	48 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: 1.4 Min: 0	Max: Min:
3	48 inches	51 inches	weathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: 1.4 Min: 0	Max: Min:

Soil Map ID: 5

Soil Component Name: CAPAY

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	35 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 1.4 Min: 0.42	Max: 8.4 Min: 6.6
2	35 inches	51 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 1.4 Min: 0.42	Max: 8.4 Min: 6.6
3	51 inches	72 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 1.4 Min: 0.42	Max: 8.4 Min: 6.6

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 0.001 miles
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

OTHER STATE DATABASE INFORMATION

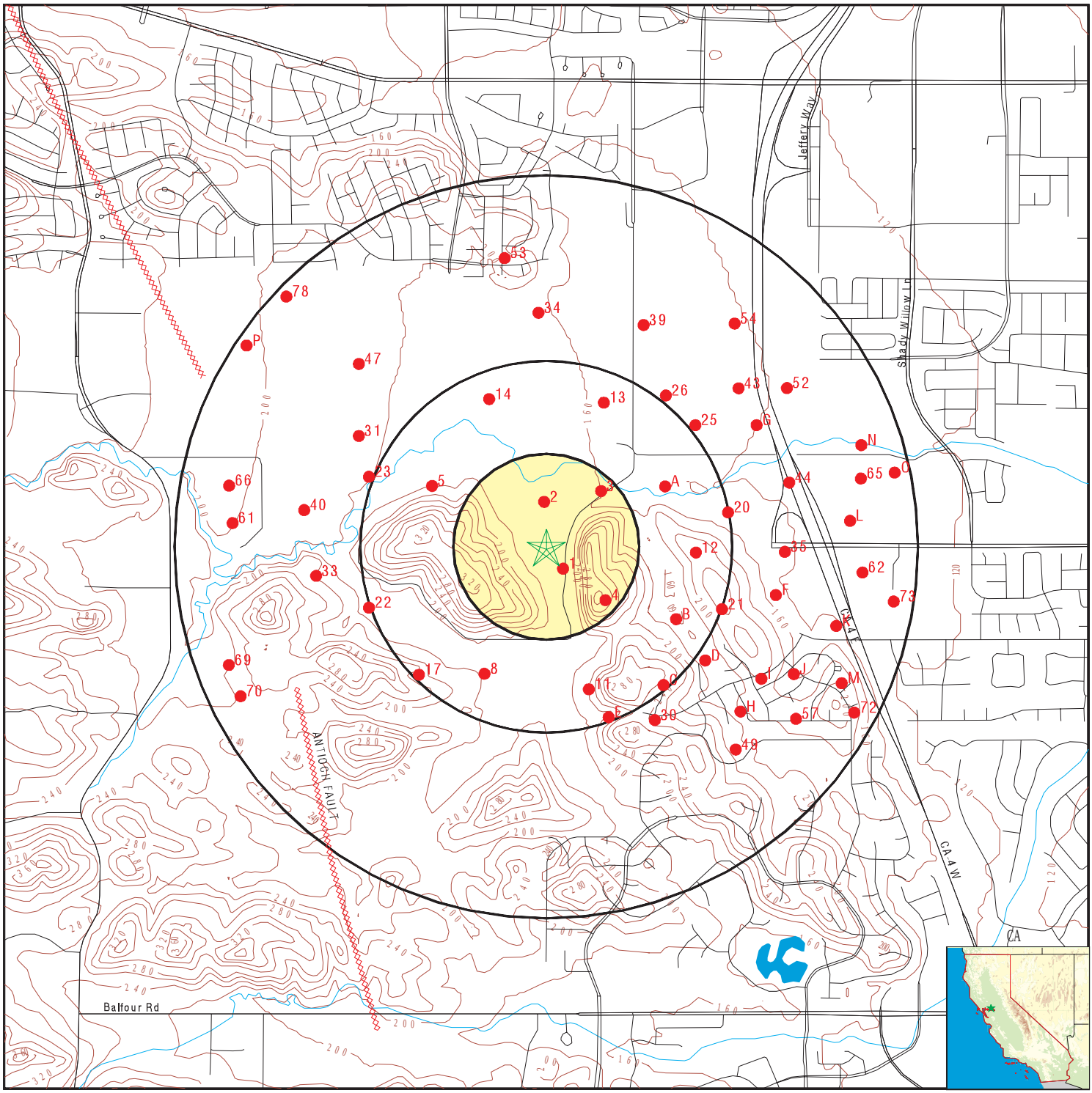
STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	CAOG11000232390	0 - 1/8 Mile SE
2	CAOG11000232386	0 - 1/8 Mile North
3	CAOG11000232391	1/8 - 1/4 Mile NE
4	CAOG11000232087	1/8 - 1/4 Mile SE
5	CAOG11000232644	1/4 - 1/2 Mile WNW
A7	CAOG11000232419	1/4 - 1/2 Mile ENE
A6	CAOG11000232418	1/4 - 1/2 Mile ENE
8	CAOG11000232387	1/4 - 1/2 Mile SSW
B9	CAOG11000232416	1/4 - 1/2 Mile ESE
B10	CAOG11000232417	1/4 - 1/2 Mile ESE
11	CAOG11000232385	1/4 - 1/2 Mile SSE
12	CAOG11000232436	1/4 - 1/2 Mile East
13	CAOG11000232384	1/4 - 1/2 Mile NNE
14	CAOG11000232356	1/4 - 1/2 Mile NNW
C15	CAOG11000232432	1/4 - 1/2 Mile SE
D16	CAOG11000232592	1/4 - 1/2 Mile SE
17	CAOG11000232382	1/4 - 1/2 Mile SW
E18	CAOG11000232388	1/4 - 1/2 Mile SSE
E19	CAOG11000232389	1/4 - 1/2 Mile SSE
20	CAOG11000232412	1/4 - 1/2 Mile East
21	CAOG11000232437	1/2 - 1 Mile ESE
22	CAOG11000232410	1/2 - 1 Mile WSW
23	CAOG11000232797	1/2 - 1 Mile WNW
C24	CAOG11000232091	1/2 - 1 Mile SE
25	CAOG11000232380	1/2 - 1 Mile NE
26	CAOG11000232381	1/2 - 1 Mile NE
D29	CAOG11000232428	1/2 - 1 Mile SE
D28	CAOG11000232427	1/2 - 1 Mile SE
D27	CAOG11000232426	1/2 - 1 Mile SE
30	CAOG11000232434	1/2 - 1 Mile SSE
31	CAOG11000232414	1/2 - 1 Mile WNW
F32	CAOG11000232690	1/2 - 1 Mile East
33	CAOG11000232409	1/2 - 1 Mile West
34	CAOG11000232383	1/2 - 1 Mile North
35	CAOG11000232089	1/2 - 1 Mile East
G36	CAOG11000232398	1/2 - 1 Mile ENE
G37	CAOG11000232399	1/2 - 1 Mile ENE

STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
F38	CAOG11000232415	1/2 - 1 Mile ESE
39	CAOG11000232061	1/2 - 1 Mile NNE
40	CAOG11000232421	1/2 - 1 Mile West
G41	CAOG11000232397	1/2 - 1 Mile ENE
H42	CAOG11000232423	1/2 - 1 Mile SE
43	CAOG11000232400	1/2 - 1 Mile NE
44	CAOG11000232420	1/2 - 1 Mile ENE
I45	CAOG11000232694	1/2 - 1 Mile ESE
I46	CAOG11000232695	1/2 - 1 Mile ESE
47	CAOG11000232413	1/2 - 1 Mile NW
H48	CAOG11000232675	1/2 - 1 Mile SE
49	CAOG11000232435	1/2 - 1 Mile SE
J50	CAOG11000232085	1/2 - 1 Mile ESE
J51	CAOG11000232430	1/2 - 1 Mile ESE
52	CAOG11000232401	1/2 - 1 Mile ENE
53	CAOG11000232394	1/2 - 1 Mile North
54	CAOG11000232375	1/2 - 1 Mile NE
K55	CAOG11000232422	1/2 - 1 Mile ESE
L56	CAOG11000232714	1/2 - 1 Mile East
57	CAOG11000232590	1/2 - 1 Mile SE
L58	CAOG11000232364	1/2 - 1 Mile East
K59	CAOG11000232080	1/2 - 1 Mile ESE
L60	CAOG11000232371	1/2 - 1 Mile East
61	CAOG11000232408	1/2 - 1 Mile West
62	CAOG11000232086	1/2 - 1 Mile East
M64	CAOG11000232425	1/2 - 1 Mile ESE
M63	CAOG11000232424	1/2 - 1 Mile ESE
65	CAOG11000232372	1/2 - 1 Mile ENE
66	CAOG11000232642	1/2 - 1 Mile West
N67	CAOG11000232359	1/2 - 1 Mile ENE
N68	CAOG11000232591	1/2 - 1 Mile ENE
69	CAOG11000232861	1/2 - 1 Mile WSW
70	CAOG11000232600	1/2 - 1 Mile WSW
M71	CAOG11000232433	1/2 - 1 Mile ESE
72	CAOG11000232429	1/2 - 1 Mile ESE
73	CAOG11000232407	1/2 - 1 Mile East
O74	CAOG11000232350	1/2 - 1 Mile ENE
O75	CAOG11000232636	1/2 - 1 Mile East
O76	CAOG11000232363	1/2 - 1 Mile ENE
O77	CAOG11000232623	1/2 - 1 Mile ENE
78	CAOG11000232810	1/2 - 1 Mile NW
P79	CAOG11000232858	1/2 - 1 Mile NW
P80	CAOG11000232859	1/2 - 1 Mile NW

PHYSICAL SETTING SOURCE MAP - 05569243.2r



County Boundary
Major Roads
Contour Lines
Earthquake Fault Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

0 1/4 1/2 1 Miles

Groundwater Flow Direction
Indeterminate Groundwater Flow at Location
Groundwater Flow Varies at Location
Closest Hydrogeological Data
Oil, gas or related wells

N

SITE NAME:	Creekside	CLIENT:	Engeo Inc.
ADDRESS:	3052 Heidorn Ranch Rd Antioch CA 94531	CONTACT:	Victoria Drake
		INQUIRY #:	05569243.2r
LAT/LONG:	37.943499 / 121.75506	DATE:	February 21, 2019 3:31 pm

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Map ID
Direction
Distance

Database EDR ID Number

1
SE
0 - 1/8 Mile

OIL_GAS **CAOG11000232390**

Districtnu:	6	Apinumber:	01300044
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	9	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 025
Leasename:	Ginochio-Shellenberger	Wellnumber:	41-9
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	14-MAR-63
Welldeptha:	4939	Redrillfoo:	0
Abandonedd:	28-SEP-91	Completion:	Not Reported
Directiona:	Directionally drilled	Gissymbol:	POG
Site id:	CAOG11000232390		

2
North
0 - 1/8 Mile

OIL_GAS **CAOG11000232386**

Districtnu:	6	Apinumber:	01300041
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	9	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Ginochio-Shellenberger	Wellnumber:	4-9
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	06-JUL-62
Welldeptha:	4300	Redrillfoo:	0
Abandonedd:	12-AUG-85	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232386		

3
NE
1/8 - 1/4 Mile

OIL_GAS **CAOG11000232391**

Districtnu:	6	Apinumber:	01300045
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	9	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Ginochio-Shellenberger	Wellnumber:	43-9

Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	08-DEC-63
Welldeptha:	4188	Redrillfoo:	0
Abandonedd:	31-JUL-85	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232391		

4
SE **OIL_GAS** **CAOG11000232087**
1/8 - 1/4 Mile

Districtnu:	6	Apinumber:	01300016
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	9	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Ginochio-Shellenberger	Wellnumber:	42-9
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	29-AUG-63
Welldeptha:	4100	Redrillfoo:	0
Abandonedd:	17-OCT-91	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232087		

5
WNW **OIL_GAS** **CAOG11000232644**
1/4 - 1/2 Mile

Districtnu:	6	Apinumber:	01320053
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Sinco Oil Corp.	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Any Area
Section:	9	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 007
Leasename:	Williamson	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	23-JUL-69
Welldeptha:	4504	Redrillfoo:	0
Abandonedd:	02-AUG-69	Completion:	Not Reported
Directiona:	Directionally drilled	Gissymbol:	PDH
Site id:	CAOG11000232644		

A7
ENE **OIL_GAS** **CAOG11000232419**
1/4 - 1/2 Mile

Districtnu:	6	Apinumber:	01300071
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P

Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Ward	Wellnumber:	34-10
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	15-NOV-63
Welldeptha:	4200	Redrillfoo:	0
Abandonedd:	29-APR-92	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232419		

A6
ENE **OIL_GAS** **CAOG11000232418**
1/4 - 1/2 Mile

Districtnu:	6	Apinumber:	01300071
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Ward	Wellnumber:	34-10
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	15-NOV-63
Welldeptha:	4200	Redrillfoo:	0
Abandonedd:	29-APR-92	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232418		

8
SSW **OIL_GAS** **CAOG11000232387**
1/4 - 1/2 Mile

Districtnu:	6	Apinumber:	01300042
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	Y	Wellstatus:	P
Operatorna:	Shell Western Exploration & Production Inc.		
Countyname:	Contra Costa	Fieldname:	Brentwood (ABD)
Areaname:	Any Area	Section:	16
Township:	01N	Range:	02E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Not Reported	Gissourcec:	hud
Comments:	Status Code 006	Leasename:	Ginochio-Shellenberger
Wellnumber:	21-16	Epawell:	N
Hydraulica:	N	Confidenti:	N
Spuddate:	17-JUL-63	Welldeptha:	4780
Redrillfoo:	0	Abandonedd:	29-JUL-63
Completion:	Not Reported	Directiona:	Unknown
Gissymbol:	PDH	Site id:	CAOG11000232387

Map ID
Direction
Distance

Database EDR ID Number

B9
ESE
1/4 - 1/2 Mile

OIL_GAS **CAOG11000232416**

Districtnu:	6	Apinumber:	01300070
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Ward	Wellnumber:	32-10
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	03-MAY-63
Welldeptha:	4700	Redrillfoo:	0
Abandonedd:	07-MAY-92	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232416		

B10
ESE
1/4 - 1/2 Mile

OIL_GAS **CAOG11000232417**

Districtnu:	6	Apinumber:	01300070
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Ward	Wellnumber:	32-10
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	03-MAY-63
Welldeptha:	4700	Redrillfoo:	0
Abandonedd:	07-MAY-92	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232417		

11
SSE
1/4 - 1/2 Mile

OIL_GAS **CAOG11000232385**

Districtnu:	6	Apinumber:	01300040
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	16	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 116
Leasename:	Ginochio-Shellenberger	Wellnumber:	2-16

Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	01-DEC-62
Welldeptha:	4746	Redrillfoo:	0
Abandonedd:	17-DEC-93	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	PWD
Site id:	CAOG11000232385		

12
East **OIL_GAS** **CAOG11000232436**
1/4 - 1/2 Mile

Districtnu:	6	Apinumber:	01300085
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Ward	Wellnumber:	38-10
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	04-JUL-64
Welldeptha:	4100	Redrillfoo:	0
Abandonedd:	20-DEC-93	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232436		

13
NNE **OIL_GAS** **CAOG11000232384**
1/4 - 1/2 Mile

Districtnu:	6	Apinumber:	01300039
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	9	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Ginochio	Wellnumber:	21-9
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	14-APR-64
Welldeptha:	4500	Redrillfoo:	0
Abandonedd:	13-JUL-81	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232384		

14
NNW **OIL_GAS** **CAOG11000232356**
1/4 - 1/2 Mile

Districtnu:	6	Apinumber:	01320005
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P

Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Any Area
Section:	9	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 024
Leasename:	Ginochio	Wellnumber:	22-9
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	07-JUL-67
Welldeptha:	4239	Redrillfoo:	0
Abandonedd:	26-SEP-91	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	PDG
Site id:	CAOG11000232356		

C15
SE
1/4 - 1/2 Mile

OIL_GAS **CAOG11000232432**

Districtnu:	6	Apinumber:	01300081
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	The Termo Company	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	15	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 06/11/1997, Status Code 016
Leasename:	Ginochio	Wellnumber:	8
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	31-JAN-64
Welldeptha:	4425	Redrillfoo:	0
Abandonedd:	28-FEB-99	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232432		

D16
SE
1/4 - 1/2 Mile

OIL_GAS **CAOG11000232592**

Districtnu:	6	Apinumber:	01320021
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	The Termo Company	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	15	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 06/11/1997, Status Code 014
Leasename:	Ginochio	Wellnumber:	14
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	02-APR-68
Welldeptha:	4407	Redrillfoo:	0
Abandonedd:	26-AUG-87	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232592		

Map ID
Direction
Distance

Database EDR ID Number

17
SW
1/4 - 1/2 Mile

OIL_GAS **CAOG11000232382**

Districtnu:	6	Apinumber:	01300037
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	West
Section:	16	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 006
Leasename:	Ginochio	Wellnumber:	1-16
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	17-MAY-63
Welldeptha:	4535	Redrillfoo:	0
Abandonedd:	14-MAY-92	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232382		

E18
SSE
1/4 - 1/2 Mile

OIL_GAS **CAOG11000232388**

Districtnu:	6	Apinumber:	01300043
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	16	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 116
Leasename:	Ginochio-Shellenberger	Wellnumber:	22-16
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	11-SEP-63
Welldeptha:	4500	Redrillfoo:	0
Abandonedd:	01-OCT-91	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	PWD
Site id:	CAOG11000232388		

E19
SSE
1/4 - 1/2 Mile

OIL_GAS **CAOG11000232389**

Districtnu:	6	Apinumber:	01300043
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	16	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 116
Leasename:	Ginochio-Shellenberger	Wellnumber:	22-16

Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	11-SEP-63
Welldeptha:	4500	Redrillfoo:	0
Abandonedd:	01-OCT-91	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	PWD
Site id:	CAOG11000232389		

20
East **OIL_GAS** **CAOG11000232412**
1/4 - 1/2 Mile

Districtnu:	6	Apinumber:	01300066
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 024
Leasename:	Ward	Wellnumber:	3-10
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	09-SEP-62
Welldeptha:	4688	Redrillfoo:	0
Abandonedd:	04-MAY-92	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232412		

21
ESE **OIL_GAS** **CAOG11000232437**
1/2 - 1 Mile

Districtnu:	6	Apinumber:	01300086
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 015
Leasename:	Ward	Wellnumber:	36-10
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	05-JUN-64
Welldeptha:	4541	Redrillfoo:	0
Abandonedd:	13-AUG-85	Completion:	Not Reported
Directiona:	Directionally drilled	Gissymbol:	POG
Site id:	CAOG11000232437		

22
WSW **OIL_GAS** **CAOG11000232410**
1/2 - 1 Mile

Districtnu:	6	Apinumber:	01300064
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	Y	Wellstatus:	P

Operatorna:	Shell Western Exploration & Production Inc.		
Countyname:	Contra Costa	Fieldname:	Brentwood (ABD)
Areaname:	Any Area	Section:	9
Township:	01N	Range:	02E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Not Reported	Gissourcec:	hud
Comments:	Status Code 006	Leasename:	Sullenger
Wellnumber:	33-9	Epawell:	N
Hydraulica:	N	Confidenti:	N
Spuddate:	03-APR-64	Welldeptha:	4351
Redrillfoo:	0	Abandonedd:	12-APR-64
Completion:	Not Reported	Directiona:	Unknown
Gissymbol:	PDH	Site id:	CAOG11000232410

23
WNW
1/2 - 1 Mile

OIL_GAS **CAOG11000232797**

Districtnu:	6	Apinumber:	01320212
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Venturini Associates Inc.	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Any Area
Section:	9	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 007
Leasename:	Williamson	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	27-AUG-83
Welldeptha:	4502	Redrillfoo:	0
Abandonedd:	05-SEP-83	Completion:	Not Reported
Directiona:	Directionally drilled	Gissymbol:	PDH
Site id:	CAOG11000232797		

C24
SE
1/2 - 1 Mile

OIL_GAS **CAOG11000232091**

Districtnu:	6	Apinumber:	01300020
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	The Termo Company	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Any Area
Section:	15	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Ginochio	Wellnumber:	2
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	04-JAN-63
Welldeptha:	4134	Redrillfoo:	0
Abandonedd:	14-MAR-68	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232091		

Map ID
Direction
Distance

Database EDR ID Number

25
NE
1/2 - 1 Mile

OIL_GAS **CAOG11000232380**

Districtnu:	6	Apinumber:	01300035
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Garaventa	Wellnumber:	12-10
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	17-OCT-63
Welldeptha:	4500	Redrillfoo:	0
Abandonedd:	10-APR-92	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232380		

26
NE
1/2 - 1 Mile

OIL_GAS **CAOG11000232381**

Districtnu:	6	Apinumber:	01300036
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Any Area
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 024
Leasename:	Garaventa	Wellnumber:	14-10
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	06-NOV-63
Welldeptha:	4439	Redrillfoo:	0
Abandonedd:	16-APR-92	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	PDG
Site id:	CAOG11000232381		

D29
SE
1/2 - 1 Mile

OIL_GAS **CAOG11000232428**

Districtnu:	6	Apinumber:	01300077
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	The Termo Company	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	15	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 06/11/1997, Status Code 016
Leasename:	Ginochio	Wellnumber:	4

Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	03-JUL-63
Welldeptha:	4358	Redrillfoo:	0
Abandonedd:	25-FEB-99	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232428		

D28
SE
1/2 - 1 Mile

OIL_GAS **CAOG11000232427**

Districtnu:	6	Apinumber:	01300077
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	The Termo Company	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	15	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 06/11/1997, Status Code 016
Leasename:	Ginochio	Wellnumber:	4
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	03-JUL-63
Welldeptha:	4358	Redrillfoo:	0
Abandonedd:	25-FEB-99	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232427		

D27
SE
1/2 - 1 Mile

OIL_GAS **CAOG11000232426**

Districtnu:	6	Apinumber:	01300077
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	The Termo Company	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	15	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 06/11/1997, Status Code 016
Leasename:	Ginochio	Wellnumber:	4
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	03-JUL-63
Welldeptha:	4358	Redrillfoo:	0
Abandonedd:	25-FEB-99	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232426		

30
SSE
1/2 - 1 Mile

OIL_GAS **CAOG11000232434**

Districtnu:	6	Apinumber:	01300083
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P

Operatorna:	The Termo Company	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	15	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 06/11/1997, Status Code 016
Leasename:	Ginochio	Wellnumber:	10
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	09-MAR-65
Welldeptha:	4403	Redrillfoo:	0
Abandonedd:	24-FEB-99	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232434		

31
WNW
1/2 - 1 Mile

OIL_GAS **CAOG11000232414**

Districtnu:	6	Apinumber:	01300068
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	Y	Wellstatus:	P
Operatorna:	Shell Western Exploration & Production Inc.		
Countyname:	Contra Costa	Fieldname:	Brentwood (ABD)
Areaname:	Any Area	Section:	9
Township:	01N	Range:	02E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Not Reported	Gissourcec:	hud
Comments:	Status Code 006	Leasename:	Williamson
Wellnumber:	11-9	Epawell:	N
Hydraulica:	N	Confidenti:	N
Spuddate:	22-DEC-62	Welldeptha:	5390
Redrillfoo:	0	Abandonedd:	01-JAN-63
Completion:	Not Reported	Directiona:	Unknown
Gissymbol:	PDH	Site id:	CAOG11000232414

F32
East
1/2 - 1 Mile

OIL_GAS **CAOG11000232690**

Districtnu:	6	Apinumber:	01320100
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Shell Western Exploration & Production Inc.		
Countyname:	Contra Costa	Fieldname:	Brentwood (ABD)
Areaname:	Any Area	Section:	10
Township:	01N	Range:	02E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Not Reported	Gissourcec:	hud
Comments:	Status Code 007	Leasename:	Dow-Termo Ward
Wellnumber:	39	Epawell:	N
Hydraulica:	N	Confidenti:	N
Spuddate:	31-MAY-75	Welldeptha:	4807
Redrillfoo:	0	Abandonedd:	04-JUL-75
Completion:	Not Reported	Directiona:	Directionally drilled
Gissymbol:	PDH	Site id:	CAOG11000232690

Map ID
Direction
Distance

Database EDR ID Number

33
West
1/2 - 1 Mile

OIL_GAS **CAOG11000232409**

Districtnu:	6	Apinumber:	01300062
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	Y	Wellstatus:	P
Operatorna:	Shell Western Exploration & Production Inc.		
Countyname:	Contra Costa	Fieldname:	Brentwood (ABD)
Areaname:	Any Area	Section:	9
Township:	01N	Range:	02E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Not Reported	Gissourcec:	hud
Comments:	Status Code 006	Leasename:	Sullenger
Wellnumber:	31-9	Epawell:	N
Hydraulica:	N	Confidenti:	N
Spuddate:	16-AUG-63	Welldeptha:	5000
Redrillfoo:	0	Abandonedd:	28-AUG-63
Completion:	Not Reported	Directiona:	Unknown
Gissymbol:	PDH	Site id:	CAOG11000232409

34
North
1/2 - 1 Mile

OIL_GAS **CAOG11000232383**

Districtnu:	6	Apinumber:	01300038
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Any Area
Section:	9	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 024
Leasename:	Ginochio	Wellnumber:	2-9
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	16-JUN-62
Welldeptha:	4037	Redrillfoo:	0
Abandonedd:	17-OCT-91	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	PDG
Site id:	CAOG11000232383		

35
East
1/2 - 1 Mile

OIL_GAS **CAOG11000232089**

Districtnu:	6	Apinumber:	01300018
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 024
Leasename:	Ward	Wellnumber:	37-10

Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	23-JUN-64
Welldeptha:	4000	Redrillfoo:	0
Abandonedd:	11-MAY-92	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232089		

G36
ENE **OIL_GAS** **CAOG11000232398**
1/2 - 1 Mile

Districtnu:	6	Apinumber:	01300052
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Maggiora-Capital Co.	Wellnumber:	13-10
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	17-NOV-63
Welldeptha:	4488	Redrillfoo:	0
Abandonedd:	25-APR-92	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	PDG
Site id:	CAOG11000232398		

G37
ENE **OIL_GAS** **CAOG11000232399**
1/2 - 1 Mile

Districtnu:	6	Apinumber:	01300052
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Maggiora-Capital Co.	Wellnumber:	13-10
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	17-NOV-63
Welldeptha:	4488	Redrillfoo:	0
Abandonedd:	25-APR-92	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	PDG
Site id:	CAOG11000232399		

F38
ESE **OIL_GAS** **CAOG11000232415**
1/2 - 1 Mile

Districtnu:	6	Apinumber:	01300069
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P

Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Ward	Wellnumber:	31-10
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	06-JAN-63
Welldeptha:	5108	Redrillfoo:	0
Abandonedd:	12-AUG-85	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232415		

39
NNE **OIL_GAS** **CAOG11000232061**
1/2 - 1 Mile

Districtnu:	6	Apinumber:	01320340
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	EOG Resources, Inc.	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	164	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 025
Leasename:	Sunset-Graham	Wellnumber:	1-10D
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	18-MAR-97
Welldeptha:	4428	Redrillfoo:	0
Abandonedd:	20-NOV-98	Completion:	18-APR-97
Directiona:	Directionally drilled	Gissymbol:	PDG
Site id:	CAOG11000232061		

40
West **OIL_GAS** **CAOG11000232421**
1/2 - 1 Mile

Districtnu:	6	Apinumber:	01300073
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	West
Section:	9	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Williamson	Wellnumber:	3-9
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	28-JUN-63
Welldeptha:	4914	Redrillfoo:	0
Abandonedd:	02-DEC-93	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232421		

Map ID
Direction
Distance

Database EDR ID Number

G41
ENE
1/2 - 1 Mile

OIL_GAS **CAOG11000232397**

Districtnu:	6	Apinumber:	01300051
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Maggiora-Capital Co.	Wellnumber:	11-10
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	29-AUG-63
Welldeptha:	4952	Redrillfoo:	0
Abandonedd:	09-JUL-81	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232397		

H42
SE
1/2 - 1 Mile

OIL_GAS **CAOG11000232423**

Districtnu:	6	Apinumber:	01300075
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	The Termo Company	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	15	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 06/11/1997, Status Code 016
Leasename:	Ginochio	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	10-JUL-62
Welldeptha:	4197	Redrillfoo:	0
Abandonedd:	14-FEB-99	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232423		

43
NE
1/2 - 1 Mile

OIL_GAS **CAOG11000232400**

Districtnu:	6	Apinumber:	01300053
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Maggiora-Capital Co.	Wellnumber:	33X-10

Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	07-MAY-66
Welldeptha:	4000	Redrillfoo:	0
Abandonedd:	21-APR-92	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232400		

44
ENE **OIL_GAS** **CAOG11000232420**
1/2 - 1 Mile

Districtnu:	6	Apinumber:	01300072
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Ward	Wellnumber:	35-10
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	02-MAR-64
Welldeptha:	4200	Redrillfoo:	0
Abandonedd:	13-MAY-92	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232420		

I45
ESE **OIL_GAS** **CAOG11000232694**
1/2 - 1 Mile

Districtnu:	6	Apinumber:	01320105
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	The Termo Company	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	15	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 06/11/1997, Status Code 016
Leasename:	Ginochio	Wellnumber:	16
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	22-JAN-76
Welldeptha:	8685	Redrillfoo:	0
Abandonedd:	15-FEB-99	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232694		

I46
ESE **OIL_GAS** **CAOG11000232695**
1/2 - 1 Mile

Districtnu:	6	Apinumber:	01320105
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P

Operatorna:	The Termo Company	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	15	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 06/11/1997, Status Code 016
Leasename:	Ginochio	Wellnumber:	16
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	22-JAN-76
Welldeptha:	8685	Redrillfoo:	0
Abandonedd:	15-FEB-99	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232695		

47
NW
1/2 - 1 Mile

OIL_GAS **CAOG11000232413**

Districtnu:	6	Apinumber:	01300067
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	Y	Wellstatus:	P
Operatorna:	Shell Western Exploration & Production Inc.		
Countyname:	Contra Costa	Fieldname:	Brentwood (ABD)
Areaname:	Any Area	Section:	9
Township:	01N	Range:	02E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Not Reported	Gissourcec:	hud
Comments:	Status Code 006	Leasename:	Williamson
Wellnumber:	1-9	Epawell:	N
Hydraulica:	N	Confidenti:	N
Spuddate:	01-OCT-62	Welldeptha:	5000
Redrillfoo:	0	Abandonedd:	27-JUL-64
Completion:	Not Reported	Directiona:	Unknown
Gissymbol:	PDH	Site id:	CAOG11000232413

H48
SE
1/2 - 1 Mile

OIL_GAS **CAOG11000232675**

Districtnu:	6	Apinumber:	01320085
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	The Termo Company	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	15	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 02/18/1999, Status Code 016
Leasename:	Ginochio	Wellnumber:	15
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	01-JUN-72
Welldeptha:	4350	Redrillfoo:	0
Abandonedd:	27-FEB-99	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232675		

Map ID
Direction
Distance

Database EDR ID Number

49
SE
1/2 - 1 Mile

OIL_GAS **CAOG11000232435**

Districtnu:	6	Apinumber:	01300084
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	The Termo Company	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	15	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Ginochio	Wellnumber:	11
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	11-OCT-65
Welldeptha:	4350	Redrillfoo:	0
Abandonedd:	29-MAY-96	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232435		

J50
ESE
1/2 - 1 Mile

OIL_GAS **CAOG11000232085**

Districtnu:	6	Apinumber:	01300014
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	The Termo Company	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	15	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 06/11/1997, Status Code 009
Leasename:	Ginochio	Wellnumber:	12
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	15-NOV-66
Welldeptha:	4465	Redrillfoo:	0
Abandonedd:	17-FEB-99	Completion:	Not Reported
Directiona:	Directionally drilled	Gissymbol:	POG
Site id:	CAOG11000232085		

J51
ESE
1/2 - 1 Mile

OIL_GAS **CAOG11000232430**

Districtnu:	6	Apinumber:	01300079
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	The Termo Company	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	15	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 06/11/1997, Status Code 016
Leasename:	Ginochio	Wellnumber:	6

Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	04-AUG-63
Welldeptha:	4316	Redrillfoo:	0
Abandonedd:	18-FEB-99	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232430		

52
ENE **OIL_GAS** **CAOG11000232401**
1/2 - 1 Mile

Districtnu:	6	Apinumber:	01300054
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	Y	Wellstatus:	P
Operatorna:	Shell Western Exploration & Production Inc.		
Countyname:	Contra Costa	Fieldname:	Brentwood (ABD)
Areaname:	Any Area	Section:	10
Township:	01N	Range:	02E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Not Reported	Gissourcec:	hud
Comments:	Status Code 006	Leasename:	Maggiora-Capital Co.
Wellnumber:	43X-10	Epawell:	N
Hydraulica:	N	Confidenti:	N
Spuddate:	14-DEC-65	Welldeptha:	4146
Redrillfoo:	0	Abandonedd:	31-DEC-65
Completion:	Not Reported	Directiona:	Unknown
Gissymbol:	PDH	Site id:	CAOG11000232401

53
North **OIL_GAS** **CAOG11000232394**
1/2 - 1 Mile

Districtnu:	6	Apinumber:	01300048
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Shell Western Exploration & Production Inc.		
Countyname:	Contra Costa	Fieldname:	Brentwood (ABD)
Areaname:	Any Area	Section:	4
Township:	01N	Range:	02E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Not Reported	Gissourcec:	gps
Comments:	GPS Date 04/02/2002, Status Code 024		
Leasename:	Heidorn	Wellnumber:	4-4
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	30-MAY-62
Welldeptha:	5200	Redrillfoo:	0
Abandonedd:	06-JUL-71	Completion:	Not Reported
Directiona:	Not Directionally drilled	Gissymbol:	PDG
Site id:	CAOG11000232394		

54
NE **OIL_GAS** **CAOG11000232375**
1/2 - 1 Mile

Districtnu:	6	Apinumber:	01300030
Blmwell:	N	Redrillcan:	Not Reported

Dryhole:	N	Wellstatus:	P
Operatorna:	Production Specialties Company	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Any Area
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 04/02/2002, Status Code 024
Leasename:	Continente	Wellnumber:	1-10
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	01-NOV-62
Welldeptha:	4127	Redrillfoo:	0
Abandonedd:	04-JUN-03	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	PDG
Site id:	CAOG11000232375		

K55
ESE
1/2 - 1 Mile

OIL_GAS **CAOG11000232422**

Districtnu:	6	Apinumber:	01300074
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	John Pestana Family Trust	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Davis-Venturini	Wellnumber:	2
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	17-DEC-65
Welldeptha:	4450	Redrillfoo:	0
Abandonedd:	28-APR-94	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232422		

L56
East
1/2 - 1 Mile

OIL_GAS **CAOG11000232714**

Districtnu:	6	Apinumber:	01320124
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Maria L. Andrade	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 05/21/2007, Status Code 014
Leasename:	Andrade	Wellnumber:	5
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	01-APR-78
Welldeptha:	3900	Redrillfoo:	0
Abandonedd:	Not Reported	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232714		

Map ID
Direction
Distance

Database EDR ID Number

57
SE
1/2 - 1 Mile

OIL_GAS **CAOG11000232590**

Districtnu:	6	Apinumber:	01320019
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	The Termo Company	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	15	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 06/11/1997, Status Code 016
Leasename:	Ginochio	Wellnumber:	13
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	15-MAR-68
Welldeptha:	4429	Redrillfoo:	0
Abandonedd:	26-FEB-99	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232590		

L58
East
1/2 - 1 Mile

OIL_GAS **CAOG11000232364**

Districtnu:	6	Apinumber:	01320013
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Sinco Oil Corp.	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 05/21/2007, Status Code 014
Leasename:	Andrade	Wellnumber:	2
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	10-OCT-67
Welldeptha:	4053	Redrillfoo:	0
Abandonedd:	01-AUG-78	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232364		

K59
ESE
1/2 - 1 Mile

OIL_GAS **CAOG11000232080**

Districtnu:	6	Apinumber:	01300009
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	John Pestana Family Trust	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Davis-Venturini	Wellnumber:	1

Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	20-FEB-63
Welldeptha:	3862	Redrillfoo:	0
Abandonedd:	28-APR-94	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232080		

L60
East
1/2 - 1 Mile

OIL_GAS **CAOG11000232371**

Districtnu:	6	Apinumber:	01300026
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Sunset Exploration Inc.	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 05/21/2007, Status Code 014
Leasename:	Arata	Wellnumber:	42-10
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	28-MAR-63
Welldeptha:	4872	Redrillfoo:	0
Abandonedd:	26-JUN-01	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232371		

61
West
1/2 - 1 Mile

OIL_GAS **CAOG11000232408**

Districtnu:	6	Apinumber:	01300061
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Occidental Petroleum Corporation	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	West
Section:	8	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Sullenger	Wellnumber:	4-8
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	05-OCT-63
Welldeptha:	5000	Redrillfoo:	0
Abandonedd:	06-DEC-93	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232408		

62
East
1/2 - 1 Mile

OIL_GAS **CAOG11000232086**

Districtnu:	6	Apinumber:	01300015
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P

Operatorna:	Sunset Exploration Inc.	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 05/05/2000, Status Code 008
Leasename:	Ridell	Wellnumber:	43-10
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	20-FEB-63
Welldeptha:	4485	Redrillfoo:	0
Abandonedd:	01-OCT-99	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232086		

M64
ESE
1/2 - 1 Mile

OIL_GAS **CAOG11000232425**

Districtnu:	6	Apinumber:	01300076
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	The Termo Company	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	15	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 06/11/1997, Status Code 016
Leasename:	Ginochio	Wellnumber:	3
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	26-JAN-63
Welldeptha:	4476	Redrillfoo:	0
Abandonedd:	18-FEB-99	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	PDG
Site id:	CAOG11000232425		

M63
ESE
1/2 - 1 Mile

OIL_GAS **CAOG11000232424**

Districtnu:	6	Apinumber:	01300076
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	The Termo Company	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	15	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 06/11/1997, Status Code 016
Leasename:	Ginochio	Wellnumber:	3
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	26-JAN-63
Welldeptha:	4476	Redrillfoo:	0
Abandonedd:	18-FEB-99	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	PDG
Site id:	CAOG11000232424		

Map ID
Direction
Distance

Database EDR ID Number

65
ENE
1/2 - 1 Mile

OIL_GAS **CAOG11000232372**

Districtnu:	6	Apinumber:	01300027
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Sunset Exploration Inc.	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 05/23/2007, Status Code 014
Leasename:	Arata	Wellnumber:	44-10
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	23-OCT-63
Welldeptha:	4500	Redrillfoo:	0
Abandonedd:	11-JUL-03	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232372		

66
West
1/2 - 1 Mile

OIL_GAS **CAOG11000232642**

Districtnu:	6	Apinumber:	01320051
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Venturini Associates Inc.	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	West
Section:	8	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Sullenger	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	16-JUN-69
Welldeptha:	4161	Redrillfoo:	0
Abandonedd:	06-JUN-95	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232642		

N67
ENE
1/2 - 1 Mile

OIL_GAS **CAOG11000232359**

Districtnu:	6	Apinumber:	01320008
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Allied Energy Corp.	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	139	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 06/11/1997, Status Code 014
Leasename:	Transamerica-Maggiora	Wellnumber:	1

Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	31-JUL-67
Welldeptha:	4196	Redrillfoo:	0
Abandonedd:	13-MAR-03	Completion:	09-AUG-67
Directiona:	Not Directionally drilled	Gissymbol:	POG
Site id:	CAOG11000232359		

N68
ENE **OIL_GAS** **CAOG11000232591**
1/2 - 1 Mile

Districtnu:	6	Apinumber:	01320020
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Allied Energy Corp.	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	139	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 06/11/1997, Status Code 014
Leasename:	Transamerica-Maggiora	Wellnumber:	2
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	20-MAR-68
Welldeptha:	3911	Redrillfoo:	0
Abandonedd:	13-MAR-03	Completion:	03-APR-68
Directiona:	Not Directionally drilled	Gissymbol:	POG
Site id:	CAOG11000232591		

69
WSW **OIL_GAS** **CAOG11000232861**
1/2 - 1 Mile

Districtnu:	6	Apinumber:	01320271
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Venturini Associates Inc.	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	West
Section:	17	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Ginochio	Wellnumber:	2
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	05-JUL-87
Welldeptha:	4300	Redrillfoo:	0
Abandonedd:	22-APR-93	Completion:	15-AUG-87
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232861		

70
WSW **OIL_GAS** **CAOG11000232600**
1/2 - 1 Mile

Districtnu:	6	Apinumber:	01320364
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	Y	Wellstatus:	P

Operatorna:	Sunset Exploration Inc.	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	17	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	448	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 11/18/2005, Status Code 007
Leasename:	Ginochio	Wellnumber:	3
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	26-OCT-05
Welldeptha:	4553	Redrillfoo:	0
Abandonedd:	02-NOV-05	Completion:	Not Reported
Directiona:	Directionally drilled	Gissymbol:	PDH
Site id:	CAOG11000232600		

M71
ESE
1/2 - 1 Mile

OIL_GAS **CAOG11000232433**

Districtnu:	6	Apinumber:	01300082
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	The Termo Company	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	15	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 06/11/1997, Status Code 016
Leasename:	Ginochio	Wellnumber:	9
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	17-NOV-64
Welldeptha:	4394	Redrillfoo:	0
Abandonedd:	20-FEB-99	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232433		

72
ESE
1/2 - 1 Mile

OIL_GAS **CAOG11000232429**

Districtnu:	6	Apinumber:	01300078
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	The Termo Company	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	15	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 02/18/1999, Status Code 016
Leasename:	Ginochio	Wellnumber:	5
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	22-JUL-63
Welldeptha:	4350	Redrillfoo:	0
Abandonedd:	16-FEB-99	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232429		

Map ID
Direction
Distance

Database EDR ID Number

73
East
1/2 - 1 Mile

OIL_GAS **CAOG11000232407**

Districtnu:	6	Apinumber:	01300060
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Shell Western Exploration & Production Inc.		
Countyname:	Contra Costa	Fieldname:	Brentwood (ABD)
Areaname:	Main	Section:	10
Township:	01N	Range:	02E
Basemeridi:	MD	Elevation:	Not Reported
Locationde:	Not Reported	Gissourcec:	hud
Comments:	Status Code 014	Leasename:	Ridell
Wellnumber:	4-10	Epawell:	N
Hydraulica:	N	Confidenti:	N
Spuddate:	19-DEC-62	Welldeptha:	4750
Redrillfoo:	0	Abandonedd:	16-AUG-85
Completion:	Not Reported	Directiona:	Unknown
Gissymbol:	POG	Site id:	CAOG11000232407

O74
ENE
1/2 - 1 Mile

OIL_GAS **CAOG11000232350**

Districtnu:	6	Apinumber:	01300601
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Unknown Operator	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Any Area
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 05/21/2007, Status Code 076
Leasename:	Unknown Conductor	Wellnumber:	2007-1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	17-MAY-07
Welldeptha:	40	Redrillfoo:	0
Abandonedd:	17-MAY-07	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232350		

O75
East
1/2 - 1 Mile

OIL_GAS **CAOG11000232636**

Districtnu:	6	Apinumber:	01320045
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Maria L. Andrade	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 05/21/2007, Status Code 014
Leasename:	Andrade	Wellnumber:	4

Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	26-MAR-69
Welldeptha:	4786	Redrillfoo:	0
Abandonedd:	23-JAN-88	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232636		

O76
ENE **OIL_GAS** **CAOG11000232363**
1/2 - 1 Mile

Districtnu:	6	Apinumber:	01320012
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Maria L. Andrade	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 05/21/2007, Status Code 014
Leasename:	Andrade	Wellnumber:	1
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	07-DEC-67
Welldeptha:	3953	Redrillfoo:	0
Abandonedd:	14-APR-87	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232363		

O77
ENE **OIL_GAS** **CAOG11000232623**
1/2 - 1 Mile

Districtnu:	6	Apinumber:	01320032
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Maria L. Andrade	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	10	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	gps	Comments:	GPS Date 05/21/2007, Status Code 014
Leasename:	Andrade	Wellnumber:	3
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	11-JUL-68
Welldeptha:	3911	Redrillfoo:	0
Abandonedd:	25-JAN-04	Completion:	Not Reported
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232623		

78
NW **OIL_GAS** **CAOG11000232810**
1/2 - 1 Mile

Districtnu:	6	Apinumber:	01320226
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P

Operatorna:	Venturini Associates Inc.	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	Main
Section:	9	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 015
Leasename:	Williamson	Wellnumber:	2
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	07-MAR-84
Welldeptha:	4329	Redrillfoo:	0
Abandonedd:	20-NOV-95	Completion:	26-MAR-84
Directiona:	Directionally drilled	Gissymbol:	POG
Site id:	CAOG11000232810		

P79
NW
1/2 - 1 Mile

OIL_GAS **CAOG11000232858**

Districtnu:	6	Apinumber:	01320269
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Venturini Associates Inc.	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	West
Section:	8	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Capital-Enea	Wellnumber:	3
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	11-APR-87
Welldeptha:	4710	Redrillfoo:	0
Abandonedd:	02-NOV-93	Completion:	03-JUN-87
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232858		

P80
NW
1/2 - 1 Mile

OIL_GAS **CAOG11000232859**

Districtnu:	6	Apinumber:	01320269
Blmwell:	N	Redrillcan:	Not Reported
Dryhole:	N	Wellstatus:	P
Operatorna:	Venturini Associates Inc.	Countyname:	Contra Costa
Fieldname:	Brentwood (ABD)	Areaname:	West
Section:	8	Township:	01N
Range:	02E	Basemeridi:	MD
Elevation:	Not Reported	Locationde:	Not Reported
Gissourcec:	hud	Comments:	Status Code 014
Leasename:	Capital-Enea	Wellnumber:	3
Epawell:	N	Hydraulica:	N
Confidenti:	N	Spuddate:	11-APR-87
Welldeptha:	4710	Redrillfoo:	0
Abandonedd:	02-NOV-93	Completion:	03-JUN-87
Directiona:	Unknown	Gissymbol:	POG
Site id:	CAOG11000232859		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
94531	2	0

Federal EPA Radon Zone for CONTRA COSTA County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for CONTRA COSTA COUNTY, CA

Number of sites tested: 55

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.760 pCi/L	100%	0%	0%
Living Area - 2nd Floor	0.300 pCi/L	100%	0%	0%
Basement	0.525 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

California Earthquake Fault Lines
Source: California Division of Mines and Geology
The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

RADON

State Database: CA Radon
Source: Department of Public Health
Telephone: 916-210-8558
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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APPENDIX B

ENVIRONMENTAL DATA RESOURCES, INC.

Sanborn Map Report

Creekside

3052 Heidorn Ranch Rd

Antioch, CA 94531

Inquiry Number: 5569243.3

February 21, 2019

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

02/21/19

Site Name:	Client Name:
Creekside	Engeo Inc.
3052 Heidorn Ranch Rd	2010 Crow Canyon Place
Antioch, CA 94531	San Ramon, CA 94583
EDR Inquiry # 5569243.3	Contact: Victoria Drake

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Engeo Inc. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # C431-4FDE-B1B9

PO # NA

Project 4894.002.001

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: C431-4FDE-B1B9

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✔ Library of Congress
- ✔ University Publications of America
- ✔ EDR Private Collection

The Sanborn Library LLC Since 1866™

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APPENDIX C

ENVIRONMENTAL DATA RESOURCES, INC.

Historical Topographic Map Report

Creekside

3052 Heidorn Ranch Rd

Antioch, CA 94531

Inquiry Number: 5569243.4

February 21, 2019

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

02/21/19

Site Name:	Client Name:
Creekside	Engeo Inc.
3052 Heidorn Ranch Rd	2010 Crow Canyon Place
Antioch, CA 94531	San Ramon, CA 94583
EDR Inquiry # 5569243.4	Contact: Victoria Drake

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Engeo Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# NA

Project: 4894.002.001

Coordinates:

Latitude:	37.943499 37° 56' 37" North
Longitude:	-121.75506 -121° 45' 18" West
UTM Zone:	Zone 10 North
UTM X Meters:	609388.33
UTM Y Meters:	4200276.95
Elevation:	169.65' above sea level

Maps Provided:

2012	1912, 1916
1978, 1980	1898
1973	1896
1968	
1953, 1954	
1943	
1940	
1914, 1916	

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

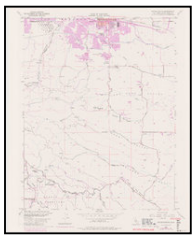
2012 Source Sheets

Antioch South
2012
7.5-minute, 24000

Brentwood
2012
7.5-minute, 24000

1978, 1980 Source Sheets

Brentwood
1978
7.5-minute, 24000
Aerial Photo Revised 1974



Antioch South
1980
7.5-minute, 24000
Aerial Photo Revised 1978

1973 Source Sheets

Antioch South
1973
7.5-minute, 24000
Aerial Photo Revised 1973

1968 Source Sheets

Antioch South
1968
7.5-minute, 24000
Aerial Photo Revised 1968

Brentwood
1968
7.5-minute, 24000
Aerial Photo Revised 1968

Topo Sheet Key

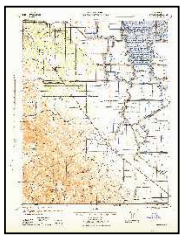
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1953, 1954 Source Sheets

Antioch South
1953
7.5-minute, 24000
Aerial Photo Revised 1949

Brentwood
1954
7.5-minute, 24000
Aerial Photo Revised 1949

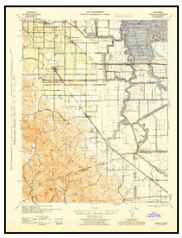
1943 Source Sheets



BYRON
1943
15-minute, 62500

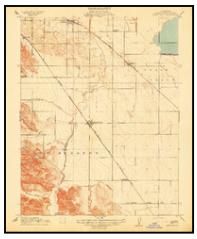
Mt. Diablo
1943
15-minute, 62500
Aerial Photo Revised 1937

1940 Source Sheets



Byron
1940
15-minute, 62500
Aerial Photo Revised 1940

1914, 1916 Source Sheets

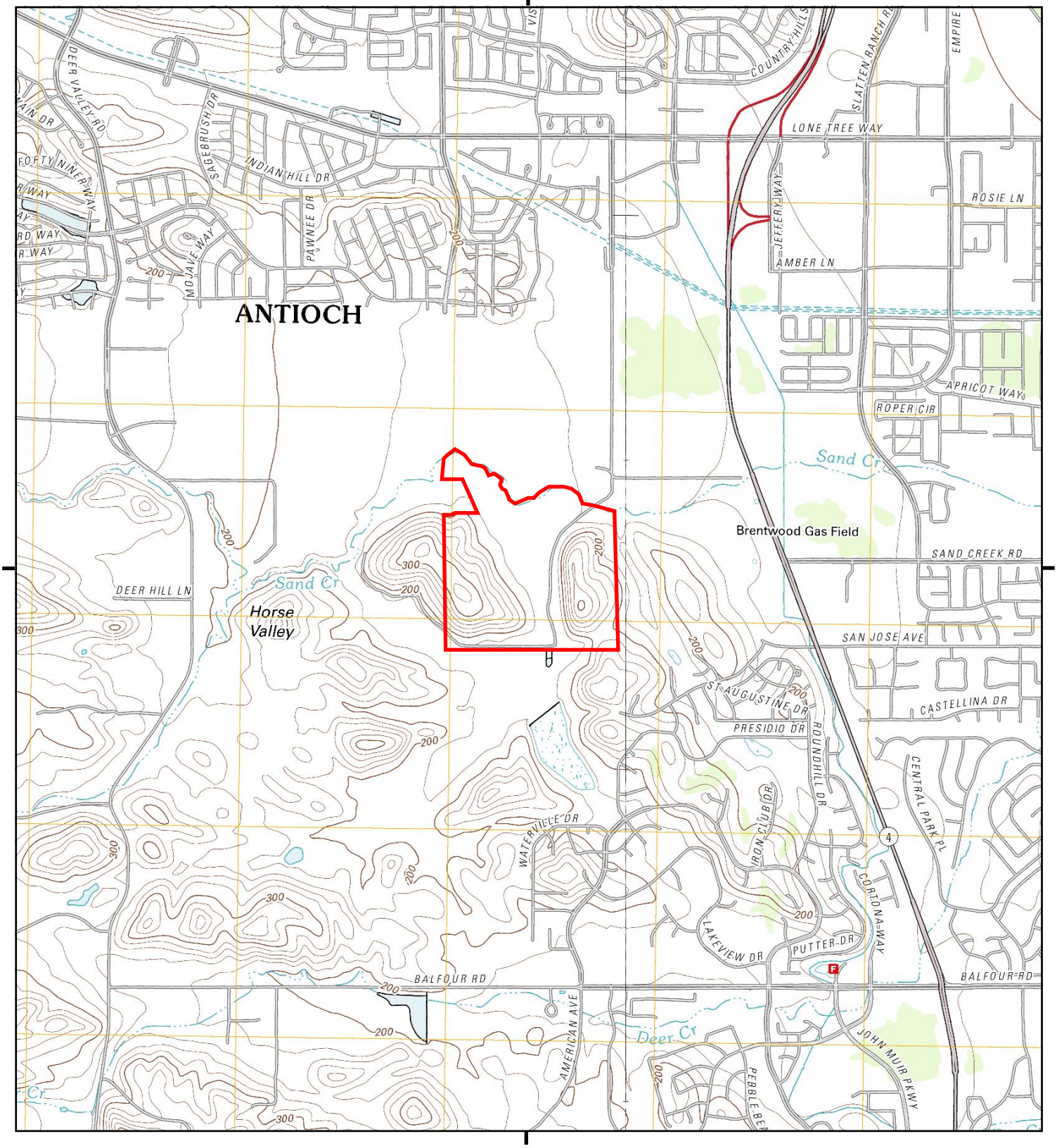


Brentwood
1914
7.5-minute, 31680

Lone Tree Valley
1916
7.5-minute, 31680

Historical Topo Map

2012



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

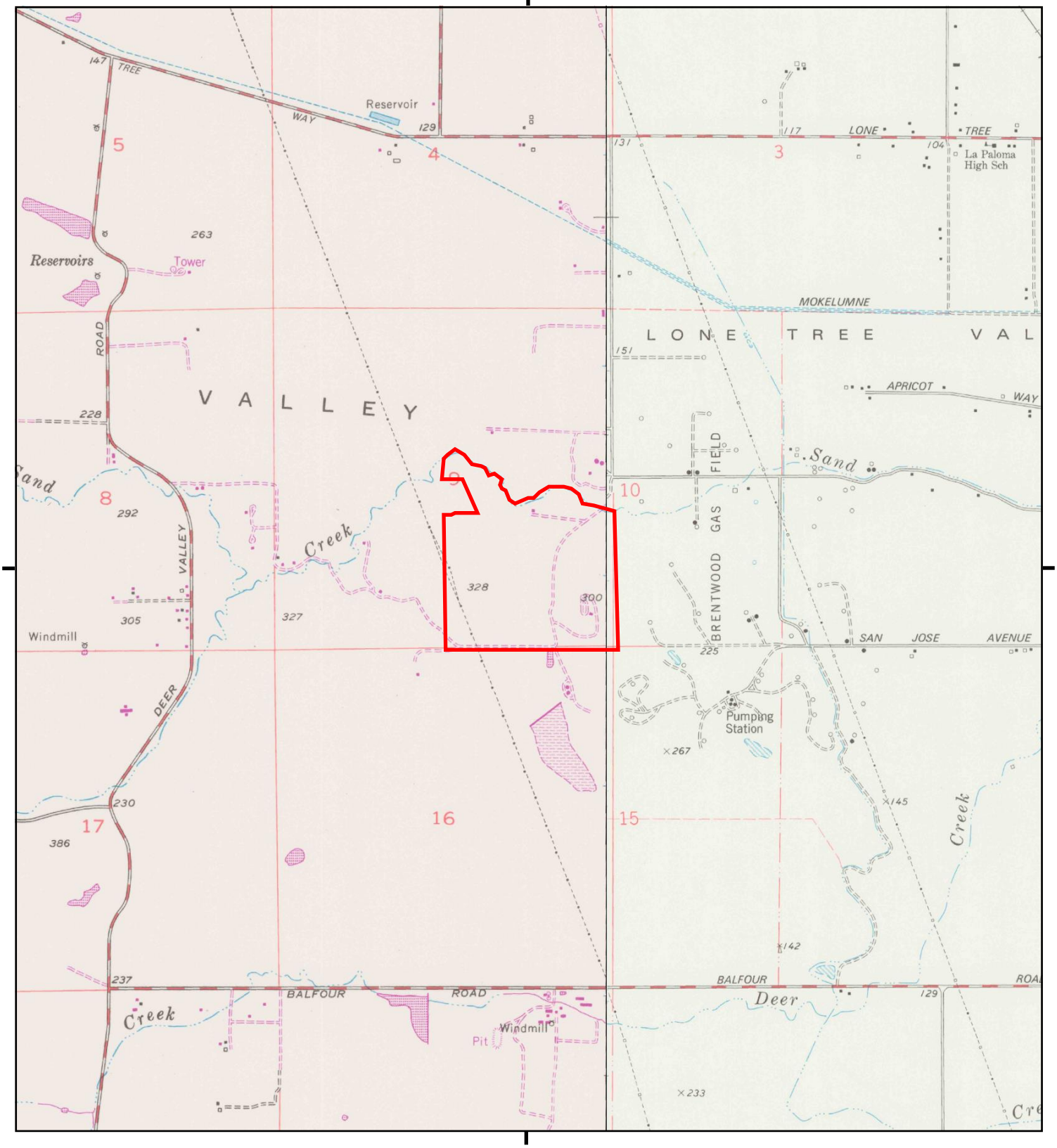
TP, Antioch South, 2012, 7.5-minute
E, Brentwood, 2012, 7.5-minute

SITE NAME: Creekside
ADDRESS: 3052 Heidorn Ranch Rd
Antioch, CA 94531
CLIENT: Engeo Inc.

N

Historical Topo Map

1978, 1980



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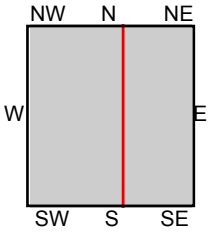


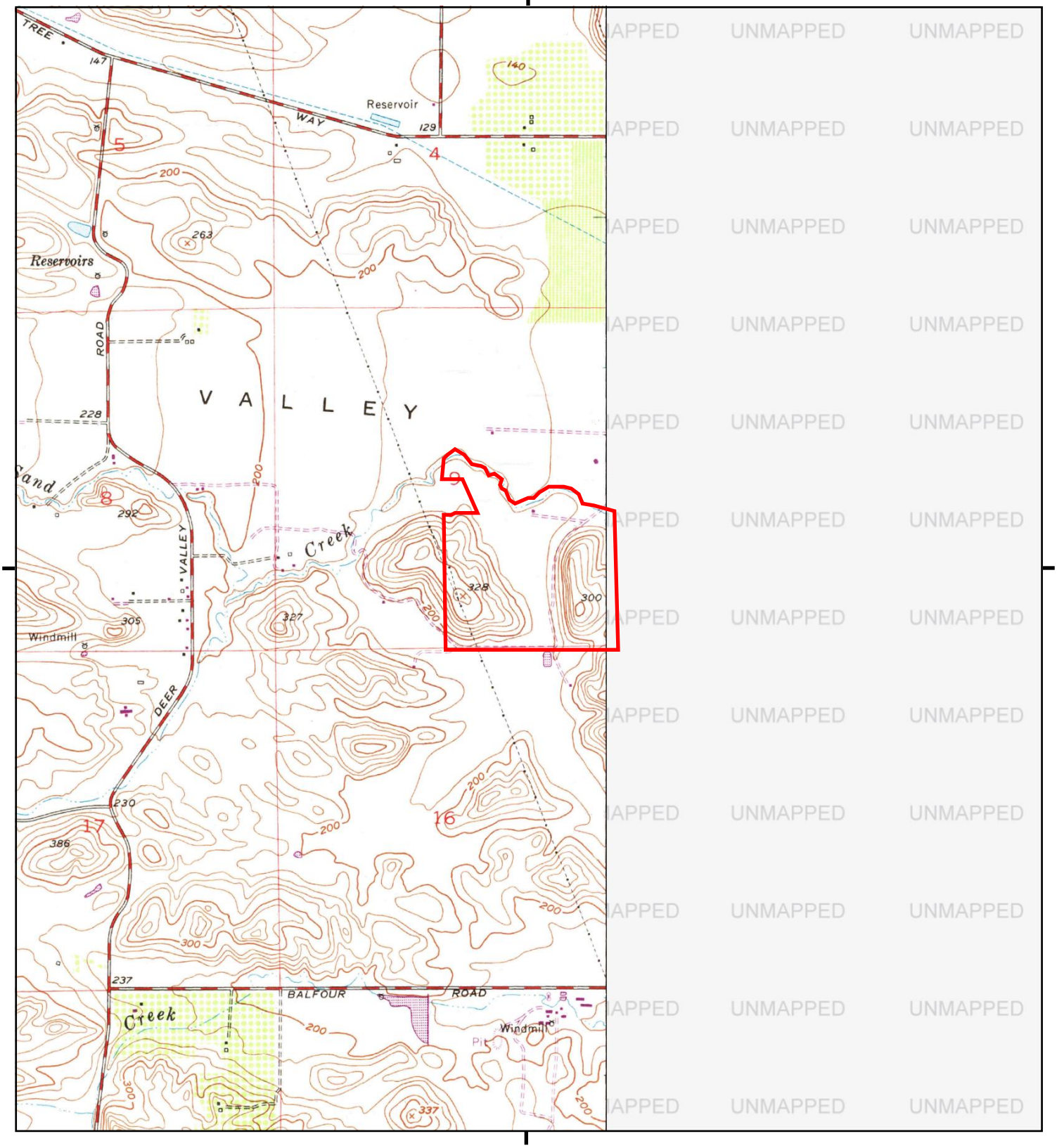
TP, Antioch South, 1980, 7.5-minute
E, Brentwood, 1978, 7.5-minute

SITE NAME: Creekside
ADDRESS: 3052 Heidorn Ranch Rd
Antioch, CA 94531
CLIENT: Engeo Inc.

N

Historical Topo Map

1973



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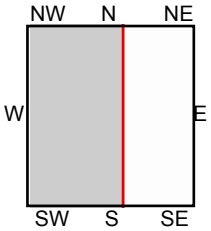


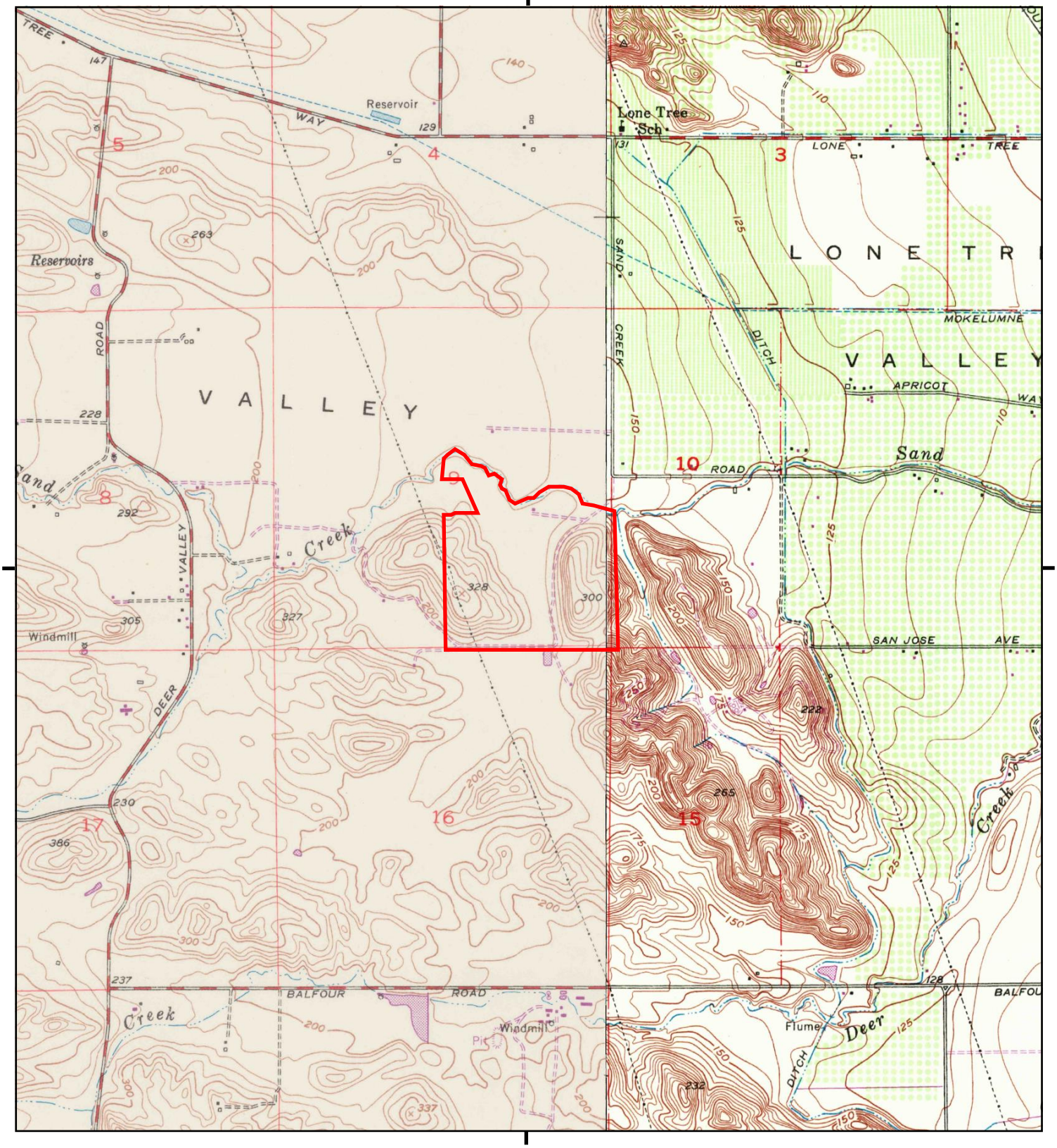
TP, Antioch South, 1973, 7.5-minute

SITE NAME: Creekside
ADDRESS: 3052 Heidorn Ranch Rd
Antioch, CA 94531
CLIENT: Engeo Inc.

N

Historical Topo Map

1968



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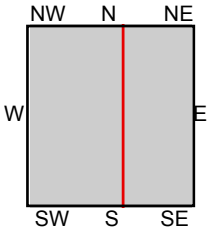


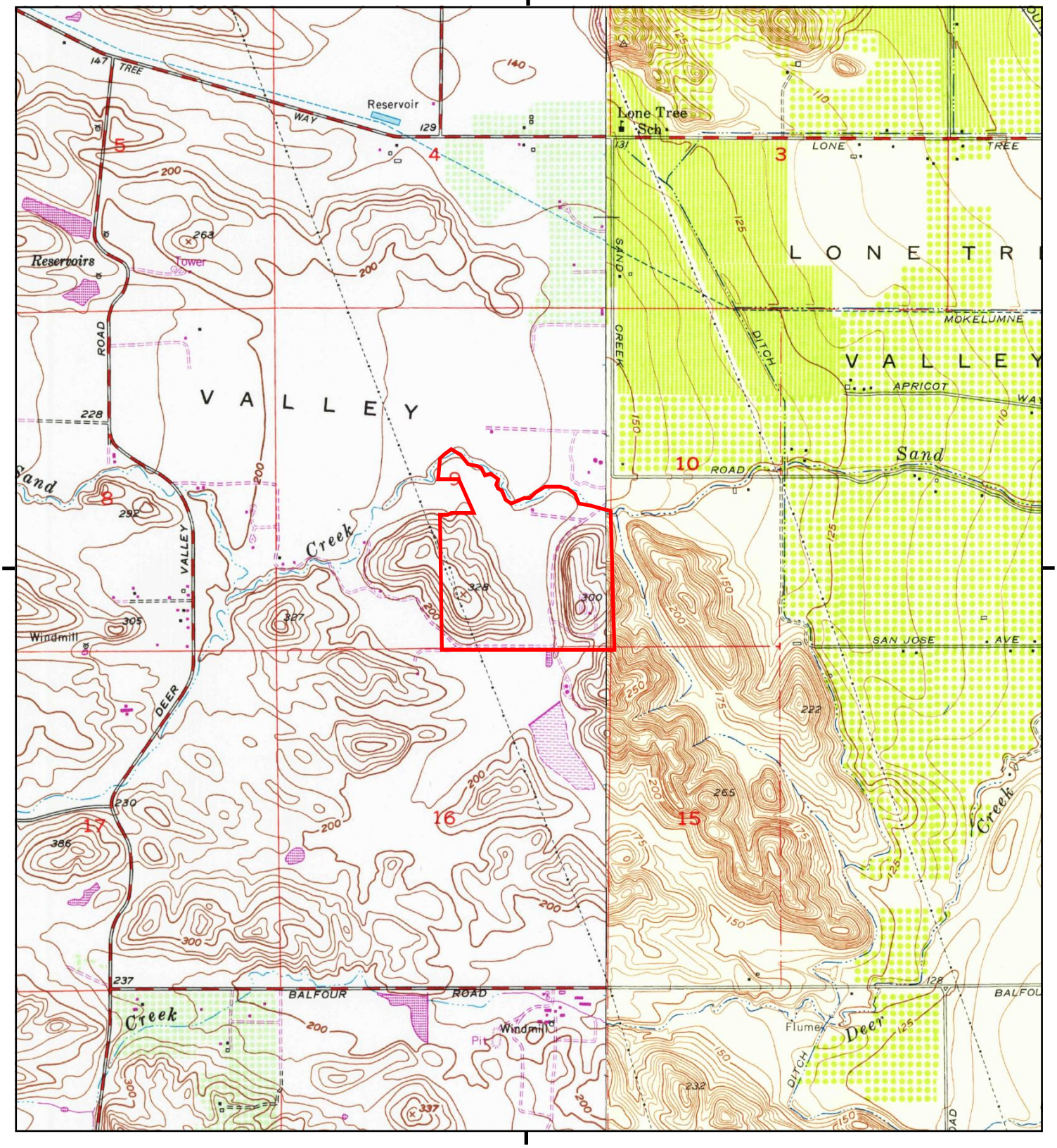
TP, Antioch South, 1968, 7.5-minute
E, Brentwood, 1968, 7.5-minute

SITE NAME: Creekside
ADDRESS: 3052 Heidorn Ranch Rd
Antioch, CA 94531
CLIENT: Engeo Inc.

N

Historical Topo Map

1953, 1954



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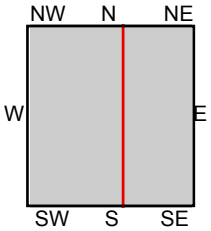


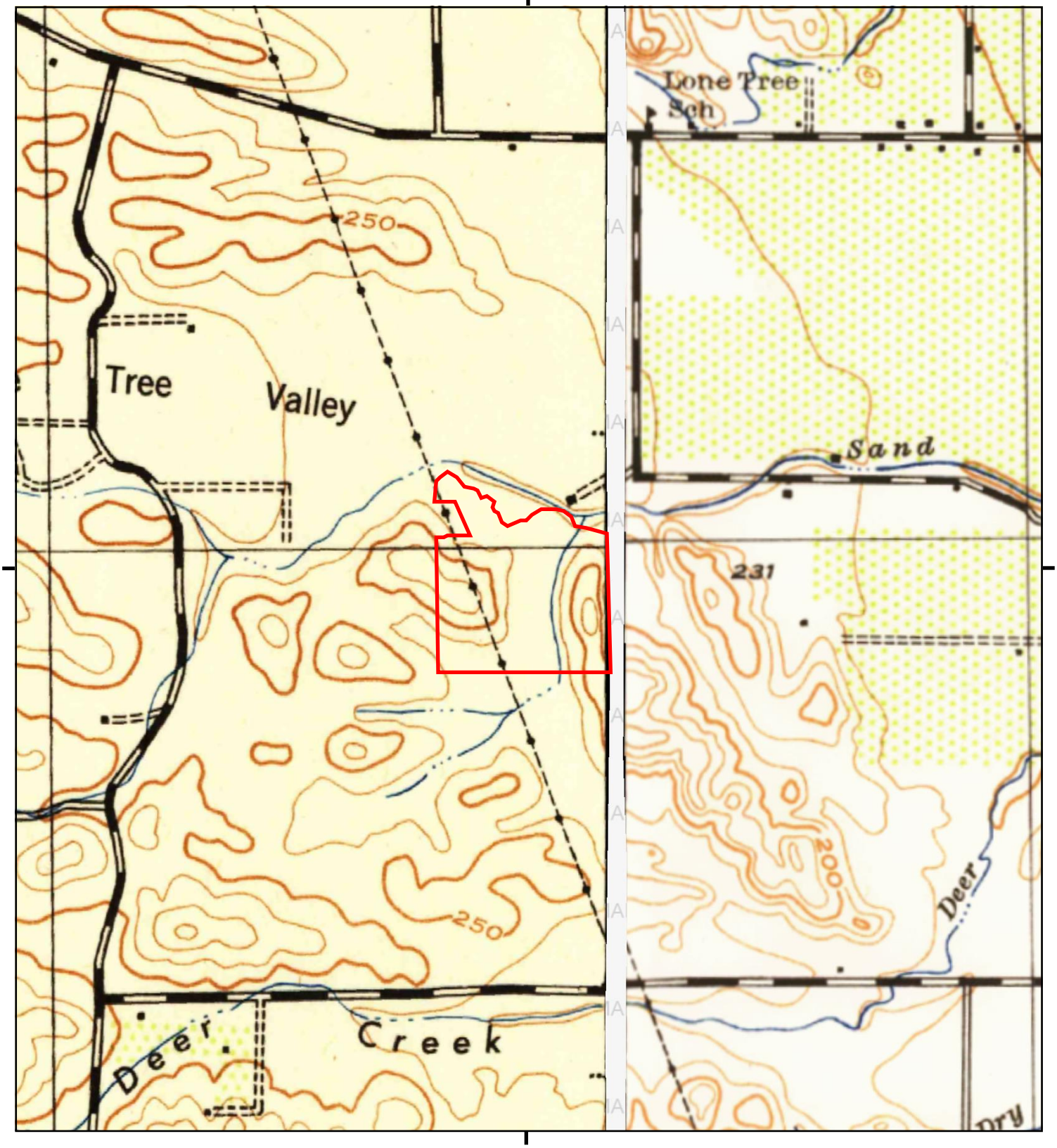
TP, Antioch South, 1953, 7.5-minute
E, Brentwood, 1954, 7.5-minute

SITE NAME: Creekside
ADDRESS: 3052 Heidorn Ranch Rd
Antioch, CA 94531
CLIENT: Engeo Inc.

N

Historical Topo Map

1943



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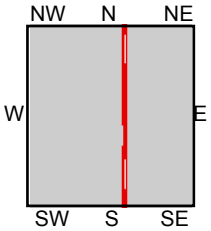


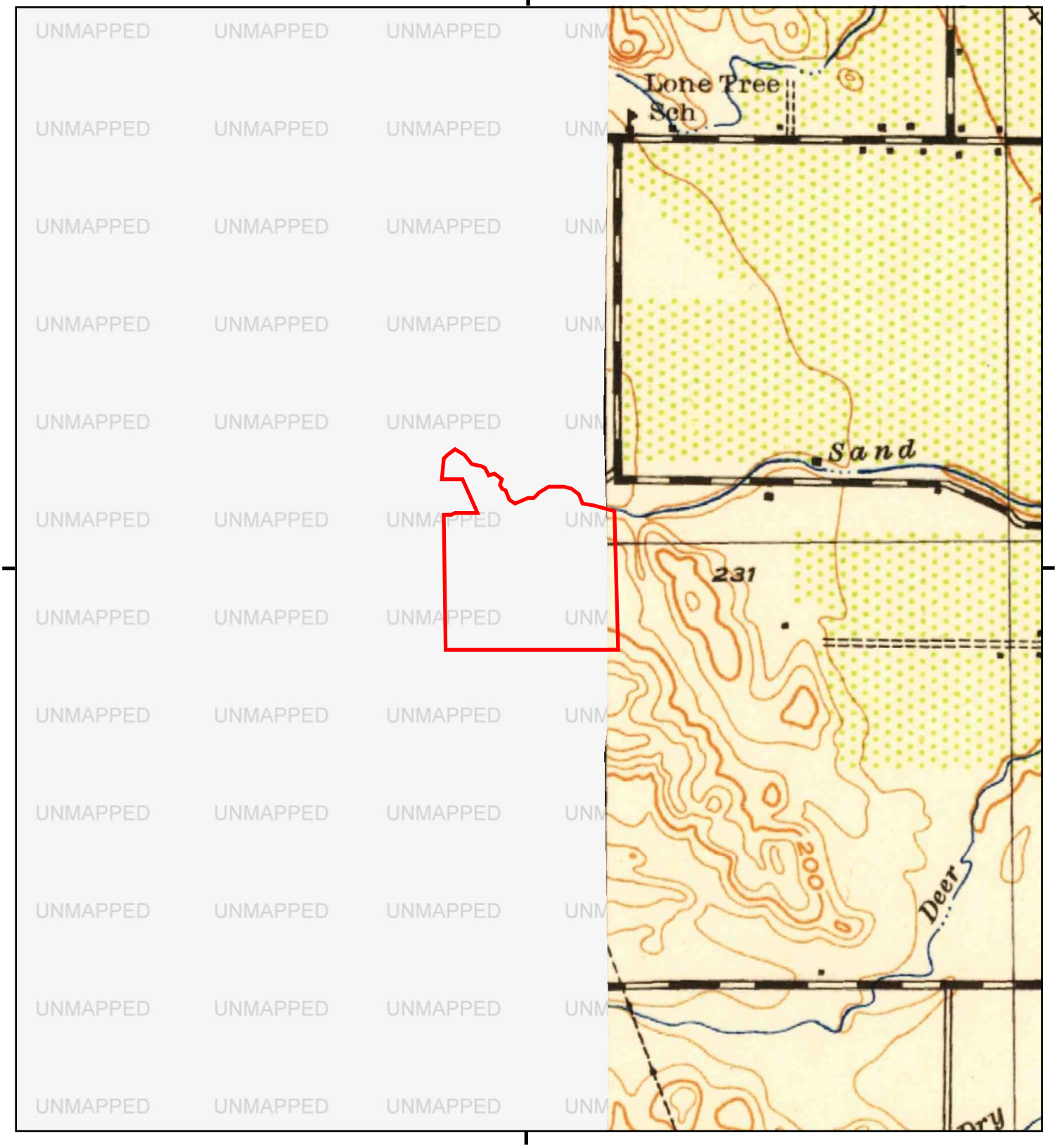
TP, Mt. Diablo, 1943, 15-minute
SE, BYRON, 1943, 15-minute

SITE NAME: Creekside
ADDRESS: 3052 Heidorn Ranch Rd
Antioch, CA 94531
CLIENT: Engeo Inc.

N

Historical Topo Map

1940



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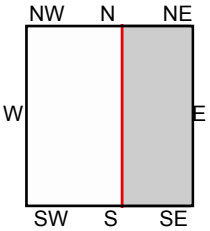


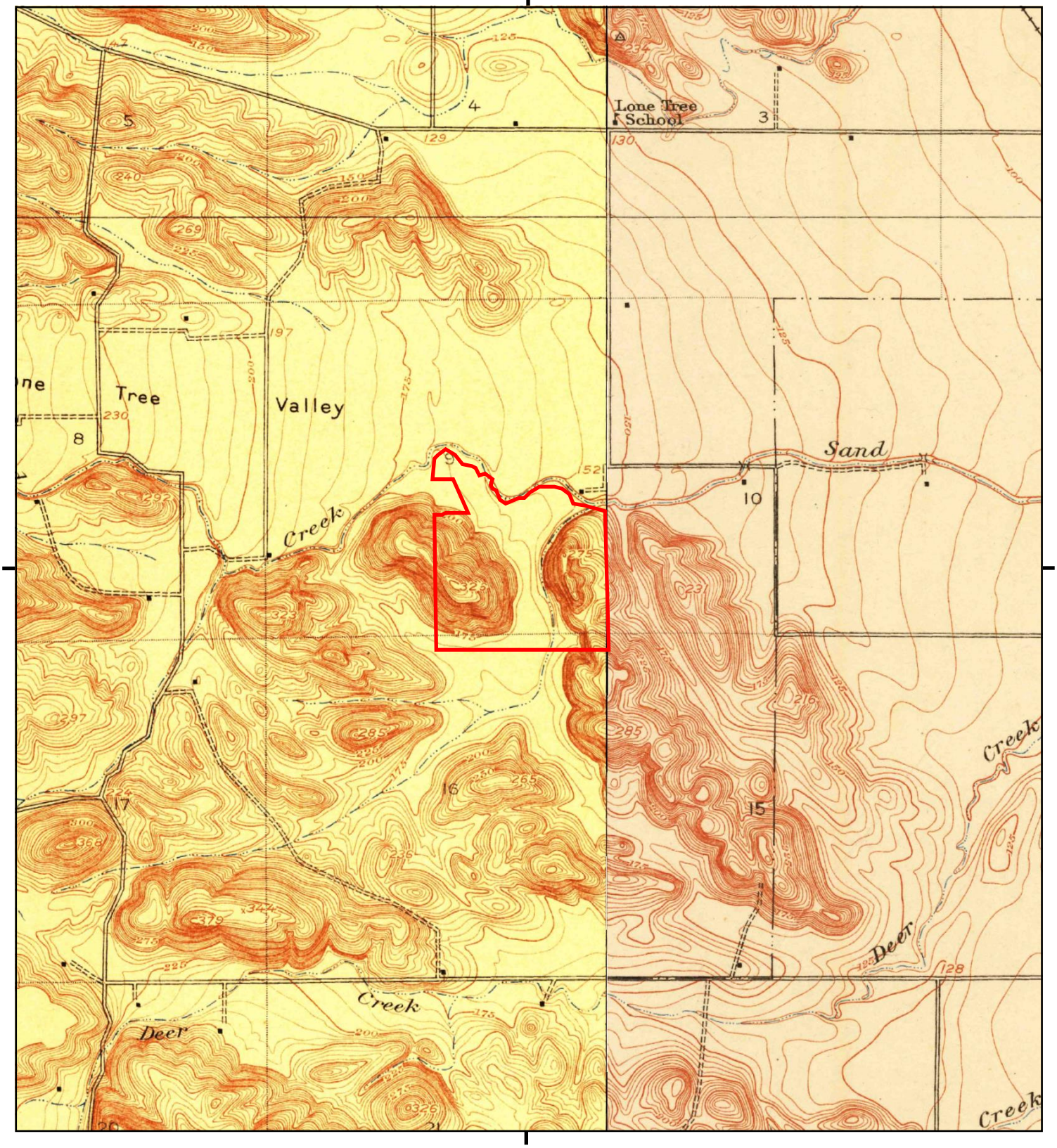
SE, Byron, 1940, 15-minute

SITE NAME: Creekside
ADDRESS: 3052 Heidorn Ranch Rd
Antioch, CA 94531
CLIENT: Engeo Inc.

N

Historical Topo Map

1914, 1916



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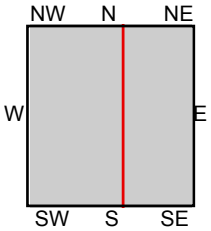


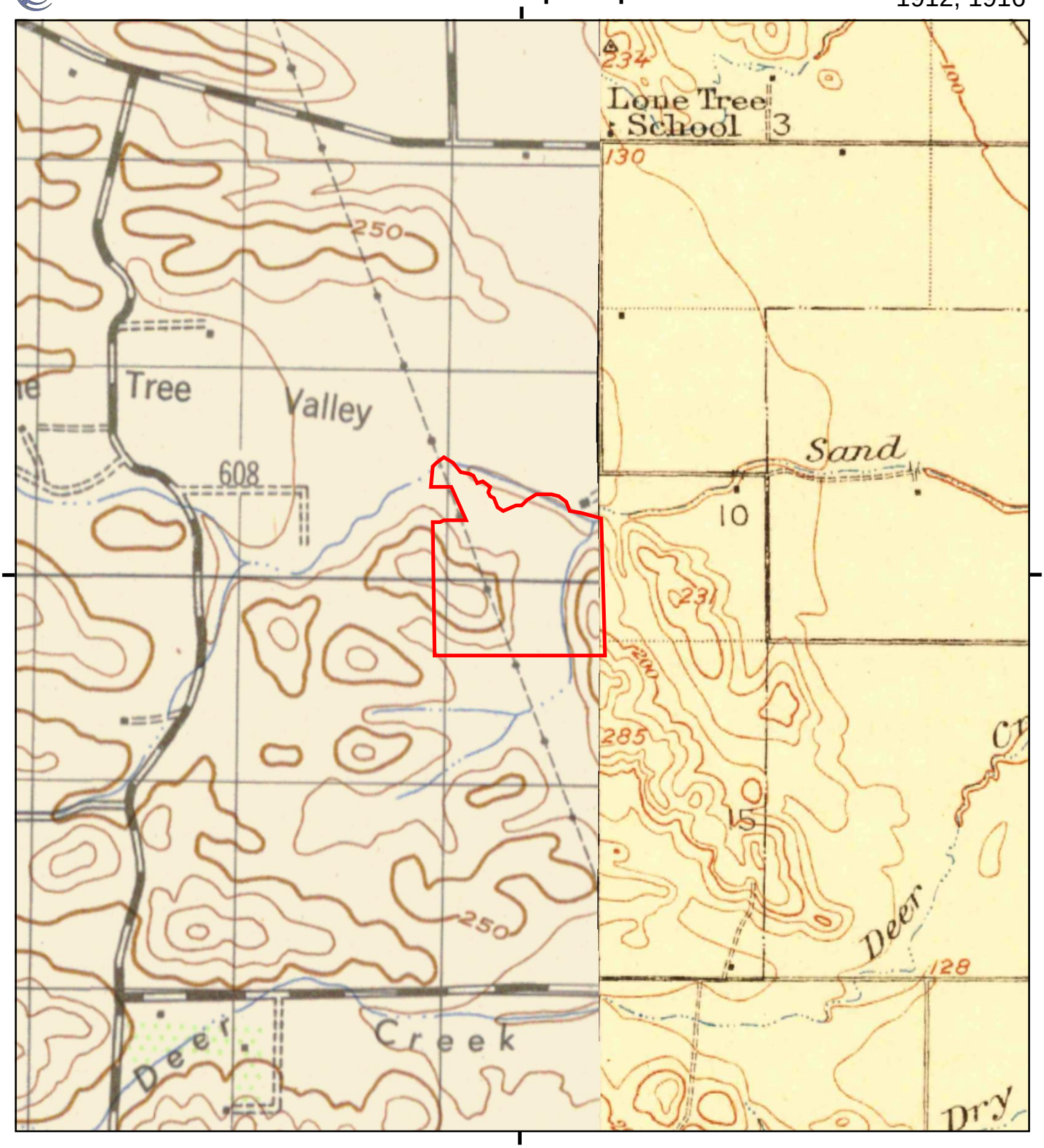
TP, Lone Tree Valley, 1916, 7.5-minute
E, Brentwood, 1914, 7.5-minute

SITE NAME: Creekside
ADDRESS: 3052 Heidorn Ranch Rd
Antioch, CA 94531
CLIENT: Engeo Inc.

N

Historical Topo Map

1912, 1916



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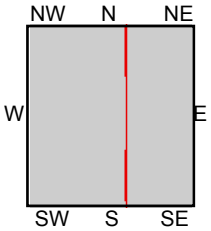


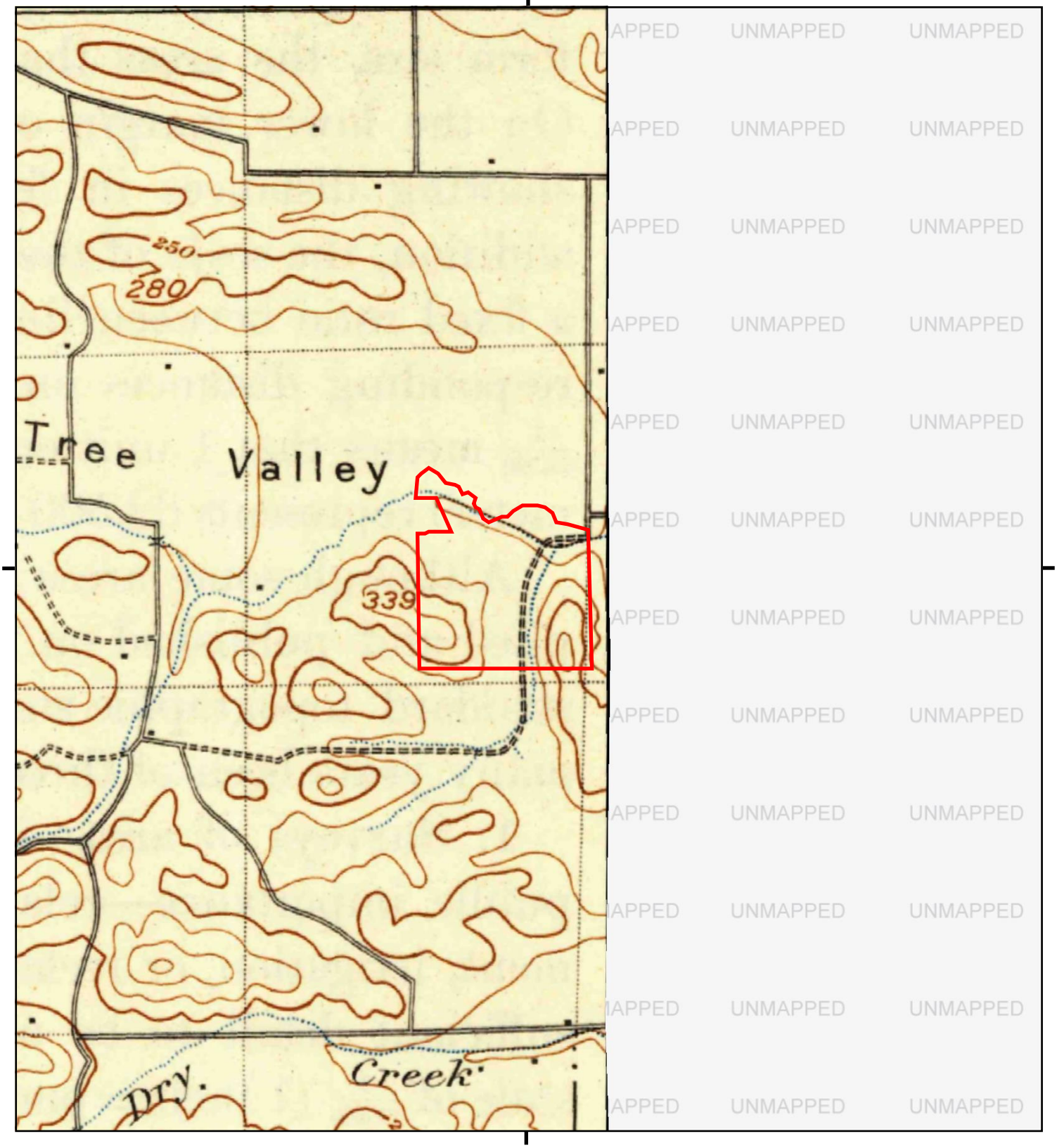
TP, MT. DIABLO, 1912, 15-minute
SE, Byron, 1916, 15-minute

SITE NAME: Creekside
ADDRESS: 3052 Heidorn Ranch Rd
Antioch, CA 94531
CLIENT: Engeo Inc.

N

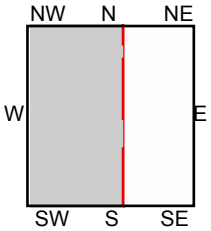
Historical Topo Map

1898



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



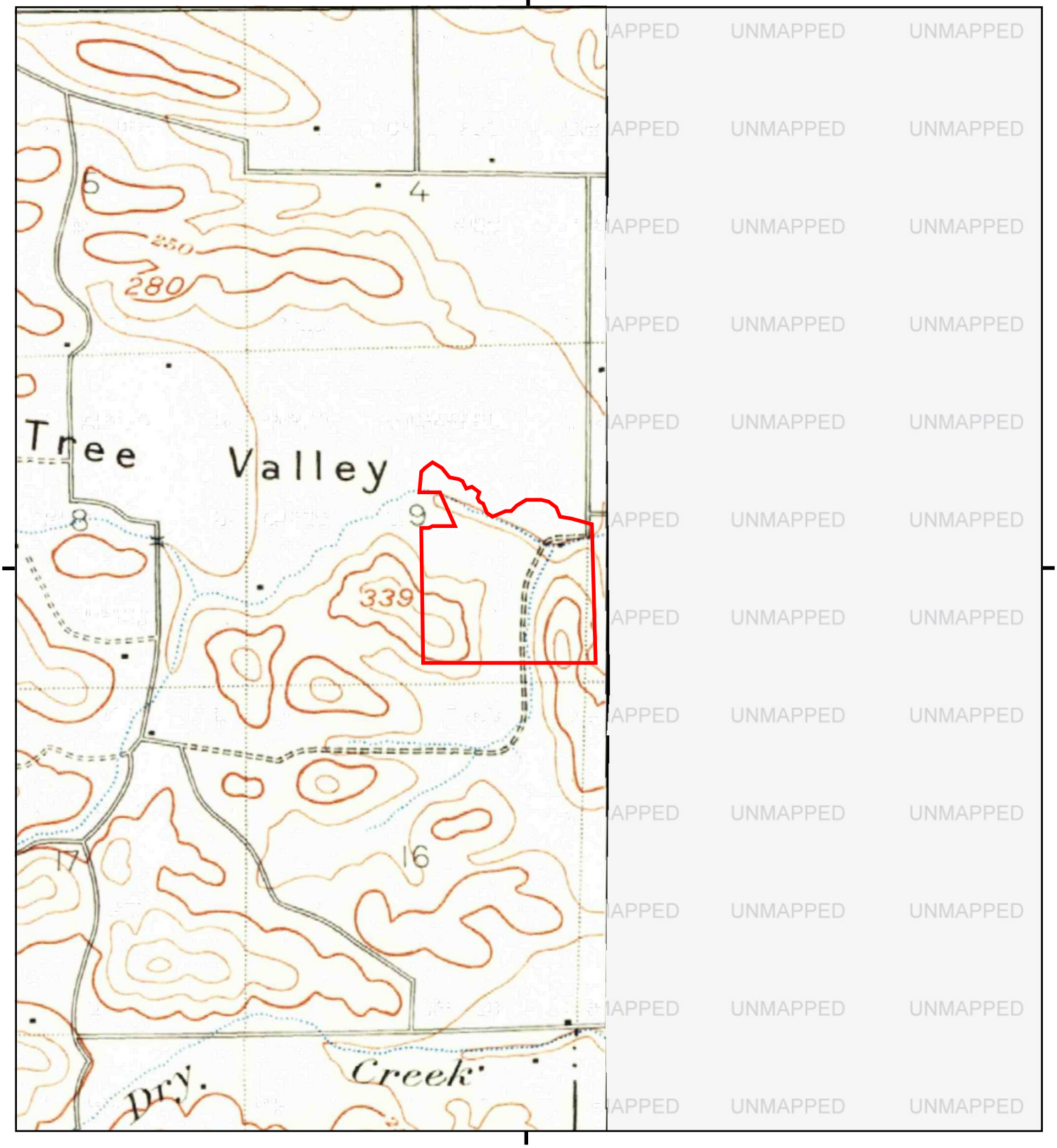
TP, Mt. Diablo, 1898, 15-minute

SITE NAME: Creekside
ADDRESS: 3052 Heidorn Ranch Rd
Antioch, CA 94531
CLIENT: Engeo Inc.

N

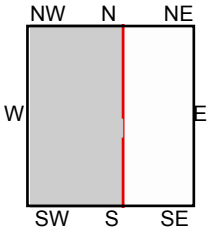
Historical Topo Map

1896



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



TP, Mt. Diablo, 1896, 15-minute

SITE NAME: Creekside
ADDRESS: 3052 Heidorn Ranch Rd
Antioch, CA 94531
CLIENT: Engeo Inc.

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APPENDIX D

FIRST AMERICAN TITLE COMPANY

Preliminary Title Report

Updated 12/28/2018

First American Title

First American Title Company

1001 Galaxy Way, Suite 101
Concord, CA 94520

Title Officer: Brianna Seckner
Phone: (925)738-4040
Fax No.: (925)738-4041
E-Mail: bseckner@firstam.com

Property: APN 057-050-024 / 158 Acres
Antioch, CA

PRELIMINARY REPORT

In response to the above referenced application for a policy of title insurance, this company hereby reports that it is prepared to issue, or cause to be issued, as of the date hereof, a Policy or Policies of Title Insurance describing the land and the estate or interest therein hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an Exception below or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations of said Policy forms.

The printed Exceptions and Exclusions from the coverage and Limitations on Covered Risks of said policy or policies are set forth in Exhibit A attached. *The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than that set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties*. Limitations on Covered Risks applicable to the CLTA and ALTA Homeowner's Policies of Title Insurance which establish a Deductible Amount and a Maximum Dollar Limit of Liability for certain coverages are also set forth in Exhibit A. Copies of the policy forms should be read. They are available from the office which issued this report.

Please read the exceptions shown or referred to below and the exceptions and exclusions set forth in Exhibit A of this report carefully. The exceptions and exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.

It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects, and encumbrances affecting title to the land.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby. If it is desired that liability be assumed prior to the issuance of a policy of title insurance, a Binder or Commitment should be requested.

Dated as of December 18, 2018 at 7:30 A.M.

The form of Policy of title insurance contemplated by this report is:

To Be Determined

A specific request should be made if another form or additional coverage is desired.

Title to said estate or interest at the date hereof is vested in:

PETER EUGENE GINOCHIO AS TRUSTEE OF THE PETER EUGENE GINOCHIO REVOCABLE LIVING TRUST (SEPARTE PROPERTY) DATED NOVEMBER 15, 2006;

JOANNE M. BAKER, TRUSTEE OF THE JOANNE M. BAKER TRUST U/A/D 2/27/92;

PETER EUGENE GINOCHIO AND JOANNE M. BAKER, ALSO KNOWN AS JOANNE BAKER, AS COTRUSTEES OF THE JAMES GINOCHIO TRUST CREATED UNDER THE DECLARATION OF 6/11/99;

JOHN R. GINOCHIO, III, A MARRIED MAN AS HIS SEPARATE PROPERTY;

RONALD S. GINOCHIO, TRUSTEE OF THE JOHN R. GINOCHIO III CHILDREN'S 1999 IRREVOCABLE TRUST DATED 4/5/99;

RONALD S. GINOCHIO AND SALLY N. GINOCHIO, TRUSTEES OF THE RON AND SALLY GINOCHIO LIVING TRUST;

ANNA M. GINOCHIO, EDWARD M. GINOCHIO AND PAUL L. GINOCHIO, CO-TRUSTEES OF THE LOUIS E. GINOCHIO EXEMPTION TRUST CREATED FEBRUARY 23, 2002, PURSUANT TO THE PROVISIONS OF THE 8/11/93 LOUIS E. AND ANNA M. GINOCHIO TRUST;

ANGELINA GINOCHIO, A MARRIED WOMAN AS HER SEPARATE PROPERTY, STEPHEN M. GINOCHIO, A MARRIED MAN AS HIS SEPARATE PROPERTY AND ANTONETTE GINOCHIO, A SINGLE WOMAN, IN EQUAL SHARES, AS TENANTS-IN-COMMON TO EACH OTHER;

PAUL L. GINOCHIO AND PATTY GINOCHIO, TRUSTEES OF THE PAUL L. AND PATTY GINOCHIO TRUST U/A/D 6/24/02, AS A SCHEDULE 1 COMMUNITY PROPERTY ASSET;

GINA GINOCHIO-ROBICHAUD, TRUSTEE OF THE GINA L. GINOCHIO SEPARATE PROPERTY TRUST U/A/D 10/09/2012;

JAMES MARTIN GINOCHIO, AKA JAMES M. GINOCHIO, TRUSTEE OF THE JAMES M. GINOCHIO TRUST U/A/D 11/27/2012;

EDWARD M. GINOCHIO, TRUSTEE OF THE EDWARD M. GINOCHIO SEPARATE PROPERTY TRUST U/A/D 5/25/04;

JOHN R. GINOCHIO, IV, A MARRIED MAN, AS HIS SEPARATE PROPERTY;

JOHN R. GINOCHIO, III, TRUSTEE OF THE JOHN R. GINOCHIO, III AND SHANON W. GINOCHIO TRUST

U/A/D JUNE 1, 2006, SCHEDULE 2 ASSET;

RONALD S. GINOCHIO, TRUSTEE OF THE JOHN R. GINOCHIO, III 1999 IRREVOCABLE TRUST (AGREEMENT FOR SETTLORS. SIBLINGS AND BARBARA A. GINOCHIO DATED APRIL 5, 1999);

ANNA M. GINOCHIO, TRUSTEE OF THE ANNA M. GINOCHIO SURVIVOR'S TRUST CREATED FEBRUARY 23, 2002, PURSUANT TO THE PROVISIONS OF THE 8/11/93 LOUIS E. AND ANNA M. GINOCHIO TRUST;

PAUL L. GINOCHIO AND PATTY GINOCHIO, TRUSTEES OF THE PAUL L. AND PATTY GINOCHIO TRUST U/A/D JUNE 24, 2002, AS A SCHEDULE 2 ASSET;

GINA L. GINOCHIO, AND JAMES M. GINOCHIO AS THEIR SEPARATE PROPERTY, AS TENANTS IN COMMON;

JOANNE M. BAKER, TRUSTEE OF THE JOANNE M. BAKER TRUST;

PETER EUGENE GINOCHIO TRUSTEE OF THE JAMES R. GINOCHIO TRUST;

JOANNE M. BAKER, TRUSTEE OF THE JAMES R. GINOCHIO TRUST;

RONALD S. GINOCHIO, A MARRIED MAN AS HIS SEPARATE PROPERTY;

PAUL L. GINOCHIO;

LOUIS E. GINOCHIO & ANNA M. GINOCHIO, HUSBAND AND WIFE, COMMUNITY PROPERTY;

AND PAUL L. GINOCHIO AND PATTY GINOCHIO, TRUSTEES OF PAUL L. & PATTY GINOCHIO TRUST U/A/D 6/24/02;

ALL AS THEIR INTEREST MAY APPEAR OF RECORD

The estate or interest in the land hereinafter described or referred to covered by this Report is:

A fee.

The Land referred to herein is described as follows:

(See attached Legal Description)

At the date hereof exceptions to coverage in addition to the printed Exceptions and Exclusions in said policy form would be as follows:

1. General and special taxes and assessments for the fiscal year 2018-2019.

First Installment:	$800.77, PAID
Penalty:	$0.00
Second Installment:	$800.77, OPEN
Penalty:	$0.00
Tax Rate Area:	01-111
A. P. No.:	057-050-024-9

2. The lien of special tax assessed pursuant to Chapter 2.5 commencing with Section 53311 of the California Government Code for Community Facilities District 89-1, as disclosed by Notice of Special Tax Lien recorded March 20, 1990 as Instrument No. 90-56597 of Official Records.

3. The land lies within the boundaries of proposed community facilities District No. 2018-01 (Public Services), as disclosed by a map filed January 24, 2018 in Book 86, Page 34 of maps of assessment and community facilities districts recorded January 24, 2018 as Instrument No. 2018-0011203 of Official Records.

4. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

5. An easement for pole line and incidental purposes in the document recorded June 7, 1913 in Book 202 of Deeds, Page 315.

   The location of the easement cannot be determined from record information.

6. An easement for tower line and incidental purposes, recorded September 30, 1925 as Book 7, Page 278 of Official Records.
   In Favor of: Pacific Gas and Electric Company
   Affects: As described therein

7. Rights of way reserved in the deed to Albert Picard, recorded August 18, 1927, Book 108, Official Records, Page 40, as follows:

   A- "A right of way for the use and maintenance of a ditch that serves for the control of storm water, a strip of land 25 feet wide and 2050 feet along whose Western boundary extends from the Northwest corner of the tract first above described, 2050 feet Southerly along the West boundary line of the said tract."

8. An easement for production, storage, transportation, exploration, testing, with the right to drill or mine, all oil, gas, and other hydrocarbons and minerals therein and incidental purposes, recorded March 12, 1946 as Book 889, Page 43 of Official Records.
   In Favor of: Louisa E. Shellenberger
   Affects: As described therein

   The location of the easement cannot be determined from record information.

9. An easement for gas pipe lines and incidental purposes, recorded August 11, 1947 as Book 1117, Page 267 of Official Records.
   In Favor of: Pacific Gas and Electric Company
   Affects: As described therein

10. An easement for pipe lines and incidental purposes, recorded April 4, 1963 as Book 4337, Page 210, and amendment recorded June 19, 1964, Book 4642, Page 190 of Official Records.
    In Favor of: Shell Oil Company
    Affects: As described therein

    The effect of a document entitled "Partial Quitclaim of Easement", recorded May 30, 2018 as Instrument No. 2018-0084921 of Official Records.

Document(s) declaring modifications thereof recorded August 13, 2018 as Instrument No. 2018-0128907 of Official Records.

11. An easement for gas transmission pipelines and incidental purposes, recorded September 11, 1963 as Book 4447, Page 789 of Official Records.
In Favor of: Pacific Gas and Electric Company
Affects: As described therein

12. An easement for the right of ingress and egress at all times for the purpose of mining, drilling, exploring, operating and developing said lands for oil, gas and other minerals, and storing, handling, transporting and marketing the same therefrom and incidental purposes in the document recorded December 24, 1964 as Book 4770, Pages 803, 806, 809, 812, 827, 830 and 833 of Official Records.

The location of the easement cannot be determined from record information.

13. An easement for the right of ingress and egress at all times for the purpose of mining, drilling, exploring, operating and developing said lands for oil, gas and other minerals, and storing, handling, transporting and marketing the same therefrom and incidental purposes in the document recorded December 24, 1964 as Book 4770, Pages 815, 818, 821, 824, 836, 839 and 842 of Official Records.

The location of the easement cannot be determined from record information.

14. An easement for pipe line and incidental purposes, recorded July 21, 1966 as Book 5166, page 428 of Official Records.
In Favor of: Shell Oil Company
Affects: As described therein

The effect of a document entitled "Quitclaim of Easement", recorded April 4, 2018 as Instrument No. 2018-0051601 of Official Records.

15. An easement for roadway and pipe line and incidental purposes, recorded July 21, 1966 as Book 5166, Page 432 of Official Records.
In Favor of: Shell Oil Company
Affects: As described therein

The effect of a document entitled "Quitclaim of Easement", recorded April 4, 2018 as Instrument No. 2018-0051601 of Official Records.

16. An easement for tower line and incidental purposes, recorded November 7, 1966 as Book 5240, Page 451 of Official Records.
In Favor of: Pacific Gas and Electric Company
Affects: As described therein

17. Terms, provisions, covenants, restrictions and conditions contained in a document executed pursuant to the California Land Conservation Act of 1965 (Williamson Act) and recorded February 27, 1969 as Book 5821, Page 451 of Official Records.

The effect of a document entitled "Notice of Nonrenewal", recorded September 27, 1993 as Book 18982, 863 and recorded December 11, 2000 as Instrument No. 2000-0277604 of Official Records.

18. An unrecorded lease dated September 16, 1978, executed by John Ginochio, Jr., et al, and Emma Le'Moin, et al, as lessor and Shell Oil Company, a corporation as lessee, as disclosed by a Memorandum of Lease for Subsurface Disposal of Waste Water recorded March 29, 1979 as Book 9283, Page 158 of Official Records.

    Defects, liens, encumbrances or other matters affecting the leasehold estate, whether or not shown by the public records.

19. An easement for ingress and egress and incidental purposes, recorded December 12, 1991 as Book 17077, Page 436 of Official Records.
    In Favor of: Pacific Gas and Electric Company
    Affects: As described therein

    The location of the easement cannot be determined from record information.

20. The terms and provisions contained in the document entitled "Limited Surface Access Agreement" recorded January 18, 2000 as Instrument No. 2000-0010657 of Official Records.

21. The terms and provisions contained in the document entitled "Easement Agreement" recorded January 9, 2009 as Instrument No. 2009-3638 of Official Records.

22. An easement for grading, landscape, planting, growing, caring for and maintaining shrubs and trees and incidental purposes, recorded January 9, 2009 as Instrument No. 2009-3639 of Official Records.
    In Favor of: Pacific Gas and Electric Company, a California corporation
    Affects: As described therein

23. The terms and provisions contained in the document entitled "Tenancy-In-Common Agreement" recorded January 24, 2014 as Instrument No. 2014-0012304 of Official Records.

    The terms and provisions contained in the document entitled "Assignment of Tenancy-In-Common Agreement" recorded August 4, 2017 as Instrument No. 2017-0140841 of Official Records.

24. An easement for cathodic pipe protection system and incidental purposes, recorded January 24, 2014 as Instrument No. 2014-0012506 of Official Records.
    In Favor of: Chevron Pipe Line Company, a Delaware corporation
    Affects: As described therein

    The location of the easement cannot be determined from record information.

25. An oil and gas lease executed by Ginochio, ET AL as lessor and Sunset Exploration, Inc, a California corporation as lessee, recorded January 9, 2015 as Instrument No. 2015-0004288 of Official Records.

    Defects, liens, encumbrances or other matters affecting the leasehold estate, whether or not shown by the public records.

26. An option in favor of GBN Partners LLC, a Delaware limited liability company as contained in or disclosed by a document recorded September 25, 2017 as Instrument No. 2017-0174855 of Official Records.

27. The Terms, Provisions and Easement(s) contained in the document entitled "Conservation Easement Deed Restriction" recorded July 13, 2018 as Instrument No. 2018-0112020 of Official Records.

28. Any defects, liens, encumbrances or other matters which name parties with the same or similar names as Joanne Baker. The name search necessary to ascertain the existence of such matters has not been completed. In order to complete this preliminary report or commitment, we will require a statement of information.

29. Any right, title or interest of the spouse (if any) of any married person herein.

30. Any claim that the Title is subject to a trust or lien created under The Perishable Agricultural Commodities Act, 1930 (7 U.S.C. §§499a, et seq.) or the Packers and Stockyards Act (7 U.S.C. §§181 et seq.) or under similar state laws.

31. Any claim that any portion of the land is below the ordinary high water mark where it was located prior to any artificial or avulsive changes in the location of the shoreline or riverbank.

32. Any rights, interests, or easements in favor of the public, which exist or are claimed to exist over any portion of said land covered by water, including a public right of access to the water.

33. Any claim that any portion of the land is or was formerly tidelands or submerged lands.

34. Rights of the public in and to that portion of the land lying within any Road, Street, Alley or Highway.

35. Water rights, claims or title to water, whether or not shown by the public records.

36. Rights of parties in possession.

Prior to the issuance of any policy of title insurance, the Company will require:

37. With respect to the trust referred to in the vesting:
a. A certification pursuant to Section 18100.5 of the California Probate Code in a form satisfactory to the Company.
b. Copies of those excerpts from the original trust documents and amendments thereto which designate the trustee and confer upon the trustee the power to act in the pending transaction.
c. Other requirements which the Company may impose following its review of the material required herein and other information which the Company may require.

38. A deed from the spouse of any married person herein be recorded in the public records, or the joinder of the spouse of any married person named herein on any conveyance, encumbrance or lease to be executed by said married person.

INFORMATIONAL NOTES

Note: The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than the certain dollar amount set forth in any applicable arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. If you desire to review the terms of the policy, including any arbitration clause that may be included, contact the office that issued this Commitment or Report to obtain a sample of the policy jacket for the policy that is to be issued in connection with your transaction.

1. The property covered by this report is vacant land.

2. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

   None

3. We find no outstanding voluntary liens of record affecting subject property. Disclosure should be made concerning the existence of any unrecorded lien or other indebtedness which could give rise to any possible security interest in the subject property.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

LEGAL DESCRIPTION

Real property in the City of Antioch , County of Contra Costa, State of California, described as follows:

BEING ALL OF PARCEL (B) OF THAT CERTAIN TRUST TRANSFER DEED RECORDED MAY 26, 2004, IN DOCUMENT NO. 2004-0199652 OF OFFICIAL RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF CONTRA COSTA COUNTY, ALSO BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 9, TOWNSHIP 1 NORTH, RANGE 2 EAST, MOUNT DIABLO BASE AND MERIDIAN.

EXCEPTING THEREFROM THE FOLLOWING DESCRIBED PARCELS OF LAND:

(A) THAT PARCEL OF LAND DESCRIBED IN THE DEED TO PACIFIC GAS AND ELECTRIC COMPANY, RECORDED DECEMBER 12, 1991 IN BOOK 17077 OR 436.

(B) THAT PARCEL OF LAND DESCRIBED IN THE DEED TO PACIFIC GAS AND ELECTRIC COMPANY, RECORDED JANUARY 9, 2009 IN INSTRUMENT NO. 2009-3639, OFFICIAL RECORDS.

(C) BEGINNING AT THE NORTHEASTERN CORNER OF SAID SOUTHEAST QUARTER;

THENCE, FROM SAID POINT OF BEGINNING, ALONG THE NORTHERN LINE OF SAID SOUTHEAST QUARTER, NORTH 89°22'08" WEST (THE BEARING OF SAID NORTHERN LINE BEING TAKEN AS NORTH 89°22'08" WEST FOR THE PURPOSE OF MAKING THIS DESCRIPTION) 1,562.40 FEET;

THENCE, LEAVING SAID NORTHERN LINE, SOUTH 14°36'23" EAST 281.45 FEET;

THENCE, SOUTH 61°13'41" EAST 51.04 FEET;

THENCE, NORTH 57°49'21" EAST 516.24 FEET;

THENCE, SOUTH 89°22'08" EAST 324.45 FEET;

THENCE, SOUTH 59°24'33" EAST 788.29 FEET TO A POINT ON THE EASTERN LINE OF SAID SOUTHEAST QUARTER;

THENCE, ALONG SAID EASTERN LINE, NORTH 00°55'42" EAST 409.59 FEET TO SAID POINT OF BEGINNING.

TOGETHER THEREWITH, THE FOLLOWING DESCRIBED PARCEL OF LAND:

BEING A PORTION OF PARCEL C, AS SAID PARCEL C IS DESCRIBED IN THAT CERTAIN GRANT DEED RECORDED SEPTEMBER 5, 2002, IN INSTRUMENT NO. 2002-0312734 OF OFFICIAL RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF CONTRA COSTA COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEASTERN CORNER OF THE SOUTHEAST QUARTER OF SECTION 9, TOWNSHIP 1 NORTH, RANGE 2 EAST, MOUNT DIABLO BASE AND MERIDIAN;

THENCE, FROM SAID POINT OF COMMENCEMENT, ALONG THE NORTHERN LINE OF SAID SOUTHEAST QUARTER, NORTH 89°22'08" WEST (THE BEARING OF SAID NORTHERN LINE BEING TAKEN AS NORTH 89°22'08" WEST FOR THE PURPOSE OF MAKING THIS DESCRIPTION) 1,562.40 FEET TO A POINT ON THE SOUTHERN LINE OF SAID PARCEL C, SAID POINT BEING THE POINT OF BEGINNING FOR THIS DESCRIPTION;

THENCE, FROM SAID POINT OF BEGINNING, LEAVING SAID SOUTHERN LINE OF PARCEL C, NORTH 14°36'23" WEST 100.92 FEET;

THENCE, NORTH 58°51'12" WEST 887.40 FEET;

THENCE, NORTH 89°23'27" WEST 91.74 FEET;

THENCE, SOUTH 75°29'23" WEST 158.77 FEET TO A POINT ON THE WESTERN LINE OF SAID PARCEL C;

THENCE, ALONG SAID WESTERN LINE, SOUTH 00°58'52" WEST 506.47 FEET TO THE SOUTHWESTERN CORNER OF SAID PARCEL C;

THENCE, FROM SAID SOUTHWESTERN CORNER, ALONG SAID SOUTHERN LINE OF PARCEL C, SOUTH 89°22'08" EAST 1,039.10 FEET TO SAID POINT OF BEGINNING.

EXCEPTING FROM A PORTION OF THE LAND:

AN UNDIVIDED ONE-HALF (1/2) RIGHT, TITLE AND INTEREST AND ESTATE IN AND TO ALL OIL, GAS AND OTHER HYDROCARBONS AND MINERALS, AS RESERVED IN THE DEED FROM LOUIS D. HEIDORN, ET AL, RECORDED MARCH 12, 1946, BOOK 889, PAGE 43, OFFICIAL RECORDS.

ALSO EXCEPTING FROM A PORTION OF THE LAND:

ALL OIL, GAS, CASINGHEAD GAS AND OTHER HYDROCARBONS AND MINERALS, AS GRANTED IN THE DEEDS TO LOUIS E. GINOCHIO, ET AL, IN THE DEEDS RECORDED DECEMBER 24, 1964, BOOK 4770, PAGES 815, 818, 821, 824, 836, 839 AND 842, OFFICIAL RECORDS.

EXCEPTING FROM THE REMAINING PORTION OF THE LAND:

ALL OIL, GAS, CASINGHEAD GAS AND OTHER HYDROCARBONS AND MINERALS, AS GRANTED IN THE DEEDS TO LOUIS E. GINOCHIO, ET AL, IN THE DEEDS RECORDED DECEMBER 24, 1964, BOOK 4770, PAGES 803, 806, 809, 812, 827, 830 AND 833, OFFICIAL RECORDS.

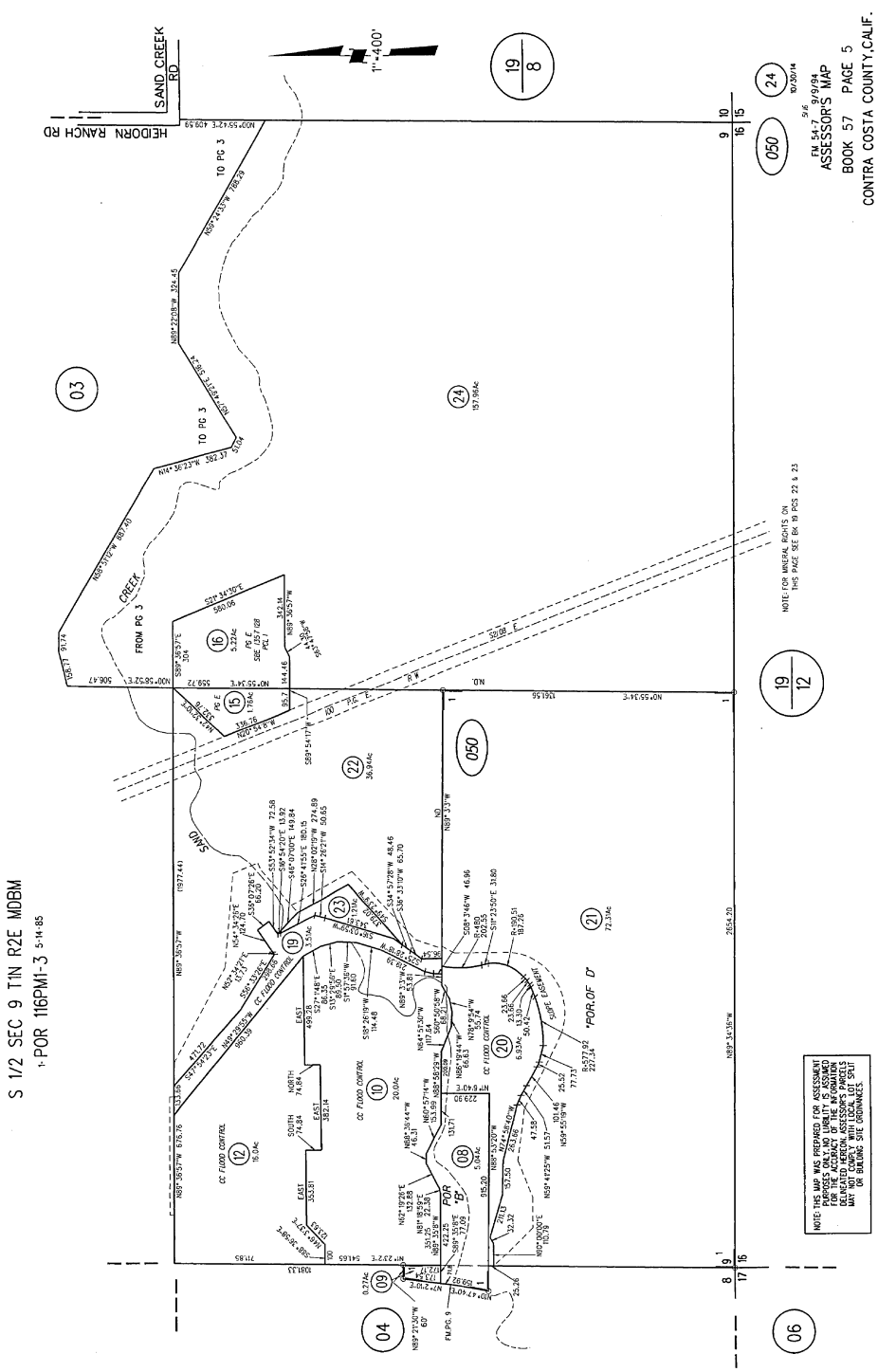
ALSO EXCEPTING FROM THE REMAINING PORTION OF THE LAND:

ALL RIGHTS RESERVED IN THE DEED FROM LOUIS E. GINOCHIO AND MARY BARTOLOMEI, AS THE DULY APPOINTED AND ACTING EXECUTORS UNDER WILL OF JOHN R. GINOCHIO JR., ALSO KNOWN AS JOHN GINOCHIO, JR., ALSO KNOWN AS JOHN GINOCHIO, JR., ALSO KNOWN AS JOHN R. GINOCHIO, DECEASED, RECORDED SEPTEMBER 15, 1989, BOOK 15347, PAGE 727, OFFICIAL RECORDS, DESCRIBED AS FOLLOWS:

ITS UNDIVIDED INTEREST IN ANY AND ALL OIL, GAS ANDS MINERALS OF WHATSOEVER KIND OR NATURE SITUATE THEREIN, NOW OR HEREAFTER DISCOVERED, AND THE RIGHTS TO EXPLORE FOR, DRILL AND PRODUCE ALL OR ANY THEREOF, AND THE RIGHT TO GRANT LEASES FOR THE EXPLORATION AND PRODUCTION THEREOF.

THIS LEGAL DESCRIPTION IS MADE PURSUANT TO THAT CERTAIN CERTIFICATE APPROVING A PW 443-03-14 LOT LINE ADJUSTMENT RECORDED SEPTEMBER 5, 2014 AS INSTRUMENT NO. 2014-0150641 OF OFFICIAL RECORDS.

APN: 057-050-024-9


S 1/2 SEC 9 T1N R2E MDBM
POR 116PM1-3 5-14-85
SAND CREEK RD
HEIDORN RANCH RD
1"=400'
ASSESSOR'S MAP
BOOK 57 PAGE 5
CONTRA COSTA COUNTY, CALIF.
FM 54-7 9/9/94
NOTE: FOR MINERAL RIGHTS ON THIS PAGE SEE BK 19 PGS 22 & 23
NOTE: THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE INFORMATION DELINEATED HEREON. ASSESSOR'S PARCELS MAY NOT COMPLY WITH LOCAL LOT SPLIT OR BUILDING SITE ORDINANCES.

NOTICE

Section 12413.1 of the California Insurance Code, effective January 1, 1990, requires that any title insurance company, underwritten title company, or controlled escrow company handling funds in an escrow or sub-escrow capacity, wait a specified number of days after depositing funds, before recording any documents in connection with the transaction or disbursing funds. This statute allows for funds deposited by wire transfer to be disbursed the same day as deposit. In the case of cashier's checks or certified checks, funds may be disbursed the next day after deposit. In order to avoid unnecessary delays of three to seven days, or more, please use wire transfer, cashier's checks, or certified checks whenever possible.

EXHIBIT A
LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)

CLTA STANDARD COVERAGE POLICY – 1990

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building or zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien, or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable doing business laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate of interest insured by this policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

EXCEPTIONS FROM COVERAGE - SCHEDULE B, PART I

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
   Proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public, records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b) or (c) are shown by the public records.
6. Any lien or right to a lien for services, labor or material not shown by the public records.

CLTA/ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE (12-02-13)

EXCLUSIONS

In addition to the Exceptions in Schedule B, You are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of those portions of any law or government regulation concerning:
   a. building;
   b. zoning;
   c. land use;

d. improvements on the Land;
e. land division; and
f. environmental protection.
This Exclusion does not limit the coverage described in Covered Risk 8.a., 14, 15, 16, 18, 19, 20, 23 or 27.

2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not limit the coverage described in Covered Risk 14 or 15.
3. The right to take the Land by condemning it. This Exclusion does not limit the coverage described in Covered Risk 17.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they are recorded in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they are recorded in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.e., 25, 26, 27 or 28.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This Exclusion does not limit the coverage described in Covered Risk 11 or 21.
7. The transfer of the Title to You is invalid as a preferential transfer or as a fraudulent transfer or conveyance under federal bankruptcy, state insolvency, or similar creditors' rights laws.
8. Contamination, explosion, fire, flooding, vibration, fracturing, earthquake, or subsidence.
9. Negligence by a person or an Entity exercising a right to extract or develop minerals, water, or any other substances.

LIMITATIONS ON COVERED RISKS

Your insurance for the following Covered Risks is limited on the Owner's Coverage Statement as follows:
For Covered Risk 16, 18, 19, and 21 Your Deductible Amount and Our Maximum Dollar Limit of Liability shown in Schedule A.
The deductible amounts and maximum dollar limits shown on Schedule A are as follows:

	Your Deductible Amount	Our Maximum Dollar Limit of Liability
Covered Risk 16:	1% of Policy Amount Shown in Schedule A or $2,500 (whichever is less)	$10,000
Covered Risk 18:	1% of Policy Amount Shown in Schedule A or $5,000 (whichever is less)	$25,000
Covered Risk 19:	1% of Policy Amount Shown in Schedule A or $5,000 (whichever is less)	$25,000
Covered Risk 21:	1% of Policy Amount Shown in Schedule A or $2,500 (whichever is less)	$5,000

2006 ALTA LOAN POLICY (06-17-06)
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions, or location of any improvement erected on the Land;
   (iii) the subdivision of land; or
   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;
(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or
(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.
6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

[Except as provided in Schedule B - Part II,[t[or T]his policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees or expenses, that arise by reason of:

[PART I

[The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
6. Any lien or right to a lien for services, labor or material not shown by the public records.

PART II

In addition to the matters set forth in Part I of this Schedule, the Title is subject to the following matters, and the Company insures against loss or damage sustained in the event that they are not subordinate to the lien of the Insured Mortgage:]

2006 ALTA OWNER'S POLICY (06-17-06)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions, or location of any improvement erected on the Land;
   (iii) the subdivision of land; or
   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;
(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 or 10); or
(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction vesting the Title as shown in Schedule A, is
(a) a fraudulent conveyance or fraudulent transfer, or
(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.
5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees or expenses, that arise by reason of:
[The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
6. Any lien or right to a lien for services, labor or material not shown by the Public Records.
7. [Variable exceptions such as taxes, easements, CC&R's, etc. shown here.]

ALTA EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (07-26-10)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions, or location of any improvement erected on the Land;
   (iii) the subdivision of land; or
   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
(a) created, suffered, assumed, or agreed to by the Insured Claimant;
(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
(c) resulting in no loss or damage to the Insured Claimant;
(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the

Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.
9. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in Covered Risk 27(b) of this policy.
10. Contamination, explosion, fire, flooding, vibration, fracturing, earthquake, or subsidence.
11. Negligence by a person or an Entity exercising a right to extract or develop minerals, water, or any other substances.

First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

APPENDIX E

ENVIRONMENTAL DATA RESOURCES, INC.

Aerial Photo Decade Package

Creekside

3052 Heidorn Ranch Rd

Antioch, CA 94531

Inquiry Number: 5569243.8

February 25, 2019

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

02/25/19

Site Name:

Creekside
3052 Heidorn Ranch Rd
Antioch, CA 94531
EDR Inquiry # 5569243.8

Client Name:

Engeo Inc.
2010 Crow Canyon Place
San Ramon, CA 94583
Contact: Victoria Drake

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	*Scale*	*Details*	*Source*
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
1998	1"=500'	Flight Date: August 22, 1998	USDA
1993	1"=500'	Acquisition Date: June 12, 1993	USGS/DOQQ
1984	1"=500'	Flight Date: June 29, 1984	USDA
1982	1"=500'	Flight Date: July 05, 1982	USDA
1979	1"=500'	Flight Date: August 16, 1979	USDA
1966	1"=500'	Flight Date: May 15, 1966	USDA
1963	1"=500'	Flight Date: July 15, 1963	EDR Proprietary Aerial Viewpoint
1958	1"=500'	Flight Date: August 09, 1958	USDA
1950	1"=500'	Flight Date: March 12, 1950	USDA
1949	1"=500'	Flight Date: October 13, 1949	USGS
1939	1"=500'	Flight Date: June 28, 1939	USDA

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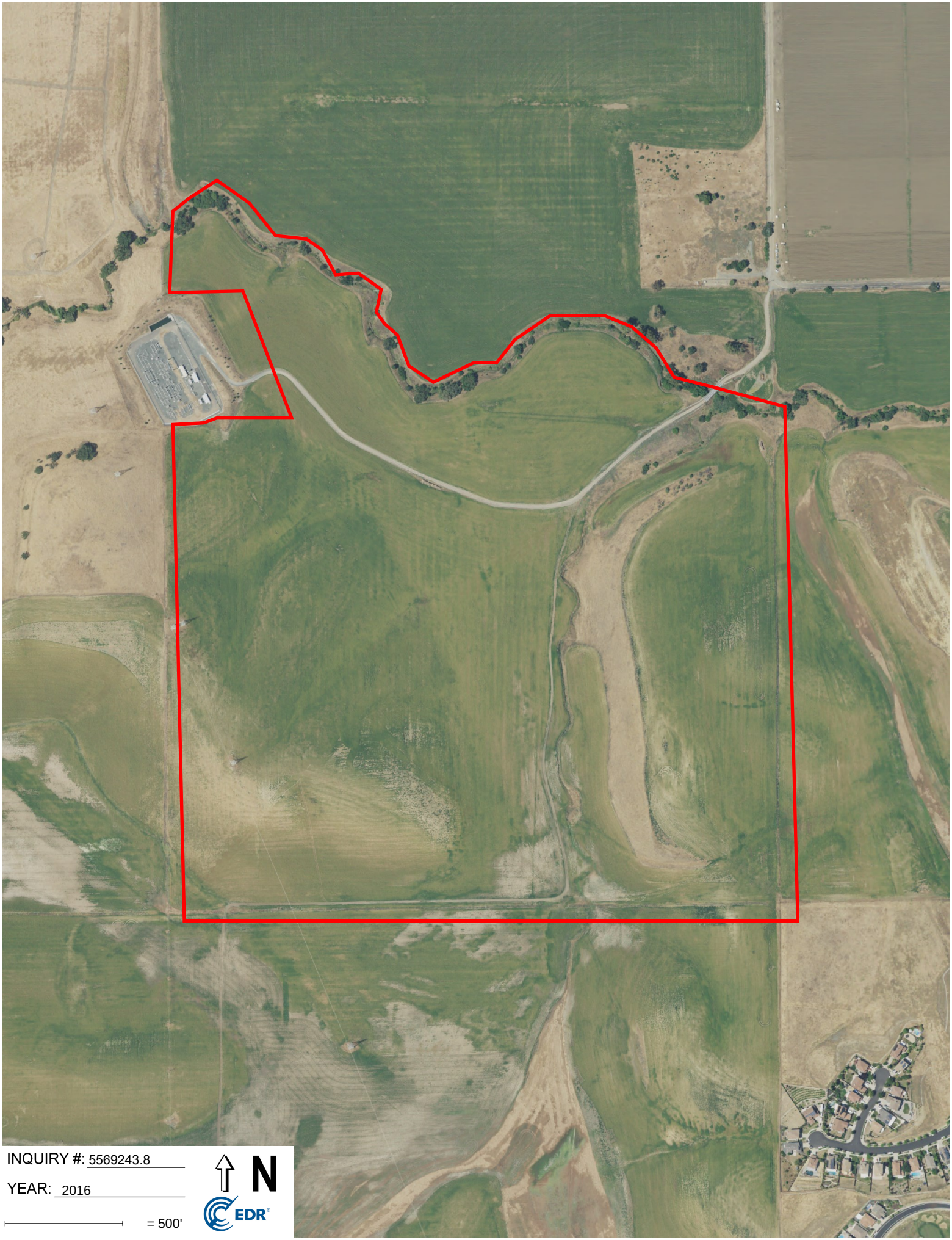
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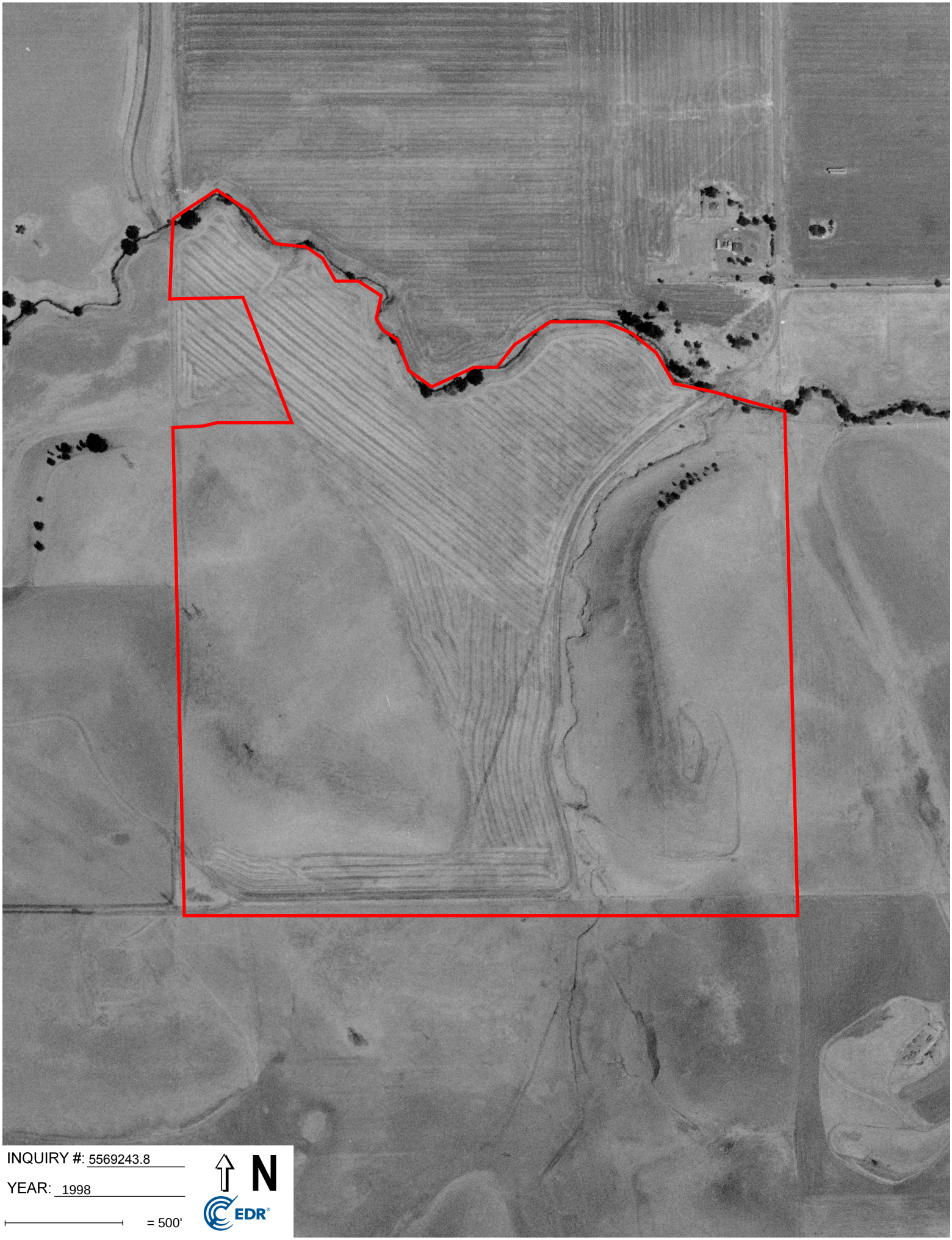
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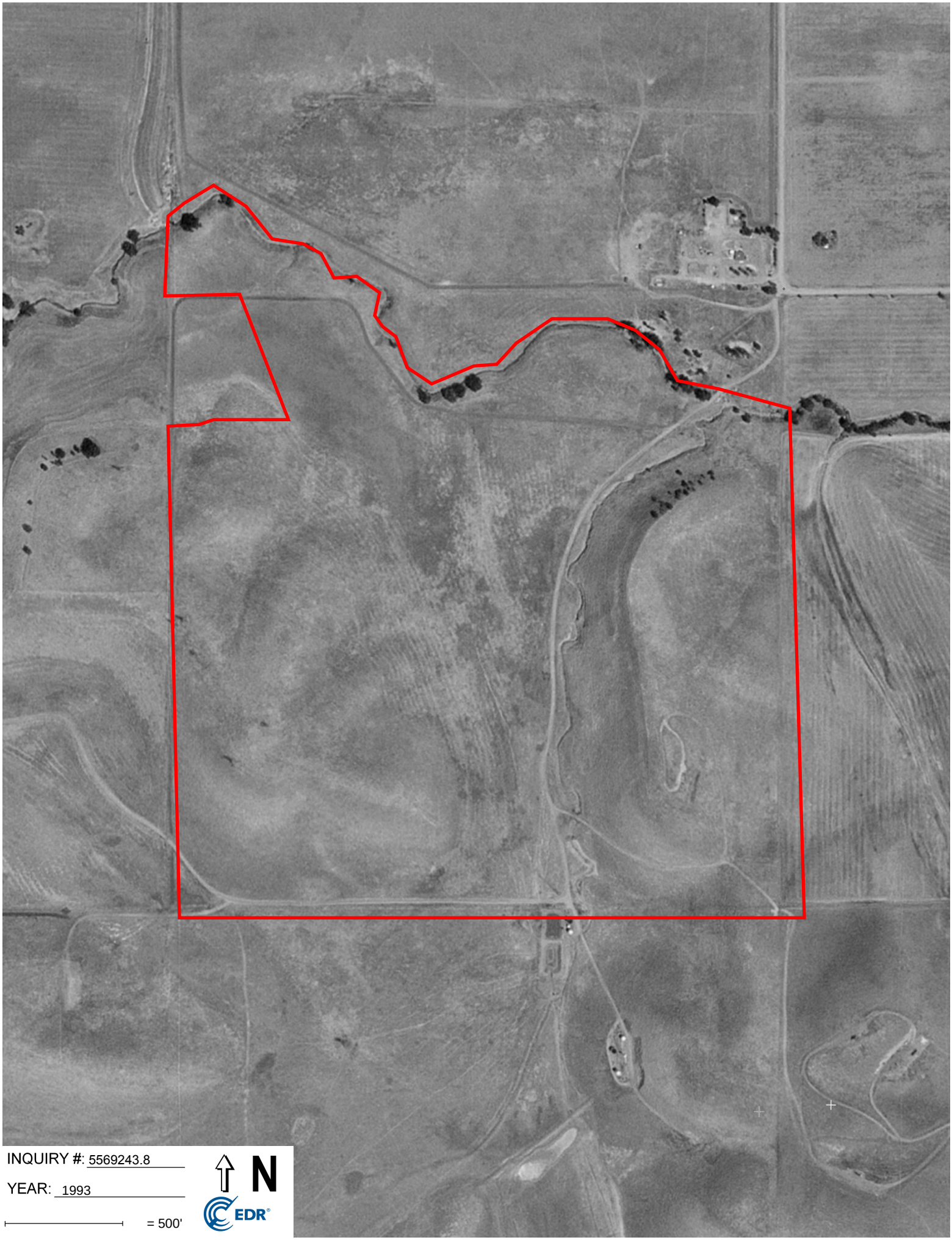
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EDR

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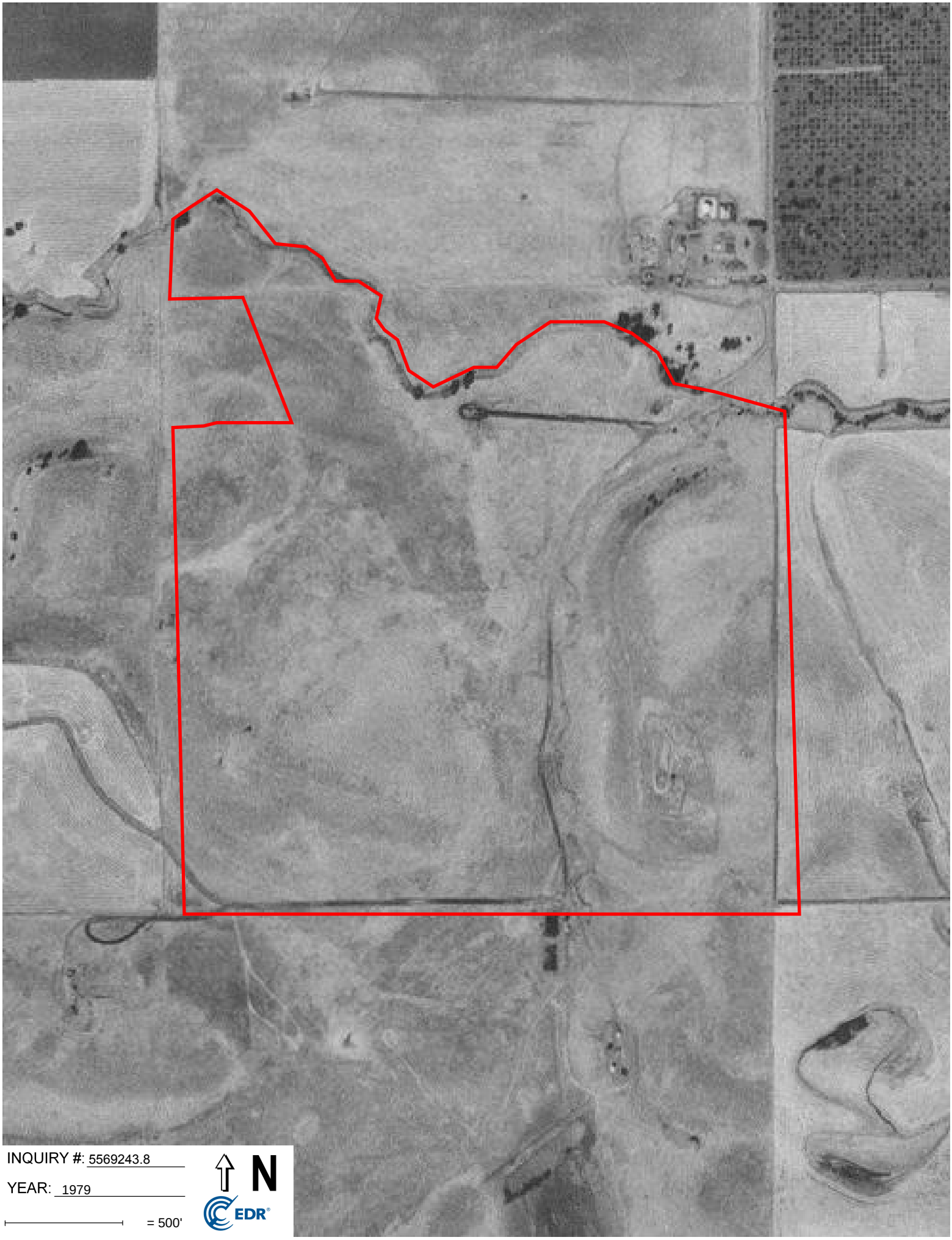
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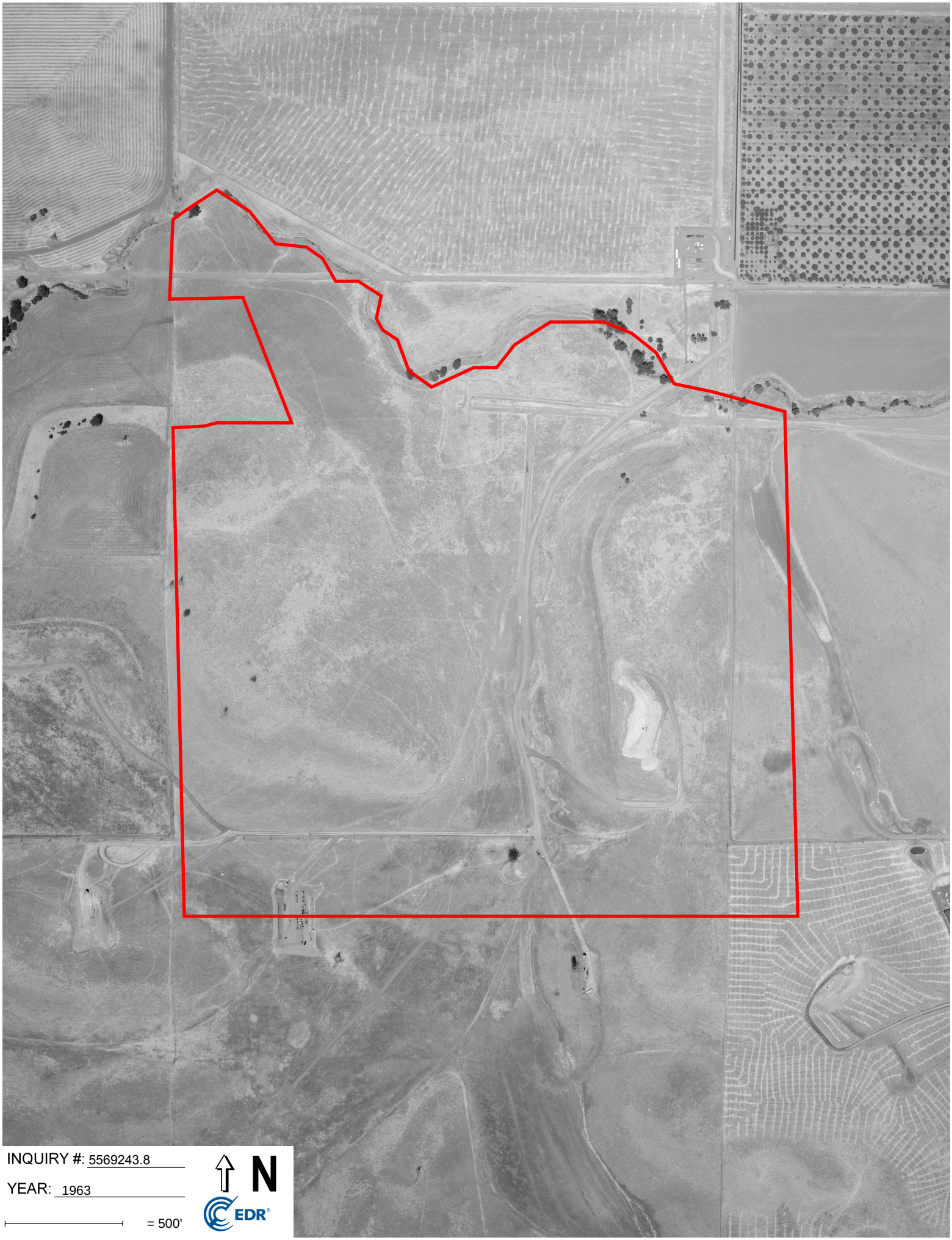
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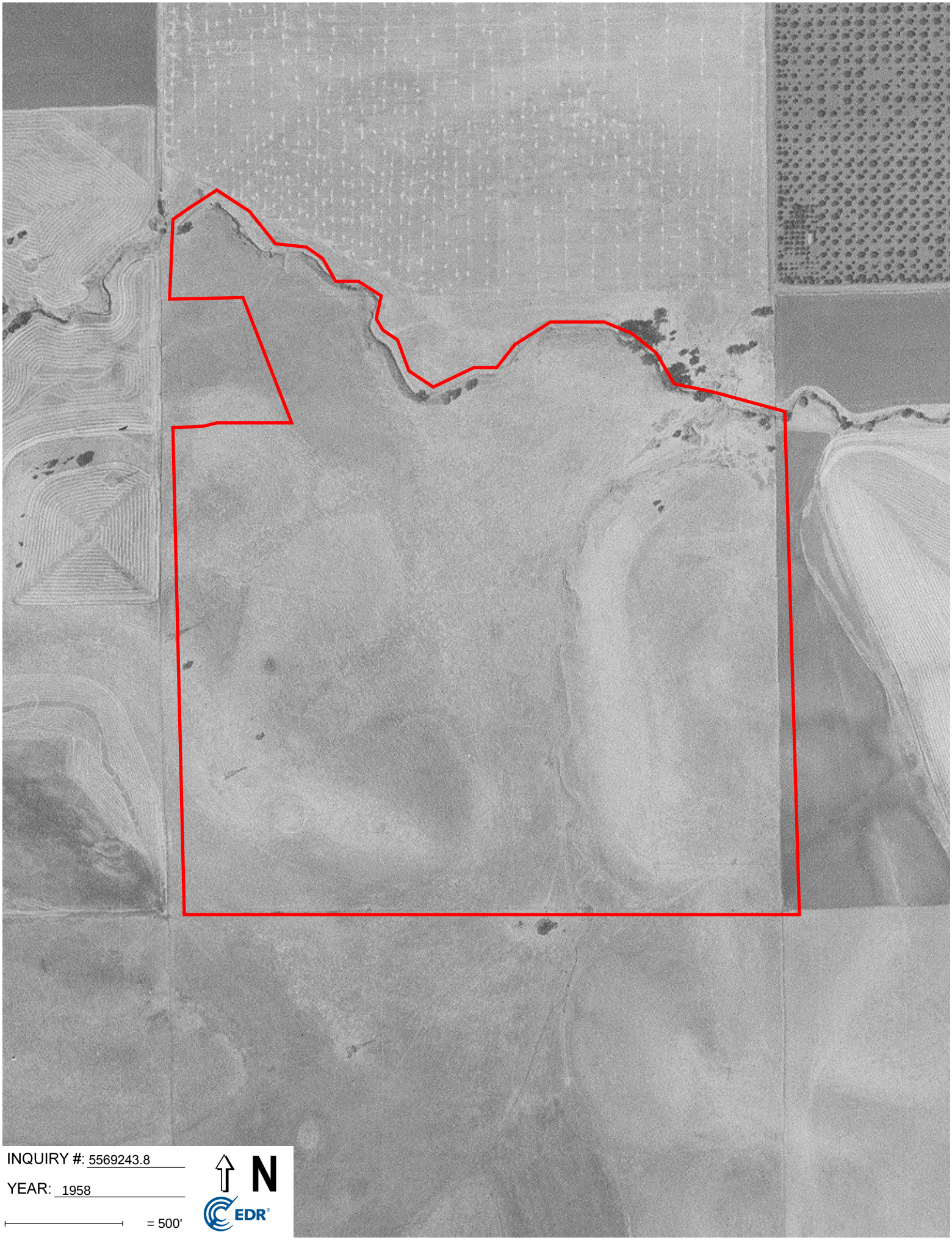
EDR


INQUIRY #: 5569243.8
YEAR: 1958
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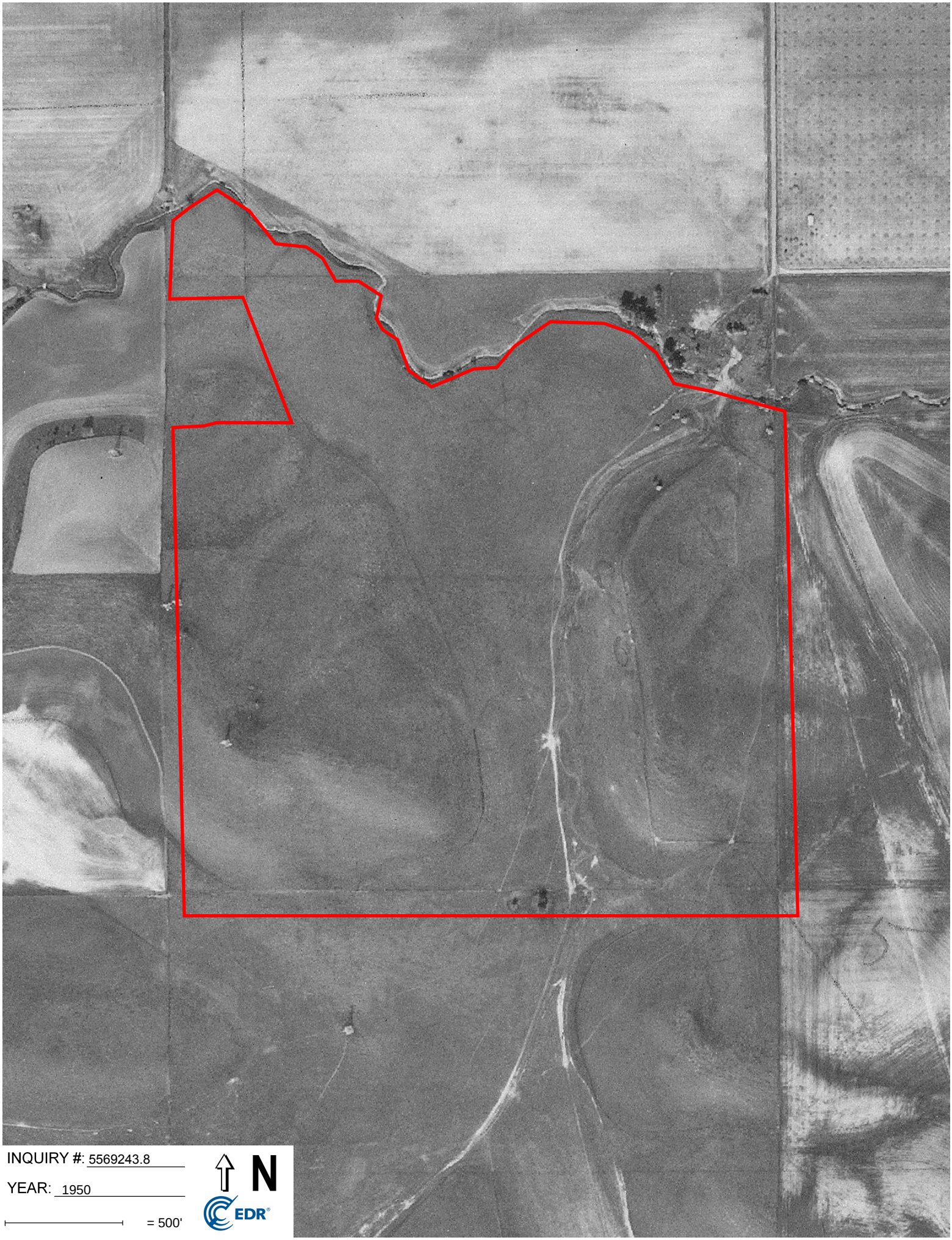
N
EDR



INQUIRY #: 5569243.8

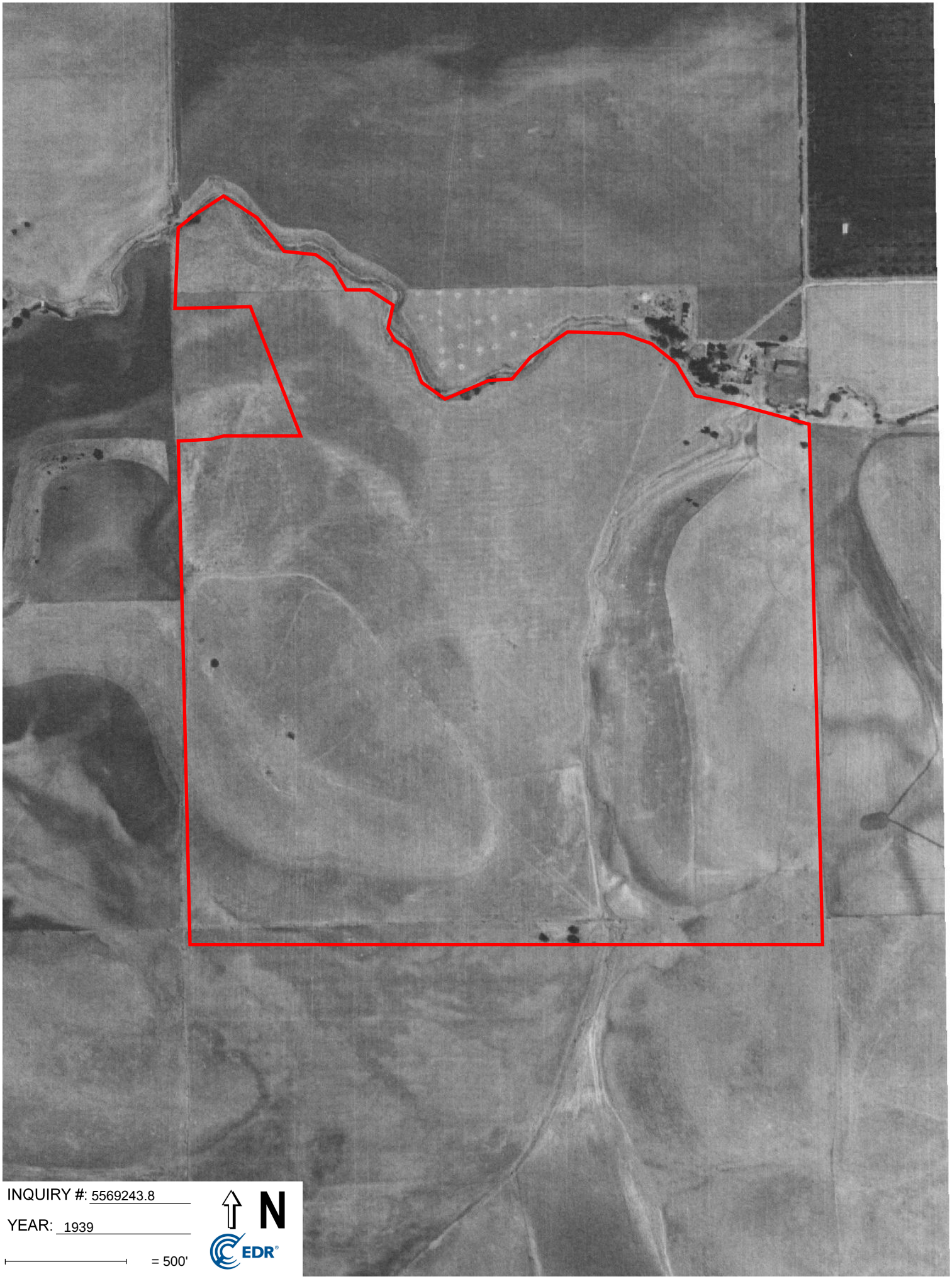
YEAR: 1950

= 500'

N

EDR

INQUIRY #: 5569243.8
YEAR: 1949
= 500'
N
EDR


INQUIRY #: 5569243.8
YEAR: 1939
= 500'
N
EDR

APPENDIX F

ENVIRONMENTAL DATA RESOURCES, INC.

City Directory

Creekside
3052 Heidorn Ranch Rd
Antioch, CA 94531

Inquiry Number: 5569243.5
February 26, 2019

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction orforecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2014	☑	☐	EDR Digital Archive
2010	☑	☐	Haines Criss-Cross Directory
2004	☑	☐	Haines Criss-Cross Directory
1999	☐	☐	Haines Criss-Cross Directory
1994	☐	☐	Haines Criss-Cross Directory
1989	☐	☐	Haines Criss-Cross Directory
1985	☐	☐	Haines Criss-Cross Directory
1980	☐	☐	Haines Criss-Cross Directory
1975	☐	☐	Haines Criss-Cross Directory

FINDINGS

TARGET PROPERTY STREET

3052 Heidorn Ranch Rd
Antioch, CA 94531

Year	CD Image	Source	
HEIDORN RANCH RD			
2014	pg A1	EDR Digital Archive	
2010	pg A2	Haines Criss-Cross Directory	
2004	pg A3	Haines Criss-Cross Directory	
1999	-	Haines Criss-Cross Directory	Street not listed in Source
1994	-	Haines Criss-Cross Directory	Street not listed in Source
1989	-	Haines Criss-Cross Directory	Street not listed in Source
1985	-	Haines Criss-Cross Directory	Street not listed in Source
1980	-	Haines Criss-Cross Directory	Street not listed in Source
1975	-	Haines Criss-Cross Directory	Street not listed in Source

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*	

OLD SAND CREEK RD

2014	-	EDR Digital Archive	Target and Adjoining not listed in Source
2010	-	Haines Criss-Cross Directory	Street not listed in Source
2004	-	Haines Criss-Cross Directory	Street not listed in Source
1999	-	Haines Criss-Cross Directory	Street not listed in Source
1994	-	Haines Criss-Cross Directory	Street not listed in Source
1989	-	Haines Criss-Cross Directory	Street not listed in Source
1985	-	Haines Criss-Cross Directory	Street not listed in Source
1980	-	Haines Criss-Cross Directory	Street not listed in Source
1975	-	Haines Criss-Cross Directory	Street not listed in Source

City Directory Images

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

HEIDORN RANCH RD 2014

5030 JOBE, LUCIA F
5200 HERITAGE BAPTIST ACADEMY INC
5320 JOHNSON, RICHARD G

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

HEIDORN RANCH RD 2010

HEIDORN RANCH RD
94531 ANTIOCH

WEALTH CODE 7

5200	★	HERITAGE BAPTIST ACADEMY	925-778-2234	2
	★	HERITAGE BAPTIST CHURCH	925-757-5242	2
5320	●	JOHNSON Richard G	925-634-5126	

★ 2 BUS 1 RES 0 NEW

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

HEIDORN RANCH RD 2004

HEIDORN RANCH RD (00)
94531 ANTIOCH

WEALTH CODE 7

5020	●LAVASSE Daryl	OO	+3
5030	JOBE Lucia	925-778-3085	2
5200	★ HERITAGE BAPTIST ACADEMY	925-778-2234	2
	★ HERITAGE BAPTIST CHURCH	925-757-5242	2
5320	●JOHNSON Richard G	925-634-5126	0

★ 2 BUS 3 RES 1 NEW

APPENDIX G

ENVIRONMENTAL SITE ASSESSMENT QUESTIONNAIRES (3)

Project Name: Creekside
Project No. P2019.000.143

ENGEO
Expect Excellence

☐ 2010 Crow Canyon Place ▪ Suite 250 ▪ San Ramon, CA 94583	(925) 866-9000 ▪ Fax (888) 279-2698
☐ 2213 Plaza Drive ▪ Rocklin, CA 95765	(916) 786-8883 ▪ Fax (888) 279-2698
☐ 101 California Street ▪ Suite 875 ▪ San Francisco, CA 94104	(415) 284-9900 ▪ Fax (888) 279-2698
☐ 6399 San Ignacio Avenue ▪ Suite 150 ▪ San Jose, CA 95119	(408) 574-4900 ▪ Fax (888) 279-2698
☐ 17278 Golden Valley Parkway ▪ Lathrop, CA 95330	(209) 835-0610 ▪ Fax (888) 279-2698
☐ 17675 Sierra Highway ▪ Santa Clarita, CA 91351	(661) 257-4004 ▪ Fax (888) 279-2698
☐ 6 Morgan ▪ Suite 162 ▪ Irvine, CA 92618	(949) 529-3479 ▪ Fax (888) 279-2698
☐ 1630 San Pablo Avenue ▪ Suite 200 ▪ Oakland, CA 94612	(510) 451-1255 ▪ Fax (888) 279-2698
☐ 9475 Double R Boulevard ▪ B-22 ▪ Reno, NV 89521	(775) 393-4891 ▪ Fax (888) 279-2698

ENVIRONMENTAL SITE ASSESSMENT QUESTIONNAIRE FOR CLIENT

To evaluate the potential for possible environmentally related impacts and site contamination the following information is requested. This questionnaire is to be completed by the user of the phase one environmental site assessment, or their authorized representative.

PART I

1. Property address and Assessor's Parcel Number (APN):

   Heidorn Ranch Road, Antioch Ca 94509
   APN 057-050-024 (157.96 Acres)

2. Current property owner (name, address, voice/fax number):

   Ron Ginochio
   6401 Cana Highway, Chico CA 95973
   510-410-2316

3. Date current property owner assumed title of property:

   40+ years

4. Current property development/improvements:

   roadway access to PG+E site, dryland farming operations above ground, PG+E towerline in west/south west. + a storm drain outfall into Sand Creek.

5. Past property use, development/improvements:

   dryland farming. Previous oil/gas exploration sites and access ways.

6. Neighboring property uses:

   agricultural & a PG+E substation on APN 057-050-016. to the west.

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PART II

1. Are you aware of any environmental cleanup liens against the *property* that are filed under federal, tribal, local or state law? ☐ Yes ☑ No

2. Are you aware of any activity and land use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded in a registry under federal, tribal, state or local law? ☐ Yes ☑ No

3. Do you have any specialized knowledge or experience related to the *property* or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the *property* or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business? ☐ Yes ☑ No

4. If a property transaction is occurring in conjunction with this environmental assessment, does the purchase price of this *property* reasonably reflect the fair market value of the *property*? ☑ Yes ☐ No

5. If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the *property*? ☐ Yes ☐ No ☑ N/A

6. Are you aware of any commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example,

   (a) do you know of specific chemicals that are present or once were present at the *property*?
   (b) do you know of spills or other chemical releases that have taken place at the *property*?
   (c) do you know of any environmental cleanups that have taken place at the *property*?

   ☐ Yes ☑ No

7. Based on your knowledge and experience related to the *property* are there any obvious indicators that point to the presence or likely presence of contamination at the *property*? ☐ Yes ☑ No

If a "Yes" response was provided to any of the above questions, please provide details below:

this environmental assessment is being conducted to inform the environmental review for development of a residential neighborhood.

I certify that the information herein is true and correct to the best of my knowledge as of the date signed below.

Name (Printed/Typed): Lisa M. Borba

Signature: [signature] Date: 1/28/19

Project Name: Creekside
Project No. P2019.000.143

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ENVIRONMENTAL SITE ASSESSMENT QUESTIONNAIRE FOR KEY SITE MANAGER

To evaluate the potential for possible environmentally related impacts and site contamination the following information is requested. This questionnaire is to be preferably completed by the current property owner, or owner representative, leasing agent, or other person having good knowledge of the uses and physical characteristics of the property (Key Site Manager).

PART I

1. Property Address/Location and Assessor's Parcel Number (APN):

   Heidorn Ranch Road, Antioch Ca 94509
   APN 057-050-024 (157.96 Acres)

2. Current property owner (name, address, voice/fax number):

   Ron Ginochio
   6401 Cana Highway, Chico CA 95973
   510-410-2316

3. Date current property owner assumed title of property:

   40+ years

4. Current property development/improvements:

   roadway access to PG+E site, dryland farming operations above ground, PG+E towerline in west/southwest of property. and a storm drain outfall into Sand Creek.

5. Past property use, development/improvements:

   dryland farming + grazing. Previous oil/gas exploration sites + access ways.

6. Neighboring property uses:

   agricultural and a PG+E substation on APN 057-050-016 to the west.

PART II - The following questions should be answered to the best of your knowledge.

1. Is/has the *property* or any adjoining property used/been used for industrial purposes?	☑ Yes	☐ No
2. Has the *property* or any adjoining property been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?	☐ Yes	☑ No
3. Are there currently, or have there been previously, any damaged or discarded automotive or industrial batteries, or pesticides, paints, or other chemicals in individual containers of greater than 5 gal in volume or 50 gal in the aggregate, stored on or used at the *property* or at the facility?	☐ Yes	☑ No
4. Has undocumented soil been brought onto the property at any time? If yes, estimated quantity is _____ cubic yards.	☐ Yes	☑ No
5. Has soil been brought onto the property that originated from a contaminated site or that is of an unknown origin?	☐ Yes	☑ No
6. Are there currently, or have there been previously, any pits, ponds, or lagoons located on the *property* in connection with waste treatment or waste disposal?	☐ Yes	☑ No
7. Is there currently, or has there been previously, any stained soil on the *property*?	☐ Yes	☑ No
8. Are there currently, or have there been previously, any registered or unregistered storage tanks (above or underground) located on the *property*?	☐ Yes	☑ No
9. Are there currently, or have there been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the *property* or adjacent to any structure located on the *property*?	☑ Yes	☐ No
10. Are there currently, or have there been previously, any flooring, drains, or walls located within the facility that are stained by substances other than water or are emitting foul odors?	☐ Yes	☑ No
11. Are there any domestic, irrigation or monitoring wells on the property?	☐ Yes	☑ No
12. If the *property* is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system or has the well been designated as contaminated by any government environmental/health agency?	☐ Yes	☑ No
13. Have you been informed of the past or current existence of *hazardous substances* or *petroleum products* or environmental violations with respect to the *property* or any facility located on the *property*?	☐ Yes	☑ No
14. Have there been any *environmental site assessments* of the *property* or facility that indicated the presence of *hazardous substances* or *petroleum products* on, or contamination of, the *property* or recommended further assessment of the *property*?	☐ Yes	☑ No
15. Have there been any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any *hazardous substance* or *petroleum products* involving the *property*?	☐ Yes	☑ No
16. Has there been any past agricultural use of the *property*, such as orchards or seed crop cultivation?	☑ Yes	☐ No
17. Have any *hazardous substances* or *petroleum products*, unidentified waste materials, tires, automotive or industrial batteries or any other waste materials been dumped above grade, buried and/or burned on the *property*?	☐ Yes	☑ No
18. Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?	☐ Yes	☑ No

If a "Yes" response was provided to any of the above questions, please provide details below:

1. The property is located in a historical Brentwood Oil Fields & has had oil/gas exploration sites.

9. There may have been vent pipes associated with past oil/gas exploration activities onsite.

16. The property has been dry-land farmed for many years.

I certify that the information herein is true and correct to the best of my knowledge as of the date signed below.

Name (Printed/Typed): Lisa M. Borba

Signature: Lisa M. Borba Date: 1/28/19

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☐ 2010 Crow Canyon Place ▪ Suite 250 ▪ San Ramon, CA 94583 (925) 866-9000 ▪ Fax (888) 279-2698
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ENVIRONMENTAL SITE ASSESSMENT QUESTIONNAIRE FOR KEY SITE MANAGER

To evaluate the potential for possible environmentally related impacts and site contamination the following information is requested. This questionnaire is to be preferably completed by the current property owner, or owner representative, leasing agent, or other person having good knowledge of the uses and physical characteristics of the property (Key Site Manager).

PART I

1. Property Address/Location and Assessor's Parcel Number (APN):

   Heidorn Ranch Rd, Antioch, CA (APN 057-050-024)

2. Current property owner (name, address, voice/fax number):

   Ron Ginochio

3. Date current property owner assumed title of property:

   Unknown

4. Current property development/improvements:

   Agricultural

5. Past property use, development/improvements:

   Agricultural, oil and gas exploration, access roads

6. Neighboring property uses:

   PG&E Substation, Agricultural area

PART II - The following questions should be answered to the best of your knowledge.

1.	Is/has the *property* or any adjoining property used/been used for industrial purposes?	☒ Yes	☐ No
2.	Has the *property* or any adjoining property been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?	☐ Yes	☒ No
3.	Are there currently, or have there been previously, any damaged or discarded automotive or industrial batteries, or pesticides, paints, or other chemicals in individual containers of greater than 5 gal in volume or 50 gal in the aggregate, stored on or used at the *property* or at the facility?	☐ Yes	☒ No
4.	Has undocumented soil been brought onto the property at any time? If yes, estimated quantity is _____ cubic yards.	☐ Yes	☒ No
5.	Has soil been brought onto the property that originated from a contaminated site or that is of an unknown origin?	☐ Yes	☒ No
6.	Are there currently, or have there been previously, any pits, ponds, or lagoons located on the *property* in connection with waste treatment or waste disposal?	☐ Yes	☒ No
7.	Is there currently, or has there been previously, any stained soil on the *property*?	☐ Yes	☒ No
8.	Are there currently, or have there been previously, any registered or unregistered storage tanks (above or underground) located on the *property*?	☐ Yes	☒ No
9.	Are there currently, or have there been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the *property* or adjacent to any structure located on the *property*?	☐ Yes	☒ No
10.	Are there currently, or have there been previously, any flooring, drains, or walls located within the facility that are stained by substances other than water or are emitting foul odors?	☐ Yes	☒ No
11.	Are there any domestic, irrigation or monitoring wells on the property?	☐ Yes	☒ No
12.	If the *property* is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system or has the well been designated as contaminated by any government environmental/health agency?	☐ Yes	☒ No
13.	Have you been informed of the past or current existence of *hazardous substances* or *petroleum products* or environmental violations with respect to the *property* or any facility located on the *property*?	☒ Yes	☐ No
14.	Have there been any *environmental site assessments* of the *property* or facility that indicated the presence of *hazardous substances* or *petroleum products* on, or contamination of, the *property* or recommended further assessment of the *property*?	☐ Yes	☒ No
15.	Have there been any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any *hazardous substance* or *petroleum products* involving the *property*?	☐ Yes	☒ No
16.	Has there been any past agricultural use of the *property*, such as orchards or seed crop cultivation?	☒ Yes	☐ No
17.	Have any *hazardous substances* or *petroleum products*, unidentified waste materials, tires, automotive or industrial batteries or any other waste materials been dumped above grade, buried and/or burned on the *property*?	☐ Yes	☒ No
18.	Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?	☐ Yes	☒ No

If a "Yes" response was provided to any of the above questions, please provide details below:

1. The property was historically used for oil and gas production.

13. Four oil/gas wells exist on the property. These wells (4-9, 41-9, 42-9, and 43-9) are all listed as abandoned with DOGGR. Prior surveys of the property indicated that in addition to oil and gas production wells, the property also had several oil and gas pipeline easements within its boundaries. Although there is no data regarding pipeline removal on the property, based on the adjacent property and prior practices, it is to the best of my knowledge that all oil and gas related facilities have been removed.

16. The property has been used for agricultural purposes, mainly dryland farming.

I certify that the information herein is true and correct to the best of my knowledge as of the date signed below.

Name (Printed/Typed): Bob Nunn

Signature:

Date: 02/28/2019

APPENDIX H

QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONAL

SHAWN MUNGER, CHG
Principal Geologist

EDUCATION

BS, Geology, U.C. Davis, 1985

EXPERIENCE

Years with ENGEO: 31
Years with Other Firms: 0

REGISTRATIONS & CERTIFICATIONS

Certified Hydrogeologist, CA, 413

8 Hour HAZWOPER Training, CA, 160115576014

Professional Geologist, CA, 5810

Certified Environmental Manager, NV, 1332

40 Hour HAZWOPER Training, CA, 100830513934

SPECIALIZATIONS

- Environmental Assessments and Remediation
- Environmental Restoration
- Water Quality Studies
- Water Wells/Hydrogeology

Since joining ENGEO in 1985, Shawn has been managing groundwater supply evaluations, hydrogeologic studies, chemical assessments, Phase I and II Site Assessment projects, UST site investigations, risk based corrective action (RBCA), VOC remediation, and agricultural impact evaluations. He serves as Principal-in-Charge or Project Manager for environmental and hazardous materials projects involving groundwater hydrology, contaminant fate and transport, and remediation. He is Principal-in-Charge of the environmental components of our on-call contracts with the City of Sacramento and the County of Sacramento.

Select Project Experience

14234 Saratoga Sunnyvale Road—Saratoga, CA
Project Geologist. Shawn performed Principal review of ENGEO's environmental documents. This 2.2-acre townhome site is planned for a new multi-family development comprising up to 20 units in 8 buildings. The site immediately borders Saratoga Creek and contains numerous mature trees, many of which are to be saved. Site challenges include shallow groundwater, creek bank stability, and the potential for liquefaction and lateral spreading.

Lenihan Dam Outlet Modification—Los Gatos, CA
Principal Geologist. Shawn provided technical advice, coordination, consultation, and review of ENGEO's documents to provide quality mitigation measures. The findings were presented to SCVWD and it was concluded that the stockpile was sufficient for transportation. This analysis led to significant project budget savings by avoiding removal and disposal at a solid waste disposal facility. The project consisted of a stockpile approximately 6,000 cubic yards that required profiling as requested by Santa Clara Valley Water District before use of as site backfill.

199 River Oaks Parkway—San Jose, CA
Principal in Charge. Shawn provided principal oversight, data analysis, and consultation regarding site characterization, risk evaluation, and demolition observation plans. The project consists of a proposed six-story podium structure with one level to be constructed below grade. The property is a former semiconductor facility that has received conditional closure from the Regional Water Quality Control Board and is approved for construction.

Riverside Avenue Property—Roseville, CA
Principal in Charge. Shawn provided principal oversight of a Phase II Environmental Site Assessments and site

characterization. The project site consists of an active auto sales and service facility. The historic use of the facility for industrial purposes resulted in soil and groundwater impacts beneath the site. The City of Roseville revised its plans for acquiring and redeveloping the site due to the identified soil and groundwater impacts.

1301 Standard Oil Ave—Pittsburg, CA
Principal in Charge. Shawn provided principal oversight of a Phase II Environmental Site Characterization. The property is an abandoned wastewater treatment plant with processing buildings, clarifier tanks, and sludge beds.

Pleasant Hill BART Station—Walnut Creek, CA
Principal in Charge. Shawn provided oversight, data analysis and consultation during the preparation of a Phase II Environmental Site Assessment. The property is an existing BART station that encompasses 20 acres, including the platform/station area, electrical facilities, a parking garage and additional paved parking areas.

County Crossings Property—Antioch, CA
Principal in Charge. Shawn provided environmental consultation and data review with regard to soil and groundwater contamination. Constituents of concern include petroleum hydrocarbons, nitrates and manganese. The approximately 264-acre site includes several former industrial facilities and petroleum pipelines. Soil and groundwater at the site has been impacted with petroleum hydrocarbons, nitrates and manganese. Planned uses include commercial, residential, retail, and a BART-oriented transit village. The center, which is currently in the entitlement phase, is estimated to break ground in 2011.

620 North Ninth Street—San Jose, CA
Principal in Charge. Shawn provided oversight of soil, groundwater and soil gad characterizations, risk evaluations and Remedial Action Plan preparation. Shawn also closely interacted with RWQCB staff to achieve approval for residential development. The property is a former fruit packing plant and food preparation facility. The proposed development consists of a single-family residential subdivision.

Westshore—Richmond, CA
Project Manager. Shawn conducted Phase I and II Site Assessments, risk evaluations and prepared a soil management plan. The property was a former automotive manufacturing plant proposed for a multi-unit condominium development, including a 6-story podium structure to include five residential floors with 269 units and one parking floor.

Mills Ranch—King City, CA
Principal in Charge. Shawn provided principal oversight of Phase I/II Environmental Site Assessments and risk evaluations. The approximate 80-acre property is used for agricultural cultivation and commercial uses. The proposed mixed-use development includes over 400 single-family residential lots.

Select Foods Site/Cross Creek—Hayward, CA
Principal in Charge. Shawn provided principal oversight, consultation, and data analysis. The property was a former processed food facility, a drum recycling business, battery manufacturing operation and a bus assembly plant. Following completion of soil remediation under RWQCB oversight, the property was developed into a single-family residential subdivision.

Arroyo Crossing—Livermore, CA
Principal in Charge. Shawn provided oversight, data analysis and regulatory consultation while ENGEO provided geotechnical and environmental engineering services for this 34-acre site. This former corporation yard and quarry site was developed into a single-family residential subdivision.

Renaissance Square—Concord, CA
Project Manager. Shawn provided consultation, data analysis, and field observation. This former automotive dealership was redeveloped as a five-story multi-family residential structure supported on slab-on-grade foundations, with two levels of below-grade parking. Petroleum hydrocarbon-impacted soil was encountered during excavation of the parking structure, which required characterization and remediation. Soil impacts were attributed to former sumps, USTs and hydraulic lifts.

Union Pacific Railroad Corridor—San Jose, CA
Project Manager. Shawn prepared a Phase I and II Environmental Site Assessment. Work included a site reconnaissance, historical records research and recovery of soil samples with laboratory analysis. Lead impacted soil was identified which required risk evaluation. This former1800 lineal foot section of the former Union Pacific Railroad Corridor was proposed for mixed-use development.

Former SFPP Alignment—Concord, CA
Project Manager. Shawn prepared a Phase I and II Environmental Site Assessment. The site was a former ±6,500-foot corridor formerly occupied by the Southern Pacific Railroad. Kinder Morgan petroleum pipelines existed within an easement along the property. The southern portion of the site was crossed by East Bay Municipal Utilities District water distribution lines and a multi-lane highway overpass. The corridor was developed as a self-storage facility. Work included the recovery of soil and groundwater samples along the SP right of way.

Hercules Property—Hercules, CA
Project Manager. Shawn provided oversight of a Phase I Environmental Site Assessment, site asbestos survey, site characterization, and demolition observation/contaminant assessment. The project area consists of ±167 acres located near and along the southeastern shore of San Pablo Bay in Hercules. The property was once a portion of a 1300-acre manufacturing facility that was operated by DuPont from 1879 to 1913 and Hercules Incorporated from 1913 to 1979. The planned development includes single/multi-family residential development with some commercial components.

Highlands Ranch—Antioch, CA
Principal in Charge. Shawn provided oversight, data analysis, and collaboration with RWQCB personnel. The project site consists of a 140-acre portion of the former Chevron Los Medanos Tank Farm located in Pittsburg, California. The site was historically occupied by 24 crude oil tanks and four wax ponds. Remediation of the crude oil tank and wax pond locations was conducted according to a remedial action plan (RAP) and oversight was provided by the CRWQCB. Remediation was performed over a period of four months and consisted of excavating approximately 110,000 cubic yards of impacted soil and placing the material in windrows for ex-situ bioremediation.

ENGEO

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APPENDIX D

ENVIRONMENTAL NOISE ASSESSMENT

Creekside Vineyards at Sand Creek
Environmental Noise Assessment

City of Antioch, California

February 21, 2020

jcb Project # 2019-154

Prepared for:

RANEY
PLANNING & MANAGEMENT, INC.

Attn:
Mr. Rod Stinson
1501 Sports Drive
Sacramento, CA 95834

Prepared by:

j.c. brennan & associates, Inc.

Jim Brennan, INCE
President
Member, Institute of Noise Control Engineering (INCE)

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INTRODUCTION

This report has been prepared to address the noise impacts due to, and upon the Creekside Vineyards at Sand Creek residential subdivision. The project site consists of 220 lots located in the southeast and southwest corners of the future Hillcrest Avenue and Sand Creek Road, in the City of Antioch, California. The proposed Project is bordered to the north by Sand Creek and open space, to the east by vacant land, and future Hillcrest Avenue to the west. Figure 1 shows the project site plan and location.

The project applicant is proposing to develop the site in 3 phases. Figure 2 shows the phasing of the project.

ENVIRONMENTAL SETTING

Background Information on Noise and Vibration

Fundamentals of Acoustics

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

Legend

A

Continuous 24-hour Noise Monitoring Site

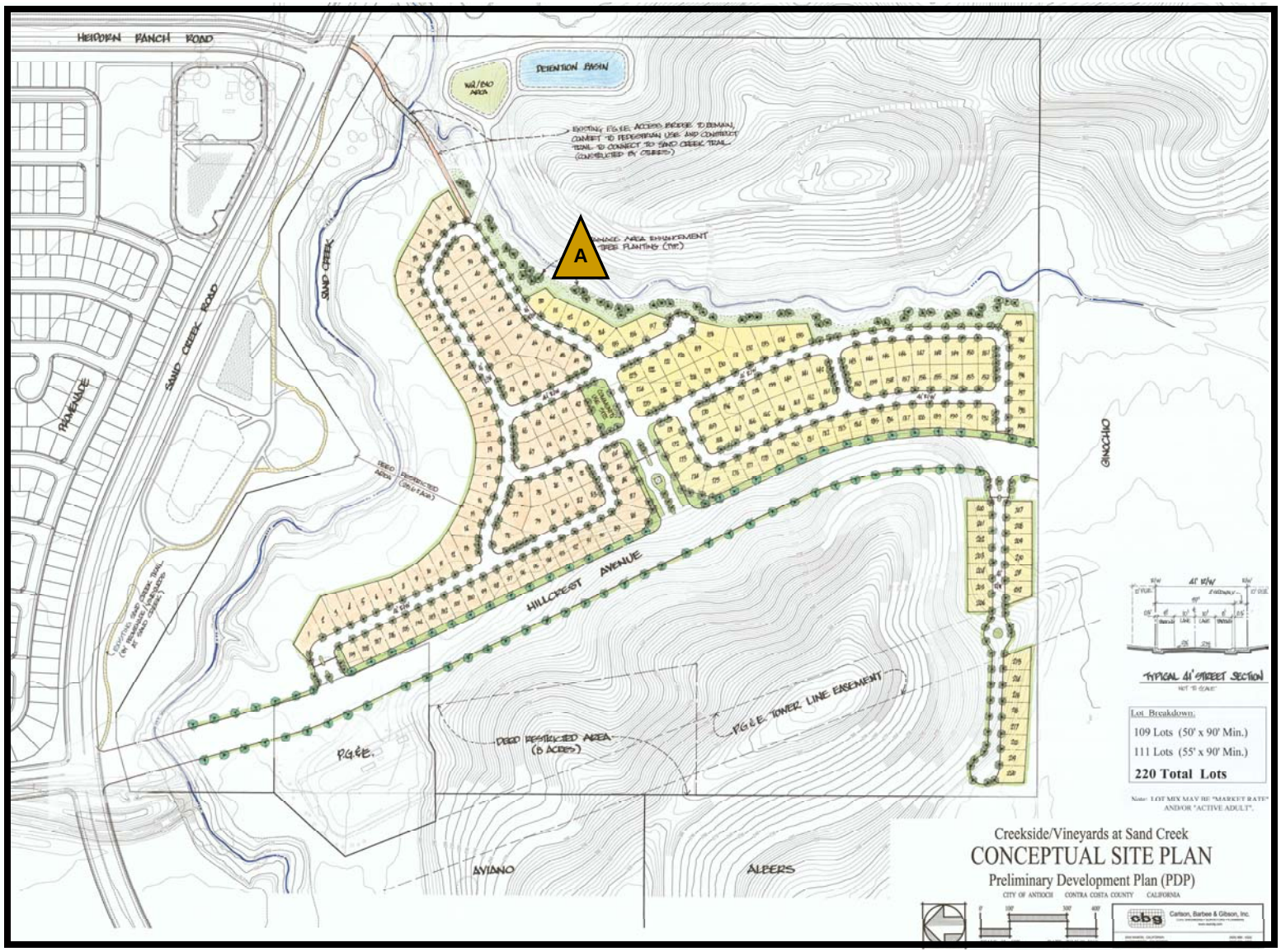

Figure 1
Project Site Plan & Noise Monitoring Sites

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consultants in acoustics

r. 2/24/2020

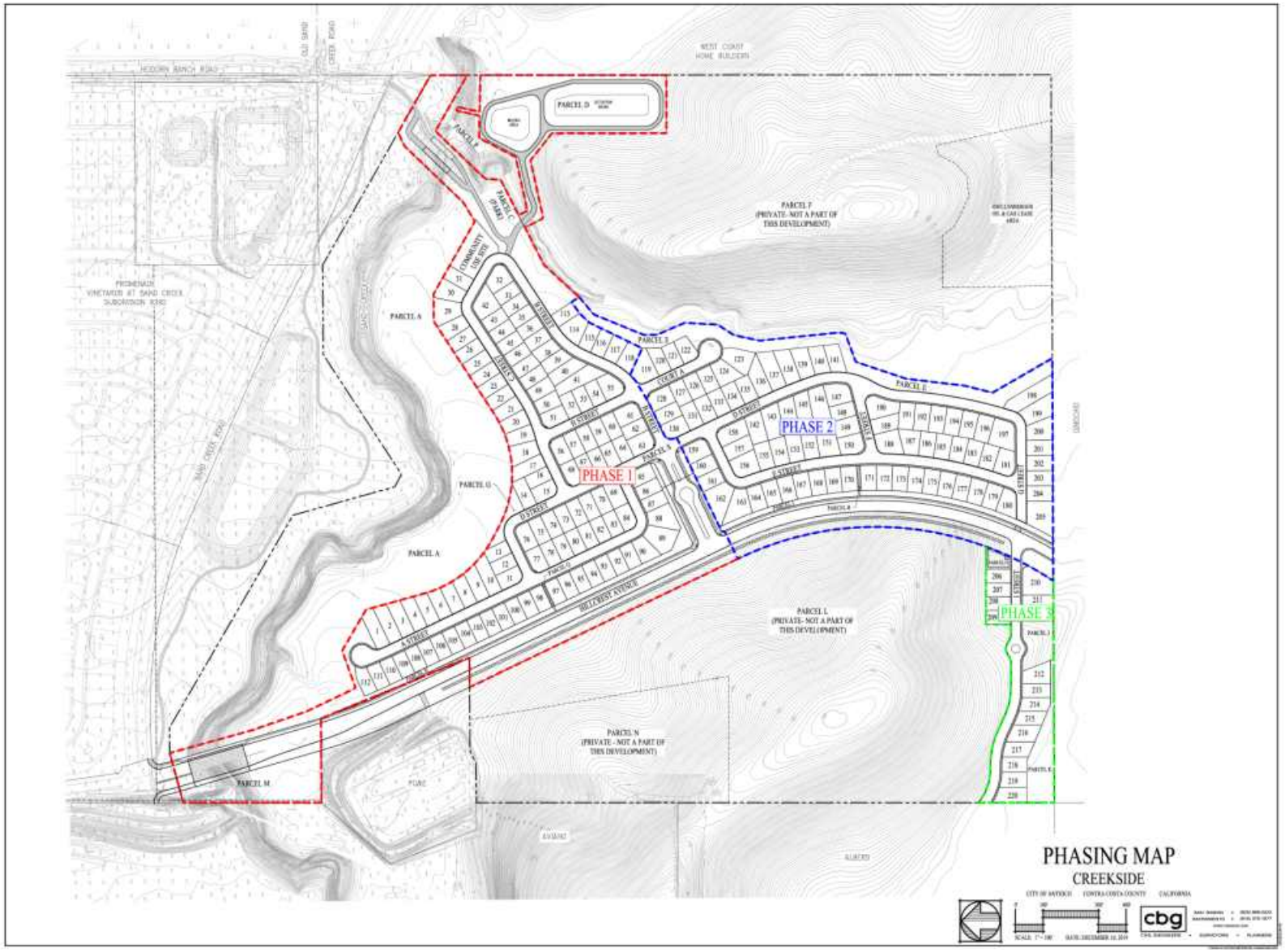

Figure 2
Project Site Phasing

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Rev. 1/11/17

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 1 lists several examples of the noise levels associated with common situations. Appendix A provides a summary of acoustical terms used in this report.

Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

Table 1: Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing
Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. November 2009.		

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

Existing Conditions

The project site consists of relatively flat topography and is currently used for farming and ranch land.

Sensitive Receptors

Some land uses are considered more sensitive to ambient noise levels than others. Land uses often associated with sensitive receptors generally include residences, schools, libraries, hospitals, and passive recreational areas. Sensitive noise receptors may also include threatened or endangered noise sensitive biological species, although many jurisdictions have not adopted noise standards for wildlife areas. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise.

In the vicinity of the project site, sensitive land uses consist of residential currently being developed to the north, and across Sand Creek Road.

Existing Ambient Noise Levels

To quantify the existing ambient noise environment in the project vicinity, j.c. brennan & associates, Inc. staff utilized continuous 24-hour noise level measurements which were conducted on January 22-23, 2020. See Figure 1 for noise measurement location. Due to construction in the area, additional background noise measurements were not conducted due to interference from construction equipment. The noise level measurements were conducted to determine typical background noise levels and for comparison to the project related noise levels. Table 2 shows a summary of the noise measurement results. Appendix B graphically shows the results of the 24-hour noise measurements.

Table 2: Summary of Ambient Noise Measurements

Continuous 24-hour Noise Measurement Site									
Site	**Location**	**Date**	**Average Measured Hourly Noise Levels, dBA**						
			CNEL	**Daytime (7:00 am-10:00 pm)**			**Nighttime (10:00 pm – 7:00 am)**		
				L_{eq}	L_{50}	L_{max}	L_{eq}	L_{50}	L_{max}
A	North portion of site	January 22-23, 2020	52.7	51.4	40.9	64.0	44.6	40.2	58.9
Source: j.c. brennan & associates, Inc. - 2020									

The sound level meters were programmed to record the maximum, median, and average noise levels at each site during the survey. The maximum value, denoted L_{max}, represents the highest noise level measured. The average value, denoted L_{eq}, represents the energy average of all of the noise received by the sound level meter microphone during the monitoring period. The median value, denoted L_{50}, represents the sound level exceeded 50 percent of the time during the monitoring period.

A Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meter was used for the ambient noise level measurement survey. The meter was calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

Existing Roadway Noise Levels

To predict existing noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calveno reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions.

Traffic volumes for existing conditions were obtained from the traffic study prepared for the project (Fehr & Peers). Truck percentages and vehicle speeds on the local area roadways were estimated from field observations.

Traffic noise levels are predicted at the sensitive receptors located at 75-feet from the centerline along each project-area roadway segment. In some locations sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers or sound walls. However, the traffic noise analysis is believed to be representative of the majority of sensitive receptors located closest to the project-area roadway segments analyzed in this report.

The actual distances to noise level contours may vary from the distances predicted by the FHWA model due to roadway curvature, roadway grade, shielding from local topography, sound walls or structures. The distances reported in Table 3 are generally considered to be conservative estimates of noise exposure along the project-area roadways.

Table 3 shows the existing traffic noise levels in terms of CNEL at 75-feet from the centerline along each roadway segment. This table also shows the distances to existing traffic noise contours. A complete listing of the FHWA Model input data is contained in Appendix C.

Table 3: Predicted Existing Traffic Noise Levels
Creekside Vineyards at Sand Creek

Roadway	Segment	CNEL, dB @ 75-feet	Noise Levels (CNEL, dB)			
			Distance (feet)	Distance to Contours (feet) Existing (CNEL)		
				70	65	60
Lone Tree Way	West of Hillcrest	67.5	75	51	110	238
Lone Tree Way	Hillcrest to Heidorn	68.3	75	57	124	266
Lone Tree Way	Heidorn to S.R. 4	63.4	75	27	59	126
Sand Creek Road	West of Deer Valley	41.2	75	1	2	4
Sand Creek Road	Deer Valley to Future Hillcrest	57.0	75	10	22	47
Sand Creek Road	East of S.R. 4	68.3	75	58	124	267
Deer Valley Road	South of Sand Creek Road	62.2	75	23	49	106
Deer Valley Road	North of Sand Creek Road	62.1	75	22	48	103
Heidorn Road	Lone Tree to Future Sand Creek	60.1	75	16	36	77
Hillcrest Avenue	North of Lone Tree Way	64.8	75	34	72	156
Hillcrest Avenue	Lone Tree to Future Sand Creek	60.6	75	18	38	83

[1] Distances to traffic noise contours are measured in feet from the centerlines of the Roadways.
[2] Traffic noise levels do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.
Source: FHWA-RD-77-108 with inputs from Fehr & Peers and j.c. brennan & associates, Inc. - 2020

REGULATORY CONTEXT

Federal

There are no federal regulations related to noise that apply to the Proposed Project.

State

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines, Appendix G, indicate that a significant noise impact may occur if a project exposes persons to noise levels in excess of local general plans or noise ordinance standards, or cause a substantial permanent or temporary increase in ambient noise levels.

California State Building Codes

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn} or CNEL in any habitable room.

Title 24 also mandates that for structures containing noise-sensitive uses to be located where the L_{dn} or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment

City of Antioch General Plan

The Environmental Hazards Chapter of the City of Antioch General Plan sets forth noise and land use compatibility standards to guide development, and noise goals and policies to protect citizens from the harmful and annoying effects of excessive noise. Objectives and policies established in the Noise Element of the General Plan that are applicable to the proposed project include:

11.6.1 Noise Objective
Achieve and maintain exterior noise levels appropriate to planned land uses throughout Antioch as described below:

- Residential
  Single-Family: 60 dBA CNEL within rear yards
  Multi-Family: 60 dBA CNEL within exterior open space

- Schools
  Classrooms: 65 dBA CNEL
  Play and sports areas: 70 dB CNEL

- Hospitals, Libraries: 60 dBA CNEL

- Commercial/Industrial: 70 dBA CNEL at the front setback

11.6.2 Noise

Noise Compatible Land Use and Circulation Patterns

b. Maintain a pattern of land uses that separates noise-sensitive land uses from major noise sources to the extent possible, and guide noise-tolerant land uses into the noisier portions of the Planning Area.

Noise Analysis and Mitigation

e. When new development incorporating a potentially significant noise generator is proposed, require noise analyses to be prepared by a qualified acoustical engineer. Require the implementation of appropriate noise mitigation when the proposed project will cause new exceedances of General Plan noise objectives, or an audible (3.0 dBA) increase in noise in areas where General Plan noise objectives are already exceeded as the result of existing development.

f. In reviewing noise impacts, utilize site design and architectural design features to the extent feasible to mitigate impacts on residential neighborhoods and other uses that are sensitive to noise. In addition to sound barriers, design techniques to mitigate noise impacts may include, but are not limited to:

- Increased building setbacks to increase the distance between the noise source and sensitive receptor.
- Orient buildings which are compatible with higher noise levels adjacent to noise generators or in clusters to shield more noise sensitive areas and uses.

- Orient delivery, loading docks, and outdoor work areas away from noise sensitive uses.
- Place noise tolerant use, such as parking areas, and noise tolerant structures, such as garages, between the noise source and sensitive receptor.
- Cluster office, commercial, or multifamily residential structures to reduce noise levels within interior open space areas.
- Provide double glazed and double paned windows on the side of the structure facing a major noise source, and place entries away from the noise source to the extent possible.

g. Where feasible, require the use of noise barriers (walls, berms, or a combination thereof) to reduce significant noise impacts.

- The barrier must have sufficient mass to reduce noise transmission and high enough to shield the receptor from the noise source
- To be effective, the barrier needs to be constructed without cracks or openings.
- The barrier must interrupt the line-of-sight between the noise source and the receptor.
- The effects of noise "flanking" the noise barrier should be minimized by bending the end of the barrier back from the noise source
- Require appropriate landscaping treatment to be provided in conjunction with noise barriers to mitigate their potential aesthetic impacts.

h. Continue enforcement of California Noise Insulation Standards (Title 25, Section 1092, California Administration Code).

Temporary Construction

i. Ensure that construction activities are regulated as to hours of operation in order to avoid or mitigate noise impacts on adjacent noise-sensitive land uses.

j. Require proposed development adjacent to occupied noise sensitive land uses to implement a construction-related noise mitigation plan. This plan would depict the location of construction equipment storage and maintenance areas, and document methods to be employed to minimize noise impacts on adjacent noise sensitive land uses.

k. Require that all construction equipment utilize noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

m. Prior to the issuance of any grading plans, the City shall condition approval of subdivisions and non-residential development adjacent to any developed/occupied noise sensitive land uses by requiring applicants to submit a construction-related noise mitigation plan to the City for review and approval. The plan should depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of the project through the use of such methods as:

- The construction contractor shall use temporary noise-attenuation fences, where feasible, to reduce construction noise impacts on adjacent noise sensitive land uses
- During all project site excavation and grading on-site, the construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards. The construction contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.
- The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.
- The construction contractor shall limit all construction-related activities that would result in high noise levels to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Saturday. No construction shall be allowed on Sundays and public holidays.

n. The construction-related noise mitigation plan required shall also specify that haul truck deliveries be subject to the same hours specified for construction equipment. Additionally, the plan shall denote any construction traffic haul routes where heavy trucks would exceed 100 daily trips (counting those both to and from the construction site). To the extent feasible, the plan shall denote haul routes that do not pass sensitive land uses or residential dwellings. Lastly, the construction-related noise mitigation plan shall incorporate any other restrictions imposed by the city.

City of Antioch Noise Ordinance

Section 9-5.1901 of the Antioch Zoning Ordinance sets forth noise attenuation requirements for stationary and mobile noise sources. The provisions applicable to the project include the following:

(A) *Stationary noise sources.* Uses adjacent to outdoor living areas (e.g., backyards for single-family homes and patios for multi-family units) and parks shall not cause an increase in background ambient noise which will exceed 60 CNEL.

(B) Mobile noise sources.

(1) Arterial and street traffic shall not cause an increase in background ambient noise which will exceed 60 CNEL.

(D) Noise attenuation. The city may require noise attenuation measures be incorporated into a project to obtain compliance with this section. Measures outlined in the noise policies of the General Plan should be utilized to mitigate noise to the maximum feasible extent.

The City of Antioch Zoning Ordinance (2005) provides noise attenuation requirements for construction activity. Specifically, Section 5-17.04 prohibits construction during sensitive evening, nighttime, and weekend hours. 5-17.04

Construction Noise Attenuation

(B) It shall be unlawful for any person to be involved in construction activity during the hours specified below:

- On weekdays prior to 7:00 a.m. and after 6:00 p.m.
- On weekdays within 300 feet of occupied dwellings, prior to 8:00 a.m. and after 5:00 p.m.
- On weekends and holidays, prior to 9:00 a.m. and after 5:00 p.m., irrespective of the distance from the occupied dwellings.

Vibration Standards

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

The City of Antioch does not contain specific policies pertaining to vibration levels. However, vibration levels associated with construction activities are discussed in this report.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 4, which was developed by Caltrans, shows the vibration levels which would normally be required to result in damage to structures. The vibration levels are presented in terms of peak particle velocity in inches per second.

Table 4 indicates that the threshold for architectural damage to structures is 0.20 in/sec p.p.v. and continuous vibrations of 0.10 in/sec p.p.v., or greater, would likely cause annoyance to sensitive receptors.

Table 4: Effects of Various Vibration Levels on People and Buildings

Vibration Level (Peak Particle Velocity)*			
mm/s	in/sec	Human Reaction	Effect on Buildings
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of “architectural” damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of “architectural” damage to normal dwelling - houses with plastered walls and ceilings Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize “architectural” damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause “architectural” damage and possibly minor structural damage.

Source: Transportation Related Earthborne Vibrations, Caltrans Experiences. Technical Advisory: TAV-02-01-R9601. February 20, 2002.

IMPACTS AND MITIGATION MEASURES

Methods of Analysis

Traffic Noise Impact Assessment Methodology

To describe future noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. Direct inputs to the model included ADT traffic volumes provided by Fehr & Peers. The FHWA model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. To predict L_{dn}/CNEL values, it is necessary to determine the day/night distribution of traffic and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

Construction Noise and Vibration Impact Methodology

Construction noise and vibration was analyzed using data compiled for various pieces of construction equipment at a representative distance of 50 feet. Construction activities are discussed relative to the applicable City of Antioch General Plan noise policies and Noise Ordinance. Potential impacts and mitigation measures are discussed.

Thresholds of Significance

Appendix G of the CEQA Guidelines states that a project would normally be considered to result in significant noise impacts if noise levels conflict with adopted environmental standards or plans or if noise generated by the project would substantially increase existing noise levels at sensitive receivers on a permanent or temporary basis. Significance criteria for noise impacts are drawn from CEQA Guidelines Appendix G (Items XI [a-f]).

Additional thresholds included in the General Plan EIR also are shown.

Would the project:

a. Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

b. Expose persons to, or generate, excessive groundborne vibration or groundborne noise levels;

c. Cause a substantial permanent increase in ambient noise levels in the project vicinity above existing levels without the project;

d. Cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels without the project;

e. Expose persons residing or working in the project area to excessive noise levels if located within an airport land use plan or where such a plan has not been adopted within 2 miles of a public airport or public use airport; or

f. Expose persons residing or working in the project area to excessive noise levels if located within the vicinity of a private airstrip.

Additionally, the General Plan EIR included the following discussion regarding increases in ambient noise:

> *"CEQA does not define "substantial increase." Webster's Dictionary defines "substantial" as "considerable in quantity." As noted earlier in the discussion of noise definitions, the human ear can detect changes of 3 dBA and changes of less than 3 dBA, while audible under controlled circumstances, are not readily discernable in an outdoor environment. Thus a change of 3 dBA is considered a barely audible change. However, CEQA uses "substantial change" as its criterion. Because most people can readily hear a change of 5 dBA L_{dn} in an exterior environment, this value was established for the proposed General Plan as the CEQA criterion for substantial change. As a point of reference, Caltrans defines a noise increase as substantial when the predicted noise level with the project would exceed existing noise levels by 12 dBA L_{eq}."*

Thus, the proposed project could result in potentially significant impacts related to noise if it would exceed any of the thresholds of significance described below.

- An increase in long-term ambient noise by 5 dBA CNEL/L_{dn} or more, where existing noise levels do not exceed the City's 60 dBA CNEL exterior noise level standard (*General Plan DEIR*), or:

- An increase in long-term ambient noise by 3 dBA CNEL/L_{dn} or more, where existing noise levels exceed the City's 60 dBA CNEL exterior noise level standard (*General Plan Noise Element, Policy E*).

The proposed project is not located within two miles of a public or private airport or airstrip. Therefore, aircraft noise is not discussed further in this analysis.

Project-Specific Impacts and Mitigation Measures

Impact 1 Construction Noise at Sensitive Receptors

Construction of the Proposed Project would temporarily increase noise levels during construction. This would be a ***potentially significant*** impact.

During the construction of the project including roads, water and sewer lines and related infrastructure, noise from construction activities would add to the noise environment in the project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 5, ranging from 76 to 90 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways. A substantial project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

Table 5: Construction Equipment Noise

Type of Equipment	Maximum Level, dB at 50 feet
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85
Source: *Roadway Construction Noise Model User's Guide*. Federal Highway Administration. FHWA-HEP-05-054. January 2006.	

Construction activities are conditionally exempt from the Noise Ordinance during certain hours.

Mitigation for Impact 1:

The following mitigation measures are required for the Proposed Project to minimize construction noise impacts.

MM 1a: Construction activities shall comply with the City of Antioch Noise Ordinance with regards to hours of operations.

MM 1b: Locate fixed construction equipment such as compressors and generators as far as possible from sensitive receptors. Shroud or shield all impact tools, and muffle or shield all intake and exhaust ports on power construction equipment.

***MM 1c*:** Designate a disturbance coordinator and conspicuously post this person's number around the project site and in adjacent public spaces. The disturbance coordinator will receive all public complaints about construction noise disturbances and will be responsible for determining the cause of the complaint, and implement any feasible measures to be taken to alleviate the problem.

MM 1d: Develop a construction-related noise mitigation plan, consistent with the General Plan.

Significance after Mitigation: **Less-than-significant**

Impact 2 Construction Vibration at Sensitive Receptors

The proposed project has the potential to expose sensitive receptors to substantial vibration associated with construction activities. This would be a ***less-than-significant*** impact.

The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as grading and utility placement.

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table 6 shows the typical vibration levels produced by construction equipment.

Sensitive receptors could be impacted by construction related vibrations, especially vibratory compactors/rollers. The nearest receptors from the residential lot portions of the project site are located approximately 600 feet from any potential residences to the north. The nearest potential existing residences are approximately 50-feet or further from any areas of the project site that might require roadway grading, paving or bridge construction across Sand Creek. At these distances construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

Table 6: Vibration Levels for Varying Construction Equipment

Type of Equipment	Peak Particle Velocity @ 25 feet (inches/second)	Peak Particle Velocity @ 50 feet (inches/second)	Peak Particle Velocity @ 100 feet (inches/second)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210	0.074	0.026

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Guidelines, May 2006

The Table 6 data indicate that construction vibration levels anticipated for the project are less than the 0.1 in/sec criteria at distances of 50 feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors. Implementation of the proposed project would have a **less than significant** impact.

Mitigation for Impact 2: None required

Impact 3 Transportation Noise at Existing Sensitive Receptors

Traffic generated by the Proposed Project will not generate traffic noise increases exceeding the substantial increase criteria, as outlined in the Thresholds of Significance criteria above. This would be a ***less-than-significant*** impact.

Tables 7 through 9 show the predicted traffic noise level increases on the local roadway network for Existing, Existing Plus Promenade, Existing Plus Promenade Plus Project, Cumulative Plus Project and Cumulative Plus Project scenarios.

Table 7: Existing No Project vs. Existing + Promenade Project Traffic Noise Levels
Creekside Vineyards at Sand Creek

Roadway	Segment	Traffic Noise Levels (CNEL, dB)			Distance to Noise Level Contours (feet)					
		Existing No Project	Existing + Promenade Project	Δ Change	Existing No Project (CNEL, dB)			Existing + Promenade Project (CNEL, dB)		
					70	65	60	70	65	60
Lone Tree Way	West of Hillcrest	67.5	67.6	0.1	51	110	238	52	112	242
Lone Tree Way	Hillcrest to Heidorn	68.3	68.4	0.1	57	124	266	59	127	274
Lone Tree Way	Heidorn to S.R. 4	63.4	63.7	0.3	27	59	126	29	62	133
Sand Creek Road	West of Deer Valley	41.2	41.2	0	1	2	4	1	2	4
Sand Creek Road	Deer Valley to Future Hillcrest	57.0	57.0	0	10	22	47	10	22	47
Sand Creek Road	East of S.R. 4	68.3	68.3	0	58	124	267	58	125	269
Deer Valley Road	South of Sand Creek Road	62.2	62.3	0.1	23	49	106	23	50	107
Deer Valley Road	North of Sand Creek Road	62.1	62.2	0.1	22	48	103	23	49	105
Heidorn Road	Lone Tree to Future Sand Creek	60.1	62.0	1.9	16	36	77	22	47	102
Hillcrest Avenue	North of Lone Tree Way	64.8	64.8	0	34	72	156	34	73	157
Hillcrest Avenue	Lone Tree to Future Sand Creek	60.6	61.3	0.7	18	38	83	20	43	92

[1] Traffic noise levels are modeled at 75-feet from the centerlines of the Roadways
[2] Distances to traffic noise contours are measured in feet from the centerlines of the Roadways.
[3] Traffic noise levels do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.
Bold indicates a potential significant increase in traffic noise levels.
Source: FHWA-RD-77-108 with inputs from Fehr & Peers and j.c. brennan & associates, Inc. - 2020

Table 8: Existing Plus Promenade vs. Existing + Promendade + Project Traffic Noise Levels
Creekside Vineyards at Sand Creek

Roadway	Segment	Traffic Noise Levels (CNEL, dB)			Distance to Noise Level Contours (feet)					
		Existing Plus Promenade	Existing + Promenade + Project	Δ Change	Existing Plus Promenade (CNEL, dB)			Existing + Promenade + Project (CNEL, dB)		
					70	65	60	70	65	60
Lone Tree Way	West of Hillcrest	67.6	67.7	0.1	52	112	242	53	113	244
Lone Tree Way	Hillcrest to Heidorn	68.4	68.6	0.2	59	127	274	61	131	282
Lone Tree Way	Heidorn to S.R. 4	63.7	63.9	0.2	29	62	133	29	64	137
Sand Creek Road	West of Deer Valley	41.2	41.2	0	1	2	4	1	2	4
Sand Creek Road	Deer Valley to Future Hillcrest	57.0	57.0	0	10	22	47	10	22	47
Sand Creek Road	East of S.R. 4	68.3	68.4	0.1	58	125	269	58	126	271
Deer Valley Road	South of Sand Creek Road	62.3	62.6	0.3	23	50	107	24	52	111
Deer Valley Road	North of Sand Creek Road	62.2	62.4	0.2	23	49	105	23	50	108
Heidorn Road	Lone Tree to Future Sand Creek	62.0	62.0	0	22	47	102	22	47	102
Hillcrest Avenue	North of Lone Tree Way	64.8	64.9	0.1	34	73	157	34	73	158
Hillcrest Avenue	Lone Tree to Future Sand Creek	61.3	62.5	1.2	20	43	92	24	51	111
Hillcrest Avenue	South of Sand Creek Road	---	57.6	NA	---	---	---	11	24	52

[1] Traffic noise levels are modeled at 75-feet from the centerlines of the Roadways
[2] Distances to traffic noise contours are measured in feet from the centerlines of the Roadways.
[3] Traffic noise levels do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.
Bold indicates a potential significant increase in traffic noise levels.
Source: FHWA-RD-77-108 with inputs from Fehr & Peers and j.c. brennan & associates, Inc. - 2020

Table 9: Cumulative No Project vs. Cumulative + Project Traffic Noise Levels
Creekside Vineyards at Sand Creek

Roadway	Segment	Traffic Noise Levels (CNEL, dB)			Distance to Noise Level Contours (feet)					
		Cumulative No Project	Cumulative + Project	Δ Change	Cumulative No Project (CNEL, dB)			Cumulative + Project (CNEL, dB)		
					70	65	60	70	65	60
Lone Tree Way	West of Hillcrest	69.4	69.7	0.3	69	148	319	71	154	332
Lone Tree Way	Hillcrest to Heidorn	70.0	70.1	0.1	75	163	350	76	163	352
Lone Tree Way	Heidorn to S.R. 4	65.8	65.8	0	39	85	183	39	85	183
Sand Creek Road	West of Deer Valley	62.7	62.7	0	24	53	114	24	53	114
Sand Creek Road	Deer Valley to Future Hillcrest	65.4	65.8	0.4	37	80	172	39	84	181
Sand Creek Road	East of S.R. 4	69.9	70.1	0.2	73	158	341	76	165	355
Deer Valley Road	South of Sand Creek Road	65.2	65.3	0.1	36	77	165	36	78	168
Deer Valley Road	North of Sand Creek Road	67.0	67.0	0	47	101	219	47	102	220
Heidorn Road	Lone Tree to Future Sand Creek	66.7	66.7	0	45	97	208	45	97	208
Hillcrest Avenue	North of Lone Tree Way	66.8	66.8	0	46	99	212	46	99	213
Hillcrest Avenue	Lone Tree to Future Sand Creek	64.5	64.8	0.3	32	70	151	34	73	157
Hillcrest Avenue	South of Sand Creek Road	60.5	62.3	1.8	17	38	81	23	50	107
Hillcrest Avenue	First Entrance to South side of Project	60.5	63.2	2.7	17	38	81	26	57	122
Hillcrest Avenue	South of Project Site	60.5	60.5	0	17	38	81	17	38	81
Sand Creek Road	Hillcrest to Heidorn	67.5	67.8	0.3	51	111	239	53	115	248
Sand Creek Road	Heidorn to S.R. 4	69.3	69.4	0.1	67	144	311	69	148	319

[1] Traffic noise levels are modeled at 75-feet from the centerlines of the Roadways
[2] Distances to traffic noise contours are measured in feet from the centerlines of the Roadways.
[3] Traffic noise levels do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.
Bold indicates a potential significant increase in traffic noise levels.
Source: FHWA-RD-77-108 with inputs from Fehr & Peers and j.c. brennan & associates, Inc. - 2020

Based upon the General Plan EIR and general standards of significance, a project results in an increase in long-term ambient noise by 5 dBA CNEL/L_{dn} or more, where existing noise levels do not exceed the City's 60 dBA CNEL exterior noise level standard (*General Plan DEIR*). Based upon the results of the analysis, this does not occur.

The project does not result in an increase in long-term ambient noise by 3 dBA CNEL/L_{dn} or more, where existing noise levels exceed the City's 60 dBA CNEL exterior noise level standard (*General Plan Noise Element, Policy E*).

Implementation of the proposed project would have a **less than significant** impact.

Mitigation for Impact 3: None required

Impact 4 Transportation Noise at New Sensitive Receptors

The proposed project could expose new noise-sensitive uses on the project site to transportation noise levels that exceed the City of Antioch exterior and interior noise level standards. This is considered to be a ***potentially significant*** impact.

Exterior Traffic Noise Level Impacts:

The FHWA traffic noise prediction model was used to predict Cumulative Plus Project traffic noise levels at the proposed residential land uses associated with the project. This would occur at the first row of residences adjacent to Hillcrest Avenue. Based upon Table 9, the traffic noise levels at the project site would range between 62.3 dB and 63.2 dB CNEL.

Using the FHWA barrier analysis, a barrier 6-feet in height would be required to reduce traffic noise levels to less than 60 dB CNEL. The modeled noise barrier assumes flat site conditions where roadway elevations, base of wall elevations, and building pad elevations are approximately equivalent.

Interior Noise Impacts:

Standard construction practices consistent with the uniform building code typically provide a 25 dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise levels of 70 dB CNEL, or less, will typically comply with the California State Building Code 45 dB CNEL interior noise level standard. Additional noise reduction measures, such as acoustically rated windows are generally required for exterior noise levels exceeding 70 dB CNEL.

Based upon analysis, the predicted cumulative plus project traffic noise levels at the project site will be less than 65 dB CNEL. Therefore, interior noise levels will comply with the interior noise level standard of 45 dB CNEL.

Mitigation for Impact 4:

MM 4a: A sound wall and/or landscaped berms should be constructed along Hillcrest Avenue where residences are located within 157-feet of the roadway. The barrier heights should be 6-feet in height. Noise barrier walls shall be constructed of concrete panels, concrete masonry units, earthen berms, or any combination of these materials. If roadway elevations and building pad elevations are not equal, the barrier heights and locations should be reviewed once grading plans are available for these locations.

MM 4b: Mechanical ventilation shall be installed in all residential uses to allow residents to keep doors and windows closed, as desired for acoustical isolation.

Significance after Mitigation: **Less-than-significant**.

Appendix A
Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
$L_{(n)}$	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L_{50} is the sound level exceeded 50% of the time during the one hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
NRC	Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the AMaximum@ level, which is the highest RMS level.
RT_{60}	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin.
SEL	Sound Exposure Level. SEL is s rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.
STC	Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

Appendix B

2019-154 Creekside Vinyards at Sand Creek

Continous 24 Hr Monitoring - Site A

January 22-23, 2020

Hour	Leq	Lmax	L50	L90
11:00	49.9	70.4	40.8	36.7
12:00	45.6	56.4	41.5	37.8
13:00	47.2	62.8	42.9	39.3
14:00	48.1	70.2	41.6	37.3
15:00	45.0	66.0	40.0	36.0
16:00	47.1	62.0	40.3	36.4
17:00	44.4	63.4	39.7	35.8
18:00	46.1	62.1	38.4	34.7
19:00	43.0	65.0	40.8	37.1
20:00	44.9	55.4	41.4	38.0
21:00	45.3	62.2	42.4	38.7
22:00	46.0	56.7	42.1	38.2
23:00	42.6	55.9	41.2	38.4
0:00	39.7	60.8	37.2	33.5
1:00	39.6	54.8	37.0	34.5
2:00	39.6	55.5	37.5	35.2
3:00	41.8	61.2	37.8	34.3
4:00	44.8	61.1	40.0	36.7
5:00	45.1	61.6	42.8	39.0
6:00	49.9	62.6	46.0	41.8
7:00	50.3	59.9	42.4	39.0
8:00	50.6	57.8	41.3	37.5
9:00	60.0	72.6	44.1	34.7
10:00	44.4	64.7	38.2	34.3

	Statistical Summary								
	Daytime (7 a.m. - 7 p.m.)			Evening (7 p.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average	High	Low	Average
Leq (Average)	60.0	44.4	51.4	45.3	43.0	44.5	49.9	39.6	44.6
Lmax (Maximum)	72.6	56.4	64.0	65.0	55.4	60.9	62.6	54.8	58.9
L50 (Median)	44.1	38.2	40.9	42.4	40.8	41.5	46.0	37.0	40.2
L90 (Background)	39.3	34.3	36.6	38.7	37.1	37.9	41.8	33.5	36.8

Computed CNEL, dB	52.7
% Daytime Energy	83%
% Evening Energy	4%
% Nighttime Energy	13%

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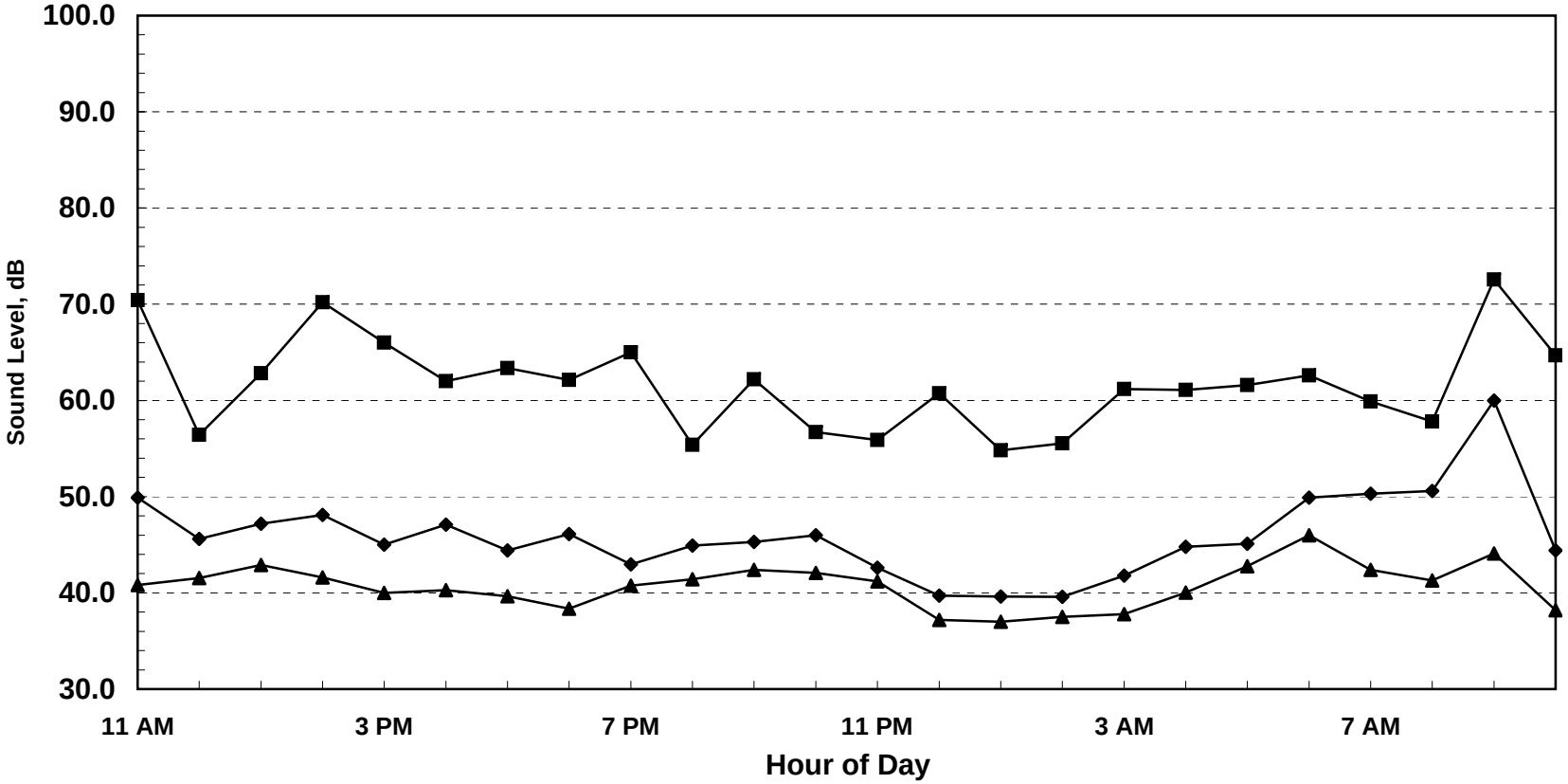
Appendix B

Continous Measured Hourly Noise Levels

Creekside Vineyards at Sand Creek

January 22-23, 2020



CNEL = 52.7 dB

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Appendix C
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2019-154
Description: Existing
Ldn/CNEL: CNEL
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Lone Tree Way	West of Hillcrest	21,220	87		13	2.0	1	45	75	
2	Lone Tree Way	Hillcrest to Heidorn	25,110	87		13	2.0	1	45	75	
3	Lone Tree Way	Heidorn to S.R. 4	27,370	87		13	2.0	1	25	75	
4	Sand Creek Road	West of Deer Valley	50	87		13	2.0	1	45	75	
5	Sand Creek Road	Deer Valley to Future Hillcrest	1,890	87		13	2.0	1	45	75	
6	Sand Creek Road	East of S.R. 4	25,250	87		13	2.0	1	45	75	
7	Deer Valley Road	South of Sand Creek Road	6,280	87		13	2.0	1	45	75	
8	Deer Valley Road	North of Sand Creek Road	6,030	87		13	2.0	1	45	75	
9	Heidorn Road	Lone Tree to Future Sand Cr.	3,870	87		13	2.0	1	45	75	
10	Hillcrest Ave	North of Lone Tree Way	11,220	87		13	2.0	1	45	75	
11	Hillcrest Ave	Lone Tree to Future Sand Cr.	4,350	87		13	2.0	1	45	75	
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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2019-154
Description: Existing
Ldn/CNEL: CNEL
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Lone Tree Way	West of Hillcrest	66.3	57.7	59.2	67.5
2	Lone Tree Way	Hillcrest to Heidorn	67.0	58.4	59.9	68.3
3	Lone Tree Way	Heidorn to S.R. 4	60.0	54.8	59.4	63.4
4	Sand Creek Road	West of Deer Valley	40.0	31.4	32.9	41.2
5	Sand Creek Road	Deer Valley to Future Hillcrest	55.8	47.2	48.7	57.0
6	Sand Creek Road	East of S.R. 4	67.0	58.4	59.9	68.3
7	Deer Valley Road	South of Sand Creek Road	61.0	52.4	53.9	62.2
8	Deer Valley Road	North of Sand Creek Road	60.8	52.2	53.7	62.1
9	Heidorn Road	Lone Tree to Future Sand Cr.	58.9	50.3	51.8	60.1
10	Hillcrest Ave	North of Lone Tree Way	63.5	54.9	56.4	64.8
11	Hillcrest Ave	Lone Tree to Future Sand Cr.	59.4	50.8	52.3	60.6

Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2019-154

Description: Existing

Ldn/CNEL: CNEL

Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Lone Tree Way	West of Hillcrest	24	51	110	238	513
2	Lone Tree Way	Hillcrest to Heidorn	27	57	124	266	573
3	Lone Tree Way	Heidorn to S.R. 4	13	27	59	126	272
4	Sand Creek Road	West of Deer Valley	0	1	2	4	9
5	Sand Creek Road	Deer Valley to Future Hillcrest	5	10	22	47	102
6	Sand Creek Road	East of S.R. 4	27	58	124	267	576
7	Deer Valley Road	South of Sand Creek Road	11	23	49	106	228
8	Deer Valley Road	North of Sand Creek Road	10	22	48	103	222
9	Heidorn Road	Lone Tree to Future Sand Cr.	8	16	36	77	165
10	Hillcrest Ave	North of Lone Tree Way	16	34	72	156	335
11	Hillcrest Ave	Lone Tree to Future Sand Cr.	8	18	38	83	178

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Appendix C
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2019-154
Description: Existing with Promenade
Ldn/CNEL: CNEL
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Lone Tree Way	West of Hillcrest	21,760	87		13	2.0	1	45	75	
2	Lone Tree Way	Hillcrest to Heidorn	26,200	87		13	2.0	1	45	75	
3	Lone Tree Way	Heidorn to S.R. 4	29,470	87		13	2.0	1	25	75	
4	Sand Creek Road	West of Deer Valley	50	87		13	2.0	1	45	75	
5	Sand Creek Road	Deer Valley to Future Hillcrest	1,890	87		13	2.0	1	45	75	
6	Sand Creek Road	East of S.R. 4	25,520	87		13	2.0	1	45	75	
7	Deer Valley Road	South of Sand Creek Road	6,440	87		13	2.0	1	45	75	
8	Deer Valley Road	North of Sand Creek Road	6,190	87		13	2.0	1	45	75	
9	Heidorn Road	Lone Tree to Future Sand Cr.	5,920	87		13	2.0	1	45	75	
10	Hillcrest Ave	North of Lone Tree Way	11,380	87		13	2.0	1	45	75	
11	Hillcrest Ave	Lone Tree to Future Sand Cr.	5,100	87		13	2.0	1	45	75	
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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2019-154

Description: Existing with Promenade

Ldn/CNEL: CNEL

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Lone Tree Way	West of Hillcrest	66.4	57.8	59.3	67.6
2	Lone Tree Way	Hillcrest to Heidorn	67.2	58.6	60.1	68.4
3	Lone Tree Way	Heidorn to S.R. 4	60.4	55.1	59.7	63.7
4	Sand Creek Road	West of Deer Valley	40.0	31.4	32.9	41.2
5	Sand Creek Road	Deer Valley to Future Hillcrest	55.8	47.2	48.7	57.0
6	Sand Creek Road	East of S.R. 4	67.1	58.5	60.0	68.3
7	Deer Valley Road	South of Sand Creek Road	61.1	52.5	54.0	62.3
8	Deer Valley Road	North of Sand Creek Road	60.9	52.3	53.8	62.2
9	Heidorn Road	Lone Tree to Future Sand Cr.	60.7	52.1	53.6	62.0
10	Hillcrest Ave	North of Lone Tree Way	63.6	55.0	56.4	64.8
11	Hillcrest Ave	Lone Tree to Future Sand Cr.	60.1	51.5	53.0	61.3

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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2019-154

Description: Existing with Promenade

Ldn/CNEL: CNEL

Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Lone Tree Way	West of Hillcrest	24	52	112	242	521
2	Lone Tree Way	Hillcrest to Heidorn	27	59	127	274	590
3	Lone Tree Way	Heidorn to S.R. 4	13	29	62	133	286
4	Sand Creek Road	West of Deer Valley	0	1	2	4	9
5	Sand Creek Road	Deer Valley to Future Hillcrest	5	10	22	47	102
6	Sand Creek Road	East of S.R. 4	27	58	125	269	580
7	Deer Valley Road	South of Sand Creek Road	11	23	50	107	231
8	Deer Valley Road	North of Sand Creek Road	10	23	49	105	225
9	Heidorn Road	Lone Tree to Future Sand Cr.	10	22	47	102	219
10	Hillcrest Ave	North of Lone Tree Way	16	34	73	157	338
11	Hillcrest Ave	Lone Tree to Future Sand Cr.	9	20	43	92	198

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Appendix C
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2019-154
Description: Existing with Promenade Plus Project
Ldn/CNEL: CNEL
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Lone Tree Way	West of Hillcrest	22,090	87		13	2.0	1	45	75	
2	Lone Tree Way	Hillcrest to Heidorn	27,410	87		13	2.0	1	45	75	
3	Lone Tree Way	Heidorn to S.R. 4	30,950	87		13	2.0	1	25	75	
4	Sand Creek Road	West of Deer Valley	50	87		13	2.0	1	45	75	
5	Sand Creek Road	Deer Valley to Future Hillcrest	1,890	87		13	2.0	1	45	75	
6	Sand Creek Road	East of S.R. 4	25,740	87		13	2.0	1	45	75	
7	Deer Valley Road	South of Sand Creek Road	6,770	87		13	2.0	1	45	75	
8	Deer Valley Road	North of Sand Creek Road	6,520	87		13	2.0	1	45	75	
9	Heidorn Road	Lone Tree to Future Sand Cr.	5,920	87		13	2.0	1	45	75	
10	Hillcrest Ave	North of Lone Tree Way	11,490	87		13	2.0	1	45	75	
11	Hillcrest Ave	Lone Tree to Future Sand Cr.	6,750	87		13	2.0	1	45	75	
12	Hillcrest Ave	South of Sand Creek Road	2,180	87		13	2.0	1	45	75	
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FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2019-154

Description: Existing with Promenade Plus Project

Ldn/CNEL: CNEL

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Lone Tree Way	West of Hillcrest	66.5	57.8	59.3	67.7
2	Lone Tree Way	Hillcrest to Heidorn	67.4	58.8	60.3	68.6
3	Lone Tree Way	Heidorn to S.R. 4	60.6	55.3	59.9	63.9
4	Sand Creek Road	West of Deer Valley	40.0	31.4	32.9	41.2
5	Sand Creek Road	Deer Valley to Future Hillcrest	55.8	47.2	48.7	57.0
6	Sand Creek Road	East of S.R. 4	67.1	58.5	60.0	68.4
7	Deer Valley Road	South of Sand Creek Road	61.3	52.7	54.2	62.6
8	Deer Valley Road	North of Sand Creek Road	61.2	52.5	54.0	62.4
9	Heidorn Road	Lone Tree to Future Sand Cr.	60.7	52.1	53.6	62.0
10	Hillcrest Ave	North of Lone Tree Way	63.6	55.0	56.5	64.9
11	Hillcrest Ave	Lone Tree to Future Sand Cr.	61.3	52.7	54.2	62.5
12	Hillcrest Ave	South of Sand Creek Road	56.4	47.8	49.3	57.6

Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2019-154

Description: Existing with Promenade Plus Project

Ldn/CNEL: CNEL

Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Lone Tree Way	West of Hillcrest	24	53	113	244	526
2	Lone Tree Way	Hillcrest to Heidorn	28	61	131	282	608
3	Lone Tree Way	Heidorn to S.R. 4	14	29	64	137	295
4	Sand Creek Road	West of Deer Valley	0	1	2	4	9
5	Sand Creek Road	Deer Valley to Future Hillcrest	5	10	22	47	102
6	Sand Creek Road	East of S.R. 4	27	58	126	271	583
7	Deer Valley Road	South of Sand Creek Road	11	24	52	111	239
8	Deer Valley Road	North of Sand Creek Road	11	23	50	108	233
9	Heidorn Road	Lone Tree to Future Sand Cr.	10	22	47	102	219
10	Hillcrest Ave	North of Lone Tree Way	16	34	73	158	340
11	Hillcrest Ave	Lone Tree to Future Sand Cr.	11	24	51	111	239
12	Hillcrest Ave	South of Sand Creek Road	5	11	24	52	112

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Appendix C
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2019-154
Description: Cumulative No Project
Ldn/CNEL: CNEL
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Lone Tree Way	West of Hillcrest	32,900	87		13	2.0	1	45	75	
2	Lone Tree Way	Hillcrest to Heidorn	37,900	87		13	2.0	1	45	75	
3	Lone Tree Way	Heidorn to S.R. 4	47,700	87		13	2.0	1	25	75	
4	Sand Creek Road	West of Deer Valley	7,000	87		13	2.0	1	45	75	
5	Sand Creek Road	Deer Valley to Future Hillcrest	13,000	87		13	2.0	1	45	75	
6	Sand Creek Road	East of S.R. 4	36,400	87		13	2.0	1	45	75	
7	Deer Valley Road	South of Sand Creek Road	12,300	87		13	2.0	1	45	75	
8	Deer Valley Road	North of Sand Creek Road	18,700	87		13	2.0	1	45	75	
9	Heidorn Road	Lone Tree to Future Sand Cr.	17,400	87		13	2.0	1	45	75	
10	Hillcrest Ave	North of Lone Tree Way	17,900	87		13	2.0	1	45	75	
11	Hillcrest Ave	Lone Tree to Future Sand Cr.	10,700	87		13	2.0	1	45	75	
12	Hillcrest Ave	South of Sand Creek Road	4,200	87		13	2.0	1	45	75	
13	Hillcrest Ave	First Entrance to South Side	4,200	87		13	2.0	1	45	75	
14	Hillcrest Ave	South of Project	4,200	87		13	2.0	1	45	75	
15	Sand Creek Road	Hillcrest to Heidorn	21,300	87		13	2.0	1	45	75	
16	Sand Creek Road	Heirdorn to S.R. 4	31,700	87		13	2.0	1	45	75	
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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2019-154

Description: Cumulative No Project

Ldn/CNEL: CNEL

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Lone Tree Way	West of Hillcrest	68.2	59.6	61.1	69.4
2	Lone Tree Way	Hillcrest to Heidorn	68.8	60.2	61.7	70.0
3	Lone Tree Way	Heidorn to S.R. 4	62.4	57.2	61.8	65.8
4	Sand Creek Road	West of Deer Valley	61.5	52.9	54.3	62.7
5	Sand Creek Road	Deer Valley to Future Hillcrest	64.1	55.5	57.0	65.4
6	Sand Creek Road	East of S.R. 4	68.6	60.0	61.5	69.9
7	Deer Valley Road	South of Sand Creek Road	63.9	55.3	56.8	65.2
8	Deer Valley Road	North of Sand Creek Road	65.7	57.1	58.6	67.0
9	Heidorn Road	Lone Tree to Future Sand Cr.	65.4	56.8	58.3	66.7
10	Hillcrest Ave	North of Lone Tree Way	65.5	56.9	58.4	66.8
11	Hillcrest Ave	Lone Tree to Future Sand Cr.	63.3	54.7	56.2	64.5
12	Hillcrest Ave	South of Sand Creek Road	59.2	50.6	52.1	60.5
13	Hillcrest Ave	First Entrance to South Side	59.2	50.6	52.1	60.5
14	Hillcrest Ave	South of Project	59.2	50.6	52.1	60.5
15	Sand Creek Road	Hillcrest to Heidorn	66.3	57.7	59.2	67.5
16	Sand Creek Road	Heirdorn to S.R. 4	68.0	59.4	60.9	69.3

Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2019-154

Description: Cumulative No Project

Ldn/CNEL: CNEL

Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Lone Tree Way	West of Hillcrest	32	69	148	319	687
2	Lone Tree Way	Hillcrest to Heidorn	35	75	163	350	755
3	Lone Tree Way	Heidorn to S.R. 4	18	39	85	183	394
4	Sand Creek Road	West of Deer Valley	11	24	53	114	245
5	Sand Creek Road	Deer Valley to Future Hillcrest	17	37	80	172	370
6	Sand Creek Road	East of S.R. 4	34	73	158	341	734
7	Deer Valley Road	South of Sand Creek Road	17	36	77	165	356
8	Deer Valley Road	North of Sand Creek Road	22	47	101	219	471
9	Heidorn Road	Lone Tree to Future Sand Cr.	21	45	97	208	449
10	Hillcrest Ave	North of Lone Tree Way	21	46	99	212	458
11	Hillcrest Ave	Lone Tree to Future Sand Cr.	15	32	70	151	325
12	Hillcrest Ave	South of Sand Creek Road	8	17	38	81	174
13	Hillcrest Ave	First Entrance to South Side	8	17	38	81	174
14	Hillcrest Ave	South of Project	8	17	38	81	174
15	Sand Creek Road	Hillcrest to Heidorn	24	51	111	239	514
16	Sand Creek Road	Heirdorn to S.R. 4	31	67	144	311	670

Appendix C
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2019-154
Description: Cumulative Plus Project
Ldn/CNEL: CNEL
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Lone Tree Way	West of Hillcrest	34,920	87		13	2.0	1	45	75	
2	Lone Tree Way	Hillcrest to Heidorn	38,110	87		13	2.0	1	45	75	
3	Lone Tree Way	Heidorn to S.R. 4	47,920	87		13	2.0	1	25	75	
4	Sand Creek Road	West of Deer Valley	7,000	87		13	2.0	1	45	75	
5	Sand Creek Road	Deer Valley to Future Hillcrest	14,130	87		13	2.0	1	45	75	
6	Sand Creek Road	East of S.R. 4	38,620	87		13	2.0	1	45	75	
7	Deer Valley Road	South of Sand Creek Road	12,610	87		13	2.0	1	45	75	
8	Deer Valley Road	North of Sand Creek Road	18,920	87		13	2.0	1	45	75	
9	Heidorn Road	Lone Tree to Future Sand Cr.	17,410	87		13	2.0	1	45	75	
10	Hillcrest Ave	North of Lone Tree Way	18,010	87		13	2.0	1	45	75	
11	Hillcrest Ave	Lone Tree to Future Sand Cr.	11,350	87		13	2.0	1	45	75	
12	Hillcrest Ave	South of Sand Creek Road	6,400	87		13	2.0	1	45	75	
13	Hillcrest Ave	First Entrance to South Side	7,780	87		13	2.0	1	45	75	
14	Hillcrest Ave	South of Project	4,200	87		13	2.0	1	45	75	
15	Sand Creek Road	Hillcrest to Heidorn	22,520	87		13	2.0	1	45	75	
16	Sand Creek Road	Heirdorn to S.R. 4	32,910	87		13	2.0	1	45	75	
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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2019-154

Description: Cumulative Plus Project

Ldn/CNEL: CNEL

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Lone Tree Way	West of Hillcrest	68.4	59.8	61.3	69.7
2	Lone Tree Way	Hillcrest to Heidorn	68.8	60.2	61.7	70.1
3	Lone Tree Way	Heidorn to S.R. 4	62.5	57.2	61.8	65.8
4	Sand Creek Road	West of Deer Valley	61.5	52.9	54.3	62.7
5	Sand Creek Road	Deer Valley to Future Hillcrest	64.5	55.9	57.4	65.8
6	Sand Creek Road	East of S.R. 4	68.9	60.3	61.8	70.1
7	Deer Valley Road	South of Sand Creek Road	64.0	55.4	56.9	65.3
8	Deer Valley Road	North of Sand Creek Road	65.8	57.2	58.7	67.0
9	Heidorn Road	Lone Tree to Future Sand Cr.	65.4	56.8	58.3	66.7
10	Hillcrest Ave	North of Lone Tree Way	65.6	57.0	58.4	66.8
11	Hillcrest Ave	Lone Tree to Future Sand Cr.	63.6	55.0	56.4	64.8
12	Hillcrest Ave	South of Sand Creek Road	61.1	52.5	53.9	62.3
13	Hillcrest Ave	First Entrance to South Side	61.9	53.3	54.8	63.2
14	Hillcrest Ave	South of Project	59.2	50.6	52.1	60.5
15	Sand Creek Road	Hillcrest to Heidorn	66.5	57.9	59.4	67.8
16	Sand Creek Road	Heirdorn to S.R. 4	68.2	59.6	61.1	69.4

Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2019-154

Description: Cumulative Plus Project

Ldn/CNEL: CNEL

Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Lone Tree Way	West of Hillcrest	33	71	154	332	714
2	Lone Tree Way	Hillcrest to Heidorn	35	76	163	352	757
3	Lone Tree Way	Heidorn to S.R. 4	18	39	85	183	395
4	Sand Creek Road	West of Deer Valley	11	24	53	114	245
5	Sand Creek Road	Deer Valley to Future Hillcrest	18	39	84	181	391
6	Sand Creek Road	East of S.R. 4	35	76	165	355	764
7	Deer Valley Road	South of Sand Creek Road	17	36	78	168	362
8	Deer Valley Road	North of Sand Creek Road	22	47	102	220	475
9	Heidorn Road	Lone Tree to Future Sand Cr.	21	45	97	208	449
10	Hillcrest Ave	North of Lone Tree Way	21	46	99	213	459
11	Hillcrest Ave	Lone Tree to Future Sand Cr.	16	34	73	157	338
12	Hillcrest Ave	South of Sand Creek Road	11	23	50	107	231
13	Hillcrest Ave	First Entrance to South Side	12	26	57	122	263
14	Hillcrest Ave	South of Project	8	17	38	81	174
15	Sand Creek Road	Hillcrest to Heidorn	25	53	115	248	533
16	Sand Creek Road	Heirdorn to S.R. 4	32	69	148	319	687

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Appendix B

NATIVE AMERICAN HERITAGE COMMISSION

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Joseph Myers
Pomo

COMMISSIONER
Julie Tumamait-Stenslie
Chumash

COMMISSIONER
[Vacant]

EXECUTIVE SECRETARY
Christina Snider
Pomo

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

March 16, 2020

Alexis Morris, Planning Manager
City of Antioch Community Development Department
P.O. Box 5007
Antioch, CA 945123

Re: 2020039044, Creekside/Vineyards at Sand Creek Project, Contra Costa County

Dear Ms. Morris:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

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

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

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

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).

2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.

3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).

4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:

a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or

b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:

a. If part or all of the APE has been previously surveyed for cultural resources.

b. If any known cultural resources have already been recorded on or adjacent to the APE.

c. If the probability is low, moderate, or high that cultural resources are located in the APE.

d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.

a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.

b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

   a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

   b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

   a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

   b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

   c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Nancy.Gonzalez-Lopez@nahc.ca.gov.

Sincerely,

Nancy Gonzalez-Lopez
Staff Services Analyst

cc: State Clearinghouse

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April 13th, 2020

Alexis Morris, Planning Manager
City of Antioch, Community Development Department
P.O. Box 5007
Antioch, CA 94531

RE: Save Mount Diablo Comments on the Creekside/Vineyards at Sand Creek Notice of Preparation of a draft Environmental Impact Report

Dear Ms. Morris,

Save Mount Diablo (SMD) is a non-profit conservation organization founded in 1971 which acquires land for addition to parks on and around Mount Diablo and monitors land use planning which might affect protected lands. We build trails, restore habitat, and are involved in environmental education. In 1971 there was just one park on Mount Diablo totaling 6,778 acres; today there are almost 50 parks and preserves around Mount Diablo totaling 120,000 acres. We include more than 8,000 donors and supporters.

Thank you for the opportunity to comment on the Notice of Preparation (NOP) of a draft Environmental Impact Report (dEIR) for the proposed Creekside/Vineyards at Sand Creek residential development project (Project). The creek buffer of 200-ft south of Sand Creek and the lack of development or significant grading on the hilly parts of the Project site described in the NOP are very positive aspects of the Project.

The Sand Creek Area is a place of high conservation value, especially the western-most square mile. The endemic Mount Diablo buckwheat has an important population in the Sand Creek watershed, and aside from the rare wildlife species discussed below, an important San Joaquin kit fox movement corridor runs through the west Sand Creek Area. The combination of a largely undeveloped creek, prominent hills and clear pathway to already protected land makes for an ideal recreational corridor that should one day wind through the Sand Creek Area and lead to Black Diamond Mines Regional Preserve. There are several issues that we would like the dEIR to explain and analyze in more detail.

On-site and/or Off-site Mitigation for Biological Impacts

The NOP states that all biological impacts from the Project will be reduced to a less than significant level through proposed mitigation measures. The NOP also states that much of the parcel where the Project is located will not be developed and will be retained as private land, and that impacts to California red-legged frog (CRLF) and California tiger salamander (CTS) will be compensated for by preservation of land adjacent occupied habitat using at least a 1:1 ratio.

The dEIR should clarify the ownership status (post-Project approval, assuming it is approved) of the remainder of the Project site parcel that will not be developed, if there will be any easements over these areas, and if any of these areas will be used as on-site mitigation for biological impacts. The dEIR should also specify if there will be any off-site mitigation to offset Project impacts, and include a detailed description of the off-site mitigation parcel's biological values, location and size.

Impacts to Hydrology of Vernal Pool and Other Wetland Features on Project Site

The NOP states that only an extremely small area of aquatic features (less than 0.05 acres) will be impacted by the Project. The dEIR should include a description of indirect impacts with respect to these features, such as changes in hydrology potentially affecting aquatic habitat.

Potentially Significant Greenhouse Gas Emissions Impacts

The NOP states that the Project will have a potentially significant effect on greenhouse gas emissions and that this will be further analyzed in the dEIR. We suggest that the dEIR include an analysis of how much impacts could be offset if each house in the Project were developed with rooftop solar, or include an electric vehicle charging station in the garage. The dEIR could even take this a step further by stating that each unit built in the Project will include these features. This would help reduce the greenhouse gas impacts of the Project and help avoid catastrophic climate change, a high priority for SMD and the State in general.

Sand Creek Buffer

The dEIR should clarify who owns and manages the buffer area adjacent Sand Creek. SMD encourages the protection and restoration of riparian corridors like Sand Creek, and their use as areas for responsible low-impact recreation that create and strengthen human connections to nature.

Potential Creekside Trail

We suggest that a trail (sufficiently set back from the creek) that would connect to the development and adjacent areas along Sand Creek be incorporated into the dEIR analysis as a potential recreational use.

Please add us to any email distribution list you maintain for future communication about this project and the availability of environmental review documents.

Regards,

Juan Pablo Galván
Senior Land Use Manager

DEPARTMENT OF TRANSPORTATION
DISTRICT 4
OFFICE OF TRANSIT AND COMMUNITY PLANNING
P.O. BOX 23660, MS-10D
OAKLAND, CA 94623-0660
PHONE (510) 286-5528
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

April 14, 2020

SCH #2020039044
GTS #04-CC-2020-00438
GTS ID: 19235
Co/Rt/Pm: CC/4/R33.953

Alexis Morris, Planning Manager
City of Antioch, Community Development Department
P.O. Box 5007
Antioch, CA 94531-5007

Creekside/ Vineyards at Sand Creek Project- Notice of Preparation of a Draft Environmental Impact Report (NOP)

Dear Alexis Morris:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Creekside/ Vineyards at Sand Creek Project. In tandem with the Metropolitan Transportation Commission's (MTC) Sustainable Communities Strategy (SCS), Caltrans' mission signals our continuing approach to evaluate and mitigate impacts to the State's multimodal transportation network. Caltrans' Strategic Management Plan 2015-2020 aims, in part, to reduce Vehicle Miles Traveled (VMT) and Greenhouse Gas emissions (GHG) in alignment with State goals and policies. The following comments are based on our review of the March NOP.

Project Understanding

The proposed project would include the development of 220 single-family residential units and associated improvements on approximately 58.9 acres of the 158.2-acre project site, as well as 1.8 acres of off-site improvements. The project improvements would include parks, trails, landscaping, circulation improvements, and utility installation. The remainder of the site, including Sand Creek and the associated buffer area, would be retained as open space. The proposed project would require an amendment to the City of Antioch General Plan, a Rezone, a Use Permit, a Vesting Tentative Map, Design Review, and a

Development Agreement. Project site is bordered by State Route (SR)-4 to the east.

Travel Demand Analysis
Please submit a travel demand analysis that provides a Vehicle Miles Traveled (VMT) analysis resulting from the proposed project. Please note that a travel demand analysis that provides a Vehicle Miles Traveled (VMT) analysis will be required as part of the California Environmental Quality Act (CEQA) process as of July 1, 2020. With the enactment of Senate Bill (SB) 743, Caltrans is focusing on transportation infrastructure that supports smart growth and efficient development to ensure alignment with State policies using efficient development patterns, innovative travel demand reduction strategies, multimodal improvements, and VMT as the primary transportation impact metric. The travel demand analysis should include:

- A vicinity map, regional location map, and site plan clearly showing project access in relation to the State Transportation Network (STN). Ingress and egress for all project components should be clearly identified. Clearly identify the State right-of-way (ROW). Project driveways, local roads and intersections, car/bike parking, and transit facilities should be mapped.

- A VMT analysis pursuant to the City's guidelines or, if the City has no guidelines, the Office of Planning and Research's Guidelines. Projects that result in automobile VMT per capita above the threshold of significance for existing (i.e. baseline) city-wide or regional values for similar land use types may indicate a significant impact. If necessary, mitigation for increasing VMT should be identified. Mitigation should support the use of transit and active transportation modes. Potential mitigation measures that include the requirements of other agencies such as Caltrans are fully enforceable through permit conditions, agreements, or other legally-binding instruments under the control of the City.

- A schematic illustration of walking, biking and auto conditions at the project site and study area roadways. Potential safety issues for all road users should be identified and fully mitigated.

- The project's primary and secondary effects on pedestrians, bicycles, travelers with disabilities and transit performance should be evaluated, including countermeasures and trade-offs resulting from mitigating VMT increases. Access to pedestrians, bicycle, and transit facilities must be maintained.

With respect to the local and regional roadway system, the full impacts to the State Transportation Network must be analyzed. A Transportation Impact Analysis should be performed to provide project-related trip generation, distribution, turning movements, and assignment estimates. The project-generated and cumulative trips should be added to the existing, future and cumulative scenario traffic volumes for all intersections affected by the project. Due to the proximity to STN ramps, access to the site must be studied. Additionally, as stated on page 17, the impact to the ramps and mainline should be evaluated. In conducting these evaluations, it is necessary to use demand volumes rather than output volumes or constrained flow volume.

Multimodal, Bicycle and Pedestrian Planning

The project's primary and secondary effects on pedestrians, bicyclists, travelers with disabilities, and transit users should be evaluated, including countermeasures and trade-offs resulting from mitigating VMT increases. Please clarify how bicyclists and pedestrians will be able to access the site and transit facilities. As well please clarify how this project site will connect active transportation facilities to nearby activity centers and existing or future trail and or transit facilities.

Please clarify what types of bicycle and pedestrian facilities will be included in the extension of Sand Creek Road, including dimensions of travel lanes for both automobile and active transportation. Elements such as low-stress bicycle facilities, Class IV Bike Lanes, wide sidewalks, and protected intersections encourage active transportation and regional multi-modal connectivity. We support the inclusion of a pedestrian bridge into the project.

Vehicle Trip Reduction

From Caltrans' *Smart Mobility 2010: A Call to Action for the New Decade*, the project site is identified as **Place Type 4c: Suburban Communities (Dedicated Use Areas)** where location efficiency factors, such as community design, are often weak and regional accessibility varies. Given the place, type and size of the project, it should include a robust Transportation Demand Management (TDM) Program to reduce VMT and greenhouse gas emissions. Such measures are critical to facilitating efficient site access. The measures listed below can promote smart mobility and reduce regional VMT.

- Project design to encourage walking, bicycling and transit access;
- Transit and trip planning resources such as a commute information kiosk;
- Real-time transit information system;
- Ten percent vehicle parking reductions;

- Charging stations and designated parking spaces for electric vehicles;
- Carpool and clean-fuel parking spaces;
- Designated parking spaces for a car share program;
- Unbundled parking;
- Secured bicycle storage facilities;
- Bicycle route mapping resources;
- Participation/Formation in/of a Transportation Management Association (TMA) in partnership with other developments in the area; and
- Aggressive trip reduction targets with Lead Agency monitoring and enforcement.

Transportation Demand Management programs should be documented with annual monitoring reports by a TDM coordinator to demonstrate effectiveness. If the project does not achieve the VMT reduction goals, the reports should also include next steps to take in order to achieve those targets. Also, reducing parking supply can encourage active forms of transportation, reduce regional VMT, and lessen future transportation impacts on State facilities.

For additional TDM options, please refer to the Federal Highway Administration's *Integrating Demand Management into the Transportation Planning Process: A Desk Reference* (Chapter 8). The reference is available online at: http://www.ops.fhwa.dot.gov/publications/fhwahop12035/fhwahop12035.pdf.

Transportation Impact Fees
Please identify project-generated travel demand and estimate the costs of transit and active transportation improvements necessitated by the proposed project; viable funding sources such as development and/or transportation impact fees should also be identified. We encourage a sufficient allocation of fair share contributions toward multi-modal and regional transit improvements to fully mitigate cumulative impacts to regional transportation. We also strongly support measures to increase sustainable mode shares, thereby reducing VMT.

Construction-Related Impacts
Potential impacts to the State Right-of-Way (ROW) from project-related temporary access points should be analyzed. Mitigation for significant impacts due to construction and noise should be identified in the EIR. Project work that requires movement of oversized or excessive load vehicles on state roadways requires a transportation permit that is issued by Caltrans. To apply, visit: https://dot.ca.gov/programs/traffic-operations/transportation-permits.

Prior to construction, coordination is required with Caltrans to develop a Transportation Management Plan (TMP) to reduce construction traffic impacts to the STN.

Hydraulics
Please provide complete hydrology and stormwater reports with any future and cumulative impacts to the STN addressed. Sand Creek runs under SR-4 further to the east of this project. However, any increased flow into the creek as a result of this project will need to be addressed on the project site to minimize those downstream impacts to State facilities.

Lead Agency
As the Lead Agency, the City of Antioch is responsible for all project mitigation, including any needed improvements to the STN. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures.

Encroachment Permit
Please be advised that any permanent work or temporary traffic control that encroaches onto the ROW requires a Caltrans-issued encroachment permit. If any Caltrans facilities are impacted by the project, those facilities must meet American Disabilities Act (ADA) Standards after project completion. As part of the encroachment permit submittal process, you may be asked by the Office of Encroachment Permits to submit a completed encroachment permit application, six (6) sets of plans clearly delineating the State ROW, six (6) copies of signed, dated and stamped (include stamp expiration date) traffic control plans, this comment letter, your response to the comment letter, and where applicable, the following items: new or amended Maintenance Agreement (MA), approved Design Standard Decision Document (DSDD), approved encroachment exception request, and/or airspace lease agreement.

To download the permit application and to obtain more information on all required documentation, visit https://dot.ca.gov/programs/traffic-operations/ep/applications.

Thank you again for including Caltrans in the environmental review process. Should you have any questions regarding this letter, please contact Laurel Sears at 510-286-5614 or laurel.sears@dot.ca.gov.

Sincerely,

Mark Leong
District Branch Chief
Local Development - Intergovernmental Review

cc: State Clearinghouse

From: Joe Smithonic <Joe.Smithonic@pw.cccounty.us>
Sent: Tuesday, April 14, 2020 4:58 PM
To: Morris, Alexis <amorris@ci.antioch.ca.us>
Cc: Tim Jensen <tim.jensen@pw.cccounty.us>; Michelle Cordis <michelle.cordis@pw.cccounty.us>; Teri Rie <teri.rie@pw.cccounty.us>; lborba@blackhawkproperties.com
Subject: Notice of Preparation Comments for Creekside/Vineyards at Sand Creek

Date: April 14, 2020

Dear Ms. Morris,
(via email: amorris@ci.antioch.ca.us)

The Contra Costa County Flood Control and Water Conservation District (FC District) has reviewed the Notice of Preparation (NOP) dated March 16, 2020 and the Initial Study prepared by Raney Planning & Management, Inc. dated March 2020 for Subdivision 9501, Creekside/Vineyards at Sand Creek, located southeast of the future Sand Creek Road and Hillcrest Avenue intersection (APN 057-050-

024) in the City of Antioch (City). We submit the following comments:

1. We recommend that the Draft Environmental Impact Report (DEIR) include a map of the project area and show all parcels involved in the development.

2. We recommend that the DEIR provide a map of watersheds where the project is located.

3. In the Hydrology Section, please identify and show all existing watercourses, tributaries, and man-made drainage facilities within the project site that could be impacted by this development. The discussion should include an analysis of the capacity of the existing watercourses.

4. The Hydrology Section should quantify the amount of runoff that would be generated by the project and discuss how the runoff entering and originating from the site would be distributed between the natural watercourses, the detention basins, and the man-made drainage facilities.

5. If improvements or work within the natural watercourses are proposed, the DEIR should discuss the scope of improvements.

6. We recommend that the DEIR address the design and construction of storm drain facilities to adequately collect and convey stormwater entering or originating within the development to the nearest adequate man-made drainage facility or natural watercourse, without diversion of the watershed.

7. The DEIR should discuss the adverse impacts of the runoff from the project site to the existing drainage facilities and downstream areas, including those areas outside of the City limits.

8. The DEIR should note that the development is located within Drainage Area 130 (DA 130). DA 130 is composed of multiple drainage areas, including Drainage Area 104 (DA 104) which encompasses the development. DA 104 and DA 130 define the watershed for Sand Creek which ultimately drains to Marsh Creek. The drainage area fees are used to fund regional drainage improvements.

The DEIR should note that developments in DA 130 are subject to a drainage fee in accordance with Flood Control Ordinance Number 2007-06. By ordinance, all building permits or subdivision maps filed in this area are subject to the provisions of the drainage fee ordinance. Effective January 1, 2020, the current fee in DA 130 is $0.78 per square foot of newly created impervious surface. The City will collect the fees during the development process prior to recordation of the final maps.

The FC District is not the approving local agency for this project as defined by the Subdivision Map Act. As a special district the FC District has an independent authority to collect drainage fees that is not restricted by the Subdivision Map Act. The FC District regularly adjusts its drainage fees to reflect increasing construction costs. The drainage fee rate does not vest at the time of project approval. The drainage fees due and payable will be based on the fee in effect at the time of fee collection.

9. The drainage facilities that may be impacted by this development include the planned Lower Sand Creek Detention Basin, the Sand Creek Channel, and the Marsh Creek Channel. The DEIR should discuss impacts to these facilities and existing capacity concerns downstream of the development. For example, on December 31, 2005, residents of Subdivision 8603, Sterling Pinnacle, which is approximately one mile downstream of the project along Sand Creek, experienced street flooding due to a significant storm. Other Residents downstream in the City of Brentwood also experienced flooding during the 2005/2006 rainy season.

10. The development's proposed land use has a density of 3.7 developed units (DU) per acre. This density is higher than the 1.0 DU per acre and 2.0 DU per acre densities for Hillside Estate and Executive Residential land uses, respectively, as provided in the City's Sand Creek Specific Plan which was considered in the drainage study for the formation of DA 130. The planned and existing drainage facilities may not be adequate to accommodate additional runoff from this development. In addition, Lower Sand Creek Detention Basin downstream of the development has not been constructed. The DEIR should discuss alternatives to mitigate downstream impacts assuming Lower Sand Creek Basin remains incomplete.

11. The Hydrology section of the DEIR should include a mitigation measure requiring the developer to mitigate post-development peak flows from the

project to pre-development levels. Furthermore, the DEIR should determine flow paths of overflow from Sand Creek which may not be able to contain flow from significant storm events.

12. The DEIR should address the impacts of this development's runoff due to the increase in duration of flows and the effect on creeks and channels downstream of the development. Whereas detention basins are capable of mitigating peak flows to pre-project levels, they increase the duration of flows in the downstream watercourses, which saturate the channel banks and increase the potential for stream and channel erosion.

13. The Hydrology Section of the DEIR should include hydrology and hydraulic analysis using Contra Costa County's hydrology method (HYDRO6) since the existing and planned regional drainage facilities affected by the development were designed using HYDRO6.

14. The DEIR should include a discussion of the basin design information, (i.e., capacity, sizes of inlet and outlet structures, routing, etc.). The FC District does not recommend the use of bioretention areas (C.3 facilities) sized to meet Contra Costa Clean Water Program C.3 requirements for mitigating peak flows.

15. A discussion of how maintenance of the development's drainage facilities would be performed and funded should also be included in the DEIR.

16. We recommend that the DEIR discuss any permit requirements, special conditions, and mitigation measures necessary for new outfalls, bridges, or creek improvements related to the development that may be required by appropriate environmental agencies, such as the U.S. Army Corps of Engineers, the State Department of Fish and Wildlife, and the State Regional Water Quality Control Board.

We appreciate the opportunity to comment on the NOP and Initial Study and welcome continued coordination. Please include us on future reviews of the hydrology section of the DEIR. If you have any questions, please contact me at your earliest convenience.

Thank you,

Joe Smithonic | Staff Engineer
Contra Costa County Public Works: Flood Control & Water Conservation District

255 Glacier Drive, Martinez, CA 94553-4825
P: 925.313.2348 | E: Joe.Smithonic@pw.cccounty.us

Cc: Tim Jensen, Flood Control
Michelle Cordis, Flood Control
Teri E. Rie, Flood Control
Lisa Borba, GBN Partners, LLC

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State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Bay Delta Region
2825 Cordelia Road, Suite 100
Fairfield, CA 94534
(707) 428-2002
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

April 16, 2020

Ms. Alexis Morris, Planning Manager
City of Antioch
Post Office Box 5007
Antioch, CA 94531-5007
amorris@ci.antioch.ca.us

Subject: Creekside/Vineyards at Sand Creek Project, Notice of Preparation of a Draft Environmental Impact Report, SCH #2020039044, City of Antioch, Contra Costa County

Dear Ms. Morris:

The California Department of Fish and Wildlife (CDFW) has reviewed the Notice of Preparation (NOP) of a draft Environmental Impact Report (EIR) prepared by the City of Antioch for the proposed Creekside/Vineyards at Sand Creek Project (Project) located in the City of Antioch, Contra Costa County. CDFW is submitting comments regarding potential impacts to biological resources associated with the proposed Project.

CDFW ROLE

CDFW is a Trustee Agency with responsibility under the California Environmental Quality Act (CEQA; Pub. Resources Code, § 21000 et seq.) pursuant to CEQA Guidelines section 15386 for commenting on projects that could impact fish, plant, and wildlife resources. CDFW is also considered a Responsible Agency if a project would require discretionary approval, such as permits issued under the California Endangered Species Act (CESA), the Native Plant Protection Act, the Lake and Streambed Alteration (LSA) Program, and other provisions of the Fish and Game Code that afford protection to the State's fish and wildlife public trust resources.

PROJECT DESCRIPTION SUMMARY

Proponent: GBN Partners, LLC

Objective: The objective of the Project is development of 220 single-family residential units and associated improvements on approximately 58.9 acres of the 158.2-acre Project site, as well as 1.8 acres of off-site improvements. The Project improvements would include, but would not be limited to, parks, trails, landscaping, circulation improvements, and utility installation. The remainder of the site, including Sand Creek and the associated buffer area, would be retained as open space.

Location: The Project site consists of 158.2 acres located south of Sand Creek Road in the southeastern portion of the City of Antioch, California. The City of Antioch is located within eastern Contra Costa County and is bordered to the north by the San Joaquin River; to the east by the City of Brentwood and the City of Oakley; to the west by the City of Pittsburg and

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unincorporated portions of Contra Costa County; and to the south by unincorporated portions of Contra Costa County. Sand Creek is located to the north of the site, and State Route (SR) 4 is located approximately 0.38 miles east of the site. The site is identified by Assessor's Parcel Number (APN) 057-050-024.

Timeframe: All Project improvements, including off-site improvements, are anticipated to be built over three phases. Phase I of the Project would commence after resource agency permits are obtained (anticipated in 2022), and Phase III is expected to be completed within four years of Phase I.

ENVIRONMENTAL SETTING

Rare, threatened and endangered or special-status species; also see CEQA Guidelines section 15380) that have the potential to occur in or near the Project site, include:

- Big tarplant (*Blepharizonia plumosa*), California Native Plant Society (CNPS) Rare Plant Rank[1] 1B
- Congdon's tarplant (*Hemizonia parryi congdonii*), CNPS Rare Plant Rank 1B;
- Carquinez goldenbush (*Isocoma arguta*), CNPS Rare Plant Rank 1B;
- Showy golden madia (*Madia radiata*), CNPS Rare Plant Rank 1B;
- Large-flowered fiddleneck (*Amsinckia grandiflora*), State listed under Fish and Game Code as endangered;
- Hoover's cryptantha (*Cryptantha hooveri*), CNPS Rare Plant Rank 1A;
- Caper-fruited tropidocarpum (*Tropidocarpum capparideum*), CNPS Rare Plant Rank 1B;
- Heartscale (*Atriplex cordulata cordulata*), CNPS Rare Plant Rank 1B;
- Brittlescale (*Atriplex depressa*), CNPS Rare Plant Rank 1B
- Lesser saltbush (*Atriplex minuscula*), CNPS Rare Plant Rank 1B;
- Alkali milkvetch (*Astragalus tener tener*), State listed as endangered;
- Mt. Diablo fairy lantern (*Calochortus pulchellus*), CNPS Rare Plant Rank 1B;
- Diamond-petaled California poppy (*Eschscholzia rhombipetala*), CNPS List 1B;
- California alkali grass (*Puccinellia simplex*), CNPS Rare Plant Rank 1B;
- Shining navarretia (*Navarretia nigelliformis radians*), CNPS Rare Plant Rank 1B;
- Mount Diablo buckwheat (*Eriogonum truncatum*), CNPS Rare Plant Rank 1B;
- Recurved larkspur (*Delphinium recurvatum*), CNPS Rare Plant Rank 1B.2;
- California red-legged frog (*Rana draytonii*), State designated as species of special concern;
- California tiger salamander (*Ambystoma californiense*), State listed as threatened;
- Western pond turtle (*Emys marmorata*), State designated species of special concern;
- Golden eagle (*Aquila chrysaetos*), State listed under Fish and Game Code as fully protected;
- White-tailed kite (*Elanus leucurus*), State listed under Fish and Game Code as fully protected,
- Swainson's hawk (*Buteo swainsonii*), State listed under Fish and Game Code as threatened;
- Western burrowing owl (*Athene cunicularia*), State designated as species of special concern;
- Tricolored blackbird (*Agelaius tricolor*); State listedas threatened;

[1] Rank 1A – Presumed extinct in California; Rank 1B – Rare, threatened, or endangered in California and elsewhere; Rank 2A - Plants presumed extirpated in California, but more common elsewhere; 2B: Rare, threatened, or endangered in California, but more common elsewhere.

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- San Joaquin kit fox (*Vulpes macrotis mutica*), State listed as threatened;
- American badger (*Taxidea taxus*), State listed under Fish and Game Code as species of special concern;
- Nesting and migratory birds

COMMENTS

Special-Status Plant Species

Rare, threatened or endangered plant species may occur within the Project location. Without appropriate mitigation measures, the Project could potentially have a significant impact on these species. Potential impacts to special-status plants include inability to reproduce and direct mortality. Special-status plants are typically narrowly distributed endemic species. These species are susceptible to habitat loss and habitat fragmentation resulting from development, vehicle and foot traffic, and introduction of non-native plant species. Therefore, there is a potential for the Project have significant impacts to these species and their populations.

Recommended Mitigation Measure 1: Special-Status Plant Impacts Avoidance

CDFW recommends that the draft EIR include a mitigation measure requiring special-status plant species avoidance through delineation and establishment of no-disturbance buffers of at least 50 feet or greater from the outer edge of the plant population or specific habitat type required by special-status plant species. Buffer sizes should be developed by a qualified botanist and based on seed dispersal and other biological characteristics of the plant species being avoided.

Recommended Mitigation Measure 2: Define Floristic Survey Protocol and Reporting Requirements

CDFW recommends that the draft EIR include measures that adhere to CDFW's *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities* (2009). Results from surveys should follow the reporting requirements contained in these protocols and included in the draft EIR. Special-status plant surveys should be performed by a qualified botanist according to the protocols.

Recommended Mitigation Measure 3: Mitigate Special-Status Plants to a Less-Than-Significant Level

The NOP identifies special-status plant species that may be on the Project site (listed above) and defines avoidance and minimization measures in the event they or other special-status plants are discovered. CDFW recommends that the draft EIR include a statement defining compensatory mitigation in the event impacts to special-status plants are not fully avoidable. CDFW recommends the draft EIR include a requirement for compensatory mitigation for impacts to special-status plant species and their habitats at a minimum of a 3:1 mitigation ratio (conserved habitat to impacted habitat) for all permanent impacts and those related to grading or compaction where the soils may take years to recover to baseline conditions.

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Recommended Mitigation Measure 4: Take Authorization for CESA-listed Plants

If CESA-listed plant species are identified during surveys and full avoidance of impacts is not feasible, then the Project may receive take authorization through CDFW issuance of an Incidental Take Permit (ITP).

Western Pond Turtle (WPT)

WPT have the potential to occur in the Project site. WPT are known to nest in the spring or early summer within 100 meters of a water body, although nest sites as far away as 500 meter have also been reported. Without appropriate avoidance and minimization measures for WPT, potentially significant impacts associated with Project activities include nest destruction, inadvertent entrapment, reduced reproductive success, reduction in health or vigor of eggs and/or young, and direct mortality. The Project includes outfall construction and construction of a clear span bridge over Sand Creek. CDFW recommends incorporating the following measures specific to WPT in the draft EIR for the Project.

Recommended Mitigation Measure 5: WPT Nesting Habitat Surveys and Exclusion

CDFW recommends that the draft EIR include a measure requiring a qualified biologist to conduct focused surveys for potential WPT nesting habitat prior to each phase of the Project. If nesting habitat is identified then to exclude any female WPT from laying eggs within a development phase of the Project, exclusion fencing should be placed prior to the egg-laying season (March through August). Exclusion fencing should be designed to encompass each development phase and maintained weekly until construction activities have been completed.

Recommended Mitigation Measure 6: WPT Relocation

CDFW recommends that if any WPT are discovered at the site immediately prior to or during Project activities, they should be allowed to move out of the area of their own accord. If a WPT is unable to independently move out of the Project area, a qualified biologist should relocate WPT out of harm's way in habitat similar to where it was found.

Western Burrowing Owl

The burrowing owl is designated by the State of California as a Species of Special Concern, defined as a species with declining population levels, limited ranges, and/or continuing threats which make them vulnerable to extinction (https://wildlife.ca.gov/Conservation/SSC). Habitat loss, degradation, and fragmentation are the greatest threats to burrowing owls in California. Loss of agricultural and other open lands (such as grazed landscapes) also negatively affect burrowing owl populations. Because of their need for open habitat with low vegetation, burrowing owls are unlikely to persist in agricultural lands dominated by vineyards and orchards or urbanized lands. Also, fossorial mammal burrows are important habitat to burrowing owl.

The Project has the potential to adversely impact the species through permanent loss of nesting and foraging habitat. The Project may also result in additional impact to burrowing owl through nest abandonment, loss of young, reduced health and vigor of chicks (resulting in reduced

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survival rates), and breeding and foraging behavior disturbance through Project activities. Burrowing owls are also known to utilize dormant or infrequently maintained urban infrastructure for nesting habitat, such as utility conduits and graded subdivision lots. Therefore, the draft EIR should include measures to require annual surveys for burrowing owls throughout each phase or each construction season of the Project to address potential impacts from Project phasing or dormancy periods.

Recommended Mitigation Measure 7: Add Language to Draft EIR to Mitigate Impacts to Burrowing Owls

CDFW recommends the draft EIR adhere to the mitigation strategies and survey guidelines as defined in CDFW's 2012 *Staff Report on Burrowing Owl Mitigation* (https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843&inline). The draft EIR should include measures requiring compensatory mitigation for impacts to burrowing owl breeding, foraging and wintering habitat at a 3:1 mitigation ratio (conserved habitat to impacted habitat) minimum for permanent impacts and a 1:1 ratio minimum for temporary impacts.

Mitigation lands for owls should have presence of ground squirrel and their burrows, well-drained soils, abundant and available prey within close proximity to burrows, as well as foraging habitat. The mitigation areas for burrowing owls should be currently occupied by owls and approved by CDFW prior to the start of Project-related activities.

Recommended Mitigation Measure 8: Burrowing Owl Surveys

CDFW recommends the draft EIR include a mitigation measure with detailed survey requirements consistent with Appendix D of CDFW's 2012 *Staff Report on Burrowing Owl Mitigation.*

Tricolor Blackbird (TRBL)

TRBL has the potential to occur within or near the Project site. Review of aerial imagery indicates that the Project site is near dense low vegetation fields that may serve as nest colony sites. Without appropriate avoidance and minimization measures for TRBL, potential significant impacts include nest and/or colony abandonment, reduced reproductive success, and reduced health and vigor of eggs and/or young. CDFW recommends incorporating the following measures specific to TRBL into the EIR for the Project.

Recommended Mitigation Measure 9: TRBL Surveys

CDFW recommends that Project activities be timed to avoid the bird breeding season (February 1 through September 15). However, if Project activities must take place during that time, CDFW recommends that a qualified biologist conduct annual surveys for TRBL prior to the start of implementation of each Project phase or construction season. The surveys should be designed to evaluate presence/absence of TRBL nesting colonies in proximity to the Project and potential Project-related impacts.

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Recommended Mitigation Measure 10: TRBL Take Authorization

CDFW recommends the draft EIR include the following mitigation measure: In the event that a TRBL nesting colony is detected during biological surveys, consultation with CDFW is warranted to discuss how to implement the Project and avoid take, or if avoidance is not feasible, to acquire an ITP, pursuant to Fish and Game Code Section 2081(b), prior to any ground-disturbing activities.

Address Project Phasing-related Impacts

Project activities may have additional significant biological impacts due to the Project's phasing over time. Projects that include multiple phases with different sections or parcels built out at different time periods may include whole-site or mass grading with separate sections or parcels developed at later dates. Delays or phasing of full buildout of a Project after initial mass grading over long periods of time negates the sufficiency of one-time-only pre-construction surveys and their validity becomes questionable over the lifetime of the Project. For example, if an area is left dormant for a season or two post-grading, grassland and scrub habitats or ground squirrel colonies can be quickly established. These elements then provide nesting habitat for nesting birds and other wildlife. There is also the potential for habitat elements to develop and wildlife to occupy dormant housing lots where foundational infrastructure is in place.

Recommended Mitigation Measure 11: Resurvey of Biological Resources Each Project Phase or on Dormant Previously Graded Areas

CDFW recommends the draft EIR include a description of the Project's phasing and estimated timeframes from start of construction to complete buildout and require resurveys for biological resources. If the Project's timeframe from start of construction to complete build out includes breaks in construction longer than 15 days or periods of inactivity that could allow establishment of habitat elements such as ground squirrel burrows or vegetation, then impacts to wildlife that may use these habitat elements should be addressed in the draft EIR. CDFW recommends including in the draft EIR a mitigation measure that includes the following elements: 1) a qualified biologist shall conduct a wildlife survey and habitat assessment to determine potential wildlife and habitat elements present that may be utilizing the vacant sections and/or parcels prior to Project-related activities taking place when there is a break in these activities greater than 15-days; 2) if unbuilt or fallow sections and/or parcels are being utilized by wildlife, avoidance and minimization measures shall be specified to prevent impacts and mortality, 3) if impacts and "take" are not fully avoidable, additional compensatory mitigation shall be discussed and agreed upon with CDFW's approval prior to the re-initiation of construction activities, and 4) if there is a break in these activities greater than 15 days, compliance checks by a qualified biologist are required to ensure habitat assessments, pre-construction surveys, and other biological mitigation measures in the draft EIR are being implemented.

Stormwater Outfalls and Changes to Stream Hydrology Impacts

CDFW recommends that the draft EIR include an analysis and discussion of the immediate and cumulative direct and indirect impacts of the Project's proposed stormwater outfalls and discharge into Sand Creek. The analysis and discussion should address the possibility of bank

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erosion, channel scour, bank undercutting, increased frequency and duration of five- or ten-year stormflow hydrograph events within the creek, and hydrologic issues downstream, etc. If riprapping, ongoing removal of large woody debris or other such actions will be required in the future, this Project will cause further loss of instream habitats and impede the natural stream processes of Sand Creek.

Cumulative Impacts

Page 58 of the NOP states: *"Sand Creek, near the northern boundary of the project site, provides a valuable east/west wildlife corridor with suitable cover, foraging and water resources, and migration pathways that lead to other natural habitats. However, the proposed project would retain Sand Creek and a 200-foot-wide buffer to the south of the creek as open space. The two proposed outfall structures and the two proposed clear span bridges over Sand Creek would not adversely affect the existing use of the creek as a wildlife corridor. Medium and large mammal movements along the creek would remain unaffected by the proposed project."* CDFW recommends analyzing the cumulative impacts of the Project to Sand Creek in the draft EIR. The Project will alter the creek dynamic by installing two stormwater outfalls in Sand Creek, constructing the Hillcrest Avenue bridge over Sand Creek, installing the potential Emergency Vehicle Access/Pedestrian Bridge over Sand Creek, and creating a public trail in the buffer area next to the creek. Adding more structures introduces regular and long-term human disturbance where there once was none and reduces habitat value for wildlife. The Project will severely restrict wildlife movement through the Sand Creek area. The proposed wildlife corridor will be surrounded by development, fragmented by recreational features, and wildlife will be confined to a 200-foot-wide buffer area that is subject to significant human disturbance. In addition, there will be the potential by predation by domestic animals, human disturbance by bicyclists and hikers, trash in the creek, potential for deleterious substances to be released in the creek, potential erosion/scour from the outfalls, and lighting disturbance. Small animals, such as amphibians, could be adversely impacted over time by these cumulative impacts to the creek. In addition, the creek corridor would be an insufficient corridor for San Joaquin kit fox who prefer open space and grasslands. For many wildlife species sensitive to human disturbance, the recreational use and proximity to development would preclude their use of Sand Creek as a movement corridor entirely. Due to these issues, CDFW recommends that the draft EIR contemplate an increase in the creek setback area greater than the proposed 200 feet or completely excluding recreation from this corridor.

Alternatives Analyses

CDFW recommends that two Project alternatives be analyzed in the draft EIR. The first would be an alternative to design the Project such that stormwater runoff from the development areas is completely retained within the Project footprint and no outfalls to Sand Creek are constructed. The second alternative would be to design the Project such that storm drains discharge directly into constructed wetlands that gradually drain into Sand Creek with a greater than 200-foot creek setback that also encompasses flat grasslands easily traversed by San Joaquin kit fox and large enough to accommodate wildlife species more sensitive to human disturbance (e.g., American badger).

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Water Pollution Prevention Devices

CDFW recommends the draft EIR require devices on storm drains that prevent entrainment of amphibians and other wildlife, and that prevent pollutants such as trash, microplastics, oils, etc. from being released into Sand Creek from the outfalls. Pollution prevention devices should be certified and in compliance with the California State Water Resources Control Board's Full Capture System (https://www.waterboards.ca.gov/water_issues/programs/stormwater/trash_implementation.html). Devices to prevent entrainment and mortality of wildlife may include "frog ladders", fine mesh grate coverings, etc.

Nesting Bird Timeframe

The NOP states that the nesting bird season ends August 31 and that buffers can be removed September 1. CDFW recommends that the draft EIR specify that the nesting season is from February 1 to September 15 and use the same time frame for buffer installations and removals. Actual timing of the bird nesting season within the Project area will depend on site conditions and should be determined each year by a qualified biologist.

Nesting Bird Buffers

CDFW recommends that the minimum buffer area around nesting birds shall be the following: 1) 250 feet for passerines, 2) 500 feet for small raptors such as accipiters, and 3) 1,000 feet for larger raptors such as buteos. A qualified biologist may adjust the buffers depending on the results of nest monitoring at a time of day and duration necessary to ascertain if the nesting birds are disturbed or not. This language should be incorporated into the draft EIR.

Additional Recommended Measures for the EIR

Recommended Mitigation Measure 12: Open or Hollow Pipes Wildlife Checks, Filling and Capping

To prevent entrapment and mortality of smaller wildlife and birds, all pipes, culverts, or similar structures that are stored at the construction site vertically or horizontally for one or more overnight periods will be securely capped on both ends prior to storage and thoroughly inspected for wildlife prior to implementation at the Project site by the Qualified Biologist. All hollow pipes or posts installed as part of the Project and exposed to the environment shall be capped, screened or filled with material by Permittee prior to the end of the workday in which installation occurs.

Recommended Mitigation Measure 13: Filling of fencing or signage post holes on uppermost sections

To prevent entanglement of raptor talons, any post with exposed perforations installed on the Project site and exposed to the environment shall have the holes permanently filled within the top six (6) inches of the post upon installation by Permittee.

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REGULATORY REQUIREMENTS

California Endangered Species Act
Please be advised that a CESA Permit must be obtained if the Project has the potential to result in "take" of plants or animals listed under the CESA, either during construction or over the life of the Project. Issuance of a CESA Permit is subject to CEQA documentation; the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the Project will impact CESA listed species, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA Permit.

CEQA requires a Mandatory Finding of Significance if a project is likely to substantially impact threatened or endangered species [CEQA section 21001(c), 21083, and CEQA Guidelines section 15380, 15064, 15065]. Impacts must be avoided or mitigated to less-than-significant levels unless the CEQA Lead Agency makes and supports Findings of Overriding Consideration (FOC). The CEQA Lead Agency's FOC does not eliminate the Project proponent's obligation to comply with Fish and Game Code section 2080.

Thank you for the opportunity to comment on the Project's NOP. If you have any questions regarding this letter, please contact Ms. Andrea Boertien, Environmental Scientist, at (209) 234-3449 or Andrea.Boertien@wildlife.ca.gov; or Ms. Melissa Farinha, Senior Environmental Scientist (Supervisory), at (707) 944-5579 or Melissa.Farinha@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Gregg Erickson
BE74D4C93C604EA...

Gregg Erickson
Regional Manager
Bay Delta Region

cc: Office of Planning and Research, State Clearinghouse, Sacramento

Appendix C

CalEEMod Results - Unmitigated

Creekside Vineyards Project

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	3.92	Acre	3.92	170,755.20	0
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
Single Family Housing	220.00	Dwelling Unit	28.00	396,000.00	629

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per the site plan.

Grading - Total acres graded changed to reflect grading plan.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Construction Phase - Phasing adjusted based on default lengths for the number of units built under each phase.

Vehicle Trips - Trip generation rates adjusted per the Traffic Impact Assessment prepared for the proposed project.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	55.00	740.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	75.00	45.00
tblConstructionPhase	NumDays	55.00	35.00
tblConstructionPhase	NumDays	740.00	440.00
tblConstructionPhase	NumDays	55.00	440.00
tblConstructionPhase	NumDays	30.00	5.00
tblConstructionPhase	NumDays	75.00	8.00
tblConstructionPhase	NumDays	55.00	18.00
tblConstructionPhase	NumDays	740.00	230.00
tblConstructionPhase	NumDays	55.00	230.00
tblConstructionPhase	PhaseEndDate	8/29/2025	6/27/2025
tblConstructionPhase	PhaseEndDate	3/28/2025	6/13/2025
tblConstructionPhase	PhaseEndDate	6/13/2025	8/12/2022
tblConstructionPhase	PhaseStartDate	6/14/2025	8/27/2022
tblConstructionPhase	PhaseStartDate	5/28/2022	8/13/2022

tblConstructionPhase	PhaseStartDate	3/29/2025	5/28/2022
tblGrading	AcresOfGrading	0.00	71.70
tblGrading	AcresOfGrading	187.50	0.00
tblGrading	AcresOfGrading	20.00	0.00
tblGrading	AcresOfGrading	112.50	0.00
tblGrading	MaterialImported	0.00	4,555.00
tblLandUse	LotAcreage	71.43	28.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblTripsAndVMT	HaulingTripNumber	569.00	0.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	9.45
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	9.45
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	9.45

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					
2022	0.7954	4.0079	3.4850	9.3300e-003	0.8173	0.1484	0.9657	0.3536	0.1377	0.4913	0.0000	841.8049	841.8049	0.1430	0.0000	845.3798
2023	1.5044	3.8673	4.1984	0.0146	0.7137	0.1057	0.8194	0.1933	0.0999	0.2932	0.0000	1,336.7440	1,336.7440	0.1055	0.0000	1,339.3823
2024	1.4880	3.7315	4.1010	0.0145	0.7192	0.0938	0.8129	0.1948	0.0886	0.2834	0.0000	1,325.5781	1,325.5781	0.1045	0.0000	1,328.1899
2025	1.1677	3.3043	3.5797	0.0113	0.7816	0.0955	0.8771	0.2998	0.0891	0.3889	0.0000	1,027.7389	1,027.7389	0.1275	0.0000	1,030.9251
2026	2.1539	3.5224	3.8782	0.0140	0.7164	0.0808	0.7972	0.1940	0.0763	0.2704	0.0000	1,281.0642	1,281.0642	0.1014	0.0000	1,283.5993
2027	2.5739	3.4126	3.7210	0.0130	0.7191	0.0839	0.8030	0.2140	0.0790	0.2930	0.0000	1,193.0022	1,193.0022	0.1065	0.0000	1,195.6635
2028	1.9010	1.6558	1.7884	6.5200e-003	0.3440	0.0384	0.3824	0.0931	0.0363	0.1295	0.0000	597.6029	597.6029	0.0474	0.0000	598.7890
Maximum	**2.5739**	**4.0079**	**4.1984**	**0.0146**	**0.8173**	**0.1484**	**0.9657**	**0.3536**	**0.1377**	**0.4913**	**0.0000**	**1,336.7440**	**1,336.7440**	**0.1430**	**0.0000**	**1,339.3823**

2.1 Overall Construction

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					
2022	0.7954	4.0079	3.4850	9.3300e-003	0.8173	0.1484	0.9657	0.3536	0.1377	0.4913	0.0000	841.8044	841.8044	0.1430	0.0000	845.3793
2023	1.5044	3.8673	4.1984	0.0146	0.7137	0.1057	0.8194	0.1933	0.0999	0.2932	0.0000	1,336.7436	1,336.7436	0.1055	0.0000	1,339.3819
2024	1.4880	3.7315	4.1010	0.0145	0.7192	0.0938	0.8129	0.1948	0.0886	0.2834	0.0000	1,325.5777	1,325.5777	0.1045	0.0000	1,328.1895
2025	1.1677	3.3043	3.5797	0.0113	0.7816	0.0955	0.8771	0.2998	0.0891	0.3889	0.0000	1,027.7384	1,027.7384	0.1275	0.0000	1,030.9246
2026	2.1539	3.5224	3.8782	0.0140	0.7164	0.0808	0.7972	0.1940	0.0763	0.2704	0.0000	1,281.0638	1,281.0638	0.1014	0.0000	1,283.5989
2027	2.5739	3.4126	3.7210	0.0130	0.7191	0.0839	0.8030	0.2140	0.0790	0.2930	0.0000	1,193.0017	1,193.0017	0.1065	0.0000	1,195.6631
2028	1.9010	1.6558	1.7884	6.5200e-003	0.3440	0.0384	0.3824	0.0931	0.0363	0.1295	0.0000	597.6027	597.6027	0.0474	0.0000	598.7888
Maximum	**2.5739**	**4.0079**	**4.1984**	**0.0146**	**0.8173**	**0.1484**	**0.9657**	**0.3536**	**0.1377**	**0.4913**	**0.0000**	**1,336.7436**	**1,336.7436**	**0.1430**	**0.0000**	**1,339.3819**

	ROG	NOx	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	**1-1-2022**	**3-31-2022**	1.2751	1.2751
2	**4-1-2022**	**6-30-2022**	1.0255	1.0255
3	**7-1-2022**	**9-30-2022**	0.9704	0.9704
4	**10-1-2022**	**12-31-2022**	1.5537	1.5537

5	**1-1-2023**	**3-31-2023**	1.3357	1.3357
6	**4-1-2023**	**6-30-2023**	1.3381	1.3381
7	**7-1-2023**	**9-30-2023**	1.3528	1.3528
8	**10-1-2023**	**12-31-2023**	1.3654	1.3654
9	**1-1-2024**	**3-31-2024**	1.3021	1.3021
10	**4-1-2024**	**6-30-2024**	1.2903	1.2903
11	**7-1-2024**	**9-30-2024**	1.3045	1.3045
12	**10-1-2024**	**12-31-2024**	1.3164	1.3164
13	**1-1-2025**	**3-31-2025**	1.2398	1.2398
14	**4-1-2025**	**6-30-2025**	1.3064	1.3064
15	**7-1-2025**	**9-30-2025**	0.8259	0.8259
16	**10-1-2025**	**12-31-2025**	1.0976	1.0976
17	**1-1-2026**	**3-31-2026**	1.4044	1.4044
18	**4-1-2026**	**6-30-2026**	1.4094	1.4094
19	**7-1-2026**	**9-30-2026**	1.4249	1.4249
20	**10-1-2026**	**12-31-2026**	1.4356	1.4356
21	**1-1-2027**	**3-31-2027**	1.3950	1.3950
22	**4-1-2027**	**6-30-2027**	1.4699	1.4699
23	**7-1-2027**	**9-30-2027**	1.2957	1.2957
24	**10-1-2027**	**12-31-2027**	1.8271	1.8271
25	**1-1-2028**	**3-31-2028**	1.7988	1.7988
26	**4-1-2028**	**6-30-2028**	1.7096	1.7096
27	**7-1-2028**	**9-30-2028**	0.0582	0.0582
		Highest	1.8271	1.8271

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	3.2356	0.0472	3.5177	3.9700e-003		0.2810	0.2810		0.2810	0.2810	27.9644	9.5349	37.4993	0.0554	1.6000e-003	39.3605
Energy	0.0345	0.2946	0.1254	1.8800e-003		0.0238	0.0238		0.0238	0.0238	0.0000	492.0483	492.0483	0.0300	0.0111	496.1049
Mobile	0.3473	1.7557	3.8571	0.0170	1.7858	0.0118	1.7976	0.4790	0.0110	0.4901	0.0000	1,569.0977	1,569.0977	0.0502	0.0000	1,570.3517
Waste						0.0000	0.0000		0.0000	0.0000	53.6952	0.0000	53.6952	3.1733	0.0000	133.0275
Water						0.0000	0.0000		0.0000	0.0000	4.5475	10.6374	15.1848	0.4687	0.0114	30.2912
Total	**3.6174**	**2.0976**	**7.5002**	**0.0229**	**1.7858**	**0.3166**	**2.1024**	**0.4790**	**0.3158**	**0.7948**	**86.2071**	**2,081.3182**	**2,167.5252**	**3.7775**	**0.0241**	**2,269.1358**

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	3.1199	0.0472	3.5177	3.9700e-003		0.2810	0.2810		0.2810	0.2810	27.9644	9.5349	37.4993	0.0554	1.6000e-003	39.3605
Energy	0.0323	0.2763	0.1176	1.7600e-003		0.0223	0.0223		0.0223	0.0223	0.0000	319.9323	319.9323	6.1300e-003	5.8700e-003	321.8335
Mobile	0.3447	1.7414	3.7993	0.0167	1.7500	0.0116	1.7617	0.4695	0.0108	0.4803	0.0000	1,540.2850	1,540.2850	0.0494	0.0000	1,541.5206
Waste						0.0000	0.0000		0.0000	0.0000	53.6952	0.0000	53.6952	3.1733	0.0000	133.0275
Water						0.0000	0.0000		0.0000	0.0000	4.5475	10.6374	15.1848	0.4687	0.0114	30.2912
Total	**3.4969**	**2.0649**	**7.4345**	**0.0224**	**1.7500**	**0.3149**	**2.0650**	**0.4695**	**0.3141**	**0.7836**	**86.2071**	**1,880.3895**	**1,966.5965**	**3.7530**	**0.0188**	**2,066.0333**

	ROG	NOx	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	**3.33**	**1.56**	**0.88**	**1.88**	**2.00**	**0.53**	**1.78**	**2.00**	**0.53**	**1.42**	**0.00**	**9.65**	**9.27**	**0.65**	**21.73**	**8.95**

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 1	Site Preparation	1/1/2022	2/11/2022	5	30	
2	Grading 1	Grading	2/12/2022	5/27/2022	5	75	
3	Paving 1	Paving	5/28/2022	8/12/2022	5	55	
4	Building Construction 1	Building Construction	8/13/2022	6/13/2025	5	740	
5	Architectural Coating 1	Architectural Coating	8/27/2022	6/27/2025	5	740	
6	Site Prep 2	Site Preparation	6/6/2025	7/3/2025	5	20	
7	Grading 2	Grading	7/4/2025	9/4/2025	5	45	
8	Paving 2	Paving	9/5/2025	10/23/2025	5	35	
9	Building Construction 2	Building Construction	10/24/2025	7/1/2027	5	440	
10	Architectural Coating 2	Architectural Coating	11/7/2025	7/15/2027	5	440	
11	Site Prep 3	Site Preparation	6/24/2027	6/30/2027	5	5	
12	Grading 3	Grading	7/1/2027	7/12/2027	5	8	
13	Paving 3	Paving	7/13/2027	8/5/2027	5	18	
14	Building Construction 3	Building Construction	8/6/2027	6/22/2028	5	230	
15	Architectural Coating 3	Architectural Coating	8/20/2027	7/6/2028	5	230	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

Residential Indoor: 801,900; Residential Outdoor: 267,300; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 44,170 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading 1	Scrapers	2	8.00	367	0.48

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

Paving 3	Pavers	2	8.00	130	0.42
Paving 2	Pavers	2	8.00	130	0.42
Paving 3	Paving Equipment	2	8.00	132	0.36
Paving 2	Paving Equipment	2	8.00	132	0.36
Paving 3	Rollers	2	8.00	80	0.38
Paving 2	Rollers	2	8.00	80	0.38
Grading 3	Rubber Tired Dozers	1	8.00	247	0.40
Grading 2	Rubber Tired Dozers	1	8.00	247	0.40
Site Prep 3	Rubber Tired Dozers	3	8.00	247	0.40
Site Prep 2	Rubber Tired Dozers	3	8.00	247	0.40
Grading 3	Scrapers	2	8.00	367	0.48
Grading 2	Scrapers	2	8.00	367	0.48
Building Construction 3	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction 2	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading 3	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading 2	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Prep 3	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Prep 2	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction 3	Welders	1	8.00	46	0.45
Building Construction 2	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating 2	1	92.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation 1	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading 1	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 1	9	460.00	172.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving 1	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating 1	1	92.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating 3	1	92.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 3	9	460.00	172.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 2	9	460.00	172.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading 3	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading 2	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving 3	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving 2	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Prep 3	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Prep 2	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation 1 - 2022

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					0.3093	0.0000	0.3093	0.1531	0.0000	0.1531	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0476	0.4963	0.2955	5.7000e-004		0.0242	0.0242		0.0223	0.0223	0.0000	50.1591	50.1591	0.0162	0.0000	50.5647
Total	**0.0476**	**0.4963**	**0.2955**	**5.7000e-004**	**0.3093**	**0.0242**	**0.3335**	**0.1531**	**0.0223**	**0.1754**	**0.0000**	**50.1591**	**50.1591**	**0.0162**	**0.0000**	**50.5647**

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	7.7000e-004	5.1000e-004	5.5700e-003	2.0000e-005	2.1300e-003	1.0000e-005	2.1500e-003	5.7000e-004	1.0000e-005	5.8000e-004	0.0000	1.7375	1.7375	4.0000e-005	0.0000	1.7384
Total	**7.7000e-004**	**5.1000e-004**	**5.5700e-003**	**2.0000e-005**	**2.1300e-003**	**1.0000e-005**	**2.1500e-003**	**5.7000e-004**	**1.0000e-005**	**5.8000e-004**	**0.0000**	**1.7375**	**1.7375**	**4.0000e-005**	**0.0000**	**1.7384**

3.2 Site Preparation 1 - 2022

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					0.3093	0.0000	0.3093	0.1531	0.0000	0.1531	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0476	0.4963	0.2955	5.7000e-004		0.0242	0.0242		0.0223	0.0223	0.0000	50.1590	50.1590	0.0162	0.0000	50.5646
Total	**0.0476**	**0.4963**	**0.2955**	**5.7000e-004**	**0.3093**	**0.0242**	**0.3335**	**0.1531**	**0.0223**	**0.1754**	**0.0000**	**50.1590**	**50.1590**	**0.0162**	**0.0000**	**50.5646**

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	7.7000e-004	5.1000e-004	5.5700e-003	2.0000e-005	2.1300e-003	1.0000e-005	2.1500e-003	5.7000e-004	1.0000e-005	5.8000e-004	0.0000	1.7375	1.7375	4.0000e-005	0.0000	1.7384
Total	**7.7000e-004**	**5.1000e-004**	**5.5700e-003**	**2.0000e-005**	**2.1300e-003**	**1.0000e-005**	**2.1500e-003**	**5.7000e-004**	**1.0000e-005**	**5.8000e-004**	**0.0000**	**1.7375**	**1.7375**	**4.0000e-005**	**0.0000**	**1.7384**

3.3 Grading 1 - 2022

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					0.2258	0.0000	0.2258	0.1241	0.0000	0.1241	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1359	1.4566	1.0891	2.3300e-003		0.0613	0.0613		0.0564	0.0564	0.0000	204.5048	204.5048	0.0661	0.0000	206.1583
Total	**0.1359**	**1.4566**	**1.0891**	**2.3300e-003**	**0.2258**	**0.0613**	**0.2871**	**0.1241**	**0.0564**	**0.1805**	**0.0000**	**204.5048**	**204.5048**	**0.0661**	**0.0000**	**206.1583**

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	2.1500e-003	1.4200e-003	0.0155	5.0000e-005	5.9300e-003	4.0000e-005	5.9600e-003	1.5800e-003	3.0000e-005	1.6100e-003	0.0000	4.8263	4.8263	1.0000e-004	0.0000	4.8288
Total	**2.1500e-003**	**1.4200e-003**	**0.0155**	**5.0000e-005**	**5.9300e-003**	**4.0000e-005**	**5.9600e-003**	**1.5800e-003**	**3.0000e-005**	**1.6100e-003**	**0.0000**	**4.8263**	**4.8263**	**1.0000e-004**	**0.0000**	**4.8288**

3.3 Grading 1 - 2022

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					0.2258	0.0000	0.2258	0.1241	0.0000	0.1241	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1359	1.4566	1.0891	2.3300e-003		0.0613	0.0613		0.0564	0.0564	0.0000	204.5045	204.5045	0.0661	0.0000	206.1580
Total	**0.1359**	**1.4566**	**1.0891**	**2.3300e-003**	**0.2258**	**0.0613**	**0.2871**	**0.1241**	**0.0564**	**0.1805**	**0.0000**	**204.5045**	**204.5045**	**0.0661**	**0.0000**	**206.1580**

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	2.1500e-003	1.4200e-003	0.0155	5.0000e-005	5.9300e-003	4.0000e-005	5.9600e-003	1.5800e-003	3.0000e-005	1.6100e-003	0.0000	4.8263	4.8263	1.0000e-004	0.0000	4.8288
Total	**2.1500e-003**	**1.4200e-003**	**0.0155**	**5.0000e-005**	**5.9300e-003**	**4.0000e-005**	**5.9600e-003**	**1.5800e-003**	**3.0000e-005**	**1.6100e-003**	**0.0000**	**4.8263**	**4.8263**	**1.0000e-004**	**0.0000**	**4.8288**

3.4 Paving 1 - 2022

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	0.0303	0.3059	0.4010	6.3000e-004		0.0156	0.0156		0.0144	0.0144	0.0000	55.0758	55.0758	0.0178	0.0000	55.5211
Paving	0.0221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0525**	**0.3059**	**0.4010**	**6.3000e-004**		**0.0156**	**0.0156**		**0.0144**	**0.0144**	**0.0000**	**55.0758**	**55.0758**	**0.0178**	**0.0000**	**55.5211**

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	1.1800e-003	7.8000e-004	8.5000e-003	3.0000e-005	3.2600e-003	2.0000e-005	3.2800e-003	8.7000e-004	2.0000e-005	8.9000e-004	0.0000	2.6544	2.6544	6.0000e-005	0.0000	2.6558
Total	**1.1800e-003**	**7.8000e-004**	**8.5000e-003**	**3.0000e-005**	**3.2600e-003**	**2.0000e-005**	**3.2800e-003**	**8.7000e-004**	**2.0000e-005**	**8.9000e-004**	**0.0000**	**2.6544**	**2.6544**	**6.0000e-005**	**0.0000**	**2.6558**

3.4 Paving 1 - 2022

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	0.0303	0.3059	0.4010	6.3000e-004		0.0156	0.0156		0.0144	0.0144	0.0000	55.0757	55.0757	0.0178	0.0000	55.5210
Paving	0.0221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0525**	**0.3059**	**0.4010**	**6.3000e-004**		**0.0156**	**0.0156**		**0.0144**	**0.0144**	**0.0000**	**55.0757**	**55.0757**	**0.0178**	**0.0000**	**55.5210**

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	1.1800e-003	7.8000e-004	8.5000e-003	3.0000e-005	3.2600e-003	2.0000e-005	3.2800e-003	8.7000e-004	2.0000e-005	8.9000e-004	0.0000	2.6544	2.6544	6.0000e-005	0.0000	2.6558
Total	**1.1800e-003**	**7.8000e-004**	**8.5000e-003**	**3.0000e-005**	**3.2600e-003**	**2.0000e-005**	**3.2800e-003**	**8.7000e-004**	**2.0000e-005**	**8.9000e-004**	**0.0000**	**2.6544**	**2.6544**	**6.0000e-005**	**0.0000**	**2.6558**

3.5 Building Construction 1 - 2022

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	0.0853	0.7808	0.8182	1.3500e-003		0.0405	0.0405		0.0381	0.0381	0.0000	115.8626	115.8626	0.0278	0.0000	116.5566
Total	**0.0853**	**0.7808**	**0.8182**	**1.3500e-003**		**0.0405**	**0.0405**		**0.0381**	**0.0381**	**0.0000**	**115.8626**	**115.8626**	**0.0278**	**0.0000**	**116.5566**

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	0.0255	0.8507	0.2108	2.3000e-003	0.0564	1.6900e-003	0.0581	0.0163	1.6200e-003	0.0179	0.0000	220.8488	220.8488	0.0105	0.0000	221.1108
Worker	0.0658	0.0437	0.4741	1.6400e-003	0.1817	1.1600e-003	0.1829	0.0484	1.0700e-003	0.0494	0.0000	148.0051	148.0051	3.0900e-003	0.0000	148.0824
Total	**0.0913**	**0.8944**	**0.6849**	**3.9400e-003**	**0.2381**	**2.8500e-003**	**0.2410**	**0.0647**	**2.6900e-003**	**0.0674**	**0.0000**	**368.8539**	**368.8539**	**0.0136**	**0.0000**	**369.1931**

3.5 Building Construction 1 - 2022

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	0.0853	0.7808	0.8182	1.3500e-003		0.0405	0.0405		0.0381	0.0381	0.0000	115.8625	115.8625	0.0278	0.0000	116.5564
Total	**0.0853**	**0.7808**	**0.8182**	**1.3500e-003**		**0.0405**	**0.0405**		**0.0381**	**0.0381**	**0.0000**	**115.8625**	**115.8625**	**0.0278**	**0.0000**	**116.5564**

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	0.0255	0.8507	0.2108	2.3000e-003	0.0564	1.6900e-003	0.0581	0.0163	1.6200e-003	0.0179	0.0000	220.8488	220.8488	0.0105	0.0000	221.1108
Worker	0.0658	0.0437	0.4741	1.6400e-003	0.1817	1.1600e-003	0.1829	0.0484	1.0700e-003	0.0494	0.0000	148.0051	148.0051	3.0900e-003	0.0000	148.0824
Total	**0.0913**	**0.8944**	**0.6849**	**3.9400e-003**	**0.2381**	**2.8500e-003**	**0.2410**	**0.0647**	**2.6900e-003**	**0.0674**	**0.0000**	**368.8539**	**368.8539**	**0.0136**	**0.0000**	**369.1931**

3.5 Building Construction 1 - 2023

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	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3462	301.3462	0.0717	0.0000	303.1383
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3462**	**301.3462**	**0.0717**	**0.0000**	**303.1383**

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	0.0497	1.7054	0.4907	5.8000e-003	0.1466	1.9600e-003	0.1486	0.0424	1.8700e-003	0.0443	0.0000	558.1144	558.1144	0.0232	0.0000	558.6950
Worker	0.1600	0.1021	1.1338	4.0900e-003	0.4725	2.9600e-003	0.4755	0.1257	2.7200e-003	0.1284	0.0000	370.0760	370.0760	7.2000e-003	0.0000	370.2560
Total	**0.2097**	**1.8075**	**1.6245**	**9.8900e-003**	**0.6192**	**4.9200e-003**	**0.6241**	**0.1681**	**4.5900e-003**	**0.1727**	**0.0000**	**928.1904**	**928.1904**	**0.0304**	**0.0000**	**928.9509**

3.5 Building Construction 1 - 2023

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	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3458	301.3458	0.0717	0.0000	303.1380
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3458**	**301.3458**	**0.0717**	**0.0000**	**303.1380**

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	0.0497	1.7054	0.4907	5.8000e-003	0.1466	1.9600e-003	0.1486	0.0424	1.8700e-003	0.0443	0.0000	558.1144	558.1144	0.0232	0.0000	558.6950
Worker	0.1600	0.1021	1.1338	4.0900e-003	0.4725	2.9600e-003	0.4755	0.1257	2.7200e-003	0.1284	0.0000	370.0760	370.0760	7.2000e-003	0.0000	370.2560
Total	**0.2097**	**1.8075**	**1.6245**	**9.8900e-003**	**0.6192**	**4.9200e-003**	**0.6241**	**0.1681**	**4.5900e-003**	**0.1727**	**0.0000**	**928.1904**	**928.1904**	**0.0304**	**0.0000**	**928.9509**

3.5 Building Construction 1 - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7223	303.7223	0.0718	0.0000	305.5179
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7223**	**303.7223**	**0.0718**	**0.0000**	**305.5179**

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	0.0484	1.6993	0.4760	5.8000e-003	0.1478	1.9400e-003	0.1497	0.0427	1.8600e-003	0.0446	0.0000	558.6118	558.6118	0.0229	0.0000	559.1851
Worker	0.1515	0.0929	1.0583	3.9600e-003	0.4762	2.9200e-003	0.4791	0.1267	2.6900e-003	0.1294	0.0000	358.1636	358.1636	6.5300e-003	0.0000	358.3269
Total	**0.1999**	**1.7922**	**1.5344**	**9.7600e-003**	**0.6239**	**4.8600e-003**	**0.6288**	**0.1694**	**4.5500e-003**	**0.1740**	**0.0000**	**916.7754**	**916.7754**	**0.0295**	**0.0000**	**917.5120**

3.5 Building Construction 1 - 2024

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	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7220	303.7220	0.0718	0.0000	305.5175
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7220**	**303.7220**	**0.0718**	**0.0000**	**305.5175**

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	0.0484	1.6993	0.4760	5.8000e-003	0.1478	1.9400e-003	0.1497	0.0427	1.8600e-003	0.0446	0.0000	558.6118	558.6118	0.0229	0.0000	559.1851
Worker	0.1515	0.0929	1.0583	3.9600e-003	0.4762	2.9200e-003	0.4791	0.1267	2.6900e-003	0.1294	0.0000	358.1636	358.1636	6.5300e-003	0.0000	358.3269
Total	**0.1999**	**1.7922**	**1.5344**	**9.7600e-003**	**0.6239**	**4.8600e-003**	**0.6288**	**0.1694**	**4.5500e-003**	**0.1740**	**0.0000**	**916.7754**	**916.7754**	**0.0295**	**0.0000**	**917.5120**

3.5 Building Construction 1 - 2025

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	0.0807	0.7357	0.9490	1.5900e-003		0.0311	0.0311		0.0293	0.0293	0.0000	136.8325	136.8325	0.0322	0.0000	137.6366
Total	**0.0807**	**0.7357**	**0.9490**	**1.5900e-003**		**0.0311**	**0.0311**		**0.0293**	**0.0293**	**0.0000**	**136.8325**	**136.8325**	**0.0322**	**0.0000**	**137.6366**

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	0.0212	0.7563	0.2081	2.5900e-003	0.0666	8.6000e-004	0.0674	0.0193	8.2000e-004	0.0201	0.0000	249.9444	249.9444	0.0101	0.0000	250.1975
Worker	0.0645	0.0380	0.4415	1.7100e-003	0.2145	1.3000e-003	0.2158	0.0571	1.1900e-003	0.0583	0.0000	154.7444	154.7444	2.6700e-003	0.0000	154.8110
Total	**0.0857**	**0.7943**	**0.6496**	**4.3000e-003**	**0.2810**	**2.1600e-003**	**0.2832**	**0.0763**	**2.0100e-003**	**0.0783**	**0.0000**	**404.6888**	**404.6888**	**0.0128**	**0.0000**	**405.0085**

3.5 Building Construction 1 - 2025

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	0.0807	0.7357	0.9490	1.5900e-003		0.0311	0.0311		0.0293	0.0293	0.0000	136.8323	136.8323	0.0322	0.0000	137.6364
Total	**0.0807**	**0.7357**	**0.9490**	**1.5900e-003**		**0.0311**	**0.0311**		**0.0293**	**0.0293**	**0.0000**	**136.8323**	**136.8323**	**0.0322**	**0.0000**	**137.6364**

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	0.0212	0.7563	0.2081	2.5900e-003	0.0666	8.6000e-004	0.0674	0.0193	8.2000e-004	0.0201	0.0000	249.9444	249.9444	0.0101	0.0000	250.1975
Worker	0.0645	0.0380	0.4415	1.7100e-003	0.2145	1.3000e-003	0.2158	0.0571	1.1900e-003	0.0583	0.0000	154.7444	154.7444	2.6700e-003	0.0000	154.8110
Total	**0.0857**	**0.7943**	**0.6496**	**4.3000e-003**	**0.2810**	**2.1600e-003**	**0.2832**	**0.0763**	**2.0100e-003**	**0.0783**	**0.0000**	**404.6888**	**404.6888**	**0.0128**	**0.0000**	**405.0085**

3.6 Architectural Coating 1 - 2022

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	0.3577					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.2000e-003	0.0634	0.0816	1.3000e-004		3.6800e-003	3.6800e-003		3.6800e-003	3.6800e-003	0.0000	11.4896	11.4896	7.5000e-004	0.0000	11.5083
Total	**0.3669**	**0.0634**	**0.0816**	**1.3000e-004**		**3.6800e-003**	**3.6800e-003**		**3.6800e-003**	**3.6800e-003**	**0.0000**	**11.4896**	**11.4896**	**7.5000e-004**	**0.0000**	**11.5083**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0118	7.8600e-003	0.0853	2.9000e-004	0.0327	2.1000e-004	0.0329	8.7000e-003	1.9000e-004	8.9000e-003	0.0000	26.6409	26.6409	5.6000e-004	0.0000	26.6548
Total	**0.0118**	**7.8600e-003**	**0.0853**	**2.9000e-004**	**0.0327**	**2.1000e-004**	**0.0329**	**8.7000e-003**	**1.9000e-004**	**8.9000e-003**	**0.0000**	**26.6409**	**26.6409**	**5.6000e-004**	**0.0000**	**26.6548**

3.6 Architectural Coating 1 - 2022

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	0.3577					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.2000e-003	0.0634	0.0816	1.3000e-004		3.6800e-003	3.6800e-003		3.6800e-003	3.6800e-003	0.0000	11.4896	11.4896	7.5000e-004	0.0000	11.5083
Total	**0.3669**	**0.0634**	**0.0816**	**1.3000e-004**		**3.6800e-003**	**3.6800e-003**		**3.6800e-003**	**3.6800e-003**	**0.0000**	**11.4896**	**11.4896**	**7.5000e-004**	**0.0000**	**11.5083**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0118	7.8600e-003	0.0853	2.9000e-004	0.0327	2.1000e-004	0.0329	8.7000e-003	1.9000e-004	8.9000e-003	0.0000	26.6409	26.6409	5.6000e-004	0.0000	26.6548
Total	**0.0118**	**7.8600e-003**	**0.0853**	**2.9000e-004**	**0.0327**	**2.1000e-004**	**0.0329**	**8.7000e-003**	**1.9000e-004**	**8.9000e-003**	**0.0000**	**26.6409**	**26.6409**	**5.6000e-004**	**0.0000**	**26.6548**

3.6 Architectural Coating 1 - 2023

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	1.0334					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2355	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**1.0583**	**0.1694**	**0.2355**	**3.9000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0320	0.0204	0.2268	8.2000e-004	0.0945	5.9000e-004	0.0951	0.0251	5.4000e-004	0.0257	0.0000	74.0152	74.0152	1.4400e-003	0.0000	74.0512
Total	**0.0320**	**0.0204**	**0.2268**	**8.2000e-004**	**0.0945**	**5.9000e-004**	**0.0951**	**0.0251**	**5.4000e-004**	**0.0257**	**0.0000**	**74.0152**	**74.0152**	**1.4400e-003**	**0.0000**	**74.0512**

3.6 Architectural Coating 1 - 2023

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	1.0334					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2354	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**1.0583**	**0.1694**	**0.2354**	**3.9000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0320	0.0204	0.2268	8.2000e-004	0.0945	5.9000e-004	0.0951	0.0251	5.4000e-004	0.0257	0.0000	74.0152	74.0152	1.4400e-003	0.0000	74.0512
Total	**0.0320**	**0.0204**	**0.2268**	**8.2000e-004**	**0.0945**	**5.9000e-004**	**0.0951**	**0.0251**	**5.4000e-004**	**0.0257**	**0.0000**	**74.0152**	**74.0152**	**1.4400e-003**	**0.0000**	**74.0512**

3.6 Architectural Coating 1 - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.0413					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0237	0.1597	0.2371	3.9000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	33.4476	33.4476	1.8800e-003	0.0000	33.4947
Total	**1.0650**	**0.1597**	**0.2371**	**3.9000e-004**		**7.9800e-003**	**7.9800e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8800e-003**	**0.0000**	**33.4947**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0303	0.0186	0.2117	7.9000e-004	0.0952	5.8000e-004	0.0958	0.0253	5.4000e-004	0.0259	0.0000	71.6327	71.6327	1.3100e-003	0.0000	71.6654
Total	**0.0303**	**0.0186**	**0.2117**	**7.9000e-004**	**0.0952**	**5.8000e-004**	**0.0958**	**0.0253**	**5.4000e-004**	**0.0259**	**0.0000**	**71.6327**	**71.6327**	**1.3100e-003**	**0.0000**	**71.6654**

3.6 Architectural Coating 1 - 2024

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	1.0413					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0237	0.1597	0.2371	3.9000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	33.4476	33.4476	1.8800e-003	0.0000	33.4947
Total	**1.0650**	**0.1597**	**0.2371**	**3.9000e-004**		**7.9800e-003**	**7.9800e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8800e-003**	**0.0000**	**33.4947**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0303	0.0186	0.2117	7.9000e-004	0.0952	5.8000e-004	0.0958	0.0253	5.4000e-004	0.0259	0.0000	71.6327	71.6327	1.3100e-003	0.0000	71.6654
Total	**0.0303**	**0.0186**	**0.2117**	**7.9000e-004**	**0.0952**	**5.8000e-004**	**0.0958**	**0.0253**	**5.4000e-004**	**0.0259**	**0.0000**	**71.6327**	**71.6327**	**1.3100e-003**	**0.0000**	**71.6654**

3.6 Architectural Coating 1 - 2025

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	0.5087					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0109	0.0733	0.1158	1.9000e-004		3.3000e-003	3.3000e-003		3.3000e-003	3.3000e-003	0.0000	16.3408	16.3408	8.9000e-004	0.0000	16.3631
Total	**0.5197**	**0.0733**	**0.1158**	**1.9000e-004**		**3.3000e-003**	**3.3000e-003**		**3.3000e-003**	**3.3000e-003**	**0.0000**	**16.3408**	**16.3408**	**8.9000e-004**	**0.0000**	**16.3631**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0140	8.2500e-003	0.0958	3.7000e-004	0.0465	2.8000e-004	0.0468	0.0124	2.6000e-004	0.0126	0.0000	33.5717	33.5717	5.8000e-004	0.0000	33.5861
Total	**0.0140**	**8.2500e-003**	**0.0958**	**3.7000e-004**	**0.0465**	**2.8000e-004**	**0.0468**	**0.0124**	**2.6000e-004**	**0.0126**	**0.0000**	**33.5717**	**33.5717**	**5.8000e-004**	**0.0000**	**33.5861**

3.6 Architectural Coating 1 - 2025

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	0.5087					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0109	0.0733	0.1158	1.9000e-004		3.3000e-003	3.3000e-003		3.3000e-003	3.3000e-003	0.0000	16.3408	16.3408	8.9000e-004	0.0000	16.3631
Total	**0.5197**	**0.0733**	**0.1158**	**1.9000e-004**		**3.3000e-003**	**3.3000e-003**		**3.3000e-003**	**3.3000e-003**	**0.0000**	**16.3408**	**16.3408**	**8.9000e-004**	**0.0000**	**16.3631**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0140	8.2500e-003	0.0958	3.7000e-004	0.0465	2.8000e-004	0.0468	0.0124	2.6000e-004	0.0126	0.0000	33.5717	33.5717	5.8000e-004	0.0000	33.5861
Total	**0.0140**	**8.2500e-003**	**0.0958**	**3.7000e-004**	**0.0465**	**2.8000e-004**	**0.0468**	**0.0124**	**2.6000e-004**	**0.0126**	**0.0000**	**33.5717**	**33.5717**	**5.8000e-004**	**0.0000**	**33.5861**

3.7 Site Prep 2 - 2025

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					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0247	0.2523	0.1791	3.8000e-004		0.0109	0.0109		0.0100	0.0100	0.0000	33.4670	33.4670	0.0108	0.0000	33.7376
Total	**0.0247**	**0.2523**	**0.1791**	**3.8000e-004**	**0.1807**	**0.0109**	**0.1915**	**0.0993**	**0.0100**	**0.1093**	**0.0000**	**33.4670**	**33.4670**	**0.0108**	**0.0000**	**33.7376**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	2.5000e-004	2.9300e-003	1.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.0263	1.0263	2.0000e-005	0.0000	1.0268
Total	**4.3000e-004**	**2.5000e-004**	**2.9300e-003**	**1.0000e-005**	**1.4200e-003**	**1.0000e-005**	**1.4300e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.0263**	**1.0263**	**2.0000e-005**	**0.0000**	**1.0268**

3.7 Site Prep 2 - 2025

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					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0247	0.2523	0.1791	3.8000e-004		0.0109	0.0109		0.0100	0.0100	0.0000	33.4670	33.4670	0.0108	0.0000	33.7375
Total	**0.0247**	**0.2523**	**0.1791**	**3.8000e-004**	**0.1807**	**0.0109**	**0.1915**	**0.0993**	**0.0100**	**0.1093**	**0.0000**	**33.4670**	**33.4670**	**0.0108**	**0.0000**	**33.7375**

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	4.3000e-004	2.5000e-004	2.9300e-003	1.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.0263	1.0263	2.0000e-005	0.0000	1.0268
Total	**4.3000e-004**	**2.5000e-004**	**2.9300e-003**	**1.0000e-005**	**1.4200e-003**	**1.0000e-005**	**1.4300e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.0263**	**1.0263**	**2.0000e-005**	**0.0000**	**1.0268**

3.8 Grading 2 - 2025

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					0.1355	0.0000	0.1355	0.0745	0.0000	0.0745	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0653	0.6287	0.5925	1.4000e-003		0.0255	0.0255		0.0234	0.0234	0.0000	122.6390	122.6390	0.0397	0.0000	123.6306
Total	**0.0653**	**0.6287**	**0.5925**	**1.4000e-003**	**0.1355**	**0.0255**	**0.1610**	**0.0745**	**0.0234**	**0.0979**	**0.0000**	**122.6390**	**122.6390**	**0.0397**	**0.0000**	**123.6306**

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	1.0700e-003	6.3000e-004	7.3200e-003	3.0000e-005	3.5600e-003	2.0000e-005	3.5800e-003	9.5000e-004	2.0000e-005	9.7000e-004	0.0000	2.5658	2.5658	4.0000e-005	0.0000	2.5669
Total	**1.0700e-003**	**6.3000e-004**	**7.3200e-003**	**3.0000e-005**	**3.5600e-003**	**2.0000e-005**	**3.5800e-003**	**9.5000e-004**	**2.0000e-005**	**9.7000e-004**	**0.0000**	**2.5658**	**2.5658**	**4.0000e-005**	**0.0000**	**2.5669**

3.8 Grading 2 - 2025

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					0.1355	0.0000	0.1355	0.0745	0.0000	0.0745	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0653	0.6287	0.5925	1.4000e-003		0.0255	0.0255		0.0234	0.0234	0.0000	122.6388	122.6388	0.0397	0.0000	123.6304
Total	**0.0653**	**0.6287**	**0.5925**	**1.4000e-003**	**0.1355**	**0.0255**	**0.1610**	**0.0745**	**0.0234**	**0.0979**	**0.0000**	**122.6388**	**122.6388**	**0.0397**	**0.0000**	**123.6304**

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	1.0700e-003	6.3000e-004	7.3200e-003	3.0000e-005	3.5600e-003	2.0000e-005	3.5800e-003	9.5000e-004	2.0000e-005	9.7000e-004	0.0000	2.5658	2.5658	4.0000e-005	0.0000	2.5669
Total	**1.0700e-003**	**6.3000e-004**	**7.3200e-003**	**3.0000e-005**	**3.5600e-003**	**2.0000e-005**	**3.5800e-003**	**9.5000e-004**	**2.0000e-005**	**9.7000e-004**	**0.0000**	**2.5658**	**2.5658**	**4.0000e-005**	**0.0000**	**2.5669**

3.9 Paving 2 - 2025

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	0.0160	0.1502	0.2551	4.0000e-004		7.3200e-003	7.3200e-003		6.7400e-003	6.7400e-003	0.0000	35.0337	35.0337	0.0113	0.0000	35.3170
Paving	0.0221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0382**	**0.1502**	**0.2551**	**4.0000e-004**		**7.3200e-003**	**7.3200e-003**		**6.7400e-003**	**6.7400e-003**	**0.0000**	**35.0337**	**35.0337**	**0.0113**	**0.0000**	**35.3170**

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	6.2000e-004	3.7000e-004	4.2700e-003	2.0000e-005	2.0700e-003	1.0000e-005	2.0900e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.4967	1.4967	3.0000e-005	0.0000	1.4973
Total	**6.2000e-004**	**3.7000e-004**	**4.2700e-003**	**2.0000e-005**	**2.0700e-003**	**1.0000e-005**	**2.0900e-003**	**5.5000e-004**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**1.4967**	**1.4967**	**3.0000e-005**	**0.0000**	**1.4973**

3.9 Paving 2 - 2025

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	0.0160	0.1502	0.2551	4.0000e-004		7.3200e-003	7.3200e-003		6.7400e-003	6.7400e-003	0.0000	35.0337	35.0337	0.0113	0.0000	35.3169
Paving	0.0221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0382**	**0.1502**	**0.2551**	**4.0000e-004**		**7.3200e-003**	**7.3200e-003**		**6.7400e-003**	**6.7400e-003**	**0.0000**	**35.0337**	**35.0337**	**0.0113**	**0.0000**	**35.3169**

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	6.2000e-004	3.7000e-004	4.2700e-003	2.0000e-005	2.0700e-003	1.0000e-005	2.0900e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.4967	1.4967	3.0000e-005	0.0000	1.4973
Total	**6.2000e-004**	**3.7000e-004**	**4.2700e-003**	**2.0000e-005**	**2.0700e-003**	**1.0000e-005**	**2.0900e-003**	**5.5000e-004**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**1.4967**	**1.4967**	**3.0000e-005**	**0.0000**	**1.4973**

3.10 Building Construction 2 - 2025

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	0.0335	0.3055	0.3941	6.6000e-004		0.0129	0.0129		0.0122	0.0122	0.0000	56.8203	56.8203	0.0134	0.0000	57.1542
Total	**0.0335**	**0.3055**	**0.3941**	**6.6000e-004**		**0.0129**	**0.0129**		**0.0122**	**0.0122**	**0.0000**	**56.8203**	**56.8203**	**0.0134**	**0.0000**	**57.1542**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.7900e-003	0.3141	0.0864	1.0800e-003	0.0276	3.6000e-004	0.0280	7.9900e-003	3.4000e-004	8.3300e-003	0.0000	103.7905	103.7905	4.2000e-003	0.0000	103.8956
Worker	0.0268	0.0158	0.1833	7.1000e-004	0.0891	5.4000e-004	0.0896	0.0237	5.0000e-004	0.0242	0.0000	64.2583	64.2583	1.1100e-003	0.0000	64.2859
Total	**0.0356**	**0.3298**	**0.2698**	**1.7900e-003**	**0.1167**	**9.0000e-004**	**0.1176**	**0.0317**	**8.4000e-004**	**0.0325**	**0.0000**	**168.0487**	**168.0487**	**5.3100e-003**	**0.0000**	**168.1815**

3.10 Building Construction 2 - 2025

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	0.0335	0.3055	0.3941	6.6000e-004		0.0129	0.0129		0.0122	0.0122	0.0000	56.8202	56.8202	0.0134	0.0000	57.1541
Total	**0.0335**	**0.3055**	**0.3941**	**6.6000e-004**		**0.0129**	**0.0129**		**0.0122**	**0.0122**	**0.0000**	**56.8202**	**56.8202**	**0.0134**	**0.0000**	**57.1541**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.7900e-003	0.3141	0.0864	1.0800e-003	0.0276	3.6000e-004	0.0280	7.9900e-003	3.4000e-004	8.3300e-003	0.0000	103.7905	103.7905	4.2000e-003	0.0000	103.8956
Worker	0.0268	0.0158	0.1833	7.1000e-004	0.0891	5.4000e-004	0.0896	0.0237	5.0000e-004	0.0242	0.0000	64.2583	64.2583	1.1100e-003	0.0000	64.2859
Total	**0.0356**	**0.3298**	**0.2698**	**1.7900e-003**	**0.1167**	**9.0000e-004**	**0.1176**	**0.0317**	**8.4000e-004**	**0.0325**	**0.0000**	**168.0487**	**168.0487**	**5.3100e-003**	**0.0000**	**168.1815**

3.10 Building Construction 2 - 2026

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	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

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	0.0457	1.6532	0.4502	5.7000e-003	0.1472	1.8600e-003	0.1491	0.0426	1.7800e-003	0.0444	0.0000	549.5345	549.5345	0.0220	0.0000	550.0843
Worker	0.1356	0.0770	0.9107	3.6400e-003	0.4744	2.7900e-003	0.4771	0.1262	2.5600e-003	0.1288	0.0000	329.6290	329.6290	5.3700e-003	0.0000	329.7634
Total	**0.1813**	**1.7302**	**1.3609**	**9.3400e-003**	**0.6216**	**4.6500e-003**	**0.6262**	**0.1688**	**4.3400e-003**	**0.1731**	**0.0000**	**879.1636**	**879.1636**	**0.0274**	**0.0000**	**879.8477**

3.10 Building Construction 2 - 2026

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	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

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	0.0457	1.6532	0.4502	5.7000e-003	0.1472	1.8600e-003	0.1491	0.0426	1.7800e-003	0.0444	0.0000	549.5345	549.5345	0.0220	0.0000	550.0843
Worker	0.1356	0.0770	0.9107	3.6400e-003	0.4744	2.7900e-003	0.4771	0.1262	2.5600e-003	0.1288	0.0000	329.6290	329.6290	5.3700e-003	0.0000	329.7634
Total	**0.1813**	**1.7302**	**1.3609**	**9.3400e-003**	**0.6216**	**4.6500e-003**	**0.6262**	**0.1688**	**4.3400e-003**	**0.1731**	**0.0000**	**879.1636**	**879.1636**	**0.0274**	**0.0000**	**879.8477**

3.10 Building Construction 2 - 2027

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	0.0889	0.8105	1.0455	1.7500e-003		0.0343	0.0343		0.0323	0.0323	0.0000	150.7476	150.7476	0.0354	0.0000	151.6336
Total	**0.0889**	**0.8105**	**1.0455**	**1.7500e-003**		**0.0343**	**0.0343**		**0.0323**	**0.0323**	**0.0000**	**150.7476**	**150.7476**	**0.0354**	**0.0000**	**151.6336**

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	0.0223	0.8135	0.2201	2.8200e-003	0.0733	9.1000e-004	0.0742	0.0212	8.7000e-004	0.0221	0.0000	272.1781	272.1781	0.0108	0.0000	272.4473
Worker	0.0642	0.0352	0.4246	1.7500e-003	0.2363	1.3200e-003	0.2376	0.0629	1.2100e-003	0.0641	0.0000	158.6143	158.6143	2.4500e-003	0.0000	158.6754
Total	**0.0865**	**0.8487**	**0.6447**	**4.5700e-003**	**0.3096**	**2.2300e-003**	**0.3118**	**0.0841**	**2.0800e-003**	**0.0861**	**0.0000**	**430.7924**	**430.7924**	**0.0132**	**0.0000**	**431.1227**

3.10 Building Construction 2 - 2027

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	0.0889	0.8105	1.0455	1.7500e-003		0.0343	0.0343		0.0323	0.0323	0.0000	150.7475	150.7475	0.0354	0.0000	151.6334
Total	**0.0889**	**0.8105**	**1.0455**	**1.7500e-003**		**0.0343**	**0.0343**		**0.0323**	**0.0323**	**0.0000**	**150.7475**	**150.7475**	**0.0354**	**0.0000**	**151.6334**

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	0.0223	0.8135	0.2201	2.8200e-003	0.0733	9.1000e-004	0.0742	0.0212	8.7000e-004	0.0221	0.0000	272.1781	272.1781	0.0108	0.0000	272.4473
Worker	0.0642	0.0352	0.4246	1.7500e-003	0.2363	1.3200e-003	0.2376	0.0629	1.2100e-003	0.0641	0.0000	158.6143	158.6143	2.4500e-003	0.0000	158.6754
Total	**0.0865**	**0.8487**	**0.6447**	**4.5700e-003**	**0.3096**	**2.2300e-003**	**0.3118**	**0.0841**	**2.0800e-003**	**0.0861**	**0.0000**	**430.7924**	**430.7924**	**0.0132**	**0.0000**	**431.1227**

3.11 Architectural Coating 2 - 2025

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	0.2607					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3300e-003	0.0223	0.0353	6.0000e-005		1.0000e-003	1.0000e-003		1.0000e-003	1.0000e-003	0.0000	4.9788	4.9788	2.7000e-004	0.0000	4.9856
Total	**0.2640**	**0.0223**	**0.0353**	**6.0000e-005**		**1.0000e-003**	**1.0000e-003**		**1.0000e-003**	**1.0000e-003**	**0.0000**	**4.9788**	**4.9788**	**2.7000e-004**	**0.0000**	**4.9856**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2600e-003	2.5100e-003	0.0292	1.1000e-004	0.0142	9.0000e-005	0.0143	3.7700e-003	8.0000e-005	3.8500e-003	0.0000	10.2289	10.2289	1.8000e-004	0.0000	10.2333
Total	**4.2600e-003**	**2.5100e-003**	**0.0292**	**1.1000e-004**	**0.0142**	**9.0000e-005**	**0.0143**	**3.7700e-003**	**8.0000e-005**	**3.8500e-003**	**0.0000**	**10.2289**	**10.2289**	**1.8000e-004**	**0.0000**	**10.2333**

3.11 Architectural Coating 2 - 2025

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	0.2607					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3300e-003	0.0223	0.0353	6.0000e-005		1.0000e-003	1.0000e-003		1.0000e-003	1.0000e-003	0.0000	4.9788	4.9788	2.7000e-004	0.0000	4.9856
Total	**0.2640**	**0.0223**	**0.0353**	**6.0000e-005**		**1.0000e-003**	**1.0000e-003**		**1.0000e-003**	**1.0000e-003**	**0.0000**	**4.9788**	**4.9788**	**2.7000e-004**	**0.0000**	**4.9856**

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	4.2600e-003	2.5100e-003	0.0292	1.1000e-004	0.0142	9.0000e-005	0.0143	3.7700e-003	8.0000e-005	3.8500e-003	0.0000	10.2289	10.2289	1.8000e-004	0.0000	10.2333
Total	**4.2600e-003**	**2.5100e-003**	**0.0292**	**1.1000e-004**	**0.0142**	**9.0000e-005**	**0.0143**	**3.7700e-003**	**8.0000e-005**	**3.8500e-003**	**0.0000**	**10.2289**	**10.2289**	**1.8000e-004**	**0.0000**	**10.2333**

3.11 Architectural Coating 2 - 2026

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	1.7446					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**1.7669**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0271	0.0154	0.1822	7.3000e-004	0.0949	5.6000e-004	0.0954	0.0252	5.1000e-004	0.0258	0.0000	65.9258	65.9258	1.0700e-003	0.0000	65.9527
Total	**0.0271**	**0.0154**	**0.1822**	**7.3000e-004**	**0.0949**	**5.6000e-004**	**0.0954**	**0.0252**	**5.1000e-004**	**0.0258**	**0.0000**	**65.9258**	**65.9258**	**1.0700e-003**	**0.0000**	**65.9527**

3.11 Architectural Coating 2 - 2026

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	1.7446					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**1.7669**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0271	0.0154	0.1822	7.3000e-004	0.0949	5.6000e-004	0.0954	0.0252	5.1000e-004	0.0258	0.0000	65.9258	65.9258	1.0700e-003	0.0000	65.9527
Total	**0.0271**	**0.0154**	**0.1822**	**7.3000e-004**	**0.0949**	**5.6000e-004**	**0.0954**	**0.0252**	**5.1000e-004**	**0.0258**	**0.0000**	**65.9258**	**65.9258**	**1.0700e-003**	**0.0000**	**65.9527**

3.11 Architectural Coating 2 - 2027

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	0.9358					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0120	0.0802	0.1266	2.1000e-004		3.6100e-003	3.6100e-003		3.6100e-003	3.6100e-003	0.0000	17.8728	17.8728	9.7000e-004	0.0000	17.8972
Total	**0.9478**	**0.0802**	**0.1266**	**2.1000e-004**		**3.6100e-003**	**3.6100e-003**		**3.6100e-003**	**3.6100e-003**	**0.0000**	**17.8728**	**17.8728**	**9.7000e-004**	**0.0000**	**17.8972**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0138	7.5900e-003	0.0915	3.8000e-004	0.0509	2.8000e-004	0.0512	0.0135	2.6000e-004	0.0138	0.0000	34.1631	34.1631	5.3000e-004	0.0000	34.1762
Total	**0.0138**	**7.5900e-003**	**0.0915**	**3.8000e-004**	**0.0509**	**2.8000e-004**	**0.0512**	**0.0135**	**2.6000e-004**	**0.0138**	**0.0000**	**34.1631**	**34.1631**	**5.3000e-004**	**0.0000**	**34.1762**

3.11 Architectural Coating 2 - 2027

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	0.9358					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0120	0.0802	0.1266	2.1000e-004		3.6100e-003	3.6100e-003		3.6100e-003	3.6100e-003	0.0000	17.8728	17.8728	9.7000e-004	0.0000	17.8971
Total	**0.9478**	**0.0802**	**0.1266**	**2.1000e-004**		**3.6100e-003**	**3.6100e-003**		**3.6100e-003**	**3.6100e-003**	**0.0000**	**17.8728**	**17.8728**	**9.7000e-004**	**0.0000**	**17.8971**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0138	7.5900e-003	0.0915	3.8000e-004	0.0509	2.8000e-004	0.0512	0.0135	2.6000e-004	0.0138	0.0000	34.1631	34.1631	5.3000e-004	0.0000	34.1762
Total	**0.0138**	**7.5900e-003**	**0.0915**	**3.8000e-004**	**0.0509**	**2.8000e-004**	**0.0512**	**0.0135**	**2.6000e-004**	**0.0138**	**0.0000**	**34.1631**	**34.1631**	**5.3000e-004**	**0.0000**	**34.1762**

3.12 Site Prep 3 - 2027

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1800e-003	0.0631	0.0448	1.0000e-004		2.7200e-003	2.7200e-003		2.5000e-003	2.5000e-003	0.0000	8.3668	8.3668	2.7100e-003	0.0000	8.4344
Total	**6.1800e-003**	**0.0631**	**0.0448**	**1.0000e-004**	**0.0452**	**2.7200e-003**	**0.0479**	**0.0248**	**2.5000e-003**	**0.0273**	**0.0000**	**8.3668**	**8.3668**	**2.7100e-003**	**0.0000**	**8.4344**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	5.0000e-005	6.4000e-004	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2387	0.2387	0.0000	0.0000	0.2388
Total	**1.0000e-004**	**5.0000e-005**	**6.4000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2387**	**0.2387**	**0.0000**	**0.0000**	**0.2388**

3.12 Site Prep 3 - 2027

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1800e-003	0.0631	0.0448	1.0000e-004		2.7200e-003	2.7200e-003		2.5000e-003	2.5000e-003	0.0000	8.3667	8.3667	2.7100e-003	0.0000	8.4344
Total	**6.1800e-003**	**0.0631**	**0.0448**	**1.0000e-004**	**0.0452**	**2.7200e-003**	**0.0479**	**0.0248**	**2.5000e-003**	**0.0273**	**0.0000**	**8.3667**	**8.3667**	**2.7100e-003**	**0.0000**	**8.4344**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	5.0000e-005	6.4000e-004	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2387	0.2387	0.0000	0.0000	0.2388
Total	**1.0000e-004**	**5.0000e-005**	**6.4000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2387**	**0.2387**	**0.0000**	**0.0000**	**0.2388**

3.13 Grading 3 - 2027

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					0.0241	0.0000	0.0241	0.0132	0.0000	0.0132	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0116	0.1118	0.1053	2.5000e-004		4.5200e-003	4.5200e-003		4.1600e-003	4.1600e-003	0.0000	21.8025	21.8025	7.0500e-003	0.0000	21.9788
Total	**0.0116**	**0.1118**	**0.1053**	**2.5000e-004**	**0.0241**	**4.5200e-003**	**0.0286**	**0.0132**	**4.1600e-003**	**0.0174**	**0.0000**	**21.8025**	**21.8025**	**7.0500e-003**	**0.0000**	**21.9788**

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	1.7000e-004	9.0000e-005	1.1400e-003	0.0000	6.3000e-004	0.0000	6.4000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4244	0.4244	1.0000e-005	0.0000	0.4246
Total	**1.7000e-004**	**9.0000e-005**	**1.1400e-003**	**0.0000**	**6.3000e-004**	**0.0000**	**6.4000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.4244**	**0.4244**	**1.0000e-005**	**0.0000**	**0.4246**

3.13 Grading 3 - 2027

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					0.0241	0.0000	0.0241	0.0132	0.0000	0.0132	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0116	0.1118	0.1053	2.5000e-004		4.5200e-003	4.5200e-003		4.1600e-003	4.1600e-003	0.0000	21.8025	21.8025	7.0500e-003	0.0000	21.9787
Total	**0.0116**	**0.1118**	**0.1053**	**2.5000e-004**	**0.0241**	**4.5200e-003**	**0.0286**	**0.0132**	**4.1600e-003**	**0.0174**	**0.0000**	**21.8025**	**21.8025**	**7.0500e-003**	**0.0000**	**21.9787**

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	1.7000e-004	9.0000e-005	1.1400e-003	0.0000	6.3000e-004	0.0000	6.4000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4244	0.4244	1.0000e-005	0.0000	0.4246
Total	**1.7000e-004**	**9.0000e-005**	**1.1400e-003**	**0.0000**	**6.3000e-004**	**0.0000**	**6.4000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.4244**	**0.4244**	**1.0000e-005**	**0.0000**	**0.4246**

3.14 Paving 3 - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.2400e-003	0.0772	0.1312	2.1000e-004		3.7700e-003	3.7700e-003		3.4700e-003	3.4700e-003	0.0000	18.0173	18.0173	5.8300e-003	0.0000	18.1630
Paving	0.0221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0304**	**0.0772**	**0.1312**	**2.1000e-004**		**3.7700e-003**	**3.7700e-003**		**3.4700e-003**	**3.4700e-003**	**0.0000**	**18.0173**	**18.0173**	**5.8300e-003**	**0.0000**	**18.1630**

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	2.9000e-004	1.6000e-004	1.9200e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0700e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.7162	0.7162	1.0000e-005	0.0000	0.7164
Total	**2.9000e-004**	**1.6000e-004**	**1.9200e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0700e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.7162**	**0.7162**	**1.0000e-005**	**0.0000**	**0.7164**

3.14 Paving 3 - 2027

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	8.2400e-003	0.0772	0.1312	2.1000e-004		3.7700e-003	3.7700e-003		3.4700e-003	3.4700e-003	0.0000	18.0173	18.0173	5.8300e-003	0.0000	18.1630
Paving	0.0221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0304**	**0.0772**	**0.1312**	**2.1000e-004**		**3.7700e-003**	**3.7700e-003**		**3.4700e-003**	**3.4700e-003**	**0.0000**	**18.0173**	**18.0173**	**5.8300e-003**	**0.0000**	**18.1630**

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	2.9000e-004	1.6000e-004	1.9200e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0700e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.7162	0.7162	1.0000e-005	0.0000	0.7164
Total	**2.9000e-004**	**1.6000e-004**	**1.9200e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0700e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.7162**	**0.7162**	**1.0000e-005**	**0.0000**	**0.7164**

3.15 Building Construction 3 - 2027

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	0.0725	0.6609	0.8525	1.4300e-003		0.0280	0.0280		0.0263	0.0263	0.0000	122.9173	122.9173	0.0289	0.0000	123.6397
Total	**0.0725**	**0.6609**	**0.8525**	**1.4300e-003**		**0.0280**	**0.0280**		**0.0263**	**0.0263**	**0.0000**	**122.9173**	**122.9173**	**0.0289**	**0.0000**	**123.6397**

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	0.0182	0.6633	0.1795	2.3000e-003	0.0598	7.4000e-004	0.0605	0.0173	7.1000e-004	0.0180	0.0000	221.9298	221.9298	8.7800e-003	0.0000	222.1493
Worker	0.0523	0.0287	0.3462	1.4300e-003	0.1927	1.0700e-003	0.1937	0.0513	9.9000e-004	0.0522	0.0000	129.3316	129.3316	1.9900e-003	0.0000	129.3815
Total	**0.0705**	**0.6920**	**0.5257**	**3.7300e-003**	**0.2524**	**1.8100e-003**	**0.2543**	**0.0685**	**1.7000e-003**	**0.0702**	**0.0000**	**351.2615**	**351.2615**	**0.0108**	**0.0000**	**351.5308**

3.15 Building Construction 3 - 2027

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	0.0725	0.6609	0.8525	1.4300e-003		0.0280	0.0280		0.0263	0.0263	0.0000	122.9172	122.9172	0.0289	0.0000	123.6395
Total	**0.0725**	**0.6609**	**0.8525**	**1.4300e-003**		**0.0280**	**0.0280**		**0.0263**	**0.0263**	**0.0000**	**122.9172**	**122.9172**	**0.0289**	**0.0000**	**123.6395**

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	0.0182	0.6633	0.1795	2.3000e-003	0.0598	7.4000e-004	0.0605	0.0173	7.1000e-004	0.0180	0.0000	221.9298	221.9298	8.7800e-003	0.0000	222.1493
Worker	0.0523	0.0287	0.3462	1.4300e-003	0.1927	1.0700e-003	0.1937	0.0513	9.9000e-004	0.0522	0.0000	129.3316	129.3316	1.9900e-003	0.0000	129.3815
Total	**0.0705**	**0.6920**	**0.5257**	**3.7300e-003**	**0.2524**	**1.8100e-003**	**0.2543**	**0.0685**	**1.7000e-003**	**0.0702**	**0.0000**	**351.2615**	**351.2615**	**0.0108**	**0.0000**	**351.5308**

3.15 Building Construction 3 - 2028

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	0.0848	0.7731	0.9973	1.6700e-003		0.0327	0.0327		0.0308	0.0308	0.0000	143.7901	143.7901	0.0338	0.0000	144.6351
Total	**0.0848**	**0.7731**	**0.9973**	**1.6700e-003**		**0.0327**	**0.0327**		**0.0308**	**0.0308**	**0.0000**	**143.7901**	**143.7901**	**0.0338**	**0.0000**	**144.6351**

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	0.0208	0.7683	0.2070	2.6800e-003	0.0699	8.5000e-004	0.0708	0.0202	8.1000e-004	0.0210	0.0000	258.3969	258.3969	0.0101	0.0000	258.6496
Worker	0.0579	0.0310	0.3807	1.6200e-003	0.2254	1.1600e-003	0.2265	0.0600	1.0700e-003	0.0610	0.0000	146.6202	146.6202	2.1400e-003	0.0000	146.6737
Total	**0.0787**	**0.7992**	**0.5877**	**4.3000e-003**	**0.2953**	**2.0100e-003**	**0.2973**	**0.0802**	**1.8800e-003**	**0.0821**	**0.0000**	**405.0171**	**405.0171**	**0.0123**	**0.0000**	**405.3234**

3.15 Building Construction 3 - 2028

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	0.0848	0.7731	0.9973	1.6700e-003		0.0327	0.0327		0.0308	0.0308	0.0000	143.7899	143.7899	0.0338	0.0000	144.6349
Total	**0.0848**	**0.7731**	**0.9973**	**1.6700e-003**		**0.0327**	**0.0327**		**0.0308**	**0.0308**	**0.0000**	**143.7899**	**143.7899**	**0.0338**	**0.0000**	**144.6349**

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	0.0208	0.7683	0.2070	2.6800e-003	0.0699	8.5000e-004	0.0708	0.0202	8.1000e-004	0.0210	0.0000	258.3969	258.3969	0.0101	0.0000	258.6496
Worker	0.0579	0.0310	0.3807	1.6200e-003	0.2254	1.1600e-003	0.2265	0.0600	1.0700e-003	0.0610	0.0000	146.6202	146.6202	2.1400e-003	0.0000	146.6737
Total	**0.0787**	**0.7992**	**0.5877**	**4.3000e-003**	**0.2953**	**2.0100e-003**	**0.2973**	**0.0802**	**1.8800e-003**	**0.0821**	**0.0000**	**405.0171**	**405.0171**	**0.0123**	**0.0000**	**405.3234**

3.16 Architectural Coating 3 - 2027

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	1.2276					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.2000e-003	0.0550	0.0868	1.4000e-004		2.4700e-003	2.4700e-003		2.4700e-003	2.4700e-003	0.0000	12.2556	12.2556	6.7000e-004	0.0000	12.2723
Total	**1.2358**	**0.0550**	**0.0868**	**1.4000e-004**		**2.4700e-003**	**2.4700e-003**		**2.4700e-003**	**2.4700e-003**	**0.0000**	**12.2556**	**12.2556**	**6.7000e-004**	**0.0000**	**12.2723**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.4800e-003	5.2000e-003	0.0627	2.6000e-004	0.0349	1.9000e-004	0.0351	9.2800e-003	1.8000e-004	9.4600e-003	0.0000	23.4261	23.4261	3.6000e-004	0.0000	23.4351
Total	**9.4800e-003**	**5.2000e-003**	**0.0627**	**2.6000e-004**	**0.0349**	**1.9000e-004**	**0.0351**	**9.2800e-003**	**1.8000e-004**	**9.4600e-003**	**0.0000**	**23.4261**	**23.4261**	**3.6000e-004**	**0.0000**	**23.4351**

3.16 Architectural Coating 3 - 2027

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	1.2276					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.2000e-003	0.0550	0.0868	1.4000e-004		2.4700e-003	2.4700e-003		2.4700e-003	2.4700e-003	0.0000	12.2556	12.2556	6.7000e-004	0.0000	12.2723
Total	**1.2358**	**0.0550**	**0.0868**	**1.4000e-004**		**2.4700e-003**	**2.4700e-003**		**2.4700e-003**	**2.4700e-003**	**0.0000**	**12.2556**	**12.2556**	**6.7000e-004**	**0.0000**	**12.2723**

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	9.4800e-003	5.2000e-003	0.0627	2.6000e-004	0.0349	1.9000e-004	0.0351	9.2800e-003	1.8000e-004	9.4600e-003	0.0000	23.4261	23.4261	3.6000e-004	0.0000	23.4351
Total	**9.4800e-003**	**5.2000e-003**	**0.0627**	**2.6000e-004**	**0.0349**	**1.9000e-004**	**0.0351**	**9.2800e-003**	**1.8000e-004**	**9.4600e-003**	**0.0000**	**23.4261**	**23.4261**	**3.6000e-004**	**0.0000**	**23.4351**

3.16 Architectural Coating 3 - 2028

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	1.7135					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0115	0.0768	0.1212	2.0000e-004		3.4500e-003	3.4500e-003		3.4500e-003	3.4500e-003	0.0000	17.1068	17.1068	9.3000e-004	0.0000	17.1301
Total	**1.7250**	**0.0768**	**0.1212**	**2.0000e-004**		**3.4500e-003**	**3.4500e-003**		**3.4500e-003**	**3.4500e-003**	**0.0000**	**17.1068**	**17.1068**	**9.3000e-004**	**0.0000**	**17.1301**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0125	6.6900e-003	0.0823	3.5000e-004	0.0487	2.5000e-004	0.0490	0.0130	2.3000e-004	0.0132	0.0000	31.6889	31.6889	4.6000e-004	0.0000	31.7005
Total	**0.0125**	**6.6900e-003**	**0.0823**	**3.5000e-004**	**0.0487**	**2.5000e-004**	**0.0490**	**0.0130**	**2.3000e-004**	**0.0132**	**0.0000**	**31.6889**	**31.6889**	**4.6000e-004**	**0.0000**	**31.7005**

3.16 Architectural Coating 3 - 2028

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	1.7135					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0115	0.0768	0.1212	2.0000e-004		3.4500e-003	3.4500e-003		3.4500e-003	3.4500e-003	0.0000	17.1068	17.1068	9.3000e-004	0.0000	17.1301
Total	**1.7250**	**0.0768**	**0.1212**	**2.0000e-004**		**3.4500e-003**	**3.4500e-003**		**3.4500e-003**	**3.4500e-003**	**0.0000**	**17.1068**	**17.1068**	**9.3000e-004**	**0.0000**	**17.1301**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0125	6.6900e-003	0.0823	3.5000e-004	0.0487	2.5000e-004	0.0490	0.0130	2.3000e-004	0.0132	0.0000	31.6889	31.6889	4.6000e-004	0.0000	31.7005
Total	**0.0125**	**6.6900e-003**	**0.0823**	**3.5000e-004**	**0.0487**	**2.5000e-004**	**0.0490**	**0.0130**	**2.3000e-004**	**0.0132**	**0.0000**	**31.6889**	**31.6889**	**4.6000e-004**	**0.0000**	**31.7005**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.3447	1.7414	3.7993	0.0167	1.7500	0.0116	1.7617	0.4695	0.0108	0.4803	0.0000	1,540.2850	1,540.2850	0.0494	0.0000	1,541.5206
Unmitigated	0.3473	1.7557	3.8571	0.0170	1.7858	0.0118	1.7976	0.4790	0.0110	0.4901	0.0000	1,569.0977	1,569.0977	0.0502	0.0000	1,570.3517

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	2,079.00	2,079.00	2079.00	4,801,674	4,705,640
Total	2,079.00	2,079.00	2,079.00	4,801,674	4,705,640

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	150.8230	150.8230	0.0234	4.8400e-003	152.8519
NaturalGas Mitigated	0.0323	0.2763	0.1176	1.7600e-003		0.0223	0.0223		0.0223	0.0223	0.0000	319.9323	319.9323	6.1300e-003	5.8700e-003	321.8335
NaturalGas Unmitigated	0.0345	0.2946	0.1254	1.8800e-003		0.0238	0.0238		0.0238	0.0238	0.0000	341.2253	341.2253	6.5400e-003	6.2600e-003	343.2530

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	6.39432e+006	0.0345	0.2946	0.1254	1.8800e-003		0.0238	0.0238		0.0238	0.0238	0.0000	341.2253	341.2253	6.5400e-003	6.2600e-003	343.2530
Total		**0.0345**	**0.2946**	**0.1254**	**1.8800e-003**		**0.0238**	**0.0238**		**0.0238**	**0.0238**	**0.0000**	**341.2253**	**341.2253**	**6.5400e-003**	**6.2600e-003**	**343.2530**

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	5.9953e+006	0.0323	0.2763	0.1176	1.7600e-003		0.0223	0.0223		0.0223	0.0223	0.0000	319.9323	319.9323	6.1300e-003	5.8700e-003	321.8335
Total		**0.0323**	**0.2763**	**0.1176**	**1.7600e-003**		**0.0223**	**0.0223**		**0.0223**	**0.0223**	**0.0000**	**319.9323**	**319.9323**	**6.1300e-003**	**5.8700e-003**	**321.8335**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.77993e+006	150.8230	0.0234	4.8400e-003	152.8519
Total		**150.8230**	**0.0234**	**4.8400e-003**	**152.8519**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	3.1199	0.0472	3.5177	3.9700e-003		0.2810	0.2810		0.2810	0.2810	27.9644	9.5349	37.4993	0.0554	1.6000e-003	39.3605
Unmitigated	3.2356	0.0472	3.5177	3.9700e-003		0.2810	0.2810		0.2810	0.2810	27.9644	9.5349	37.4993	0.0554	1.6000e-003	39.3605

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	0.2941					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5958					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2967	0.0284	1.8855	3.8900e-003		0.2719	0.2719		0.2719	0.2719	27.9644	6.8662	34.8306	0.0528	1.6000e-003	36.6279
Landscaping	0.0490	0.0188	1.6322	9.0000e-005		9.0600e-003	9.0600e-003		9.0600e-003	9.0600e-003	0.0000	2.6687	2.6687	2.5600e-003	0.0000	2.7326
Total	**3.2356**	**0.0472**	**3.5177**	**3.9800e-003**		**0.2810**	**0.2810**		**0.2810**	**0.2810**	**27.9644**	**9.5349**	**37.4993**	**0.0554**	**1.6000e-003**	**39.3605**

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	0.2941					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2967	0.0284	1.8855	3.8900e-003		0.2719	0.2719		0.2719	0.2719	27.9644	6.8662	34.8306	0.0528	1.6000e-003	36.6279
Landscaping	0.0490	0.0188	1.6322	9.0000e-005		9.0600e-003	9.0600e-003		9.0600e-003	9.0600e-003	0.0000	2.6687	2.6687	2.5600e-003	0.0000	2.7326
Total	**3.1200**	**0.0472**	**3.5177**	**3.9800e-003**		**0.2810**	**0.2810**		**0.2810**	**0.2810**	**27.9644**	**9.5349**	**37.4993**	**0.0554**	**1.6000e-003**	**39.3605**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	15.1848	0.4687	0.0114	30.2912
Unmitigated	15.1848	0.4687	0.0114	30.2912

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.67061	1.3852	2.2000e-004	4.0000e-005	1.4038
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	14.3339 / 9.03658	13.7997	0.4685	0.0113	28.8874
Total		**15.1848**	**0.4687**	**0.0114**	**30.2912**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.67061	1.3852	2.2000e-004	4.0000e-005	1.4038
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	14.3339 / 9.03658	13.7997	0.4685	0.0113	28.8874
Total		**15.1848**	**0.4687**	**0.0114**	**30.2912**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	53.6952	3.1733	0.0000	133.0275
Unmitigated	53.6952	3.1733	0.0000	133.0275

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.34	0.0690	4.0800e-003	0.0000	0.1710
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	264.18	53.6262	3.1692	0.0000	132.8565
Total		**53.6952**	**3.1733**	**0.0000**	**133.0275**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.34	0.0690	4.0800e-003	0.0000	0.1710
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	264.18	53.6262	3.1692	0.0000	132.8565
Total		**53.6952**	**3.1733**	**0.0000**	**133.0275**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards Project

Bay Area AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	3.92	Acre	3.92	170,755.20	0
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
Single Family Housing	220.00	Dwelling Unit	28.00	396,000.00	629

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per the site plan.

Grading - Total acres graded changed to reflect grading plan.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Construction Phase - Phasing adjusted based on default lengths for the number of units built under each phase.

Vehicle Trips - Trip generation rates adjusted per the Traffic Impact Assessment prepared for the proposed project.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	55.00	740.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	75.00	45.00
tblConstructionPhase	NumDays	55.00	35.00
tblConstructionPhase	NumDays	740.00	440.00
tblConstructionPhase	NumDays	55.00	440.00
tblConstructionPhase	NumDays	30.00	5.00
tblConstructionPhase	NumDays	75.00	8.00
tblConstructionPhase	NumDays	55.00	18.00
tblConstructionPhase	NumDays	740.00	230.00
tblConstructionPhase	NumDays	55.00	230.00
tblConstructionPhase	PhaseEndDate	8/29/2025	6/27/2025
tblConstructionPhase	PhaseEndDate	3/28/2025	6/13/2025
tblConstructionPhase	PhaseEndDate	6/13/2025	8/12/2022
tblConstructionPhase	PhaseStartDate	6/14/2025	8/27/2022
tblConstructionPhase	PhaseStartDate	5/28/2022	8/13/2022

tblConstructionPhase	PhaseStartDate	3/29/2025	5/28/2022
tblGrading	AcresOfGrading	0.00	71.70
tblGrading	AcresOfGrading	187.50	0.00
tblGrading	AcresOfGrading	20.00	0.00
tblGrading	AcresOfGrading	112.50	0.00
tblGrading	MaterialImported	0.00	4,555.00
tblLandUse	LotAcreage	71.43	28.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblTripsAndVMT	HaulingTripNumber	569.00	0.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	9.45
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	9.45
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	9.45

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					
2022	12.0093	38.8772	34.6126	0.1186	20.7659	1.6359	22.3794	10.2462	1.5050	11.7306	0.0000	11,968.6495	11,968.6495	1.9474	0.0000	11,992.1760
2023	11.6285	29.5429	33.1266	0.1156	5.6989	0.8127	6.5116	1.5380	0.7685	2.3065	0.0000	11,669.6317	11,669.6317	0.8941	0.0000	11,691.9843
2024	11.4089	28.2926	32.0914	0.1137	5.6990	0.7156	6.4145	1.5380	0.6764	2.2144	0.0000	11,477.0091	11,477.0091	0.8782	0.0000	11,498.9629
2025	16.6229	52.2824	49.3710	0.1511	23.9131	1.7074	25.6205	11.5079	1.5864	13.0943	0.0000	15,098.6951	15,098.6951	2.0593	0.0000	15,150.1786
2026	16.5445	26.8210	30.4094	0.1101	5.6990	0.6187	6.3178	1.5380	0.5848	2.1228	0.0000	11,121.5323	11,121.5323	0.8553	0.0000	11,142.9143
2027	28.6764	54.5842	56.4167	0.1719	23.9132	1.7489	25.6179	11.5079	1.6245	13.0918	0.0000	17,107.2586	17,107.2586	2.7925	0.0000	17,177.0699
2028	28.6013	26.4532	29.2172	0.1073	5.6991	0.6152	6.3142	1.5380	0.5814	2.1195	0.0000	10,844.0258	10,844.0258	0.8402	0.0000	10,865.0311
Maximum	**28.6764**	**54.5842**	**56.4167**	**0.1719**	**23.9132**	**1.7489**	**25.6205**	**11.5079**	**1.6245**	**13.0943**	**0.0000**	**17,107.2586**	**17,107.2586**	**2.7925**	**0.0000**	**17,177.0699**

2.1 Overall Construction (Maximum Daily Emission)

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					
2022	12.0093	38.8772	34.6126	0.1186	20.7659	1.6359	22.3794	10.2462	1.5050	11.7306	0.0000	11,968.6495	11,968.6495	1.9474	0.0000	11,992.1760
2023	11.6285	29.5429	33.1266	0.1156	5.6989	0.8127	6.5116	1.5380	0.7685	2.3065	0.0000	11,669.6317	11,669.6317	0.8941	0.0000	11,691.9843
2024	11.4089	28.2926	32.0914	0.1137	5.6990	0.7156	6.4145	1.5380	0.6764	2.2144	0.0000	11,477.0091	11,477.0091	0.8782	0.0000	11,498.9629
2025	16.6229	52.2824	49.3710	0.1511	23.9131	1.7074	25.6205	11.5079	1.5864	13.0943	0.0000	15,098.6951	15,098.6951	2.0593	0.0000	15,150.1786
2026	16.5445	26.8210	30.4094	0.1101	5.6990	0.6187	6.3178	1.5380	0.5848	2.1228	0.0000	11,121.5323	11,121.5323	0.8553	0.0000	11,142.9143
2027	28.6764	54.5842	56.4167	0.1719	23.9132	1.7489	25.6179	11.5079	1.6245	13.0918	0.0000	17,107.2586	17,107.2586	2.7925	0.0000	17,177.0699
2028	28.6013	26.4532	29.2172	0.1073	5.6991	0.6152	6.3142	1.5380	0.5814	2.1195	0.0000	10,844.0258	10,844.0258	0.8402	0.0000	10,865.0311
Maximum	**28.6764**	**54.5842**	**56.4167**	**0.1719**	**23.9132**	**1.7489**	**25.6205**	**11.5079**	**1.6245**	**13.0943**	**0.0000**	**17,107.2586**	**17,107.2586**	**2.7925**	**0.0000**	**17,177.0699**

	ROG	NOx	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	238.8900	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834
Energy	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693
Mobile	2.2066	9.4343	22.1262	0.0986	10.1941	0.0651	10.2592	2.7259	0.0606	2.7865		10,025.3696	10,025.3696	0.3038		10,032.9640
Total	**241.2856**	**15.6475**	**335.8120**	**0.6652**	**10.1941**	**41.9914**	**52.1855**	**2.7259**	**41.9869**	**44.7128**	**4,483.2345**	**13,477.9009**	**17,961.1353**	**5.9179**	**0.3541**	**18,214.6167**

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	238.2564	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834
Energy	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
Mobile	2.1921	9.3604	21.7700	0.0968	9.9902	0.0639	10.0542	2.6714	0.0595	2.7309		9,841.0849	9,841.0849	0.2992		9,848.5646
Total	**240.6256**	**15.4729**	**335.4128**	**0.6627**	**9.9902**	**41.9821**	**51.9723**	**2.6714**	**41.9777**	**44.6491**	**4,483.2345**	**13,165.0052**	**17,648.2397**	**5.9109**	**0.3518**	**17,900.8421**

	ROG	NOx	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	**0.27**	**1.12**	**0.12**	**0.37**	**2.00**	**0.02**	**0.41**	**2.00**	**0.02**	**0.14**	**0.00**	**2.32**	**1.74**	**0.12**	**0.67**	**1.72**

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 1	Site Preparation	1/1/2022	2/11/2022	5	30	
2	Grading 1	Grading	2/12/2022	5/27/2022	5	75	
3	Paving 1	Paving	5/28/2022	8/12/2022	5	55	
4	Building Construction 1	Building Construction	8/13/2022	6/13/2025	5	740	
5	Architectural Coating 1	Architectural Coating	8/27/2022	6/27/2025	5	740	
6	Site Prep 2	Site Preparation	6/6/2025	7/3/2025	5	20	
7	Grading 2	Grading	7/4/2025	9/4/2025	5	45	
8	Paving 2	Paving	9/5/2025	10/23/2025	5	35	
9	Building Construction 2	Building Construction	10/24/2025	7/1/2027	5	440	
10	Architectural Coating 2	Architectural Coating	11/7/2025	7/15/2027	5	440	
11	Site Prep 3	Site Preparation	6/24/2027	6/30/2027	5	5	
12	Grading 3	Grading	7/1/2027	7/12/2027	5	8	
13	Paving 3	Paving	7/13/2027	8/5/2027	5	18	
14	Building Construction 3	Building Construction	8/6/2027	6/22/2028	5	230	
15	Architectural Coating 3	Architectural Coating	8/20/2027	7/6/2028	5	230	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

Residential Indoor: 801,900; Residential Outdoor: 267,300; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 44,170 (Architectural Coating – sqft)

OffRoad Equipment

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

Building Construction 3	Forklifts	3	8.00	89	0.20
Building Construction 2	Forklifts	3	8.00	89	0.20
Building Construction 3	Generator Sets	1	8.00	84	0.74
Building Construction 2	Generator Sets	1	8.00	84	0.74
Grading 3	Graders	1	8.00	187	0.41
Grading 2	Graders	1	8.00	187	0.41
Paving 3	Pavers	2	8.00	130	0.42
Paving 2	Pavers	2	8.00	130	0.42
Paving 3	Paving Equipment	2	8.00	132	0.36
Paving 2	Paving Equipment	2	8.00	132	0.36
Paving 3	Rollers	2	8.00	80	0.38
Paving 2	Rollers	2	8.00	80	0.38
Grading 3	Rubber Tired Dozers	1	8.00	247	0.40
Grading 2	Rubber Tired Dozers	1	8.00	247	0.40
Site Prep 3	Rubber Tired Dozers	3	8.00	247	0.40
Site Prep 2	Rubber Tired Dozers	3	8.00	247	0.40
Grading 3	Scrapers	2	8.00	367	0.48
Grading 2	Scrapers	2	8.00	367	0.48
Building Construction 3	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction 2	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading 3	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading 2	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Prep 3	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Prep 2	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction 3	Welders	1	8.00	46	0.45
Building Construction 2	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating 2	1	92.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation 1	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading 1	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 1	9	460.00	172.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving 1	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating 1	1	92.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating 3	1	92.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 3	9	460.00	172.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 2	9	460.00	172.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading 3	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading 2	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving 3	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving 2	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Prep 3	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Prep 2	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation 1 - 2022

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					20.6180	0.0000	20.6180	10.2070	0.0000	10.2070			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**20.6180**	**1.6126**	**22.2306**	**10.2070**	**1.4836**	**11.6905**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

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	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		137.3212	137.3212	2.8600e-003		137.3927
Total	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**137.3212**	**137.3212**	**2.8600e-003**		**137.3927**

3.2 Site Preparation 1 - 2022

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					20.6180	0.0000	20.6180	10.2070	0.0000	10.2070			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**20.6180**	**1.6126**	**22.2306**	**10.2070**	**1.4836**	**11.6905**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

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	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		137.3212	137.3212	2.8600e-003		137.3927
Total	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**137.3212**	**137.3212**	**2.8600e-003**		**137.3927**

3.3 Grading 1 - 2022

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**6.0221**	**1.6349**	**7.6570**	**3.3102**	**1.5041**	**4.8143**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

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	0.0599	0.0337	0.4527	1.5300e-003	0.1643	1.0100e-003	0.1653	0.0436	9.3000e-004	0.0445		152.5791	152.5791	3.1800e-003		152.6586
Total	**0.0599**	**0.0337**	**0.4527**	**1.5300e-003**	**0.1643**	**1.0100e-003**	**0.1653**	**0.0436**	**9.3000e-004**	**0.0445**		**152.5791**	**152.5791**	**3.1800e-003**		**152.6586**

3.3 Grading 1 - 2022

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**6.0221**	**1.6349**	**7.6570**	**3.3102**	**1.5041**	**4.8143**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

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	0.0599	0.0337	0.4527	1.5300e-003	0.1643	1.0100e-003	0.1653	0.0436	9.3000e-004	0.0445		152.5791	152.5791	3.1800e-003		152.6586
Total	**0.0599**	**0.0337**	**0.4527**	**1.5300e-003**	**0.1643**	**1.0100e-003**	**0.1653**	**0.0436**	**9.3000e-004**	**0.0445**		**152.5791**	**152.5791**	**3.1800e-003**		**152.6586**

3.4 Paving 1 - 2022

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.8051					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9079**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

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	0.0449	0.0253	0.3395	1.1500e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		114.4343	114.4343	2.3800e-003		114.4939
Total	**0.0449**	**0.0253**	**0.3395**	**1.1500e-003**	**0.1232**	**7.6000e-004**	**0.1240**	**0.0327**	**7.0000e-004**	**0.0334**		**114.4343**	**114.4343**	**2.3800e-003**		**114.4939**

3.4 Paving 1 - 2022

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.8051					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9079**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

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	0.0449	0.0253	0.3395	1.1500e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		114.4343	114.4343	2.3800e-003		114.4939
Total	**0.0449**	**0.0253**	**0.3395**	**1.1500e-003**	**0.1232**	**7.6000e-004**	**0.1240**	**0.0327**	**7.0000e-004**	**0.0334**		**114.4343**	**114.4343**	**2.3800e-003**		**114.4939**

3.5 Building Construction 1 - 2022

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

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	0.4975	16.8457	3.9419	0.0464	1.1643	0.0334	1.1977	0.3352	0.0319	0.3671		4,921.6854	4,921.6854	0.2230		4,927.2613
Worker	1.3767	0.7753	10.4114	0.0352	3.7788	0.0232	3.8020	1.0023	0.0214	1.0237		3,509.3187	3,509.3187	0.0731		3,511.1470
Total	**1.8742**	**17.6210**	**14.3534**	**0.0816**	**4.9431**	**0.0566**	**4.9997**	**1.3375**	**0.0533**	**1.3908**		**8,431.0041**	**8,431.0041**	**0.2962**		**8,438.4082**

3.5 Building Construction 1 - 2022

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

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	0.4975	16.8457	3.9419	0.0464	1.1643	0.0334	1.1977	0.3352	0.0319	0.3671		4,921.6854	4,921.6854	0.2230		4,927.2613
Worker	1.3767	0.7753	10.4114	0.0352	3.7788	0.0232	3.8020	1.0023	0.0214	1.0237		3,509.3187	3,509.3187	0.0731		3,511.1470
Total	**1.8742**	**17.6210**	**14.3534**	**0.0816**	**4.9431**	**0.0566**	**4.9997**	**1.3375**	**0.0533**	**1.3908**		**8,431.0041**	**8,431.0041**	**0.2962**		**8,438.4082**

3.5 Building Construction 1 - 2023

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	0.3728	13.0182	3.5487	0.0451	1.1644	0.0148	1.1792	0.3352	0.0142	0.3493		4,783.2325	4,783.2325	0.1906		4,787.9981
Worker	1.2852	0.6973	9.6023	0.0338	3.7788	0.0228	3.8015	1.0023	0.0209	1.0233		3,374.7843	3,374.7843	0.0657		3,376.4259
Total	**1.6580**	**13.7155**	**13.1510**	**0.0789**	**4.9432**	**0.0376**	**4.9807**	**1.3375**	**0.0351**	**1.3726**		**8,158.0169**	**8,158.0169**	**0.2563**		**8,164.4240**

3.5 Building Construction 1 - 2023

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	0.3728	13.0182	3.5487	0.0451	1.1644	0.0148	1.1792	0.3352	0.0142	0.3493		4,783.2325	4,783.2325	0.1906		4,787.9981
Worker	1.2852	0.6973	9.6023	0.0338	3.7788	0.0228	3.8015	1.0023	0.0209	1.0233		3,374.7843	3,374.7843	0.0657		3,376.4259
Total	**1.6580**	**13.7155**	**13.1510**	**0.0789**	**4.9432**	**0.0376**	**4.9807**	**1.3375**	**0.0351**	**1.3726**		**8,158.0169**	**8,158.0169**	**0.2563**		**8,164.4240**

3.5 Building Construction 1 - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	0.3607	12.8741	3.4190	0.0447	1.1644	0.0146	1.1790	0.3352	0.0139	0.3491		4,750.5587	4,750.5587	0.1869		4,755.2311
Worker	1.2057	0.6299	8.9128	0.0325	3.7788	0.0223	3.8011	1.0023	0.0205	1.0229		3,241.0862	3,241.0862	0.0592		3,242.5665
Total	**1.5664**	**13.5040**	**12.3318**	**0.0772**	**4.9432**	**0.0369**	**4.9801**	**1.3375**	**0.0345**	**1.3720**		**7,991.6449**	**7,991.6449**	**0.2461**		**7,997.7977**

3.5 Building Construction 1 - 2024

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	0.3607	12.8741	3.4190	0.0447	1.1644	0.0146	1.1790	0.3352	0.0139	0.3491		4,750.5587	4,750.5587	0.1869		4,755.2311
Worker	1.2057	0.6299	8.9128	0.0325	3.7788	0.0223	3.8011	1.0023	0.0205	1.0229		3,241.0862	3,241.0862	0.0592		3,242.5665
Total	**1.5664**	**13.5040**	**12.3318**	**0.0772**	**4.9432**	**0.0369**	**4.9801**	**1.3375**	**0.0345**	**1.3720**		**7,991.6449**	**7,991.6449**	**0.2461**		**7,997.7977**

3.5 Building Construction 1 - 2025

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3505	12.7236	3.3203	0.0444	1.1644	0.0143	1.1787	0.3352	0.0137	0.3489		4,719.1770	4,719.1770	0.1834		4,723.7612
Worker	1.1378	0.5727	8.2680	0.0312	3.7788	0.0220	3.8008	1.0023	0.0202	1.0226		3,109.0286	3,109.0286	0.0537		3,110.3711
Total	**1.4883**	**13.2964**	**11.5883**	**0.0756**	**4.9432**	**0.0363**	**4.9795**	**1.3375**	**0.0339**	**1.3714**		**7,828.2056**	**7,828.2056**	**0.2371**		**7,834.1323**

3.5 Building Construction 1 - 2025

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3505	12.7236	3.3203	0.0444	1.1644	0.0143	1.1787	0.3352	0.0137	0.3489		4,719.1770	4,719.1770	0.1834		4,723.7612
Worker	1.1378	0.5727	8.2680	0.0312	3.7788	0.0220	3.8008	1.0023	0.0202	1.0226		3,109.0286	3,109.0286	0.0537		3,110.3711
Total	**1.4883**	**13.2964**	**11.5883**	**0.0756**	**4.9432**	**0.0363**	**4.9795**	**1.3375**	**0.0339**	**1.3714**		**7,828.2056**	**7,828.2056**	**0.2371**		**7,834.1323**

3.6 Architectural Coating 1 - 2022

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**8.1536**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	0.2753	0.1551	2.0823	7.0400e-003	0.7558	4.6400e-003	0.7604	0.2005	4.2800e-003	0.2047		701.8637	701.8637	0.0146		702.2294
Total	**0.2753**	**0.1551**	**2.0823**	**7.0400e-003**	**0.7558**	**4.6400e-003**	**0.7604**	**0.2005**	**4.2800e-003**	**0.2047**		**701.8637**	**701.8637**	**0.0146**		**702.2294**

3.6 Architectural Coating 1 - 2022

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**8.1536**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	0.2753	0.1551	2.0823	7.0400e-003	0.7558	4.6400e-003	0.7604	0.2005	4.2800e-003	0.2047		701.8637	701.8637	0.0146		702.2294
Total	**0.2753**	**0.1551**	**2.0823**	**7.0400e-003**	**0.7558**	**4.6400e-003**	**0.7604**	**0.2005**	**4.2800e-003**	**0.2047**		**701.8637**	**701.8637**	**0.0146**		**702.2294**

3.6 Architectural Coating 1 - 2023

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**8.1407**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

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	0.2570	0.1395	1.9205	6.7700e-003	0.7558	4.5500e-003	0.7603	0.2005	4.1900e-003	0.2047		674.9569	674.9569	0.0131		675.2852
Total	**0.2570**	**0.1395**	**1.9205**	**6.7700e-003**	**0.7558**	**4.5500e-003**	**0.7603**	**0.2005**	**4.1900e-003**	**0.2047**		**674.9569**	**674.9569**	**0.0131**		**675.2852**

3.6 Architectural Coating 1 - 2023

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**8.1407**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

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	0.2570	0.1395	1.9205	6.7700e-003	0.7558	4.5500e-003	0.7603	0.2005	4.1900e-003	0.2047		674.9569	674.9569	0.0131		675.2852
Total	**0.2570**	**0.1395**	**1.9205**	**6.7700e-003**	**0.7558**	**4.5500e-003**	**0.7603**	**0.2005**	**4.1900e-003**	**0.2047**		**674.9569**	**674.9569**	**0.0131**		**675.2852**

3.6 Architectural Coating 1 - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**8.1298**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	0.2411	0.1260	1.7826	6.5000e-003	0.7558	4.4600e-003	0.7602	0.2005	4.1100e-003	0.2046		648.2172	648.2172	0.0118		648.5133
Total	**0.2411**	**0.1260**	**1.7826**	**6.5000e-003**	**0.7558**	**4.4600e-003**	**0.7602**	**0.2005**	**4.1100e-003**	**0.2046**		**648.2172**	**648.2172**	**0.0118**		**648.5133**

3.6 Architectural Coating 1 - 2024

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**8.1298**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	0.2411	0.1260	1.7826	6.5000e-003	0.7558	4.4600e-003	0.7602	0.2005	4.1100e-003	0.2046		648.2172	648.2172	0.0118		648.5133
Total	**0.2411**	**0.1260**	**1.7826**	**6.5000e-003**	**0.7558**	**4.4600e-003**	**0.7602**	**0.2005**	**4.1100e-003**	**0.2046**		**648.2172**	**648.2172**	**0.0118**		**648.5133**

3.6 Architectural Coating 1 - 2025

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**8.1199**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2276	0.1146	1.6536	6.2300e-003	0.7558	4.4000e-003	0.7602	0.2005	4.0500e-003	0.2045		621.8057	621.8057	0.0107		622.0742
Total	**0.2276**	**0.1146**	**1.6536**	**6.2300e-003**	**0.7558**	**4.4000e-003**	**0.7602**	**0.2005**	**4.0500e-003**	**0.2045**		**621.8057**	**621.8057**	**0.0107**		**622.0742**

3.6 Architectural Coating 1 - 2025

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**8.1199**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2276	0.1146	1.6536	6.2300e-003	0.7558	4.4000e-003	0.7602	0.2005	4.0500e-003	0.2045		621.8057	621.8057	0.0107		622.0742
Total	**0.2276**	**0.1146**	**1.6536**	**6.2300e-003**	**0.7558**	**4.4000e-003**	**0.7602**	**0.2005**	**4.0500e-003**	**0.2045**		**621.8057**	**621.8057**	**0.0107**		**622.0742**

3.7 Site Prep 2 - 2025

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	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

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	0.0445	0.0224	0.3235	1.2200e-003	0.1479	8.6000e-004	0.1487	0.0392	7.9000e-004	0.0400		121.6576	121.6576	2.1000e-003		121.7102
Total	**0.0445**	**0.0224**	**0.3235**	**1.2200e-003**	**0.1479**	**8.6000e-004**	**0.1487**	**0.0392**	**7.9000e-004**	**0.0400**		**121.6576**	**121.6576**	**2.1000e-003**		**121.7102**

3.7 Site Prep 2 - 2025

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	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

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	0.0445	0.0224	0.3235	1.2200e-003	0.1479	8.6000e-004	0.1487	0.0392	7.9000e-004	0.0400		121.6576	121.6576	2.1000e-003		121.7102
Total	**0.0445**	**0.0224**	**0.3235**	**1.2200e-003**	**0.1479**	**8.6000e-004**	**0.1487**	**0.0392**	**7.9000e-004**	**0.0400**		**121.6576**	**121.6576**	**2.1000e-003**		**121.7102**

3.8 Grading 2 - 2025

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404		6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**6.0221**	**1.1309**	**7.1530**	**3.3102**	**1.0404**	**4.3507**		**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

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	0.0495	0.0249	0.3595	1.3500e-003	0.1643	9.6000e-004	0.1653	0.0436	8.8000e-004	0.0445		135.1752	135.1752	2.3300e-003		135.2335
Total	**0.0495**	**0.0249**	**0.3595**	**1.3500e-003**	**0.1643**	**9.6000e-004**	**0.1653**	**0.0436**	**8.8000e-004**	**0.0445**		**135.1752**	**135.1752**	**2.3300e-003**		**135.2335**

3.8 Grading 2 - 2025

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404	0.0000	6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**6.0221**	**1.1309**	**7.1530**	**3.3102**	**1.0404**	**4.3507**	**0.0000**	**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

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	0.0495	0.0249	0.3595	1.3500e-003	0.1643	9.6000e-004	0.1653	0.0436	8.8000e-004	0.0445		135.1752	135.1752	2.3300e-003		135.2335
Total	**0.0495**	**0.0249**	**0.3595**	**1.3500e-003**	**0.1643**	**9.6000e-004**	**0.1653**	**0.0436**	**8.8000e-004**	**0.0445**		**135.1752**	**135.1752**	**2.3300e-003**		**135.2335**

3.9 Paving 2 - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	1.2651					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.1802**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

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	0.0371	0.0187	0.2696	1.0200e-003	0.1232	7.2000e-004	0.1239	0.0327	6.6000e-004	0.0333		101.3814	101.3814	1.7500e-003		101.4251
Total	**0.0371**	**0.0187**	**0.2696**	**1.0200e-003**	**0.1232**	**7.2000e-004**	**0.1239**	**0.0327**	**6.6000e-004**	**0.0333**		**101.3814**	**101.3814**	**1.7500e-003**		**101.4251**

3.9 Paving 2 - 2025

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	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	1.2651					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.1802**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

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	0.0371	0.0187	0.2696	1.0200e-003	0.1232	7.2000e-004	0.1239	0.0327	6.6000e-004	0.0333		101.3814	101.3814	1.7500e-003		101.4251
Total	**0.0371**	**0.0187**	**0.2696**	**1.0200e-003**	**0.1232**	**7.2000e-004**	**0.1239**	**0.0327**	**6.6000e-004**	**0.0333**		**101.3814**	**101.3814**	**1.7500e-003**		**101.4251**

3.10 Building Construction 2 - 2025

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3505	12.7236	3.3203	0.0444	1.1644	0.0143	1.1787	0.3352	0.0137	0.3489		4,719.1770	4,719.1770	0.1834		4,723.7612
Worker	1.1378	0.5727	8.2680	0.0312	3.7788	0.0220	3.8008	1.0023	0.0202	1.0226		3,109.0286	3,109.0286	0.0537		3,110.3711
Total	**1.4883**	**13.2964**	**11.5883**	**0.0756**	**4.9432**	**0.0363**	**4.9795**	**1.3375**	**0.0339**	**1.3714**		**7,828.2056**	**7,828.2056**	**0.2371**		**7,834.1323**

3.10 Building Construction 2 - 2025

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3505	12.7236	3.3203	0.0444	1.1644	0.0143	1.1787	0.3352	0.0137	0.3489		4,719.1770	4,719.1770	0.1834		4,723.7612
Worker	1.1378	0.5727	8.2680	0.0312	3.7788	0.0220	3.8008	1.0023	0.0202	1.0226		3,109.0286	3,109.0286	0.0537		3,110.3711
Total	**1.4883**	**13.2964**	**11.5883**	**0.0756**	**4.9432**	**0.0363**	**4.9795**	**1.3375**	**0.0339**	**1.3714**		**7,828.2056**	**7,828.2056**	**0.2371**		**7,834.1323**

3.10 Building Construction 2 - 2026

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3420	12.5764	3.2489	0.0441	1.1645	0.0141	1.1785	0.3352	0.0134	0.3487		4,690.6524	4,690.6524	0.1802		4,695.1571
Worker	1.0795	0.5246	7.7222	0.0300	3.7788	0.0214	3.8001	1.0023	0.0197	1.0220		2,994.1312	2,994.1312	0.0490		2,995.3561
Total	**1.4214**	**13.1009**	**10.9711**	**0.0742**	**4.9433**	**0.0354**	**4.9787**	**1.3375**	**0.0331**	**1.3706**		**7,684.7836**	**7,684.7836**	**0.2292**		**7,690.5132**

3.10 Building Construction 2 - 2026

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3420	12.5764	3.2489	0.0441	1.1645	0.0141	1.1785	0.3352	0.0134	0.3487		4,690.6524	4,690.6524	0.1802		4,695.1571
Worker	1.0795	0.5246	7.7222	0.0300	3.7788	0.0214	3.8001	1.0023	0.0197	1.0220		2,994.1312	2,994.1312	0.0490		2,995.3561
Total	**1.4214**	**13.1009**	**10.9711**	**0.0742**	**4.9433**	**0.0354**	**4.9787**	**1.3375**	**0.0331**	**1.3706**		**7,684.7836**	**7,684.7836**	**0.2292**		**7,690.5132**

3.10 Building Construction 2 - 2027

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3346	12.4271	3.1903	0.0439	1.1645	0.0138	1.1783	0.3352	0.0132	0.3484		4,664.1204	4,664.1204	0.1772		4,668.5513
Worker	1.0236	0.4818	7.2390	0.0290	3.7788	0.0202	3.7990	1.0023	0.0186	1.0209		2,892.6395	2,892.6395	0.0448		2,893.7597
Total	**1.3582**	**12.9088**	**10.4293**	**0.0729**	**4.9433**	**0.0340**	**4.9773**	**1.3375**	**0.0318**	**1.3693**		**7,556.7599**	**7,556.7599**	**0.2220**		**7,562.3109**

3.10 Building Construction 2 - 2027

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3346	12.4271	3.1903	0.0439	1.1645	0.0138	1.1783	0.3352	0.0132	0.3484		4,664.1204	4,664.1204	0.1772		4,668.5513
Worker	1.0236	0.4818	7.2390	0.0290	3.7788	0.0202	3.7990	1.0023	0.0186	1.0209		2,892.6395	2,892.6395	0.0448		2,893.7597
Total	**1.3582**	**12.9088**	**10.4293**	**0.0729**	**4.9433**	**0.0340**	**4.9773**	**1.3375**	**0.0318**	**1.3693**		**7,556.7599**	**7,556.7599**	**0.2220**		**7,562.3109**

3.11 Architectural Coating 2 - 2025

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2276	0.1146	1.6536	6.2300e-003	0.7558	4.4000e-003	0.7602	0.2005	4.0500e-003	0.2045		621.8057	621.8057	0.0107		622.0742
Total	**0.2276**	**0.1146**	**1.6536**	**6.2300e-003**	**0.7558**	**4.4000e-003**	**0.7602**	**0.2005**	**4.0500e-003**	**0.2045**		**621.8057**	**621.8057**	**0.0107**		**622.0742**

3.11 Architectural Coating 2 - 2025

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2276	0.1146	1.6536	6.2300e-003	0.7558	4.4000e-003	0.7602	0.2005	4.0500e-003	0.2045		621.8057	621.8057	0.0107		622.0742
Total	**0.2276**	**0.1146**	**1.6536**	**6.2300e-003**	**0.7558**	**4.4000e-003**	**0.7602**	**0.2005**	**4.0500e-003**	**0.2045**		**621.8057**	**621.8057**	**0.0107**		**622.0742**

3.11 Architectural Coating 2 - 2026

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2159	0.1049	1.5444	6.0000e-003	0.7558	4.2700e-003	0.7600	0.2005	3.9300e-003	0.2044		598.8263	598.8263	9.8000e-003		599.0712
Total	**0.2159**	**0.1049**	**1.5444**	**6.0000e-003**	**0.7558**	**4.2700e-003**	**0.7600**	**0.2005**	**3.9300e-003**	**0.2044**		**598.8263**	**598.8263**	**9.8000e-003**		**599.0712**

3.11 Architectural Coating 2 - 2026

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2159	0.1049	1.5444	6.0000e-003	0.7558	4.2700e-003	0.7600	0.2005	3.9300e-003	0.2044		598.8263	598.8263	9.8000e-003		599.0712
Total	**0.2159**	**0.1049**	**1.5444**	**6.0000e-003**	**0.7558**	**4.2700e-003**	**0.7600**	**0.2005**	**3.9300e-003**	**0.2044**		**598.8263**	**598.8263**	**9.8000e-003**		**599.0712**

3.11 Architectural Coating 2 - 2027

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2047	0.0964	1.4478	5.8000e-003	0.7558	4.0500e-003	0.7598	0.2005	3.7200e-003	0.2042		578.5279	578.5279	8.9600e-003		578.7519
Total	**0.2047**	**0.0964**	**1.4478**	**5.8000e-003**	**0.7558**	**4.0500e-003**	**0.7598**	**0.2005**	**3.7200e-003**	**0.2042**		**578.5279**	**578.5279**	**8.9600e-003**		**578.7519**

3.11 Architectural Coating 2 - 2027

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2047	0.0964	1.4478	5.8000e-003	0.7558	4.0500e-003	0.7598	0.2005	3.7200e-003	0.2042		578.5279	578.5279	8.9600e-003		578.7519
Total	**0.2047**	**0.0964**	**1.4478**	**5.8000e-003**	**0.7558**	**4.0500e-003**	**0.7598**	**0.2005**	**3.7200e-003**	**0.2042**		**578.5279**	**578.5279**	**8.9600e-003**		**578.7519**

3.12 Site Prep 3 - 2027

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	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

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	0.0401	0.0189	0.2833	1.1300e-003	0.1479	7.9000e-004	0.1487	0.0392	7.3000e-004	0.0400		113.1902	113.1902	1.7500e-003		113.2341
Total	**0.0401**	**0.0189**	**0.2833**	**1.1300e-003**	**0.1479**	**7.9000e-004**	**0.1487**	**0.0392**	**7.3000e-004**	**0.0400**		**113.1902**	**113.1902**	**1.7500e-003**		**113.2341**

3.12 Site Prep 3 - 2027

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	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

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	0.0401	0.0189	0.2833	1.1300e-003	0.1479	7.9000e-004	0.1487	0.0392	7.3000e-004	0.0400		113.1902	113.1902	1.7500e-003		113.2341
Total	**0.0401**	**0.0189**	**0.2833**	**1.1300e-003**	**0.1479**	**7.9000e-004**	**0.1487**	**0.0392**	**7.3000e-004**	**0.0400**		**113.1902**	**113.1902**	**1.7500e-003**		**113.2341**

3.13 Grading 3 - 2027

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404		6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**6.0221**	**1.1309**	**7.1530**	**3.3102**	**1.0404**	**4.3507**		**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

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	0.0445	0.0210	0.3147	1.2600e-003	0.1643	8.8000e-004	0.1652	0.0436	8.1000e-004	0.0444		125.7669	125.7669	1.9500e-003		125.8156
Total	**0.0445**	**0.0210**	**0.3147**	**1.2600e-003**	**0.1643**	**8.8000e-004**	**0.1652**	**0.0436**	**8.1000e-004**	**0.0444**		**125.7669**	**125.7669**	**1.9500e-003**		**125.8156**

3.13 Grading 3 - 2027

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404	0.0000	6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**6.0221**	**1.1309**	**7.1530**	**3.3102**	**1.0404**	**4.3507**	**0.0000**	**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

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	0.0445	0.0210	0.3147	1.2600e-003	0.1643	8.8000e-004	0.1652	0.0436	8.1000e-004	0.0444		125.7669	125.7669	1.9500e-003		125.8156
Total	**0.0445**	**0.0210**	**0.3147**	**1.2600e-003**	**0.1643**	**8.8000e-004**	**0.1652**	**0.0436**	**8.1000e-004**	**0.0444**		**125.7669**	**125.7669**	**1.9500e-003**		**125.8156**

3.14 Paving 3 - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	2.4599					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.3750**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

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	0.0334	0.0157	0.2361	9.5000e-004	0.1232	6.6000e-004	0.1239	0.0327	6.1000e-004	0.0333		94.3252	94.3252	1.4600e-003		94.3617
Total	**0.0334**	**0.0157**	**0.2361**	**9.5000e-004**	**0.1232**	**6.6000e-004**	**0.1239**	**0.0327**	**6.1000e-004**	**0.0333**		**94.3252**	**94.3252**	**1.4600e-003**		**94.3617**

3.14 Paving 3 - 2027

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	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	2.4599					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.3750**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

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	0.0334	0.0157	0.2361	9.5000e-004	0.1232	6.6000e-004	0.1239	0.0327	6.1000e-004	0.0333		94.3252	94.3252	1.4600e-003		94.3617
Total	**0.0334**	**0.0157**	**0.2361**	**9.5000e-004**	**0.1232**	**6.6000e-004**	**0.1239**	**0.0327**	**6.1000e-004**	**0.0333**		**94.3252**	**94.3252**	**1.4600e-003**		**94.3617**

3.15 Building Construction 3 - 2027

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3346	12.4271	3.1903	0.0439	1.1645	0.0138	1.1783	0.3352	0.0132	0.3484		4,664.1204	4,664.1204	0.1772		4,668.5513
Worker	1.0236	0.4818	7.2390	0.0290	3.7788	0.0202	3.7990	1.0023	0.0186	1.0209		2,892.6395	2,892.6395	0.0448		2,893.7597
Total	**1.3582**	**12.9088**	**10.4293**	**0.0729**	**4.9433**	**0.0340**	**4.9773**	**1.3375**	**0.0318**	**1.3693**		**7,556.7599**	**7,556.7599**	**0.2220**		**7,562.3109**

3.15 Building Construction 3 - 2027

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3346	12.4271	3.1903	0.0439	1.1645	0.0138	1.1783	0.3352	0.0132	0.3484		4,664.1204	4,664.1204	0.1772		4,668.5513
Worker	1.0236	0.4818	7.2390	0.0290	3.7788	0.0202	3.7990	1.0023	0.0186	1.0209		2,892.6395	2,892.6395	0.0448		2,893.7597
Total	**1.3582**	**12.9088**	**10.4293**	**0.0729**	**4.9433**	**0.0340**	**4.9773**	**1.3375**	**0.0318**	**1.3693**		**7,556.7599**	**7,556.7599**	**0.2220**		**7,562.3109**

3.15 Building Construction 3 - 2028

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3284	12.3053	3.1467	0.0437	1.1645	0.0135	1.1781	0.3352	0.0130	0.3482		4,642.0082	4,642.0082	0.1745		4,646.3706
Worker	0.9661	0.4439	6.8139	0.0281	3.7788	0.0188	3.7976	1.0023	0.0173	1.0196		2,803.4127	2,803.4127	0.0412		2,804.4422
Total	**1.2945**	**12.7493**	**9.9606**	**0.0717**	**4.9433**	**0.0323**	**4.9756**	**1.3376**	**0.0302**	**1.3678**		**7,445.4209**	**7,445.4209**	**0.2157**		**7,450.8128**

3.15 Building Construction 3 - 2028

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3284	12.3053	3.1467	0.0437	1.1645	0.0135	1.1781	0.3352	0.0130	0.3482		4,642.0082	4,642.0082	0.1745		4,646.3706
Worker	0.9661	0.4439	6.8139	0.0281	3.7788	0.0188	3.7976	1.0023	0.0173	1.0196		2,803.4127	2,803.4127	0.0412		2,804.4422
Total	**1.2945**	**12.7493**	**9.9606**	**0.0717**	**4.9433**	**0.0323**	**4.9756**	**1.3376**	**0.0302**	**1.3678**		**7,445.4209**	**7,445.4209**	**0.2157**		**7,450.8128**

3.16 Architectural Coating 3 - 2027

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	25.5752					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**25.7461**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2047	0.0964	1.4478	5.8000e-003	0.7558	4.0500e-003	0.7598	0.2005	3.7200e-003	0.2042		578.5279	578.5279	8.9600e-003		578.7519
Total	**0.2047**	**0.0964**	**1.4478**	**5.8000e-003**	**0.7558**	**4.0500e-003**	**0.7598**	**0.2005**	**3.7200e-003**	**0.2042**		**578.5279**	**578.5279**	**8.9600e-003**		**578.7519**

3.16 Architectural Coating 3 - 2027

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	25.5752					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**25.7461**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2047	0.0964	1.4478	5.8000e-003	0.7558	4.0500e-003	0.7598	0.2005	3.7200e-003	0.2042		578.5279	578.5279	8.9600e-003		578.7519
Total	**0.2047**	**0.0964**	**1.4478**	**5.8000e-003**	**0.7558**	**4.0500e-003**	**0.7598**	**0.2005**	**3.7200e-003**	**0.2042**		**578.5279**	**578.5279**	**8.9600e-003**		**578.7519**

3.16 Architectural Coating 3 - 2028

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	25.5752					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**25.7461**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.1932	0.0888	1.3628	5.6200e-003	0.7558	3.7600e-003	0.7595	0.2005	3.4600e-003	0.2039		560.6825	560.6825	8.2400e-003		560.8884
Total	**0.1932**	**0.0888**	**1.3628**	**5.6200e-003**	**0.7558**	**3.7600e-003**	**0.7595**	**0.2005**	**3.4600e-003**	**0.2039**		**560.6825**	**560.6825**	**8.2400e-003**		**560.8884**

3.16 Architectural Coating 3 - 2028

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	25.5752					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**25.7461**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.1932	0.0888	1.3628	5.6200e-003	0.7558	3.7600e-003	0.7595	0.2005	3.4600e-003	0.2039		560.6825	560.6825	8.2400e-003		560.8884
Total	**0.1932**	**0.0888**	**1.3628**	**5.6200e-003**	**0.7558**	**3.7600e-003**	**0.7595**	**0.2005**	**3.4600e-003**	**0.2039**		**560.6825**	**560.6825**	**8.2400e-003**		**560.8884**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive 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	2.1921	9.3604	21.7700	0.0968	9.9902	0.0639	10.0542	2.6714	0.0595	2.7309		9,841.0849	9,841.0849	0.2992		9,848.5646
Unmitigated	2.2066	9.4343	22.1262	0.0986	10.1941	0.0651	10.2592	2.7259	0.0606	2.7865		10,025.3696	10,025.3696	0.3038		10,032.9640

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	2,079.00	2,079.00	2079.00	4,801,674	4,705,640
Total	2,079.00	2,079.00	2,079.00	4,801,674	4,705,640

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
NaturalGas Unmitigated	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	17518.7	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693
Total		**0.1889**	**1.6145**	**0.6870**	**0.0103**		**0.1305**	**0.1305**		**0.1305**	**0.1305**		**2,061.0217**	**2,061.0217**	**0.0395**	**0.0378**	**2,073.2693**

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	16.4255	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
Total		**0.1771**	**1.5137**	**0.6441**	**9.6600e-003**		**0.1224**	**0.1224**		**0.1224**	**0.1224**		**1,932.4108**	**1,932.4108**	**0.0370**	**0.0354**	**1,943.8941**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive 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	238.2564	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834
Unmitigated	238.8900	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834

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	1.6116					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.7440					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	227.9898	4.3899	294.8635	0.5553		41.6952	41.6952		41.6952	41.6952	4,483.2345	1,358.8235	5,842.0580	5.5433	0.3164	6,074.9146
Landscaping	0.5446	0.2089	18.1352	9.6000e-004		0.1006	0.1006		0.1006	0.1006		32.6861	32.6861	0.0313		33.4688
Total	**238.8900**	**4.5987**	**312.9987**	**0.5563**		**41.7958**	**41.7958**		**41.7958**	**41.7958**	**4,483.2345**	**1,391.5096**	**5,874.7441**	**5.5746**	**0.3164**	**6,108.3834**

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	1.6116					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.1104					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	227.9898	4.3899	294.8635	0.5553		41.6952	41.6952		41.6952	41.6952	4,483.2345	1,358.8235	5,842.0580	5.5433	0.3164	6,074.9146
Landscaping	0.5446	0.2089	18.1352	9.6000e-004		0.1006	0.1006		0.1006	0.1006		32.6861	32.6861	0.0313		33.4688
Total	**238.2564**	**4.5987**	**312.9987**	**0.5563**		**41.7958**	**41.7958**		**41.7958**	**41.7958**	**4,483.2345**	**1,391.5096**	**5,874.7441**	**5.5746**	**0.3164**	**6,108.3834**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards Project

Bay Area AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	3.92	Acre	3.92	170,755.20	0
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
Single Family Housing	220.00	Dwelling Unit	28.00	396,000.00	629

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per the site plan.

Grading - Total acres graded changed to reflect grading plan.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Construction Phase - Phasing adjusted based on default lengths for the number of units built under each phase.

Vehicle Trips - Trip generation rates adjusted per the Traffic Impact Assessment prepared for the proposed project.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	55.00	740.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	75.00	45.00
tblConstructionPhase	NumDays	55.00	35.00
tblConstructionPhase	NumDays	740.00	440.00
tblConstructionPhase	NumDays	55.00	440.00
tblConstructionPhase	NumDays	30.00	5.00
tblConstructionPhase	NumDays	75.00	8.00
tblConstructionPhase	NumDays	55.00	18.00
tblConstructionPhase	NumDays	740.00	230.00
tblConstructionPhase	NumDays	55.00	230.00
tblConstructionPhase	PhaseEndDate	8/29/2025	6/27/2025
tblConstructionPhase	PhaseEndDate	3/28/2025	6/13/2025
tblConstructionPhase	PhaseEndDate	6/13/2025	8/12/2022
tblConstructionPhase	PhaseStartDate	6/14/2025	8/27/2022
tblConstructionPhase	PhaseStartDate	5/28/2022	8/13/2022

tblConstructionPhase	PhaseStartDate	3/29/2025	5/28/2022
tblGrading	AcresOfGrading	0.00	71.70
tblGrading	AcresOfGrading	187.50	0.00
tblGrading	AcresOfGrading	20.00	0.00
tblGrading	AcresOfGrading	112.50	0.00
tblGrading	MaterialImported	0.00	4,555.00
tblLandUse	LotAcreage	71.43	28.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblTripsAndVMT	HaulingTripNumber	569.00	0.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	9.45
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	9.45
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	9.45

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					
2022	12.1417	38.8851	34.3467	0.1141	20.7659	1.6359	22.3794	10.2462	1.5050	11.7306	0.0000	11,511.2228	11,511.2228	1.9472	0.0000	11,535.0459
2023	11.7535	29.8023	32.7680	0.1113	5.6989	0.8133	6.5122	1.5380	0.7692	2.3071	0.0000	11,229.8412	11,229.8412	0.9024	0.0000	11,252.4000
2024	11.5326	28.5309	31.7392	0.1095	5.6990	0.7162	6.4151	1.5380	0.6770	2.2149	0.0000	11,051.7537	11,051.7537	0.8863	0.0000	11,073.9099
2025	16.7454	52.5071	49.0138	0.1469	23.9131	1.7080	25.6211	11.5079	1.5869	13.0948	0.0000	14,678.0746	14,678.0746	2.0671	0.0000	14,729.7524
2026	16.6668	27.0242	30.0958	0.1062	5.6990	0.6192	6.3182	1.5380	0.5852	2.1232	0.0000	10,722.7426	10,722.7426	0.8631	0.0000	10,744.3193
2027	28.7979	54.7767	56.0955	0.1680	23.9132	1.7493	25.6183	11.5079	1.6249	13.0922	0.0000	16,709.1966	16,709.1966	2.8000	0.0000	16,779.1953
2028	28.7202	26.6282	28.9394	0.1036	5.6991	0.6155	6.3146	1.5380	0.5818	2.1198	0.0000	10,465.1567	10,465.1567	0.8478	0.0000	10,486.3503
Maximum	**28.7979**	**54.7767**	**56.0955**	**0.1680**	**23.9132**	**1.7493**	**25.6211**	**11.5079**	**1.6249**	**13.0948**	**0.0000**	**16,709.1966**	**16,709.1966**	**2.8000**	**0.0000**	**16,779.1953**

2.1 Overall Construction (Maximum Daily Emission)

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					
2022	12.1417	38.8851	34.3467	0.1141	20.7659	1.6359	22.3794	10.2462	1.5050	11.7306	0.0000	11,511.2228	11,511.2228	1.9472	0.0000	11,535.0459
2023	11.7535	29.8023	32.7680	0.1113	5.6989	0.8133	6.5122	1.5380	0.7692	2.3071	0.0000	11,229.8412	11,229.8412	0.9024	0.0000	11,252.4000
2024	11.5326	28.5309	31.7392	0.1095	5.6990	0.7162	6.4151	1.5380	0.6770	2.2149	0.0000	11,051.7537	11,051.7537	0.8863	0.0000	11,073.9099
2025	16.7454	52.5071	49.0138	0.1469	23.9131	1.7080	25.6211	11.5079	1.5869	13.0948	0.0000	14,678.0746	14,678.0746	2.0671	0.0000	14,729.7524
2026	16.6668	27.0242	30.0958	0.1062	5.6990	0.6192	6.3182	1.5380	0.5852	2.1232	0.0000	10,722.7426	10,722.7426	0.8631	0.0000	10,744.3193
2027	28.7979	54.7767	56.0955	0.1680	23.9132	1.7493	25.6183	11.5079	1.6249	13.0922	0.0000	16,709.1965	16,709.1965	2.8000	0.0000	16,779.1953
2028	28.7202	26.6282	28.9394	0.1036	5.6991	0.6155	6.3146	1.5380	0.5818	2.1198	0.0000	10,465.1567	10,465.1567	0.8478	0.0000	10,486.3503
Maximum	**28.7979**	**54.7767**	**56.0955**	**0.1680**	**23.9132**	**1.7493**	**25.6211**	**11.5079**	**1.6249**	**13.0948**	**0.0000**	**16,709.1965**	**16,709.1965**	**2.8000**	**0.0000**	**16,779.1953**

	ROG	NOx	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	238.8900	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834
Energy	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693
Mobile	1.8813	9.7690	22.1144	0.0926	10.1941	0.0653	10.2594	2.7259	0.0608	2.7867		9,411.4049	9,411.4049	0.3116		9,419.1939
Total	**240.9603**	**15.9822**	**335.8001**	**0.6591**	**10.1941**	**41.9916**	**52.1857**	**2.7259**	**41.9871**	**44.7130**	**4,483.2345**	**12,863.9362**	**17,347.1707**	**5.9257**	**0.3541**	**17,600.8465**

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	238.2564	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834
Energy	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
Mobile	1.8668	9.6872	21.7948	0.0908	9.9902	0.0642	10.0544	2.6714	0.0598	2.7311		9,237.8693	9,237.8693	0.3071		9,245.5465
Total	**240.3004**	**15.7996**	**335.4376**	**0.6568**	**9.9902**	**41.9824**	**51.9726**	**2.6714**	**41.9779**	**44.6493**	**4,483.2345**	**12,561.7897**	**17,045.0242**	**5.9188**	**0.3518**	**17,297.8240**

	ROG	NOx	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	**0.27**	**1.14**	**0.11**	**0.36**	**2.00**	**0.02**	**0.41**	**2.00**	**0.02**	**0.14**	**0.00**	**2.35**	**1.74**	**0.12**	**0.67**	**1.72**

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 1	Site Preparation	1/1/2022	2/11/2022	5	30	
2	Grading 1	Grading	2/12/2022	5/27/2022	5	75	
3	Paving 1	Paving	5/28/2022	8/12/2022	5	55	
4	Building Construction 1	Building Construction	8/13/2022	6/13/2025	5	740	
5	Architectural Coating 1	Architectural Coating	8/27/2022	6/27/2025	5	740	
6	Site Prep 2	Site Preparation	6/6/2025	7/3/2025	5	20	
7	Grading 2	Grading	7/4/2025	9/4/2025	5	45	
8	Paving 2	Paving	9/5/2025	10/23/2025	5	35	
9	Building Construction 2	Building Construction	10/24/2025	7/1/2027	5	440	
10	Architectural Coating 2	Architectural Coating	11/7/2025	7/15/2027	5	440	
11	Site Prep 3	Site Preparation	6/24/2027	6/30/2027	5	5	
12	Grading 3	Grading	7/1/2027	7/12/2027	5	8	
13	Paving 3	Paving	7/13/2027	8/5/2027	5	18	
14	Building Construction 3	Building Construction	8/6/2027	6/22/2028	5	230	
15	Architectural Coating 3	Architectural Coating	8/20/2027	7/6/2028	5	230	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

Residential Indoor: 801,900; Residential Outdoor: 267,300; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 44,170 (Architectural Coating – sqft)

OffRoad Equipment

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

Building Construction 3	Forklifts	3	8.00	89	0.20
Building Construction 2	Forklifts	3	8.00	89	0.20
Building Construction 3	Generator Sets	1	8.00	84	0.74
Building Construction 2	Generator Sets	1	8.00	84	0.74
Grading 3	Graders	1	8.00	187	0.41
Grading 2	Graders	1	8.00	187	0.41
Paving 3	Pavers	2	8.00	130	0.42
Paving 2	Pavers	2	8.00	130	0.42
Paving 3	Paving Equipment	2	8.00	132	0.36
Paving 2	Paving Equipment	2	8.00	132	0.36
Paving 3	Rollers	2	8.00	80	0.38
Paving 2	Rollers	2	8.00	80	0.38
Grading 3	Rubber Tired Dozers	1	8.00	247	0.40
Grading 2	Rubber Tired Dozers	1	8.00	247	0.40
Site Prep 3	Rubber Tired Dozers	3	8.00	247	0.40
Site Prep 2	Rubber Tired Dozers	3	8.00	247	0.40
Grading 3	Scrapers	2	8.00	367	0.48
Grading 2	Scrapers	2	8.00	367	0.48
Building Construction 3	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction 2	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading 3	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading 2	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Prep 3	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Prep 2	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction 3	Welders	1	8.00	46	0.45
Building Construction 2	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating 2	1	92.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation 1	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading 1	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 1	9	460.00	172.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving 1	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating 1	1	92.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating 3	1	92.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 3	9	460.00	172.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 2	9	460.00	172.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading 3	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading 2	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving 3	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving 2	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Prep 3	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Prep 2	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation 1 - 2022

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					20.6180	0.0000	20.6180	10.2070	0.0000	10.2070			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**20.6180**	**1.6126**	**22.2306**	**10.2070**	**1.4836**	**11.6905**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

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	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		126.5026	126.5026	2.6600e-003		126.5691
Total	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**126.5026**	**126.5026**	**2.6600e-003**		**126.5691**

3.2 Site Preparation 1 - 2022

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					20.6180	0.0000	20.6180	10.2070	0.0000	10.2070			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**20.6180**	**1.6126**	**22.2306**	**10.2070**	**1.4836**	**11.6905**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

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	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		126.5026	126.5026	2.6600e-003		126.5691
Total	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**126.5026**	**126.5026**	**2.6600e-003**		**126.5691**

3.3 Grading 1 - 2022

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**6.0221**	**1.6349**	**7.6570**	**3.3102**	**1.5041**	**4.8143**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

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	0.0636	0.0416	0.4218	1.4100e-003	0.1643	1.0100e-003	0.1653	0.0436	9.3000e-004	0.0445		140.5584	140.5584	2.9600e-003		140.6323
Total	**0.0636**	**0.0416**	**0.4218**	**1.4100e-003**	**0.1643**	**1.0100e-003**	**0.1653**	**0.0436**	**9.3000e-004**	**0.0445**		**140.5584**	**140.5584**	**2.9600e-003**		**140.6323**

3.3 Grading 1 - 2022

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**6.0221**	**1.6349**	**7.6570**	**3.3102**	**1.5041**	**4.8143**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

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	0.0636	0.0416	0.4218	1.4100e-003	0.1643	1.0100e-003	0.1653	0.0436	9.3000e-004	0.0445		140.5584	140.5584	2.9600e-003		140.6323
Total	**0.0636**	**0.0416**	**0.4218**	**1.4100e-003**	**0.1643**	**1.0100e-003**	**0.1653**	**0.0436**	**9.3000e-004**	**0.0445**		**140.5584**	**140.5584**	**2.9600e-003**		**140.6323**

3.4 Paving 1 - 2022

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.8051					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9079**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

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	0.0477	0.0312	0.3163	1.0600e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		105.4188	105.4188	2.2200e-003		105.4742
Total	**0.0477**	**0.0312**	**0.3163**	**1.0600e-003**	**0.1232**	**7.6000e-004**	**0.1240**	**0.0327**	**7.0000e-004**	**0.0334**		**105.4188**	**105.4188**	**2.2200e-003**		**105.4742**

3.4 Paving 1 - 2022

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.8051					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9079**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

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	0.0477	0.0312	0.3163	1.0600e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		105.4188	105.4188	2.2200e-003		105.4742
Total	**0.0477**	**0.0312**	**0.3163**	**1.0600e-003**	**0.1232**	**7.6000e-004**	**0.1240**	**0.0327**	**7.0000e-004**	**0.0334**		**105.4188**	**105.4188**	**2.2200e-003**		**105.4742**

3.5 Building Construction 1 - 2022

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

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	0.5269	16.9728	4.5288	0.0453	1.1643	0.0346	1.1989	0.3352	0.0331	0.3683		4,796.0292	4,796.0292	0.2411		4,802.0560
Worker	1.4625	0.9573	9.7008	0.0324	3.7788	0.0232	3.8020	1.0023	0.0214	1.0237		3,232.8433	3,232.8433	0.0680		3,234.5430
Total	**1.9894**	**17.9301**	**14.2296**	**0.0777**	**4.9431**	**0.0578**	**5.0009**	**1.3375**	**0.0545**	**1.3920**		**8,028.8725**	**8,028.8725**	**0.3091**		**8,036.5990**

3.5 Building Construction 1 - 2022

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

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	0.5269	16.9728	4.5288	0.0453	1.1643	0.0346	1.1989	0.3352	0.0331	0.3683		4,796.0292	4,796.0292	0.2411		4,802.0560
Worker	1.4625	0.9573	9.7008	0.0324	3.7788	0.0232	3.8020	1.0023	0.0214	1.0237		3,232.8433	3,232.8433	0.0680		3,234.5430
Total	**1.9894**	**17.9301**	**14.2296**	**0.0777**	**4.9431**	**0.0578**	**5.0009**	**1.3375**	**0.0545**	**1.3920**		**8,028.8725**	**8,028.8725**	**0.3091**		**8,036.5990**

3.5 Building Construction 1 - 2023

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	0.3961	13.0817	4.0215	0.0440	1.1644	0.0155	1.1798	0.3352	0.0148	0.3500		4,662.3359	4,662.3359	0.2047		4,667.4524
Worker	1.3699	0.8606	8.9095	0.0312	3.7788	0.0228	3.8015	1.0023	0.0209	1.0233		3,109.0395	3,109.0395	0.0608		3,110.5604
Total	**1.7660**	**13.9423**	**12.9309**	**0.0751**	**4.9432**	**0.0382**	**4.9814**	**1.3375**	**0.0357**	**1.3732**		**7,771.3754**	**7,771.3754**	**0.2655**		**7,778.0128**

3.5 Building Construction 1 - 2023

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	0.3961	13.0817	4.0215	0.0440	1.1644	0.0155	1.1798	0.3352	0.0148	0.3500		4,662.3359	4,662.3359	0.2047		4,667.4524
Worker	1.3699	0.8606	8.9095	0.0312	3.7788	0.0228	3.8015	1.0023	0.0209	1.0233		3,109.0395	3,109.0395	0.0608		3,110.5604
Total	**1.7660**	**13.9423**	**12.9309**	**0.0751**	**4.9432**	**0.0382**	**4.9814**	**1.3375**	**0.0357**	**1.3732**		**7,771.3754**	**7,771.3754**	**0.2655**		**7,778.0128**

3.5 Building Construction 1 - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	0.3828	12.9357	3.8703	0.0436	1.1644	0.0152	1.1796	0.3352	0.0145	0.3497		4,631.4084	4,631.4084	0.2004		4,636.4186
Worker	1.2903	0.7772	8.2433	0.0299	3.7788	0.0223	3.8011	1.0023	0.0205	1.0229		2,985.9986	2,985.9986	0.0547		2,987.3661
Total	**1.6732**	**13.7129**	**12.1136**	**0.0736**	**4.9432**	**0.0375**	**4.9807**	**1.3375**	**0.0350**	**1.3725**		**7,617.4071**	**7,617.4071**	**0.2551**		**7,623.7847**

3.5 Building Construction 1 - 2024

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	0.3828	12.9357	3.8703	0.0436	1.1644	0.0152	1.1796	0.3352	0.0145	0.3497		4,631.4084	4,631.4084	0.2004		4,636.4186
Worker	1.2903	0.7772	8.2433	0.0299	3.7788	0.0223	3.8011	1.0023	0.0205	1.0229		2,985.9986	2,985.9986	0.0547		2,987.3661
Total	**1.6732**	**13.7129**	**12.1136**	**0.0736**	**4.9432**	**0.0375**	**4.9807**	**1.3375**	**0.0350**	**1.3725**		**7,617.4071**	**7,617.4071**	**0.2551**		**7,623.7847**

3.5 Building Construction 1 - 2025

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3716	12.7828	3.7549	0.0433	1.1644	0.0148	1.1793	0.3352	0.0142	0.3494		4,601.6063	4,601.6063	0.1964		4,606.5152
Worker	1.2222	0.7064	7.6290	0.0287	3.7788	0.0220	3.8008	1.0023	0.0202	1.0226		2,864.4621	2,864.4621	0.0495		2,865.6994
Total	**1.5938**	**13.4892**	**11.3839**	**0.0720**	**4.9432**	**0.0368**	**4.9801**	**1.3375**	**0.0344**	**1.3719**		**7,466.0684**	**7,466.0684**	**0.2458**		**7,472.2146**

3.5 Building Construction 1 - 2025

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3716	12.7828	3.7549	0.0433	1.1644	0.0148	1.1793	0.3352	0.0142	0.3494		4,601.6063	4,601.6063	0.1964		4,606.5152
Worker	1.2222	0.7064	7.6290	0.0287	3.7788	0.0220	3.8008	1.0023	0.0202	1.0226		2,864.4621	2,864.4621	0.0495		2,865.6994
Total	**1.5938**	**13.4892**	**11.3839**	**0.0720**	**4.9432**	**0.0368**	**4.9801**	**1.3375**	**0.0344**	**1.3719**		**7,466.0684**	**7,466.0684**	**0.2458**		**7,472.2146**

3.6 Architectural Coating 1 - 2022

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**8.1536**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	0.2925	0.1915	1.9402	6.4800e-003	0.7558	4.6400e-003	0.7604	0.2005	4.2800e-003	0.2047		646.5687	646.5687	0.0136		646.9086
Total	**0.2925**	**0.1915**	**1.9402**	**6.4800e-003**	**0.7558**	**4.6400e-003**	**0.7604**	**0.2005**	**4.2800e-003**	**0.2047**		**646.5687**	**646.5687**	**0.0136**		**646.9086**

3.6 Architectural Coating 1 - 2022

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**8.1536**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	0.2925	0.1915	1.9402	6.4800e-003	0.7558	4.6400e-003	0.7604	0.2005	4.2800e-003	0.2047		646.5687	646.5687	0.0136		646.9086
Total	**0.2925**	**0.1915**	**1.9402**	**6.4800e-003**	**0.7558**	**4.6400e-003**	**0.7604**	**0.2005**	**4.2800e-003**	**0.2047**		**646.5687**	**646.5687**	**0.0136**		**646.9086**

3.6 Architectural Coating 1 - 2023

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**8.1407**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

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	0.2740	0.1721	1.7819	6.2300e-003	0.7558	4.5500e-003	0.7603	0.2005	4.1900e-003	0.2047		621.8079	621.8079	0.0122		622.1121
Total	**0.2740**	**0.1721**	**1.7819**	**6.2300e-003**	**0.7558**	**4.5500e-003**	**0.7603**	**0.2005**	**4.1900e-003**	**0.2047**		**621.8079**	**621.8079**	**0.0122**		**622.1121**

3.6 Architectural Coating 1 - 2023

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**8.1407**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

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	0.2740	0.1721	1.7819	6.2300e-003	0.7558	4.5500e-003	0.7603	0.2005	4.1900e-003	0.2047		621.8079	621.8079	0.0122		622.1121
Total	**0.2740**	**0.1721**	**1.7819**	**6.2300e-003**	**0.7558**	**4.5500e-003**	**0.7603**	**0.2005**	**4.1900e-003**	**0.2047**		**621.8079**	**621.8079**	**0.0122**		**622.1121**

3.6 Architectural Coating 1 - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**8.1298**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	0.2581	0.1554	1.6487	5.9900e-003	0.7558	4.4600e-003	0.7602	0.2005	4.1100e-003	0.2046		597.1997	597.1997	0.0109		597.4732
Total	**0.2581**	**0.1554**	**1.6487**	**5.9900e-003**	**0.7558**	**4.4600e-003**	**0.7602**	**0.2005**	**4.1100e-003**	**0.2046**		**597.1997**	**597.1997**	**0.0109**		**597.4732**

3.6 Architectural Coating 1 - 2024

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**8.1298**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	0.2581	0.1554	1.6487	5.9900e-003	0.7558	4.4600e-003	0.7602	0.2005	4.1100e-003	0.2046		597.1997	597.1997	0.0109		597.4732
Total	**0.2581**	**0.1554**	**1.6487**	**5.9900e-003**	**0.7558**	**4.4600e-003**	**0.7602**	**0.2005**	**4.1100e-003**	**0.2046**		**597.1997**	**597.1997**	**0.0109**		**597.4732**

3.6 Architectural Coating 1 - 2025

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**8.1199**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2444	0.1413	1.5258	5.7400e-003	0.7558	4.4000e-003	0.7602	0.2005	4.0500e-003	0.2045		572.8924	572.8924	9.9000e-003		573.1399
Total	**0.2444**	**0.1413**	**1.5258**	**5.7400e-003**	**0.7558**	**4.4000e-003**	**0.7602**	**0.2005**	**4.0500e-003**	**0.2045**		**572.8924**	**572.8924**	**9.9000e-003**		**573.1399**

3.6 Architectural Coating 1 - 2025

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**8.1199**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2444	0.1413	1.5258	5.7400e-003	0.7558	4.4000e-003	0.7602	0.2005	4.0500e-003	0.2045		572.8924	572.8924	9.9000e-003		573.1399
Total	**0.2444**	**0.1413**	**1.5258**	**5.7400e-003**	**0.7558**	**4.4000e-003**	**0.7602**	**0.2005**	**4.0500e-003**	**0.2045**		**572.8924**	**572.8924**	**9.9000e-003**		**573.1399**

3.7 Site Prep 2 - 2025

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	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

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	0.0478	0.0276	0.2985	1.1200e-003	0.1479	8.6000e-004	0.1487	0.0392	7.9000e-004	0.0400		112.0877	112.0877	1.9400e-003		112.1361
Total	**0.0478**	**0.0276**	**0.2985**	**1.1200e-003**	**0.1479**	**8.6000e-004**	**0.1487**	**0.0392**	**7.9000e-004**	**0.0400**		**112.0877**	**112.0877**	**1.9400e-003**		**112.1361**

3.7 Site Prep 2 - 2025

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	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

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	0.0478	0.0276	0.2985	1.1200e-003	0.1479	8.6000e-004	0.1487	0.0392	7.9000e-004	0.0400		112.0877	112.0877	1.9400e-003		112.1361
Total	**0.0478**	**0.0276**	**0.2985**	**1.1200e-003**	**0.1479**	**8.6000e-004**	**0.1487**	**0.0392**	**7.9000e-004**	**0.0400**		**112.0877**	**112.0877**	**1.9400e-003**		**112.1361**

3.8 Grading 2 - 2025

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404		6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**6.0221**	**1.1309**	**7.1530**	**3.3102**	**1.0404**	**4.3507**		**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

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	0.0531	0.0307	0.3317	1.2500e-003	0.1643	9.6000e-004	0.1653	0.0436	8.8000e-004	0.0445		124.5418	124.5418	2.1500e-003		124.5956
Total	**0.0531**	**0.0307**	**0.3317**	**1.2500e-003**	**0.1643**	**9.6000e-004**	**0.1653**	**0.0436**	**8.8000e-004**	**0.0445**		**124.5418**	**124.5418**	**2.1500e-003**		**124.5956**

3.8 Grading 2 - 2025

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404	0.0000	6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**6.0221**	**1.1309**	**7.1530**	**3.3102**	**1.0404**	**4.3507**	**0.0000**	**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

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	0.0531	0.0307	0.3317	1.2500e-003	0.1643	9.6000e-004	0.1653	0.0436	8.8000e-004	0.0445		124.5418	124.5418	2.1500e-003		124.5956
Total	**0.0531**	**0.0307**	**0.3317**	**1.2500e-003**	**0.1643**	**9.6000e-004**	**0.1653**	**0.0436**	**8.8000e-004**	**0.0445**		**124.5418**	**124.5418**	**2.1500e-003**		**124.5956**

3.9 Paving 2 - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	1.2651					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.1802**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

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	0.0399	0.0230	0.2488	9.4000e-004	0.1232	7.2000e-004	0.1239	0.0327	6.6000e-004	0.0333		93.4064	93.4064	1.6100e-003		93.4467
Total	**0.0399**	**0.0230**	**0.2488**	**9.4000e-004**	**0.1232**	**7.2000e-004**	**0.1239**	**0.0327**	**6.6000e-004**	**0.0333**		**93.4064**	**93.4064**	**1.6100e-003**		**93.4467**

3.9 Paving 2 - 2025

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	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	1.2651					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.1802**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

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	0.0399	0.0230	0.2488	9.4000e-004	0.1232	7.2000e-004	0.1239	0.0327	6.6000e-004	0.0333		93.4064	93.4064	1.6100e-003		93.4467
Total	**0.0399**	**0.0230**	**0.2488**	**9.4000e-004**	**0.1232**	**7.2000e-004**	**0.1239**	**0.0327**	**6.6000e-004**	**0.0333**		**93.4064**	**93.4064**	**1.6100e-003**		**93.4467**

3.10 Building Construction 2 - 2025

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3716	12.7828	3.7549	0.0433	1.1644	0.0148	1.1793	0.3352	0.0142	0.3494		4,601.6063	4,601.6063	0.1964		4,606.5152
Worker	1.2222	0.7064	7.6290	0.0287	3.7788	0.0220	3.8008	1.0023	0.0202	1.0226		2,864.4621	2,864.4621	0.0495		2,865.6994
Total	**1.5938**	**13.4892**	**11.3839**	**0.0720**	**4.9432**	**0.0368**	**4.9801**	**1.3375**	**0.0344**	**1.3719**		**7,466.0684**	**7,466.0684**	**0.2458**		**7,472.2146**

3.10 Building Construction 2 - 2025

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3716	12.7828	3.7549	0.0433	1.1644	0.0148	1.1793	0.3352	0.0142	0.3494		4,601.6063	4,601.6063	0.1964		4,606.5152
Worker	1.2222	0.7064	7.6290	0.0287	3.7788	0.0220	3.8008	1.0023	0.0202	1.0226		2,864.4621	2,864.4621	0.0495		2,865.6994
Total	**1.5938**	**13.4892**	**11.3839**	**0.0720**	**4.9432**	**0.0368**	**4.9801**	**1.3375**	**0.0344**	**1.3719**		**7,466.0684**	**7,466.0684**	**0.2458**		**7,472.2146**

3.10 Building Construction 2 - 2026

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3623	12.6328	3.6712	0.0431	1.1645	0.0145	1.1790	0.3352	0.0139	0.3491		4,574.4556	4,574.4556	0.1927		4,579.2729
Worker	1.1645	0.6468	7.1090	0.0277	3.7788	0.0214	3.8001	1.0023	0.0197	1.0220		2,758.6371	2,758.6371	0.0451		2,759.7637
Total	**1.5268**	**13.2796**	**10.7802**	**0.0707**	**4.9433**	**0.0359**	**4.9791**	**1.3375**	**0.0335**	**1.3711**		**7,333.0927**	**7,333.0927**	**0.2378**		**7,339.0367**

3.10 Building Construction 2 - 2026

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3623	12.6328	3.6712	0.0431	1.1645	0.0145	1.1790	0.3352	0.0139	0.3491		4,574.4556	4,574.4556	0.1927		4,579.2729
Worker	1.1645	0.6468	7.1090	0.0277	3.7788	0.0214	3.8001	1.0023	0.0197	1.0220		2,758.6371	2,758.6371	0.0451		2,759.7637
Total	**1.5268**	**13.2796**	**10.7802**	**0.0707**	**4.9433**	**0.0359**	**4.9791**	**1.3375**	**0.0335**	**1.3711**		**7,333.0927**	**7,333.0927**	**0.2378**		**7,339.0367**

3.10 Building Construction 2 - 2027

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3543	12.4800	3.6029	0.0428	1.1645	0.0142	1.1787	0.3352	0.0136	0.3488		4,549.0569	4,549.0569	0.1893		4,553.7895
Worker	1.1085	0.5940	6.6488	0.0267	3.7788	0.0202	3.7990	1.0023	0.0186	1.0209		2,665.0533	2,665.0533	0.0411		2,666.0815
Total	**1.4628**	**13.0740**	**10.2517**	**0.0695**	**4.9433**	**0.0344**	**4.9777**	**1.3375**	**0.0322**	**1.3697**		**7,214.1102**	**7,214.1102**	**0.2304**		**7,219.8710**

3.10 Building Construction 2 - 2027

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3543	12.4800	3.6029	0.0428	1.1645	0.0142	1.1787	0.3352	0.0136	0.3488		4,549.0569	4,549.0569	0.1893		4,553.7895
Worker	1.1085	0.5940	6.6488	0.0267	3.7788	0.0202	3.7990	1.0023	0.0186	1.0209		2,665.0533	2,665.0533	0.0411		2,666.0815
Total	**1.4628**	**13.0740**	**10.2517**	**0.0695**	**4.9433**	**0.0344**	**4.9777**	**1.3375**	**0.0322**	**1.3697**		**7,214.1102**	**7,214.1102**	**0.2304**		**7,219.8710**

3.11 Architectural Coating 2 - 2025

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2444	0.1413	1.5258	5.7400e-003	0.7558	4.4000e-003	0.7602	0.2005	4.0500e-003	0.2045		572.8924	572.8924	9.9000e-003		573.1399
Total	**0.2444**	**0.1413**	**1.5258**	**5.7400e-003**	**0.7558**	**4.4000e-003**	**0.7602**	**0.2005**	**4.0500e-003**	**0.2045**		**572.8924**	**572.8924**	**9.9000e-003**		**573.1399**

3.11 Architectural Coating 2 - 2025

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2444	0.1413	1.5258	5.7400e-003	0.7558	4.4000e-003	0.7602	0.2005	4.0500e-003	0.2045		572.8924	572.8924	9.9000e-003		573.1399
Total	**0.2444**	**0.1413**	**1.5258**	**5.7400e-003**	**0.7558**	**4.4000e-003**	**0.7602**	**0.2005**	**4.0500e-003**	**0.2045**		**572.8924**	**572.8924**	**9.9000e-003**		**573.1399**

3.11 Architectural Coating 2 - 2026

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2329	0.1294	1.4218	5.5300e-003	0.7558	4.2700e-003	0.7600	0.2005	3.9300e-003	0.2044		551.7274	551.7274	9.0100e-003		551.9527
Total	**0.2329**	**0.1294**	**1.4218**	**5.5300e-003**	**0.7558**	**4.2700e-003**	**0.7600**	**0.2005**	**3.9300e-003**	**0.2044**		**551.7274**	**551.7274**	**9.0100e-003**		**551.9527**

3.11 Architectural Coating 2 - 2026

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2329	0.1294	1.4218	5.5300e-003	0.7558	4.2700e-003	0.7600	0.2005	3.9300e-003	0.2044		551.7274	551.7274	9.0100e-003		551.9527
Total	**0.2329**	**0.1294**	**1.4218**	**5.5300e-003**	**0.7558**	**4.2700e-003**	**0.7600**	**0.2005**	**3.9300e-003**	**0.2044**		**551.7274**	**551.7274**	**9.0100e-003**		**551.9527**

3.11 Architectural Coating 2 - 2027

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2217	0.1188	1.3298	5.3400e-003	0.7558	4.0500e-003	0.7598	0.2005	3.7200e-003	0.2042		533.0107	533.0107	8.2300e-003		533.2163
Total	**0.2217**	**0.1188**	**1.3298**	**5.3400e-003**	**0.7558**	**4.0500e-003**	**0.7598**	**0.2005**	**3.7200e-003**	**0.2042**		**533.0107**	**533.0107**	**8.2300e-003**		**533.2163**

3.11 Architectural Coating 2 - 2027

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2217	0.1188	1.3298	5.3400e-003	0.7558	4.0500e-003	0.7598	0.2005	3.7200e-003	0.2042		533.0107	533.0107	8.2300e-003		533.2163
Total	**0.2217**	**0.1188**	**1.3298**	**5.3400e-003**	**0.7558**	**4.0500e-003**	**0.7598**	**0.2005**	**3.7200e-003**	**0.2042**		**533.0107**	**533.0107**	**8.2300e-003**		**533.2163**

3.12 Site Prep 3 - 2027

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	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

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	0.0434	0.0232	0.2602	1.0400e-003	0.1479	7.9000e-004	0.1487	0.0392	7.3000e-004	0.0400		104.2847	104.2847	1.6100e-003		104.3249
Total	**0.0434**	**0.0232**	**0.2602**	**1.0400e-003**	**0.1479**	**7.9000e-004**	**0.1487**	**0.0392**	**7.3000e-004**	**0.0400**		**104.2847**	**104.2847**	**1.6100e-003**		**104.3249**

3.12 Site Prep 3 - 2027

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	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

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	0.0434	0.0232	0.2602	1.0400e-003	0.1479	7.9000e-004	0.1487	0.0392	7.3000e-004	0.0400		104.2847	104.2847	1.6100e-003		104.3249
Total	**0.0434**	**0.0232**	**0.2602**	**1.0400e-003**	**0.1479**	**7.9000e-004**	**0.1487**	**0.0392**	**7.3000e-004**	**0.0400**		**104.2847**	**104.2847**	**1.6100e-003**		**104.3249**

3.13 Grading 3 - 2027

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404		6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**6.0221**	**1.1309**	**7.1530**	**3.3102**	**1.0404**	**4.3507**		**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

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	0.0482	0.0258	0.2891	1.1600e-003	0.1643	8.8000e-004	0.1652	0.0436	8.1000e-004	0.0444		115.8719	115.8719	1.7900e-003		115.9166
Total	**0.0482**	**0.0258**	**0.2891**	**1.1600e-003**	**0.1643**	**8.8000e-004**	**0.1652**	**0.0436**	**8.1000e-004**	**0.0444**		**115.8719**	**115.8719**	**1.7900e-003**		**115.9166**

3.13 Grading 3 - 2027

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404	0.0000	6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**6.0221**	**1.1309**	**7.1530**	**3.3102**	**1.0404**	**4.3507**	**0.0000**	**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

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	0.0482	0.0258	0.2891	1.1600e-003	0.1643	8.8000e-004	0.1652	0.0436	8.1000e-004	0.0444		115.8719	115.8719	1.7900e-003		115.9166
Total	**0.0482**	**0.0258**	**0.2891**	**1.1600e-003**	**0.1643**	**8.8000e-004**	**0.1652**	**0.0436**	**8.1000e-004**	**0.0444**		**115.8719**	**115.8719**	**1.7900e-003**		**115.9166**

3.14 Paving 3 - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	2.4599					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.3750**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

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	0.0362	0.0194	0.2168	8.7000e-004	0.1232	6.6000e-004	0.1239	0.0327	6.1000e-004	0.0333		86.9039	86.9039	1.3400e-003		86.9374
Total	**0.0362**	**0.0194**	**0.2168**	**8.7000e-004**	**0.1232**	**6.6000e-004**	**0.1239**	**0.0327**	**6.1000e-004**	**0.0333**		**86.9039**	**86.9039**	**1.3400e-003**		**86.9374**

3.14 Paving 3 - 2027

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	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	2.4599					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.3750**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

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	0.0362	0.0194	0.2168	8.7000e-004	0.1232	6.6000e-004	0.1239	0.0327	6.1000e-004	0.0333		86.9039	86.9039	1.3400e-003		86.9374
Total	**0.0362**	**0.0194**	**0.2168**	**8.7000e-004**	**0.1232**	**6.6000e-004**	**0.1239**	**0.0327**	**6.1000e-004**	**0.0333**		**86.9039**	**86.9039**	**1.3400e-003**		**86.9374**

3.15 Building Construction 3 - 2027

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3543	12.4800	3.6029	0.0428	1.1645	0.0142	1.1787	0.3352	0.0136	0.3488		4,549.0569	4,549.0569	0.1893		4,553.7895
Worker	1.1085	0.5940	6.6488	0.0267	3.7788	0.0202	3.7990	1.0023	0.0186	1.0209		2,665.0533	2,665.0533	0.0411		2,666.0815
Total	**1.4628**	**13.0740**	**10.2517**	**0.0695**	**4.9433**	**0.0344**	**4.9777**	**1.3375**	**0.0322**	**1.3697**		**7,214.1102**	**7,214.1102**	**0.2304**		**7,219.8710**

3.15 Building Construction 3 - 2027

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3543	12.4800	3.6029	0.0428	1.1645	0.0142	1.1787	0.3352	0.0136	0.3488		4,549.0569	4,549.0569	0.1893		4,553.7895
Worker	1.1085	0.5940	6.6488	0.0267	3.7788	0.0202	3.7990	1.0023	0.0186	1.0209		2,665.0533	2,665.0533	0.0411		2,666.0815
Total	**1.4628**	**13.0740**	**10.2517**	**0.0695**	**4.9433**	**0.0344**	**4.9777**	**1.3375**	**0.0322**	**1.3697**		**7,214.1102**	**7,214.1102**	**0.2304**		**7,219.8710**

3.15 Building Construction 3 - 2028

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3476	12.3565	3.5517	0.0426	1.1645	0.0139	1.1784	0.3352	0.0133	0.3486		4,527.9864	4,527.9864	0.1862		4,532.6404
Worker	1.0493	0.5472	6.2449	0.0259	3.7788	0.0188	3.7976	1.0023	0.0173	1.0196		2,582.7065	2,582.7065	0.0377		2,583.6500
Total	**1.3969**	**12.9036**	**9.7966**	**0.0685**	**4.9433**	**0.0327**	**4.9760**	**1.3376**	**0.0306**	**1.3681**		**7,110.6929**	**7,110.6929**	**0.2239**		**7,116.2903**

3.15 Building Construction 3 - 2028

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3476	12.3565	3.5517	0.0426	1.1645	0.0139	1.1784	0.3352	0.0133	0.3486		4,527.9864	4,527.9864	0.1862		4,532.6404
Worker	1.0493	0.5472	6.2449	0.0259	3.7788	0.0188	3.7976	1.0023	0.0173	1.0196		2,582.7065	2,582.7065	0.0377		2,583.6500
Total	**1.3969**	**12.9036**	**9.7966**	**0.0685**	**4.9433**	**0.0327**	**4.9760**	**1.3376**	**0.0306**	**1.3681**		**7,110.6929**	**7,110.6929**	**0.2239**		**7,116.2903**

3.16 Architectural Coating 3 - 2027

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	25.5752					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**25.7461**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2217	0.1188	1.3298	5.3400e-003	0.7558	4.0500e-003	0.7598	0.2005	3.7200e-003	0.2042		533.0107	533.0107	8.2300e-003		533.2163
Total	**0.2217**	**0.1188**	**1.3298**	**5.3400e-003**	**0.7558**	**4.0500e-003**	**0.7598**	**0.2005**	**3.7200e-003**	**0.2042**		**533.0107**	**533.0107**	**8.2300e-003**		**533.2163**

3.16 Architectural Coating 3 - 2027

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	25.5752					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**25.7461**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2217	0.1188	1.3298	5.3400e-003	0.7558	4.0500e-003	0.7598	0.2005	3.7200e-003	0.2042		533.0107	533.0107	8.2300e-003		533.2163
Total	**0.2217**	**0.1188**	**1.3298**	**5.3400e-003**	**0.7558**	**4.0500e-003**	**0.7598**	**0.2005**	**3.7200e-003**	**0.2042**		**533.0107**	**533.0107**	**8.2300e-003**		**533.2163**

3.16 Architectural Coating 3 - 2028

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	25.5752					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**25.7461**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2099	0.1094	1.2490	5.1800e-003	0.7558	3.7600e-003	0.7595	0.2005	3.4600e-003	0.2039		516.5413	516.5413	7.5500e-003		516.7300
Total	**0.2099**	**0.1094**	**1.2490**	**5.1800e-003**	**0.7558**	**3.7600e-003**	**0.7595**	**0.2005**	**3.4600e-003**	**0.2039**		**516.5413**	**516.5413**	**7.5500e-003**		**516.7300**

3.16 Architectural Coating 3 - 2028

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	25.5752					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**25.7461**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2099	0.1094	1.2490	5.1800e-003	0.7558	3.7600e-003	0.7595	0.2005	3.4600e-003	0.2039		516.5413	516.5413	7.5500e-003		516.7300
Total	**0.2099**	**0.1094**	**1.2490**	**5.1800e-003**	**0.7558**	**3.7600e-003**	**0.7595**	**0.2005**	**3.4600e-003**	**0.2039**		**516.5413**	**516.5413**	**7.5500e-003**		**516.7300**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive 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	1.8668	9.6872	21.7948	0.0908	9.9902	0.0642	10.0544	2.6714	0.0598	2.7311		9,237.8693	9,237.8693	0.3071		9,245.5465
Unmitigated	1.8813	9.7690	22.1144	0.0926	10.1941	0.0653	10.2594	2.7259	0.0608	2.7867		9,411.4049	9,411.4049	0.3116		9,419.1939

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	2,079.00	2,079.00	2079.00	4,801,674	4,705,640
Total	2,079.00	2,079.00	2,079.00	4,801,674	4,705,640

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
NaturalGas Unmitigated	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	17518.7	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693
Total		**0.1889**	**1.6145**	**0.6870**	**0.0103**		**0.1305**	**0.1305**		**0.1305**	**0.1305**		**2,061.0217**	**2,061.0217**	**0.0395**	**0.0378**	**2,073.2693**

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	16.4255	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
Total		**0.1771**	**1.5137**	**0.6441**	**9.6600e-003**		**0.1224**	**0.1224**		**0.1224**	**0.1224**		**1,932.4108**	**1,932.4108**	**0.0370**	**0.0354**	**1,943.8941**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive 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	238.2564	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834
Unmitigated	238.8900	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834

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	1.6116					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.7440					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	227.9898	4.3899	294.8635	0.5553		41.6952	41.6952		41.6952	41.6952	4,483.2345	1,358.8235	5,842.0580	5.5433	0.3164	6,074.9146
Landscaping	0.5446	0.2089	18.1352	9.6000e-004		0.1006	0.1006		0.1006	0.1006		32.6861	32.6861	0.0313		33.4688
Total	**238.8900**	**4.5987**	**312.9987**	**0.5563**		**41.7958**	**41.7958**		**41.7958**	**41.7958**	**4,483.2345**	**1,391.5096**	**5,874.7441**	**5.5746**	**0.3164**	**6,108.3834**

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	1.6116					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.1104					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	227.9898	4.3899	294.8635	0.5553		41.6952	41.6952		41.6952	41.6952	4,483.2345	1,358.8235	5,842.0580	5.5433	0.3164	6,074.9146
Landscaping	0.5446	0.2089	18.1352	9.6000e-004		0.1006	0.1006		0.1006	0.1006		32.6861	32.6861	0.0313		33.4688
Total	**238.2564**	**4.5987**	**312.9987**	**0.5563**		**41.7958**	**41.7958**		**41.7958**	**41.7958**	**4,483.2345**	**1,391.5096**	**5,874.7441**	**5.5746**	**0.3164**	**6,108.3834**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards Project

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 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating 2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating 3	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 1	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 2	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 3	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 1	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 2	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 3	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 1	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 2	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 3	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 Prep 2	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 Prep 3	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 1	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	3	No Change	0.00
Scrapers	Diesel	No Change	0	6	No Change	0.00
Cranes	Diesel	No Change	0	3	No Change	0.00
Excavators	Diesel	No Change	0	6	No Change	0.00
Forklifts	Diesel	No Change	0	9	No Change	0.00
Generator Sets	Diesel	No Change	0	3	No Change	0.00
Graders	Diesel	No Change	0	3	No Change	0.00
Pavers	Diesel	No Change	0	6	No Change	0.00
Paving Equipment	Diesel	No Change	0	6	No Change	0.00
Rollers	Diesel	No Change	0	6	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	12	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	27	No Change	0.00
Welders	Diesel	No Change	0	3	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	1.25970E-001	8.49490E-001	1.27603E+000	2.09000E-003	4.14100E-002	4.14100E-002	0.00000E+000	1.80004E+002	1.80004E+002	1.01700E-002	0.00000E+000	1.80259E+002
Cranes	2.02160E-001	2.11090E+000	1.09353E+000	3.56000E-003	8.88600E-002	8.17500E-002	0.00000E+000	3.12728E+002	3.12728E+002	1.01140E-001	0.00000E+000	3.15256E+002
Excavators	2.40400E-002	1.98020E-001	4.16880E-001	6.60000E-004	9.62000E-003	8.85000E-003	0.00000E+000	5.80771E+001	5.80771E+001	1.87800E-002	0.00000E+000	5.85467E+001
Forklifts	1.96750E-001	1.84725E+000	2.40737E+000	3.23000E-003	1.05460E-001	9.70200E-002	0.00000E+000	2.84026E+002	2.84026E+002	9.18600E-002	0.00000E+000	2.86323E+002
Generator Sets	1.98570E-001	1.77658E+000	2.58263E+000	4.64000E-003	7.61100E-002	7.61100E-002	0.00000E+000	3.98471E+002	3.98471E+002	1.58000E-002	0.00000E+000	3.98866E+002
Graders	2.38100E-002	2.88760E-001	1.06810E-001	4.20000E-004	9.22000E-003	8.48000E-003	0.00000E+000	3.72076E+001	3.72076E+001	1.20300E-002	0.00000E+000	3.75084E+001
Pavers	2.05900E-002	1.99340E-001	3.12090E-001	5.10000E-004	9.41000E-003	8.66000E-003	0.00000E+000	4.45916E+001	4.45916E+001	1.44200E-002	0.00000E+000	4.49522E+001
Paving Equipment	1.75800E-002	1.62600E-001	2.74990E-001	4.40000E-004	7.98000E-003	7.34000E-003	0.00000E+000	3.86412E+001	3.86412E+001	1.25000E-002	0.00000E+000	3.89536E+001
Rollers	1.64000E-002	1.71400E-001	2.00200E-001	2.80000E-004	9.32000E-003	8.57000E-003	0.00000E+000	2.48941E+001	2.48941E+001	8.05000E-003	0.00000E+000	2.50953E+001
Rubber Tired Dozers	1.10540E-001	1.14987E+000	4.87370E-001	1.25000E-003	5.30000E-002	4.87600E-002	0.00000E+000	1.09911E+002	1.09911E+002	3.55500E-002	0.00000E+000	1.10799E+002
Scrapers	9.70500E-002	1.00841E+000	7.63360E-001	1.94000E-003	3.94700E-002	3.63200E-002	0.00000E+000	1.70627E+002	1.70627E+002	5.51800E-002	0.00000E+000	1.72006E+002
Tractors/Loaders/ Backhoes	2.95260E-001	2.98654E+000	4.66174E+000	6.51000E-003	1.34240E-001	1.23500E-001	0.00000E+000	5.71890E+002	5.71890E+002	1.84960E-001	0.00000E+000	5.76514E+002
Welders	1.64410E-001	9.67460E-001	1.17162E+000	1.80000E-003	3.26900E-002	3.26900E-002	0.00000E+000	1.32696E+002	1.32696E+002	1.33600E-002	0.00000E+000	1.33030E+002

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	1.25970E-001	8.49490E-001	1.27603E+000	2.09000E-003	4.14100E-002	4.14100E-002	0.00000E+000	1.80004E+002	1.80004E+002	1.01700E-002	0.00000E+000	1.80259E+002
Cranes	2.02160E-001	2.11090E+000	1.09352E+000	3.56000E-003	8.88600E-002	8.17500E-002	0.00000E+000	3.12727E+002	3.12727E+002	1.01140E-001	0.00000E+000	3.15256E+002
Excavators	2.40400E-002	1.98020E-001	4.16880E-001	6.60000E-004	9.62000E-003	8.85000E-003	0.00000E+000	5.80770E+001	5.80770E+001	1.87800E-002	0.00000E+000	5.85466E+001
Forklifts	1.96750E-001	1.84724E+000	2.40737E+000	3.23000E-003	1.05460E-001	9.70200E-002	0.00000E+000	2.84026E+002	2.84026E+002	9.18600E-002	0.00000E+000	2.86322E+002
Generator Sets	1.98570E-001	1.77658E+000	2.58262E+000	4.64000E-003	7.61000E-002	7.61000E-002	0.00000E+000	3.98471E+002	3.98471E+002	1.58000E-002	0.00000E+000	3.98866E+002
Graders	2.38100E-002	2.88760E-001	1.06810E-001	4.20000E-004	9.22000E-003	8.48000E-003	0.00000E+000	3.72075E+001	3.72075E+001	1.20300E-002	0.00000E+000	3.75084E+001
Pavers	2.05900E-002	1.99340E-001	3.12090E-001	5.10000E-004	9.41000E-003	8.66000E-003	0.00000E+000	4.45916E+001	4.45916E+001	1.44200E-002	0.00000E+000	4.49521E+001
Paving Equipment	1.75800E-002	1.62600E-001	2.74990E-001	4.40000E-004	7.98000E-003	7.34000E-003	0.00000E+000	3.86411E+001	3.86411E+001	1.25000E-002	0.00000E+000	3.89535E+001
Rollers	1.64000E-002	1.71400E-001	2.00190E-001	2.80000E-004	9.32000E-003	8.57000E-003	0.00000E+000	2.48940E+001	2.48940E+001	8.05000E-003	0.00000E+000	2.50953E+001
Rubber Tired Dozers	1.10540E-001	1.14987E+000	4.87370E-001	1.25000E-003	5.30000E-002	4.87600E-002	0.00000E+000	1.09911E+002	1.09911E+002	3.55500E-002	0.00000E+000	1.10799E+002
Scrapers	9.70500E-002	1.00841E+000	7.63360E-001	1.94000E-003	3.94700E-002	3.63200E-002	0.00000E+000	1.70627E+002	1.70627E+002	5.51800E-002	0.00000E+000	1.72006E+002
Tractors/Loaders/Backhoes	2.95260E-001	2.98654E+000	4.66174E+000	6.51000E-003	1.34240E-001	1.23500E-001	0.00000E+000	5.71889E+002	5.71889E+002	1.84960E-001	0.00000E+000	5.76513E+002
Welders	1.64410E-001	9.67460E-001	1.17161E+000	1.80000E-003	3.26900E-002	3.26900E-002	0.00000E+000	1.32695E+002	1.32695E+002	1.33600E-002	0.00000E+000	1.33029E+002

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	1.16664E-006	1.16664E-006	0.00000E+000	0.00000E+000	1.22047E-006
Cranes	0.00000E+000	0.00000E+000	9.14470E-006	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.18314E-006	1.18314E-006	0.00000E+000	0.00000E+000	1.20537E-006
Excavators	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20529E-006	1.20529E-006	0.00000E+000	0.00000E+000	1.19563E-006
Forklifts	0.00000E+000	5.41345E-006	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.19707E-006	1.19707E-006	0.00000E+000	0.00000E+000	1.18747E-006
Generator Sets	0.00000E+000	0.00000E+000	3.87202E-006	0.00000E+000	1.31389E-004	1.31389E-004	0.00000E+000	1.17951E-006	1.17951E-006	0.00000E+000	0.00000E+000	1.20341E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.34381E-006	1.34381E-006	0.00000E+000	0.00000E+000	1.33303E-006
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.12129E-006	1.12129E-006	0.00000E+000	0.00000E+000	1.11229E-006
Paving Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.29396E-006	1.29396E-006	0.00000E+000	0.00000E+000	1.28358E-006
Rollers	0.00000E+000	0.00000E+000	4.99500E-005	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20511E-006	1.20511E-006	0.00000E+000	0.00000E+000	1.19544E-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	1.18278E-006	1.18278E-006	0.00000E+000	0.00000E+000	1.17329E-006
Scrapers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.17215E-006	1.17215E-006	0.00000E+000	0.00000E+000	1.16275E-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	1.18904E-006	1.18904E-006	0.00000E+000	0.00000E+000	1.17950E-006
Welders	0.00000E+000	0.00000E+000	8.53519E-006	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.13041E-006	1.13041E-006	0.00000E+000	0.00000E+000	1.20274E-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 1	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating 1	Roads	0.27	0.07	0.27	0.07	0.00	0.00
Architectural Coating 2	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating 2	Roads	0.16	0.04	0.16	0.04	0.00	0.00
Architectural Coating 3	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating 3	Roads	0.08	0.02	0.08	0.02	0.00	0.00
Building Construction 1	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction 1	Roads	1.76	0.48	1.76	0.48	0.00	0.00
Building Construction 2	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction 2	Roads	1.05	0.28	1.05	0.28	0.00	0.00
Building Construction 3	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction 3	Roads	0.55	0.15	0.55	0.15	0.00	0.00
Grading 1	Fugitive Dust	0.23	0.12	0.23	0.12	0.00	0.00
Grading 1	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Grading 2	Fugitive Dust	0.14	0.07	0.14	0.07	0.00	0.00
Grading 2	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Grading 3	Fugitive Dust	0.02	0.01	0.02	0.01	0.00	0.00
Grading 3	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Paving 1	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00

Paving 1	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Paving 2	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving 2	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Paving 3	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving 3	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Prep 2	Fugitive Dust	0.18	0.10	0.18	0.10	0.00	0.00
Site Prep 2	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Prep 3	Fugitive Dust	0.05	0.02	0.05	0.02	0.00	0.00
Site Prep 3	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation 1	Fugitive Dust	0.31	0.15	0.31	0.15	0.00	0.00
Site Preparation 1	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	7.25	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	100.00	100.00	100.00	100.00	100.00
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	0.75	0.82	1.50	1.82	1.69	1.72	0.00	1.84	1.84	1.46	0.00	1.84
Natural Gas	6.24	6.24	6.25	6.38	6.21	6.21	0.00	6.24	6.24	6.27	6.23	6.24
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: Low Density Suburban

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.18	0.45		
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			
Yes	Neighborhood Enhancements	Improve Pedestrian Network	2.00	Project Site and Connecting Off-Site		
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.02			
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	0.02			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"	3.00			
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	5.00			
	Commute	Commute Subtotal	0.00			
No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.02			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
Yes	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
Yes	Use Low VOC Paint (Residential Exterior)	150.00
No	Use Low VOC Paint (Non-residential Interior)	100.00
Yes	Use Low VOC Paint (Non-residential Exterior)	150.00

Yes	Use Low VOC Paint (Parking)	150.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	7.00	
No	Install High Efficiency Lighting		
Yes	On-site Renewable		100.00

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	

CalEEMod Results - Mitigated

Creekside Vineyards Project - Mitigated 1

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
City Park	3.92	Acre	3.92	170,755.20	0
Single Family Housing	220.00	Dwelling Unit	28.00	396,000.00	629

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per the site plan.

Construction Phase - Phasing adjusted based on default lengths for the number of units built under each phase.

Grading - Total acres graded changed to reflect grading plan.

Vehicle Trips - Trip generation rates adjusted per the Traffic Impact Assessment prepared for the proposed project.

Woodstoves -

Construction Off-road Equipment Mitigation - Some equipment set to Tier 3, per mitigation measure.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	55.00	440.00
tblConstructionPhase	NumDays	55.00	230.00
tblConstructionPhase	NumDays	55.00	740.00
tblConstructionPhase	NumDays	740.00	230.00
tblConstructionPhase	NumDays	740.00	440.00
tblConstructionPhase	NumDays	75.00	8.00
tblConstructionPhase	NumDays	75.00	45.00
tblConstructionPhase	NumDays	55.00	18.00
tblConstructionPhase	NumDays	55.00	35.00
tblConstructionPhase	NumDays	30.00	5.00

tblConstructionPhase	NumDays	30.00	20.00
tblGrading	AcresOfGrading	20.00	0.00
tblGrading	AcresOfGrading	187.50	0.00
tblGrading	AcresOfGrading	112.50	0.00
tblGrading	AcresOfGrading	0.00	71.70
tblGrading	MaterialImported	0.00	4,555.00
tblLandUse	LotAcreage	71.43	28.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblTripsAndVMT	HaulingTripNumber	569.00	0.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	9.45
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	9.45
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	9.45

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					
2022	0.7954	4.0079	3.4850	9.3300e-003	0.8173	0.1484	0.9657	0.3536	0.1377	0.4913	0.0000	841.8049	841.8049	0.1430	0.0000	845.3798
2023	1.5044	3.8673	4.1984	0.0146	0.7137	0.1057	0.8194	0.1933	0.0999	0.2932	0.0000	1,336.7440	1,336.7440	0.1055	0.0000	1,339.3823
2024	1.4880	3.7315	4.1010	0.0145	0.7192	0.0938	0.8129	0.1948	0.0886	0.2834	0.0000	1,325.5781	1,325.5781	0.1045	0.0000	1,328.1899
2025	1.1677	3.3043	3.5797	0.0113	0.7816	0.0955	0.8771	0.2998	0.0891	0.3889	0.0000	1,027.7389	1,027.7389	0.1275	0.0000	1,030.9251
2026	2.1539	3.5224	3.8782	0.0140	0.7164	0.0808	0.7972	0.1940	0.0763	0.2704	0.0000	1,281.0642	1,281.0642	0.1014	0.0000	1,283.5993
2027	2.5739	3.4126	3.7210	0.0130	0.7191	0.0839	0.8030	0.2140	0.0790	0.2930	0.0000	1,193.0022	1,193.0022	0.1065	0.0000	1,195.6635
2028	1.9010	1.6558	1.7884	6.5200e-003	0.3440	0.0384	0.3824	0.0931	0.0363	0.1295	0.0000	597.6029	597.6029	0.0474	0.0000	598.7890
Maximum	**2.5739**	**4.0079**	**4.1984**	**0.0146**	**0.8173**	**0.1484**	**0.9657**	**0.3536**	**0.1377**	**0.4913**	**0.0000**	**1,336.7440**	**1,336.7440**	**0.1430**	**0.0000**	**1,339.3823**

2.1 Overall Construction

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					
2022	0.7335	3.5528	3.6149	9.3300e-003	0.8173	0.1236	0.9408	0.3536	0.1162	0.4699	0.0000	841.8044	841.8044	0.1430	0.0000	845.3793
2023	1.4806	3.7451	4.3391	0.0146	0.7137	0.0994	0.8131	0.1933	0.0951	0.2884	0.0000	1,336.7436	1,336.7436	0.1055	0.0000	1,339.3819
2024	1.4663	3.6441	4.2497	0.0145	0.7192	0.0890	0.8081	0.1948	0.0852	0.2799	0.0000	1,325.5777	1,325.5777	0.1045	0.0000	1,328.1895
2025	1.1322	3.1372	3.7577	0.0113	0.7816	0.0860	0.8676	0.2998	0.0817	0.3815	0.0000	1,027.7384	1,027.7384	0.1275	0.0000	1,030.9246
2026	2.1343	3.4737	4.0307	0.0140	0.7164	0.0773	0.7937	0.1940	0.0741	0.2681	0.0000	1,281.0638	1,281.0638	0.1014	0.0000	1,283.5989
2027	2.5512	3.3387	3.8765	0.0130	0.7191	0.0791	0.7982	0.2140	0.0756	0.2897	0.0000	1,193.0017	1,193.0017	0.1065	0.0000	1,195.6631
2028	1.8917	1.6326	1.8609	6.5200e-003	0.3440	0.0368	0.3808	0.0931	0.0353	0.1284	0.0000	597.6027	597.6027	0.0474	0.0000	598.7888
Maximum	**2.5512**	**3.7451**	**4.3391**	**0.0146**	**0.8173**	**0.1236**	**0.9408**	**0.3536**	**0.1162**	**0.4699**	**0.0000**	**1,336.7436**	**1,336.7436**	**0.1430**	**0.0000**	**1,339.3819**

	ROG	NOx	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	**1.68**	**4.16**	**-3.95**	**0.00**	**0.00**	**8.55**	**1.01**	**0.00**	**7.23**	**2.04**	**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	**1-1-2022**	**3-31-2022**	1.2751	0.9408
2	**4-1-2022**	**6-30-2022**	1.0255	0.9160
3	**7-1-2022**	**9-30-2022**	0.9704	0.9448
4	**10-1-2022**	**12-31-2022**	1.5537	1.5056

5	**1-1-2023**	**3-31-2023**	1.3357	1.2996
6	**4-1-2023**	**6-30-2023**	1.3381	1.3016
7	**7-1-2023**	**9-30-2023**	1.3528	1.3159
8	**10-1-2023**	**12-31-2023**	1.3654	1.3285
9	**1-1-2024**	**3-31-2024**	1.3021	1.2750
10	**4-1-2024**	**6-30-2024**	1.2903	1.2632
11	**7-1-2024**	**9-30-2024**	1.3045	1.2771
12	**10-1-2024**	**12-31-2024**	1.3164	1.2890
13	**1-1-2025**	**3-31-2025**	1.2398	1.2230
14	**4-1-2025**	**6-30-2025**	1.3064	1.2114
15	**7-1-2025**	**9-30-2025**	0.8259	0.7480
16	**10-1-2025**	**12-31-2025**	1.0976	1.0847
17	**1-1-2026**	**3-31-2026**	1.4044	1.3875
18	**4-1-2026**	**6-30-2026**	1.4094	1.3924
19	**7-1-2026**	**9-30-2026**	1.4249	1.4077
20	**10-1-2026**	**12-31-2026**	1.4356	1.4184
21	**1-1-2027**	**3-31-2027**	1.3950	1.3782
22	**4-1-2027**	**6-30-2027**	1.4699	1.4301
23	**7-1-2027**	**9-30-2027**	1.2957	1.2720
24	**10-1-2027**	**12-31-2027**	1.8271	1.8099
25	**1-1-2028**	**3-31-2028**	1.7988	1.7818
26	**4-1-2028**	**6-30-2028**	1.7096	1.6941
27	**7-1-2028**	**9-30-2028**	0.0582	0.0582
		Highest	1.8271	1.8099

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	3.2356	0.0472	3.5177	3.9700e-003		0.2810	0.2810		0.2810	0.2810	27.9644	9.5349	37.4993	0.0554	1.6000e-003	39.3605
Energy	0.0345	0.2946	0.1254	1.8800e-003		0.0238	0.0238		0.0238	0.0238	0.0000	492.0483	492.0483	0.0300	0.0111	496.1049
Mobile	0.3473	1.7557	3.8571	0.0170	1.7858	0.0118	1.7976	0.4790	0.0110	0.4901	0.0000	1,569.0977	1,569.0977	0.0502	0.0000	1,570.3517
Waste						0.0000	0.0000		0.0000	0.0000	53.6952	0.0000	53.6952	3.1733	0.0000	133.0275
Water						0.0000	0.0000		0.0000	0.0000	4.5475	10.6374	15.1848	0.4687	0.0114	30.2912
Total	**3.6174**	**2.0976**	**7.5002**	**0.0229**	**1.7858**	**0.3166**	**2.1024**	**0.4790**	**0.3158**	**0.7948**	**86.2071**	**2,081.3182**	**2,167.5252**	**3.7775**	**0.0241**	**2,269.1358**

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	1.8252	0.0349	1.6390	1.9000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	21.3447	21.3447	2.9100e-003	3.4000e-004	21.5196
Energy	0.0323	0.2763	0.1176	1.7600e-003		0.0223	0.0223		0.0223	0.0223	0.0000	319.9323	319.9323	6.1300e-003	5.8700e-003	321.8335
Mobile	0.3447	1.7414	3.7993	0.0167	1.7500	0.0116	1.7617	0.4695	0.0108	0.4803	0.0000	1,540.2850	1,540.2850	0.0494	0.0000	1,541.5206
Waste						0.0000	0.0000		0.0000	0.0000	53.6952	0.0000	53.6952	3.1733	0.0000	133.0275
Water						0.0000	0.0000		0.0000	0.0000	4.5475	10.6374	15.1848	0.4687	0.0114	30.2912
Total	**2.2022**	**2.0526**	**5.5559**	**0.0186**	**1.7500**	**0.0443**	**1.7944**	**0.4695**	**0.0435**	**0.5130**	**58.2427**	**1,892.1993**	**1,950.4419**	**3.7005**	**0.0176**	**2,048.1923**

	ROG	NOx	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	**39.12**	**2.14**	**25.92**	**18.42**	**2.00**	**86.00**	**14.65**	**2.00**	**86.21**	**35.46**	**32.44**	**9.09**	**10.02**	**2.04**	**26.96**	**9.74**

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 1	Site Preparation	1/1/2022	2/11/2022	5	30	
2	Grading 1	Grading	2/12/2022	5/27/2022	5	75	
3	Paving 1	Paving	5/28/2022	8/12/2022	5	55	
4	Building Construction 1	Building Construction	8/13/2022	6/13/2025	5	740	
5	Architectural Coating 1	Architectural Coating	8/27/2022	6/27/2025	5	740	
6	Site Prep 2	Site Preparation	6/6/2025	7/3/2025	5	20	
7	Grading 2	Grading	7/4/2025	9/4/2025	5	45	
8	Paving 2	Paving	9/5/2025	10/23/2025	5	35	
9	Building Construction 2	Building Construction	10/24/2025	7/1/2027	5	440	
10	Architectural Coating 2	Architectural Coating	11/7/2025	7/15/2027	5	440	
11	Site Prep 3	Site Preparation	6/24/2027	6/30/2027	5	5	
12	Grading 3	Grading	7/1/2027	7/12/2027	5	8	
13	Paving 3	Paving	7/13/2027	8/5/2027	5	18	
14	Building Construction 3	Building Construction	8/6/2027	6/22/2028	5	230	
15	Architectural Coating 3	Architectural Coating	8/20/2027	7/6/2028	5	230	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

Residential Indoor: 801,900; Residential Outdoor: 267,300; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 44,170 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation 1	Rubber Tired Dozers	3	8.00	247	0.40

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

Building Construction 2	Generator Sets	1	8.00	84	0.74
Building Construction 2	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction 2	Welders	1	8.00	46	0.45
Architectural Coating 2	Air Compressors	1	6.00	78	0.48
Site Prep 3	Rubber Tired Dozers	3	8.00	247	0.40
Site Prep 3	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading 3	Excavators	2	8.00	158	0.38
Grading 3	Graders	1	8.00	187	0.41
Grading 3	Rubber Tired Dozers	1	8.00	247	0.40
Grading 3	Scrapers	2	8.00	367	0.48
Grading 3	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving 3	Pavers	2	8.00	130	0.42
Paving 3	Paving Equipment	2	8.00	132	0.36
Paving 3	Rollers	2	8.00	80	0.38
Building Construction 3	Cranes	1	7.00	231	0.29
Building Construction 3	Forklifts	3	8.00	89	0.20
Building Construction 3	Generator Sets	1	8.00	84	0.74
Building Construction 3	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction 3	Welders	1	8.00	46	0.45
Architectural Coating 3	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 1	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading 1	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving 1	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 1	9	460.00	172.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating 1	1	92.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Prep 2	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading 2	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving 2	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 2	9	460.00	172.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating 2	1	92.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Prep 3	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading 3	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving 3	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 3	9	460.00	172.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating 3	1	92.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Site Preparation 1 - 2022

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					0.3093	0.0000	0.3093	0.1531	0.0000	0.1531	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0476	0.4963	0.2955	5.7000e-004		0.0242	0.0242		0.0223	0.0223	0.0000	50.1591	50.1591	0.0162	0.0000	50.5647
Total	**0.0476**	**0.4963**	**0.2955**	**5.7000e-004**	**0.3093**	**0.0242**	**0.3335**	**0.1531**	**0.0223**	**0.1754**	**0.0000**	**50.1591**	**50.1591**	**0.0162**	**0.0000**	**50.5647**

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	7.7000e-004	5.1000e-004	5.5700e-003	2.0000e-005	2.1300e-003	1.0000e-005	2.1500e-003	5.7000e-004	1.0000e-005	5.8000e-004	0.0000	1.7375	1.7375	4.0000e-005	0.0000	1.7384
Total	**7.7000e-004**	**5.1000e-004**	**5.5700e-003**	**2.0000e-005**	**2.1300e-003**	**1.0000e-005**	**2.1500e-003**	**5.7000e-004**	**1.0000e-005**	**5.8000e-004**	**0.0000**	**1.7375**	**1.7375**	**4.0000e-005**	**0.0000**	**1.7384**

3.2 Site Preparation 1 - 2022

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					0.3093	0.0000	0.3093	0.1531	0.0000	0.1531	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0193	0.2825	0.3382	5.7000e-004		0.0123	0.0123		0.0119	0.0119	0.0000	50.1590	50.1590	0.0162	0.0000	50.5646
Total	**0.0193**	**0.2825**	**0.3382**	**5.7000e-004**	**0.3093**	**0.0123**	**0.3216**	**0.1531**	**0.0119**	**0.1650**	**0.0000**	**50.1590**	**50.1590**	**0.0162**	**0.0000**	**50.5646**

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	7.7000e-004	5.1000e-004	5.5700e-003	2.0000e-005	2.1300e-003	1.0000e-005	2.1500e-003	5.7000e-004	1.0000e-005	5.8000e-004	0.0000	1.7375	1.7375	4.0000e-005	0.0000	1.7384
Total	**7.7000e-004**	**5.1000e-004**	**5.5700e-003**	**2.0000e-005**	**2.1300e-003**	**1.0000e-005**	**2.1500e-003**	**5.7000e-004**	**1.0000e-005**	**5.8000e-004**	**0.0000**	**1.7375**	**1.7375**	**4.0000e-005**	**0.0000**	**1.7384**

3.3 Grading 1 - 2022

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					0.2258	0.0000	0.2258	0.1241	0.0000	0.1241	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1359	1.4566	1.0891	2.3300e-003		0.0613	0.0613		0.0564	0.0564	0.0000	204.5048	204.5048	0.0661	0.0000	206.1583
Total	**0.1359**	**1.4566**	**1.0891**	**2.3300e-003**	**0.2258**	**0.0613**	**0.2871**	**0.1241**	**0.0564**	**0.1805**	**0.0000**	**204.5048**	**204.5048**	**0.0661**	**0.0000**	**206.1583**

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	2.1500e-003	1.4200e-003	0.0155	5.0000e-005	5.9300e-003	4.0000e-005	5.9600e-003	1.5800e-003	3.0000e-005	1.6100e-003	0.0000	4.8263	4.8263	1.0000e-004	0.0000	4.8288
Total	**2.1500e-003**	**1.4200e-003**	**0.0155**	**5.0000e-005**	**5.9300e-003**	**4.0000e-005**	**5.9600e-003**	**1.5800e-003**	**3.0000e-005**	**1.6100e-003**	**0.0000**	**4.8263**	**4.8263**	**1.0000e-004**	**0.0000**	**4.8288**

3.3 Grading 1 - 2022

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					0.2258	0.0000	0.2258	0.1241	0.0000	0.1241	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1124	1.2785	1.1246	2.3300e-003		0.0514	0.0514		0.0478	0.0478	0.0000	204.5045	204.5045	0.0661	0.0000	206.1580
Total	**0.1124**	**1.2785**	**1.1246**	**2.3300e-003**	**0.2258**	**0.0514**	**0.2772**	**0.1241**	**0.0478**	**0.1719**	**0.0000**	**204.5045**	**204.5045**	**0.0661**	**0.0000**	**206.1580**

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	2.1500e-003	1.4200e-003	0.0155	5.0000e-005	5.9300e-003	4.0000e-005	5.9600e-003	1.5800e-003	3.0000e-005	1.6100e-003	0.0000	4.8263	4.8263	1.0000e-004	0.0000	4.8288
Total	**2.1500e-003**	**1.4200e-003**	**0.0155**	**5.0000e-005**	**5.9300e-003**	**4.0000e-005**	**5.9600e-003**	**1.5800e-003**	**3.0000e-005**	**1.6100e-003**	**0.0000**	**4.8263**	**4.8263**	**1.0000e-004**	**0.0000**	**4.8288**

3.4 Paving 1 - 2022

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	0.0303	0.3059	0.4010	6.3000e-004		0.0156	0.0156		0.0144	0.0144	0.0000	55.0758	55.0758	0.0178	0.0000	55.5211
Paving	0.0221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0525**	**0.3059**	**0.4010**	**6.3000e-004**		**0.0156**	**0.0156**		**0.0144**	**0.0144**	**0.0000**	**55.0758**	**55.0758**	**0.0178**	**0.0000**	**55.5211**

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	1.1800e-003	7.8000e-004	8.5000e-003	3.0000e-005	3.2600e-003	2.0000e-005	3.2800e-003	8.7000e-004	2.0000e-005	8.9000e-004	0.0000	2.6544	2.6544	6.0000e-005	0.0000	2.6558
Total	**1.1800e-003**	**7.8000e-004**	**8.5000e-003**	**3.0000e-005**	**3.2600e-003**	**2.0000e-005**	**3.2800e-003**	**8.7000e-004**	**2.0000e-005**	**8.9000e-004**	**0.0000**	**2.6544**	**2.6544**	**6.0000e-005**	**0.0000**	**2.6558**

3.4 Paving 1 - 2022

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	0.0303	0.3059	0.4010	6.3000e-004		0.0156	0.0156		0.0144	0.0144	0.0000	55.0757	55.0757	0.0178	0.0000	55.5210
Paving	0.0221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0525**	**0.3059**	**0.4010**	**6.3000e-004**		**0.0156**	**0.0156**		**0.0144**	**0.0144**	**0.0000**	**55.0757**	**55.0757**	**0.0178**	**0.0000**	**55.5210**

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	1.1800e-003	7.8000e-004	8.5000e-003	3.0000e-005	3.2600e-003	2.0000e-005	3.2800e-003	8.7000e-004	2.0000e-005	8.9000e-004	0.0000	2.6544	2.6544	6.0000e-005	0.0000	2.6558
Total	**1.1800e-003**	**7.8000e-004**	**8.5000e-003**	**3.0000e-005**	**3.2600e-003**	**2.0000e-005**	**3.2800e-003**	**8.7000e-004**	**2.0000e-005**	**8.9000e-004**	**0.0000**	**2.6544**	**2.6544**	**6.0000e-005**	**0.0000**	**2.6558**

3.5 Building Construction 1 - 2022

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	0.0853	0.7808	0.8182	1.3500e-003		0.0405	0.0405		0.0381	0.0381	0.0000	115.8626	115.8626	0.0278	0.0000	116.5566
Total	**0.0853**	**0.7808**	**0.8182**	**1.3500e-003**		**0.0405**	**0.0405**		**0.0381**	**0.0381**	**0.0000**	**115.8626**	**115.8626**	**0.0278**	**0.0000**	**116.5566**

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	0.0255	0.8507	0.2108	2.3000e-003	0.0564	1.6900e-003	0.0581	0.0163	1.6200e-003	0.0179	0.0000	220.8488	220.8488	0.0105	0.0000	221.1108
Worker	0.0658	0.0437	0.4741	1.6400e-003	0.1817	1.1600e-003	0.1829	0.0484	1.0700e-003	0.0494	0.0000	148.0051	148.0051	3.0900e-003	0.0000	148.0824
Total	**0.0913**	**0.8944**	**0.6849**	**3.9400e-003**	**0.2381**	**2.8500e-003**	**0.2410**	**0.0647**	**2.6900e-003**	**0.0674**	**0.0000**	**368.8539**	**368.8539**	**0.0136**	**0.0000**	**369.1931**

3.5 Building Construction 1 - 2022

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	0.0752	0.7176	0.8698	1.3500e-003		0.0374	0.0374		0.0356	0.0356	0.0000	115.8625	115.8625	0.0278	0.0000	116.5564
Total	**0.0752**	**0.7176**	**0.8698**	**1.3500e-003**		**0.0374**	**0.0374**		**0.0356**	**0.0356**	**0.0000**	**115.8625**	**115.8625**	**0.0278**	**0.0000**	**116.5564**

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	0.0255	0.8507	0.2108	2.3000e-003	0.0564	1.6900e-003	0.0581	0.0163	1.6200e-003	0.0179	0.0000	220.8488	220.8488	0.0105	0.0000	221.1108
Worker	0.0658	0.0437	0.4741	1.6400e-003	0.1817	1.1600e-003	0.1829	0.0484	1.0700e-003	0.0494	0.0000	148.0051	148.0051	3.0900e-003	0.0000	148.0824
Total	**0.0913**	**0.8944**	**0.6849**	**3.9400e-003**	**0.2381**	**2.8500e-003**	**0.2410**	**0.0647**	**2.6900e-003**	**0.0674**	**0.0000**	**368.8539**	**368.8539**	**0.0136**	**0.0000**	**369.1931**

3.5 Building Construction 1 - 2023

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	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3462	301.3462	0.0717	0.0000	303.1383
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3462**	**301.3462**	**0.0717**	**0.0000**	**303.1383**

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	0.0497	1.7054	0.4907	5.8000e-003	0.1466	1.9600e-003	0.1486	0.0424	1.8700e-003	0.0443	0.0000	558.1144	558.1144	0.0232	0.0000	558.6950
Worker	0.1600	0.1021	1.1338	4.0900e-003	0.4725	2.9600e-003	0.4755	0.1257	2.7200e-003	0.1284	0.0000	370.0760	370.0760	7.2000e-003	0.0000	370.2560
Total	**0.2097**	**1.8075**	**1.6245**	**9.8900e-003**	**0.6192**	**4.9200e-003**	**0.6241**	**0.1681**	**4.5900e-003**	**0.1727**	**0.0000**	**928.1904**	**928.1904**	**0.0304**	**0.0000**	**928.9509**

3.5 Building Construction 1 - 2023

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	0.1806	1.7478	2.2525	3.5000e-003		0.0847	0.0847		0.0808	0.0808	0.0000	301.3458	301.3458	0.0717	0.0000	303.1380
Total	**0.1806**	**1.7478**	**2.2525**	**3.5000e-003**		**0.0847**	**0.0847**		**0.0808**	**0.0808**	**0.0000**	**301.3458**	**301.3458**	**0.0717**	**0.0000**	**303.1380**

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	0.0497	1.7054	0.4907	5.8000e-003	0.1466	1.9600e-003	0.1486	0.0424	1.8700e-003	0.0443	0.0000	558.1144	558.1144	0.0232	0.0000	558.6950
Worker	0.1600	0.1021	1.1338	4.0900e-003	0.4725	2.9600e-003	0.4755	0.1257	2.7200e-003	0.1284	0.0000	370.0760	370.0760	7.2000e-003	0.0000	370.2560
Total	**0.2097**	**1.8075**	**1.6245**	**9.8900e-003**	**0.6192**	**4.9200e-003**	**0.6241**	**0.1681**	**4.5900e-003**	**0.1727**	**0.0000**	**928.1904**	**928.1904**	**0.0304**	**0.0000**	**928.9509**

3.5 Building Construction 1 - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7223	303.7223	0.0718	0.0000	305.5179
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7223**	**303.7223**	**0.0718**	**0.0000**	**305.5179**

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	0.0484	1.6993	0.4760	5.8000e-003	0.1478	1.9400e-003	0.1497	0.0427	1.8600e-003	0.0446	0.0000	558.6118	558.6118	0.0229	0.0000	559.1851
Worker	0.1515	0.0929	1.0583	3.9600e-003	0.4762	2.9200e-003	0.4791	0.1267	2.6900e-003	0.1294	0.0000	358.1636	358.1636	6.5300e-003	0.0000	358.3269
Total	**0.1999**	**1.7922**	**1.5344**	**9.7600e-003**	**0.6239**	**4.8600e-003**	**0.6288**	**0.1694**	**4.5500e-003**	**0.1740**	**0.0000**	**916.7754**	**916.7754**	**0.0295**	**0.0000**	**917.5120**

3.5 Building Construction 1 - 2024

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	0.1710	1.6737	2.2665	3.5300e-003		0.0756	0.0756		0.0721	0.0721	0.0000	303.7220	303.7220	0.0718	0.0000	305.5175
Total	**0.1710**	**1.6737**	**2.2665**	**3.5300e-003**		**0.0756**	**0.0756**		**0.0721**	**0.0721**	**0.0000**	**303.7220**	**303.7220**	**0.0718**	**0.0000**	**305.5175**

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	0.0484	1.6993	0.4760	5.8000e-003	0.1478	1.9400e-003	0.1497	0.0427	1.8600e-003	0.0446	0.0000	558.6118	558.6118	0.0229	0.0000	559.1851
Worker	0.1515	0.0929	1.0583	3.9600e-003	0.4762	2.9200e-003	0.4791	0.1267	2.6900e-003	0.1294	0.0000	358.1636	358.1636	6.5300e-003	0.0000	358.3269
Total	**0.1999**	**1.7922**	**1.5344**	**9.7600e-003**	**0.6239**	**4.8600e-003**	**0.6288**	**0.1694**	**4.5500e-003**	**0.1740**	**0.0000**	**916.7754**	**916.7754**	**0.0295**	**0.0000**	**917.5120**

3.5 Building Construction 1 - 2025

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	0.0807	0.7357	0.9490	1.5900e-003		0.0311	0.0311		0.0293	0.0293	0.0000	136.8325	136.8325	0.0322	0.0000	137.6366
Total	**0.0807**	**0.7357**	**0.9490**	**1.5900e-003**		**0.0311**	**0.0311**		**0.0293**	**0.0293**	**0.0000**	**136.8325**	**136.8325**	**0.0322**	**0.0000**	**137.6366**

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	0.0212	0.7563	0.2081	2.5900e-003	0.0666	8.6000e-004	0.0674	0.0193	8.2000e-004	0.0201	0.0000	249.9444	249.9444	0.0101	0.0000	250.1975
Worker	0.0645	0.0380	0.4415	1.7100e-003	0.2145	1.3000e-003	0.2158	0.0571	1.1900e-003	0.0583	0.0000	154.7444	154.7444	2.6700e-003	0.0000	154.8110
Total	**0.0857**	**0.7943**	**0.6496**	**4.3000e-003**	**0.2810**	**2.1600e-003**	**0.2832**	**0.0763**	**2.0100e-003**	**0.0783**	**0.0000**	**404.6888**	**404.6888**	**0.0128**	**0.0000**	**405.0085**

3.5 Building Construction 1 - 2025

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	0.0719	0.7137	1.0179	1.5900e-003		0.0295	0.0295		0.0283	0.0283	0.0000	136.8323	136.8323	0.0322	0.0000	137.6364
Total	**0.0719**	**0.7137**	**1.0179**	**1.5900e-003**		**0.0295**	**0.0295**		**0.0283**	**0.0283**	**0.0000**	**136.8323**	**136.8323**	**0.0322**	**0.0000**	**137.6364**

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	0.0212	0.7563	0.2081	2.5900e-003	0.0666	8.6000e-004	0.0674	0.0193	8.2000e-004	0.0201	0.0000	249.9444	249.9444	0.0101	0.0000	250.1975
Worker	0.0645	0.0380	0.4415	1.7100e-003	0.2145	1.3000e-003	0.2158	0.0571	1.1900e-003	0.0583	0.0000	154.7444	154.7444	2.6700e-003	0.0000	154.8110
Total	**0.0857**	**0.7943**	**0.6496**	**4.3000e-003**	**0.2810**	**2.1600e-003**	**0.2832**	**0.0763**	**2.0100e-003**	**0.0783**	**0.0000**	**404.6888**	**404.6888**	**0.0128**	**0.0000**	**405.0085**

3.6 Architectural Coating 1 - 2022

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	0.3577					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.2000e-003	0.0634	0.0816	1.3000e-004		3.6800e-003	3.6800e-003		3.6800e-003	3.6800e-003	0.0000	11.4896	11.4896	7.5000e-004	0.0000	11.5083
Total	**0.3669**	**0.0634**	**0.0816**	**1.3000e-004**		**3.6800e-003**	**3.6800e-003**		**3.6800e-003**	**3.6800e-003**	**0.0000**	**11.4896**	**11.4896**	**7.5000e-004**	**0.0000**	**11.5083**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0118	7.8600e-003	0.0853	2.9000e-004	0.0327	2.1000e-004	0.0329	8.7000e-003	1.9000e-004	8.9000e-003	0.0000	26.6409	26.6409	5.6000e-004	0.0000	26.6548
Total	**0.0118**	**7.8600e-003**	**0.0853**	**2.9000e-004**	**0.0327**	**2.1000e-004**	**0.0329**	**8.7000e-003**	**1.9000e-004**	**8.9000e-003**	**0.0000**	**26.6409**	**26.6409**	**5.6000e-004**	**0.0000**	**26.6548**

3.6 Architectural Coating 1 - 2022

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	0.3577					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.2000e-003	0.0634	0.0816	1.3000e-004		3.6800e-003	3.6800e-003		3.6800e-003	3.6800e-003	0.0000	11.4896	11.4896	7.5000e-004	0.0000	11.5083
Total	**0.3669**	**0.0634**	**0.0816**	**1.3000e-004**		**3.6800e-003**	**3.6800e-003**		**3.6800e-003**	**3.6800e-003**	**0.0000**	**11.4896**	**11.4896**	**7.5000e-004**	**0.0000**	**11.5083**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0118	7.8600e-003	0.0853	2.9000e-004	0.0327	2.1000e-004	0.0329	8.7000e-003	1.9000e-004	8.9000e-003	0.0000	26.6409	26.6409	5.6000e-004	0.0000	26.6548
Total	**0.0118**	**7.8600e-003**	**0.0853**	**2.9000e-004**	**0.0327**	**2.1000e-004**	**0.0329**	**8.7000e-003**	**1.9000e-004**	**8.9000e-003**	**0.0000**	**26.6409**	**26.6409**	**5.6000e-004**	**0.0000**	**26.6548**

3.6 Architectural Coating 1 - 2023

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	1.0334					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2355	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**1.0583**	**0.1694**	**0.2355**	**3.9000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0320	0.0204	0.2268	8.2000e-004	0.0945	5.9000e-004	0.0951	0.0251	5.4000e-004	0.0257	0.0000	74.0152	74.0152	1.4400e-003	0.0000	74.0512
Total	**0.0320**	**0.0204**	**0.2268**	**8.2000e-004**	**0.0945**	**5.9000e-004**	**0.0951**	**0.0251**	**5.4000e-004**	**0.0257**	**0.0000**	**74.0152**	**74.0152**	**1.4400e-003**	**0.0000**	**74.0512**

3.6 Architectural Coating 1 - 2023

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	1.0334					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2354	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**1.0583**	**0.1694**	**0.2354**	**3.9000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0320	0.0204	0.2268	8.2000e-004	0.0945	5.9000e-004	0.0951	0.0251	5.4000e-004	0.0257	0.0000	74.0152	74.0152	1.4400e-003	0.0000	74.0512
Total	**0.0320**	**0.0204**	**0.2268**	**8.2000e-004**	**0.0945**	**5.9000e-004**	**0.0951**	**0.0251**	**5.4000e-004**	**0.0257**	**0.0000**	**74.0152**	**74.0152**	**1.4400e-003**	**0.0000**	**74.0512**

3.6 Architectural Coating 1 - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.0413					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0237	0.1597	0.2371	3.9000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	33.4476	33.4476	1.8800e-003	0.0000	33.4947
Total	**1.0650**	**0.1597**	**0.2371**	**3.9000e-004**		**7.9800e-003**	**7.9800e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8800e-003**	**0.0000**	**33.4947**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0303	0.0186	0.2117	7.9000e-004	0.0952	5.8000e-004	0.0958	0.0253	5.4000e-004	0.0259	0.0000	71.6327	71.6327	1.3100e-003	0.0000	71.6654
Total	**0.0303**	**0.0186**	**0.2117**	**7.9000e-004**	**0.0952**	**5.8000e-004**	**0.0958**	**0.0253**	**5.4000e-004**	**0.0259**	**0.0000**	**71.6327**	**71.6327**	**1.3100e-003**	**0.0000**	**71.6654**

3.6 Architectural Coating 1 - 2024

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	1.0413					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0237	0.1597	0.2371	3.9000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	33.4476	33.4476	1.8800e-003	0.0000	33.4947
Total	**1.0650**	**0.1597**	**0.2371**	**3.9000e-004**		**7.9800e-003**	**7.9800e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8800e-003**	**0.0000**	**33.4947**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0303	0.0186	0.2117	7.9000e-004	0.0952	5.8000e-004	0.0958	0.0253	5.4000e-004	0.0259	0.0000	71.6327	71.6327	1.3100e-003	0.0000	71.6654
Total	**0.0303**	**0.0186**	**0.2117**	**7.9000e-004**	**0.0952**	**5.8000e-004**	**0.0958**	**0.0253**	**5.4000e-004**	**0.0259**	**0.0000**	**71.6327**	**71.6327**	**1.3100e-003**	**0.0000**	**71.6654**

3.6 Architectural Coating 1 - 2025

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	0.5087					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0109	0.0733	0.1158	1.9000e-004		3.3000e-003	3.3000e-003		3.3000e-003	3.3000e-003	0.0000	16.3408	16.3408	8.9000e-004	0.0000	16.3631
Total	**0.5197**	**0.0733**	**0.1158**	**1.9000e-004**		**3.3000e-003**	**3.3000e-003**		**3.3000e-003**	**3.3000e-003**	**0.0000**	**16.3408**	**16.3408**	**8.9000e-004**	**0.0000**	**16.3631**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0140	8.2500e-003	0.0958	3.7000e-004	0.0465	2.8000e-004	0.0468	0.0124	2.6000e-004	0.0126	0.0000	33.5717	33.5717	5.8000e-004	0.0000	33.5861
Total	**0.0140**	**8.2500e-003**	**0.0958**	**3.7000e-004**	**0.0465**	**2.8000e-004**	**0.0468**	**0.0124**	**2.6000e-004**	**0.0126**	**0.0000**	**33.5717**	**33.5717**	**5.8000e-004**	**0.0000**	**33.5861**

3.6 Architectural Coating 1 - 2025

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	0.5087					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0109	0.0733	0.1158	1.9000e-004		3.3000e-003	3.3000e-003		3.3000e-003	3.3000e-003	0.0000	16.3408	16.3408	8.9000e-004	0.0000	16.3631
Total	**0.5197**	**0.0733**	**0.1158**	**1.9000e-004**		**3.3000e-003**	**3.3000e-003**		**3.3000e-003**	**3.3000e-003**	**0.0000**	**16.3408**	**16.3408**	**8.9000e-004**	**0.0000**	**16.3631**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0140	8.2500e-003	0.0958	3.7000e-004	0.0465	2.8000e-004	0.0468	0.0124	2.6000e-004	0.0126	0.0000	33.5717	33.5717	5.8000e-004	0.0000	33.5861
Total	**0.0140**	**8.2500e-003**	**0.0958**	**3.7000e-004**	**0.0465**	**2.8000e-004**	**0.0468**	**0.0124**	**2.6000e-004**	**0.0126**	**0.0000**	**33.5717**	**33.5717**	**5.8000e-004**	**0.0000**	**33.5861**

3.7 Site Prep 2 - 2025

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					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0247	0.2523	0.1791	3.8000e-004		0.0109	0.0109		0.0100	0.0100	0.0000	33.4670	33.4670	0.0108	0.0000	33.7376
Total	**0.0247**	**0.2523**	**0.1791**	**3.8000e-004**	**0.1807**	**0.0109**	**0.1915**	**0.0993**	**0.0100**	**0.1093**	**0.0000**	**33.4670**	**33.4670**	**0.0108**	**0.0000**	**33.7376**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	2.5000e-004	2.9300e-003	1.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.0263	1.0263	2.0000e-005	0.0000	1.0268
Total	**4.3000e-004**	**2.5000e-004**	**2.9300e-003**	**1.0000e-005**	**1.4200e-003**	**1.0000e-005**	**1.4300e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.0263**	**1.0263**	**2.0000e-005**	**0.0000**	**1.0268**

3.7 Site Prep 2 - 2025

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					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0116	0.1747	0.2251	3.8000e-004		6.7600e-003	6.7600e-003		6.5900e-003	6.5900e-003	0.0000	33.4670	33.4670	0.0108	0.0000	33.7375
Total	**0.0116**	**0.1747**	**0.2251**	**3.8000e-004**	**0.1807**	**6.7600e-003**	**0.1874**	**0.0993**	**6.5900e-003**	**0.1059**	**0.0000**	**33.4670**	**33.4670**	**0.0108**	**0.0000**	**33.7375**

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	4.3000e-004	2.5000e-004	2.9300e-003	1.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.0263	1.0263	2.0000e-005	0.0000	1.0268
Total	**4.3000e-004**	**2.5000e-004**	**2.9300e-003**	**1.0000e-005**	**1.4200e-003**	**1.0000e-005**	**1.4300e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.0263**	**1.0263**	**2.0000e-005**	**0.0000**	**1.0268**

3.8 Grading 2 - 2025

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					0.1355	0.0000	0.1355	0.0745	0.0000	0.0745	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0653	0.6287	0.5925	1.4000e-003		0.0255	0.0255		0.0234	0.0234	0.0000	122.6390	122.6390	0.0397	0.0000	123.6306
Total	**0.0653**	**0.6287**	**0.5925**	**1.4000e-003**	**0.1355**	**0.0255**	**0.1610**	**0.0745**	**0.0234**	**0.0979**	**0.0000**	**122.6390**	**122.6390**	**0.0397**	**0.0000**	**123.6306**

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	1.0700e-003	6.3000e-004	7.3200e-003	3.0000e-005	3.5600e-003	2.0000e-005	3.5800e-003	9.5000e-004	2.0000e-005	9.7000e-004	0.0000	2.5658	2.5658	4.0000e-005	0.0000	2.5669
Total	**1.0700e-003**	**6.3000e-004**	**7.3200e-003**	**3.0000e-005**	**3.5600e-003**	**2.0000e-005**	**3.5800e-003**	**9.5000e-004**	**2.0000e-005**	**9.7000e-004**	**0.0000**	**2.5658**	**2.5658**	**4.0000e-005**	**0.0000**	**2.5669**

3.8 Grading 2 - 2025

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					0.1355	0.0000	0.1355	0.0745	0.0000	0.0745	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0554	0.5705	0.6269	1.4000e-003		0.0224	0.0224		0.0209	0.0209	0.0000	122.6388	122.6388	0.0397	0.0000	123.6304
Total	**0.0554**	**0.5705**	**0.6269**	**1.4000e-003**	**0.1355**	**0.0224**	**0.1579**	**0.0745**	**0.0209**	**0.0953**	**0.0000**	**122.6388**	**122.6388**	**0.0397**	**0.0000**	**123.6304**

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	1.0700e-003	6.3000e-004	7.3200e-003	3.0000e-005	3.5600e-003	2.0000e-005	3.5800e-003	9.5000e-004	2.0000e-005	9.7000e-004	0.0000	2.5658	2.5658	4.0000e-005	0.0000	2.5669
Total	**1.0700e-003**	**6.3000e-004**	**7.3200e-003**	**3.0000e-005**	**3.5600e-003**	**2.0000e-005**	**3.5800e-003**	**9.5000e-004**	**2.0000e-005**	**9.7000e-004**	**0.0000**	**2.5658**	**2.5658**	**4.0000e-005**	**0.0000**	**2.5669**

3.9 Paving 2 - 2025

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	0.0160	0.1502	0.2551	4.0000e-004		7.3200e-003	7.3200e-003		6.7400e-003	6.7400e-003	0.0000	35.0337	35.0337	0.0113	0.0000	35.3170
Paving	0.0221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0382**	**0.1502**	**0.2551**	**4.0000e-004**		**7.3200e-003**	**7.3200e-003**		**6.7400e-003**	**6.7400e-003**	**0.0000**	**35.0337**	**35.0337**	**0.0113**	**0.0000**	**35.3170**

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	6.2000e-004	3.7000e-004	4.2700e-003	2.0000e-005	2.0700e-003	1.0000e-005	2.0900e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.4967	1.4967	3.0000e-005	0.0000	1.4973
Total	**6.2000e-004**	**3.7000e-004**	**4.2700e-003**	**2.0000e-005**	**2.0700e-003**	**1.0000e-005**	**2.0900e-003**	**5.5000e-004**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**1.4967**	**1.4967**	**3.0000e-005**	**0.0000**	**1.4973**

3.9 Paving 2 - 2025

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	0.0160	0.1502	0.2551	4.0000e-004		7.3200e-003	7.3200e-003		6.7400e-003	6.7400e-003	0.0000	35.0337	35.0337	0.0113	0.0000	35.3169
Paving	0.0221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0382**	**0.1502**	**0.2551**	**4.0000e-004**		**7.3200e-003**	**7.3200e-003**		**6.7400e-003**	**6.7400e-003**	**0.0000**	**35.0337**	**35.0337**	**0.0113**	**0.0000**	**35.3169**

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	6.2000e-004	3.7000e-004	4.2700e-003	2.0000e-005	2.0700e-003	1.0000e-005	2.0900e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.4967	1.4967	3.0000e-005	0.0000	1.4973
Total	**6.2000e-004**	**3.7000e-004**	**4.2700e-003**	**2.0000e-005**	**2.0700e-003**	**1.0000e-005**	**2.0900e-003**	**5.5000e-004**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**1.4967**	**1.4967**	**3.0000e-005**	**0.0000**	**1.4973**

3.10 Building Construction 2 - 2025

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	0.0335	0.3055	0.3941	6.6000e-004		0.0129	0.0129		0.0122	0.0122	0.0000	56.8203	56.8203	0.0134	0.0000	57.1542
Total	**0.0335**	**0.3055**	**0.3941**	**6.6000e-004**		**0.0129**	**0.0129**		**0.0122**	**0.0122**	**0.0000**	**56.8203**	**56.8203**	**0.0134**	**0.0000**	**57.1542**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.7900e-003	0.3141	0.0864	1.0800e-003	0.0276	3.6000e-004	0.0280	7.9900e-003	3.4000e-004	8.3300e-003	0.0000	103.7905	103.7905	4.2000e-003	0.0000	103.8956
Worker	0.0268	0.0158	0.1833	7.1000e-004	0.0891	5.4000e-004	0.0896	0.0237	5.0000e-004	0.0242	0.0000	64.2583	64.2583	1.1100e-003	0.0000	64.2859
Total	**0.0356**	**0.3298**	**0.2698**	**1.7900e-003**	**0.1167**	**9.0000e-004**	**0.1176**	**0.0317**	**8.4000e-004**	**0.0325**	**0.0000**	**168.0487**	**168.0487**	**5.3100e-003**	**0.0000**	**168.1815**

3.10 Building Construction 2 - 2025

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	0.0298	0.2964	0.4227	6.6000e-004		0.0123	0.0123		0.0117	0.0117	0.0000	56.8202	56.8202	0.0134	0.0000	57.1541
Total	**0.0298**	**0.2964**	**0.4227**	**6.6000e-004**		**0.0123**	**0.0123**		**0.0117**	**0.0117**	**0.0000**	**56.8202**	**56.8202**	**0.0134**	**0.0000**	**57.1541**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.7900e-003	0.3141	0.0864	1.0800e-003	0.0276	3.6000e-004	0.0280	7.9900e-003	3.4000e-004	8.3300e-003	0.0000	103.7905	103.7905	4.2000e-003	0.0000	103.8956
Worker	0.0268	0.0158	0.1833	7.1000e-004	0.0891	5.4000e-004	0.0896	0.0237	5.0000e-004	0.0242	0.0000	64.2583	64.2583	1.1100e-003	0.0000	64.2859
Total	**0.0356**	**0.3298**	**0.2698**	**1.7900e-003**	**0.1167**	**9.0000e-004**	**0.1176**	**0.0317**	**8.4000e-004**	**0.0325**	**0.0000**	**168.0487**	**168.0487**	**5.3100e-003**	**0.0000**	**168.1815**

3.10 Building Construction 2 - 2026

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	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

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	0.0457	1.6532	0.4502	5.7000e-003	0.1472	1.8600e-003	0.1491	0.0426	1.7800e-003	0.0444	0.0000	549.5345	549.5345	0.0220	0.0000	550.0843
Worker	0.1356	0.0770	0.9107	3.6400e-003	0.4744	2.7900e-003	0.4771	0.1262	2.5600e-003	0.1288	0.0000	329.6290	329.6290	5.3700e-003	0.0000	329.7634
Total	**0.1813**	**1.7302**	**1.3609**	**9.3400e-003**	**0.6216**	**4.6500e-003**	**0.6262**	**0.1688**	**4.3400e-003**	**0.1731**	**0.0000**	**879.1636**	**879.1636**	**0.0274**	**0.0000**	**879.8477**

3.10 Building Construction 2 - 2026

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	0.1589	1.5786	2.2515	3.5200e-003		0.0653	0.0653		0.0625	0.0625	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1589**	**1.5786**	**2.2515**	**3.5200e-003**		**0.0653**	**0.0653**		**0.0625**	**0.0625**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

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	0.0457	1.6532	0.4502	5.7000e-003	0.1472	1.8600e-003	0.1491	0.0426	1.7800e-003	0.0444	0.0000	549.5345	549.5345	0.0220	0.0000	550.0843
Worker	0.1356	0.0770	0.9107	3.6400e-003	0.4744	2.7900e-003	0.4771	0.1262	2.5600e-003	0.1288	0.0000	329.6290	329.6290	5.3700e-003	0.0000	329.7634
Total	**0.1813**	**1.7302**	**1.3609**	**9.3400e-003**	**0.6216**	**4.6500e-003**	**0.6262**	**0.1688**	**4.3400e-003**	**0.1731**	**0.0000**	**879.1636**	**879.1636**	**0.0274**	**0.0000**	**879.8477**

3.10 Building Construction 2 - 2027

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	0.0889	0.8105	1.0455	1.7500e-003		0.0343	0.0343		0.0323	0.0323	0.0000	150.7476	150.7476	0.0354	0.0000	151.6336
Total	**0.0889**	**0.8105**	**1.0455**	**1.7500e-003**		**0.0343**	**0.0343**		**0.0323**	**0.0323**	**0.0000**	**150.7476**	**150.7476**	**0.0354**	**0.0000**	**151.6336**

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	0.0223	0.8135	0.2201	2.8200e-003	0.0733	9.1000e-004	0.0742	0.0212	8.7000e-004	0.0221	0.0000	272.1781	272.1781	0.0108	0.0000	272.4473
Worker	0.0642	0.0352	0.4246	1.7500e-003	0.2363	1.3200e-003	0.2376	0.0629	1.2100e-003	0.0641	0.0000	158.6143	158.6143	2.4500e-003	0.0000	158.6754
Total	**0.0865**	**0.8487**	**0.6447**	**4.5700e-003**	**0.3096**	**2.2300e-003**	**0.3118**	**0.0841**	**2.0800e-003**	**0.0861**	**0.0000**	**430.7924**	**430.7924**	**0.0132**	**0.0000**	**431.1227**

3.10 Building Construction 2 - 2027

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	0.0792	0.7863	1.1215	1.7500e-003		0.0326	0.0326		0.0311	0.0311	0.0000	150.7475	150.7475	0.0354	0.0000	151.6334
Total	**0.0792**	**0.7863**	**1.1215**	**1.7500e-003**		**0.0326**	**0.0326**		**0.0311**	**0.0311**	**0.0000**	**150.7475**	**150.7475**	**0.0354**	**0.0000**	**151.6334**

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	0.0223	0.8135	0.2201	2.8200e-003	0.0733	9.1000e-004	0.0742	0.0212	8.7000e-004	0.0221	0.0000	272.1781	272.1781	0.0108	0.0000	272.4473
Worker	0.0642	0.0352	0.4246	1.7500e-003	0.2363	1.3200e-003	0.2376	0.0629	1.2100e-003	0.0641	0.0000	158.6143	158.6143	2.4500e-003	0.0000	158.6754
Total	**0.0865**	**0.8487**	**0.6447**	**4.5700e-003**	**0.3096**	**2.2300e-003**	**0.3118**	**0.0841**	**2.0800e-003**	**0.0861**	**0.0000**	**430.7924**	**430.7924**	**0.0132**	**0.0000**	**431.1227**

3.11 Architectural Coating 2 - 2025

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	0.2607					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3300e-003	0.0223	0.0353	6.0000e-005		1.0000e-003	1.0000e-003		1.0000e-003	1.0000e-003	0.0000	4.9788	4.9788	2.7000e-004	0.0000	4.9856
Total	**0.2640**	**0.0223**	**0.0353**	**6.0000e-005**		**1.0000e-003**	**1.0000e-003**		**1.0000e-003**	**1.0000e-003**	**0.0000**	**4.9788**	**4.9788**	**2.7000e-004**	**0.0000**	**4.9856**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2600e-003	2.5100e-003	0.0292	1.1000e-004	0.0142	9.0000e-005	0.0143	3.7700e-003	8.0000e-005	3.8500e-003	0.0000	10.2289	10.2289	1.8000e-004	0.0000	10.2333
Total	**4.2600e-003**	**2.5100e-003**	**0.0292**	**1.1000e-004**	**0.0142**	**9.0000e-005**	**0.0143**	**3.7700e-003**	**8.0000e-005**	**3.8500e-003**	**0.0000**	**10.2289**	**10.2289**	**1.8000e-004**	**0.0000**	**10.2333**

3.11 Architectural Coating 2 - 2025

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	0.2607					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3300e-003	0.0223	0.0353	6.0000e-005		1.0000e-003	1.0000e-003		1.0000e-003	1.0000e-003	0.0000	4.9788	4.9788	2.7000e-004	0.0000	4.9856
Total	**0.2640**	**0.0223**	**0.0353**	**6.0000e-005**		**1.0000e-003**	**1.0000e-003**		**1.0000e-003**	**1.0000e-003**	**0.0000**	**4.9788**	**4.9788**	**2.7000e-004**	**0.0000**	**4.9856**

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	4.2600e-003	2.5100e-003	0.0292	1.1000e-004	0.0142	9.0000e-005	0.0143	3.7700e-003	8.0000e-005	3.8500e-003	0.0000	10.2289	10.2289	1.8000e-004	0.0000	10.2333
Total	**4.2600e-003**	**2.5100e-003**	**0.0292**	**1.1000e-004**	**0.0142**	**9.0000e-005**	**0.0143**	**3.7700e-003**	**8.0000e-005**	**3.8500e-003**	**0.0000**	**10.2289**	**10.2289**	**1.8000e-004**	**0.0000**	**10.2333**

3.11 Architectural Coating 2 - 2026

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	1.7446					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**1.7669**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0271	0.0154	0.1822	7.3000e-004	0.0949	5.6000e-004	0.0954	0.0252	5.1000e-004	0.0258	0.0000	65.9258	65.9258	1.0700e-003	0.0000	65.9527
Total	**0.0271**	**0.0154**	**0.1822**	**7.3000e-004**	**0.0949**	**5.6000e-004**	**0.0954**	**0.0252**	**5.1000e-004**	**0.0258**	**0.0000**	**65.9258**	**65.9258**	**1.0700e-003**	**0.0000**	**65.9527**

3.11 Architectural Coating 2 - 2026

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	1.7446					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**1.7669**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0271	0.0154	0.1822	7.3000e-004	0.0949	5.6000e-004	0.0954	0.0252	5.1000e-004	0.0258	0.0000	65.9258	65.9258	1.0700e-003	0.0000	65.9527
Total	**0.0271**	**0.0154**	**0.1822**	**7.3000e-004**	**0.0949**	**5.6000e-004**	**0.0954**	**0.0252**	**5.1000e-004**	**0.0258**	**0.0000**	**65.9258**	**65.9258**	**1.0700e-003**	**0.0000**	**65.9527**

3.11 Architectural Coating 2 - 2027

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	0.9358					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0120	0.0802	0.1266	2.1000e-004		3.6100e-003	3.6100e-003		3.6100e-003	3.6100e-003	0.0000	17.8728	17.8728	9.7000e-004	0.0000	17.8972
Total	**0.9478**	**0.0802**	**0.1266**	**2.1000e-004**		**3.6100e-003**	**3.6100e-003**		**3.6100e-003**	**3.6100e-003**	**0.0000**	**17.8728**	**17.8728**	**9.7000e-004**	**0.0000**	**17.8972**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0138	7.5900e-003	0.0915	3.8000e-004	0.0509	2.8000e-004	0.0512	0.0135	2.6000e-004	0.0138	0.0000	34.1631	34.1631	5.3000e-004	0.0000	34.1762
Total	**0.0138**	**7.5900e-003**	**0.0915**	**3.8000e-004**	**0.0509**	**2.8000e-004**	**0.0512**	**0.0135**	**2.6000e-004**	**0.0138**	**0.0000**	**34.1631**	**34.1631**	**5.3000e-004**	**0.0000**	**34.1762**

3.11 Architectural Coating 2 - 2027

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	0.9358					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0120	0.0802	0.1266	2.1000e-004		3.6100e-003	3.6100e-003		3.6100e-003	3.6100e-003	0.0000	17.8728	17.8728	9.7000e-004	0.0000	17.8971
Total	**0.9478**	**0.0802**	**0.1266**	**2.1000e-004**		**3.6100e-003**	**3.6100e-003**		**3.6100e-003**	**3.6100e-003**	**0.0000**	**17.8728**	**17.8728**	**9.7000e-004**	**0.0000**	**17.8971**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0138	7.5900e-003	0.0915	3.8000e-004	0.0509	2.8000e-004	0.0512	0.0135	2.6000e-004	0.0138	0.0000	34.1631	34.1631	5.3000e-004	0.0000	34.1762
Total	**0.0138**	**7.5900e-003**	**0.0915**	**3.8000e-004**	**0.0509**	**2.8000e-004**	**0.0512**	**0.0135**	**2.6000e-004**	**0.0138**	**0.0000**	**34.1631**	**34.1631**	**5.3000e-004**	**0.0000**	**34.1762**

3.12 Site Prep 3 - 2027

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1800e-003	0.0631	0.0448	1.0000e-004		2.7200e-003	2.7200e-003		2.5000e-003	2.5000e-003	0.0000	8.3668	8.3668	2.7100e-003	0.0000	8.4344
Total	**6.1800e-003**	**0.0631**	**0.0448**	**1.0000e-004**	**0.0452**	**2.7200e-003**	**0.0479**	**0.0248**	**2.5000e-003**	**0.0273**	**0.0000**	**8.3668**	**8.3668**	**2.7100e-003**	**0.0000**	**8.4344**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	5.0000e-005	6.4000e-004	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2387	0.2387	0.0000	0.0000	0.2388
Total	**1.0000e-004**	**5.0000e-005**	**6.4000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2387**	**0.2387**	**0.0000**	**0.0000**	**0.2388**

3.12 Site Prep 3 - 2027

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8900e-003	0.0437	0.0563	1.0000e-004		1.6900e-003	1.6900e-003		1.6500e-003	1.6500e-003	0.0000	8.3667	8.3667	2.7100e-003	0.0000	8.4344
Total	**2.8900e-003**	**0.0437**	**0.0563**	**1.0000e-004**	**0.0452**	**1.6900e-003**	**0.0469**	**0.0248**	**1.6500e-003**	**0.0265**	**0.0000**	**8.3667**	**8.3667**	**2.7100e-003**	**0.0000**	**8.4344**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	5.0000e-005	6.4000e-004	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2387	0.2387	0.0000	0.0000	0.2388
Total	**1.0000e-004**	**5.0000e-005**	**6.4000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2387**	**0.2387**	**0.0000**	**0.0000**	**0.2388**

3.13 Grading 3 - 2027

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					0.0241	0.0000	0.0241	0.0132	0.0000	0.0132	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0116	0.1118	0.1053	2.5000e-004		4.5200e-003	4.5200e-003		4.1600e-003	4.1600e-003	0.0000	21.8025	21.8025	7.0500e-003	0.0000	21.9788
Total	**0.0116**	**0.1118**	**0.1053**	**2.5000e-004**	**0.0241**	**4.5200e-003**	**0.0286**	**0.0132**	**4.1600e-003**	**0.0174**	**0.0000**	**21.8025**	**21.8025**	**7.0500e-003**	**0.0000**	**21.9788**

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	1.7000e-004	9.0000e-005	1.1400e-003	0.0000	6.3000e-004	0.0000	6.4000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4244	0.4244	1.0000e-005	0.0000	0.4246
Total	**1.7000e-004**	**9.0000e-005**	**1.1400e-003**	**0.0000**	**6.3000e-004**	**0.0000**	**6.4000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.4244**	**0.4244**	**1.0000e-005**	**0.0000**	**0.4246**

3.13 Grading 3 - 2027

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					0.0241	0.0000	0.0241	0.0132	0.0000	0.0132	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.8500e-003	0.1014	0.1115	2.5000e-004		3.9800e-003	3.9800e-003		3.7100e-003	3.7100e-003	0.0000	21.8025	21.8025	7.0500e-003	0.0000	21.9787
Total	**9.8500e-003**	**0.1014**	**0.1115**	**2.5000e-004**	**0.0241**	**3.9800e-003**	**0.0281**	**0.0132**	**3.7100e-003**	**0.0170**	**0.0000**	**21.8025**	**21.8025**	**7.0500e-003**	**0.0000**	**21.9787**

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	1.7000e-004	9.0000e-005	1.1400e-003	0.0000	6.3000e-004	0.0000	6.4000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4244	0.4244	1.0000e-005	0.0000	0.4246
Total	**1.7000e-004**	**9.0000e-005**	**1.1400e-003**	**0.0000**	**6.3000e-004**	**0.0000**	**6.4000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.4244**	**0.4244**	**1.0000e-005**	**0.0000**	**0.4246**

3.14 Paving 3 - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.2400e-003	0.0772	0.1312	2.1000e-004		3.7700e-003	3.7700e-003		3.4700e-003	3.4700e-003	0.0000	18.0173	18.0173	5.8300e-003	0.0000	18.1630
Paving	0.0221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0304**	**0.0772**	**0.1312**	**2.1000e-004**		**3.7700e-003**	**3.7700e-003**		**3.4700e-003**	**3.4700e-003**	**0.0000**	**18.0173**	**18.0173**	**5.8300e-003**	**0.0000**	**18.1630**

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	2.9000e-004	1.6000e-004	1.9200e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0700e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.7162	0.7162	1.0000e-005	0.0000	0.7164
Total	**2.9000e-004**	**1.6000e-004**	**1.9200e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0700e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.7162**	**0.7162**	**1.0000e-005**	**0.0000**	**0.7164**

3.14 Paving 3 - 2027

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	8.2400e-003	0.0772	0.1312	2.1000e-004		3.7700e-003	3.7700e-003		3.4700e-003	3.4700e-003	0.0000	18.0173	18.0173	5.8300e-003	0.0000	18.1630
Paving	0.0221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0304**	**0.0772**	**0.1312**	**2.1000e-004**		**3.7700e-003**	**3.7700e-003**		**3.4700e-003**	**3.4700e-003**	**0.0000**	**18.0173**	**18.0173**	**5.8300e-003**	**0.0000**	**18.1630**

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	2.9000e-004	1.6000e-004	1.9200e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0700e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.7162	0.7162	1.0000e-005	0.0000	0.7164
Total	**2.9000e-004**	**1.6000e-004**	**1.9200e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0700e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.7162**	**0.7162**	**1.0000e-005**	**0.0000**	**0.7164**

3.15 Building Construction 3 - 2027

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	0.0725	0.6609	0.8525	1.4300e-003		0.0280	0.0280		0.0263	0.0263	0.0000	122.9173	122.9173	0.0289	0.0000	123.6397
Total	**0.0725**	**0.6609**	**0.8525**	**1.4300e-003**		**0.0280**	**0.0280**		**0.0263**	**0.0263**	**0.0000**	**122.9173**	**122.9173**	**0.0289**	**0.0000**	**123.6397**

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	0.0182	0.6633	0.1795	2.3000e-003	0.0598	7.4000e-004	0.0605	0.0173	7.1000e-004	0.0180	0.0000	221.9298	221.9298	8.7800e-003	0.0000	222.1493
Worker	0.0523	0.0287	0.3462	1.4300e-003	0.1927	1.0700e-003	0.1937	0.0513	9.9000e-004	0.0522	0.0000	129.3316	129.3316	1.9900e-003	0.0000	129.3815
Total	**0.0705**	**0.6920**	**0.5257**	**3.7300e-003**	**0.2524**	**1.8100e-003**	**0.2543**	**0.0685**	**1.7000e-003**	**0.0702**	**0.0000**	**351.2615**	**351.2615**	**0.0108**	**0.0000**	**351.5308**

3.15 Building Construction 3 - 2027

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	0.0645	0.6411	0.9144	1.4300e-003		0.0265	0.0265		0.0254	0.0254	0.0000	122.9172	122.9172	0.0289	0.0000	123.6395
Total	**0.0645**	**0.6411**	**0.9144**	**1.4300e-003**		**0.0265**	**0.0265**		**0.0254**	**0.0254**	**0.0000**	**122.9172**	**122.9172**	**0.0289**	**0.0000**	**123.6395**

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	0.0182	0.6633	0.1795	2.3000e-003	0.0598	7.4000e-004	0.0605	0.0173	7.1000e-004	0.0180	0.0000	221.9298	221.9298	8.7800e-003	0.0000	222.1493
Worker	0.0523	0.0287	0.3462	1.4300e-003	0.1927	1.0700e-003	0.1937	0.0513	9.9000e-004	0.0522	0.0000	129.3316	129.3316	1.9900e-003	0.0000	129.3815
Total	**0.0705**	**0.6920**	**0.5257**	**3.7300e-003**	**0.2524**	**1.8100e-003**	**0.2543**	**0.0685**	**1.7000e-003**	**0.0702**	**0.0000**	**351.2615**	**351.2615**	**0.0108**	**0.0000**	**351.5308**

3.15 Building Construction 3 - 2028

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	0.0848	0.7731	0.9973	1.6700e-003		0.0327	0.0327		0.0308	0.0308	0.0000	143.7901	143.7901	0.0338	0.0000	144.6351
Total	**0.0848**	**0.7731**	**0.9973**	**1.6700e-003**		**0.0327**	**0.0327**		**0.0308**	**0.0308**	**0.0000**	**143.7901**	**143.7901**	**0.0338**	**0.0000**	**144.6351**

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	0.0208	0.7683	0.2070	2.6800e-003	0.0699	8.5000e-004	0.0708	0.0202	8.1000e-004	0.0210	0.0000	258.3969	258.3969	0.0101	0.0000	258.6496
Worker	0.0579	0.0310	0.3807	1.6200e-003	0.2254	1.1600e-003	0.2265	0.0600	1.0700e-003	0.0610	0.0000	146.6202	146.6202	2.1400e-003	0.0000	146.6737
Total	**0.0787**	**0.7992**	**0.5877**	**4.3000e-003**	**0.2953**	**2.0100e-003**	**0.2973**	**0.0802**	**1.8800e-003**	**0.0821**	**0.0000**	**405.0171**	**405.0171**	**0.0123**	**0.0000**	**405.3234**

3.15 Building Construction 3 - 2028

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	0.0755	0.7500	1.0697	1.6700e-003		0.0310	0.0310		0.0297	0.0297	0.0000	143.7899	143.7899	0.0338	0.0000	144.6349
Total	**0.0755**	**0.7500**	**1.0697**	**1.6700e-003**		**0.0310**	**0.0310**		**0.0297**	**0.0297**	**0.0000**	**143.7899**	**143.7899**	**0.0338**	**0.0000**	**144.6349**

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	0.0208	0.7683	0.2070	2.6800e-003	0.0699	8.5000e-004	0.0708	0.0202	8.1000e-004	0.0210	0.0000	258.3969	258.3969	0.0101	0.0000	258.6496
Worker	0.0579	0.0310	0.3807	1.6200e-003	0.2254	1.1600e-003	0.2265	0.0600	1.0700e-003	0.0610	0.0000	146.6202	146.6202	2.1400e-003	0.0000	146.6737
Total	**0.0787**	**0.7992**	**0.5877**	**4.3000e-003**	**0.2953**	**2.0100e-003**	**0.2973**	**0.0802**	**1.8800e-003**	**0.0821**	**0.0000**	**405.0171**	**405.0171**	**0.0123**	**0.0000**	**405.3234**

3.16 Architectural Coating 3 - 2027

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	1.2276					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.2000e-003	0.0550	0.0868	1.4000e-004		2.4700e-003	2.4700e-003		2.4700e-003	2.4700e-003	0.0000	12.2556	12.2556	6.7000e-004	0.0000	12.2723
Total	**1.2358**	**0.0550**	**0.0868**	**1.4000e-004**		**2.4700e-003**	**2.4700e-003**		**2.4700e-003**	**2.4700e-003**	**0.0000**	**12.2556**	**12.2556**	**6.7000e-004**	**0.0000**	**12.2723**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.4800e-003	5.2000e-003	0.0627	2.6000e-004	0.0349	1.9000e-004	0.0351	9.2800e-003	1.8000e-004	9.4600e-003	0.0000	23.4261	23.4261	3.6000e-004	0.0000	23.4351
Total	**9.4800e-003**	**5.2000e-003**	**0.0627**	**2.6000e-004**	**0.0349**	**1.9000e-004**	**0.0351**	**9.2800e-003**	**1.8000e-004**	**9.4600e-003**	**0.0000**	**23.4261**	**23.4261**	**3.6000e-004**	**0.0000**	**23.4351**

3.16 Architectural Coating 3 - 2027

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	1.2276					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.2000e-003	0.0550	0.0868	1.4000e-004		2.4700e-003	2.4700e-003		2.4700e-003	2.4700e-003	0.0000	12.2556	12.2556	6.7000e-004	0.0000	12.2723
Total	**1.2358**	**0.0550**	**0.0868**	**1.4000e-004**		**2.4700e-003**	**2.4700e-003**		**2.4700e-003**	**2.4700e-003**	**0.0000**	**12.2556**	**12.2556**	**6.7000e-004**	**0.0000**	**12.2723**

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	9.4800e-003	5.2000e-003	0.0627	2.6000e-004	0.0349	1.9000e-004	0.0351	9.2800e-003	1.8000e-004	9.4600e-003	0.0000	23.4261	23.4261	3.6000e-004	0.0000	23.4351
Total	**9.4800e-003**	**5.2000e-003**	**0.0627**	**2.6000e-004**	**0.0349**	**1.9000e-004**	**0.0351**	**9.2800e-003**	**1.8000e-004**	**9.4600e-003**	**0.0000**	**23.4261**	**23.4261**	**3.6000e-004**	**0.0000**	**23.4351**

3.16 Architectural Coating 3 - 2028

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	1.7135					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0115	0.0768	0.1212	2.0000e-004		3.4500e-003	3.4500e-003		3.4500e-003	3.4500e-003	0.0000	17.1068	17.1068	9.3000e-004	0.0000	17.1301
Total	**1.7250**	**0.0768**	**0.1212**	**2.0000e-004**		**3.4500e-003**	**3.4500e-003**		**3.4500e-003**	**3.4500e-003**	**0.0000**	**17.1068**	**17.1068**	**9.3000e-004**	**0.0000**	**17.1301**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0125	6.6900e-003	0.0823	3.5000e-004	0.0487	2.5000e-004	0.0490	0.0130	2.3000e-004	0.0132	0.0000	31.6889	31.6889	4.6000e-004	0.0000	31.7005
Total	**0.0125**	**6.6900e-003**	**0.0823**	**3.5000e-004**	**0.0487**	**2.5000e-004**	**0.0490**	**0.0130**	**2.3000e-004**	**0.0132**	**0.0000**	**31.6889**	**31.6889**	**4.6000e-004**	**0.0000**	**31.7005**

3.16 Architectural Coating 3 - 2028

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	1.7135					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0115	0.0768	0.1212	2.0000e-004		3.4500e-003	3.4500e-003		3.4500e-003	3.4500e-003	0.0000	17.1068	17.1068	9.3000e-004	0.0000	17.1301
Total	**1.7250**	**0.0768**	**0.1212**	**2.0000e-004**		**3.4500e-003**	**3.4500e-003**		**3.4500e-003**	**3.4500e-003**	**0.0000**	**17.1068**	**17.1068**	**9.3000e-004**	**0.0000**	**17.1301**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0125	6.6900e-003	0.0823	3.5000e-004	0.0487	2.5000e-004	0.0490	0.0130	2.3000e-004	0.0132	0.0000	31.6889	31.6889	4.6000e-004	0.0000	31.7005
Total	**0.0125**	**6.6900e-003**	**0.0823**	**3.5000e-004**	**0.0487**	**2.5000e-004**	**0.0490**	**0.0130**	**2.3000e-004**	**0.0132**	**0.0000**	**31.6889**	**31.6889**	**4.6000e-004**	**0.0000**	**31.7005**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.3447	1.7414	3.7993	0.0167	1.7500	0.0116	1.7617	0.4695	0.0108	0.4803	0.0000	1,540.2850	1,540.2850	0.0494	0.0000	1,541.5206
Unmitigated	0.3473	1.7557	3.8571	0.0170	1.7858	0.0118	1.7976	0.4790	0.0110	0.4901	0.0000	1,569.0977	1,569.0977	0.0502	0.0000	1,570.3517

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	2,079.00	2,079.00	2079.00	4,801,674	4,705,640
Total	2,079.00	2,079.00	2,079.00	4,801,674	4,705,640

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	150.8230	150.8230	0.0234	4.8400e-003	152.8519
NaturalGas Mitigated	0.0323	0.2763	0.1176	1.7600e-003		0.0223	0.0223		0.0223	0.0223	0.0000	319.9323	319.9323	6.1300e-003	5.8700e-003	321.8335
NaturalGas Unmitigated	0.0345	0.2946	0.1254	1.8800e-003		0.0238	0.0238		0.0238	0.0238	0.0000	341.2253	341.2253	6.5400e-003	6.2600e-003	343.2530

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	6.39432e+006	0.0345	0.2946	0.1254	1.8800e-003		0.0238	0.0238		0.0238	0.0238	0.0000	341.2253	341.2253	6.5400e-003	6.2600e-003	343.2530
Total		**0.0345**	**0.2946**	**0.1254**	**1.8800e-003**		**0.0238**	**0.0238**		**0.0238**	**0.0238**	**0.0000**	**341.2253**	**341.2253**	**6.5400e-003**	**6.2600e-003**	**343.2530**

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	5.9953e+006	0.0323	0.2763	0.1176	1.7600e-003		0.0223	0.0223		0.0223	0.0223	0.0000	319.9323	319.9323	6.1300e-003	5.8700e-003	321.8335
Total		**0.0323**	**0.2763**	**0.1176**	**1.7600e-003**		**0.0223**	**0.0223**		**0.0223**	**0.0223**	**0.0000**	**319.9323**	**319.9323**	**6.1300e-003**	**5.8700e-003**	**321.8335**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.77993e+006	150.8230	0.0234	4.8400e-003	152.8519
Total		**150.8230**	**0.0234**	**4.8400e-003**	**152.8519**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.8252	0.0349	1.6390	1.9000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	21.3447	21.3447	2.9100e-003	3.4000e-004	21.5196
Unmitigated	3.2356	0.0472	3.5177	3.9700e-003		0.2810	0.2810		0.2810	0.2810	27.9644	9.5349	37.4993	0.0554	1.6000e-003	39.3605

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	0.2941					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5958					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2967	0.0284	1.8855	3.8900e-003		0.2719	0.2719		0.2719	0.2719	27.9644	6.8662	34.8306	0.0528	1.6000e-003	36.6279
Landscaping	0.0490	0.0188	1.6322	9.0000e-005		9.0600e-003	9.0600e-003		9.0600e-003	9.0600e-003	0.0000	2.6687	2.6687	2.5600e-003	0.0000	2.7326
Total	**3.2356**	**0.0472**	**3.5177**	**3.9800e-003**		**0.2810**	**0.2810**		**0.2810**	**0.2810**	**27.9644**	**9.5349**	**37.4993**	**0.0554**	**1.6000e-003**	**39.3605**

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	0.2941					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.8900e-003	0.0161	6.8600e-003	1.0000e-004		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	18.6760	18.6760	3.6000e-004	3.4000e-004	18.7869
Landscaping	0.0490	0.0188	1.6322	9.0000e-005		9.0600e-003	9.0600e-003		9.0600e-003	9.0600e-003	0.0000	2.6687	2.6687	2.5600e-003	0.0000	2.7326
Total	**1.8252**	**0.0349**	**1.6390**	**1.9000e-004**		**0.0104**	**0.0104**		**0.0104**	**0.0104**	**0.0000**	**21.3447**	**21.3447**	**2.9200e-003**	**3.4000e-004**	**21.5196**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	15.1848	0.4687	0.0114	30.2912
Unmitigated	15.1848	0.4687	0.0114	30.2912

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.67061	1.3852	2.2000e-004	4.0000e-005	1.4038
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	14.3339 / 9.03658	13.7997	0.4685	0.0113	28.8874
Total		**15.1848**	**0.4687**	**0.0114**	**30.2912**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.67061	1.3852	2.2000e-004	4.0000e-005	1.4038
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	14.3339 / 9.03658	13.7997	0.4685	0.0113	28.8874
Total		**15.1848**	**0.4687**	**0.0114**	**30.2912**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	53.6952	3.1733	0.0000	133.0275
Unmitigated	53.6952	3.1733	0.0000	133.0275

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.34	0.0690	4.0800e-003	0.0000	0.1710
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	264.18	53.6262	3.1692	0.0000	132.8565
Total		**53.6952**	**3.1733**	**0.0000**	**133.0275**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.34	0.0690	4.0800e-003	0.0000	0.1710
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	264.18	53.6262	3.1692	0.0000	132.8565
Total		**53.6952**	**3.1733**	**0.0000**	**133.0275**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards Project - Mitigated 1

Bay Area AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
City Park	3.92	Acre	3.92	170,755.20	0
Single Family Housing	220.00	Dwelling Unit	28.00	396,000.00	629

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per the site plan.

Construction Phase - Phasing adjusted based on default lengths for the number of units built under each phase.

Grading - Total acres graded changed to reflect grading plan.

Vehicle Trips - Trip generation rates adjusted per the Traffic Impact Assessment prepared for the proposed project.

Woodstoves -

Construction Off-road Equipment Mitigation - Some equipment set to Tier 3, per mitigation measure.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	55.00	440.00
tblConstructionPhase	NumDays	55.00	230.00
tblConstructionPhase	NumDays	55.00	740.00
tblConstructionPhase	NumDays	740.00	230.00
tblConstructionPhase	NumDays	740.00	440.00
tblConstructionPhase	NumDays	75.00	8.00
tblConstructionPhase	NumDays	75.00	45.00
tblConstructionPhase	NumDays	55.00	18.00
tblConstructionPhase	NumDays	55.00	35.00
tblConstructionPhase	NumDays	30.00	5.00

tblConstructionPhase	NumDays	30.00	20.00
tblGrading	AcresOfGrading	20.00	0.00
tblGrading	AcresOfGrading	187.50	0.00
tblGrading	AcresOfGrading	112.50	0.00
tblGrading	AcresOfGrading	0.00	71.70
tblGrading	MaterialImported	0.00	4,555.00
tblLandUse	LotAcreage	71.43	28.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblTripsAndVMT	HaulingTripNumber	569.00	0.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	9.45
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	9.45
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	9.45

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					
2022	12.0093	38.8772	34.6126	0.1186	20.7659	1.6359	22.3794	10.2462	1.5050	11.7306	0.0000	11,968.6495	11,968.6495	1.9474	0.0000	11,992.1760
2023	11.6285	29.5429	33.1266	0.1156	5.6989	0.8127	6.5116	1.5380	0.7685	2.3065	0.0000	11,669.6317	11,669.6317	0.8941	0.0000	11,691.9843
2024	11.4089	28.2926	32.0914	0.1137	5.6990	0.7156	6.4145	1.5380	0.6764	2.2144	0.0000	11,477.0091	11,477.0091	0.8782	0.0000	11,498.9629
2025	16.6229	52.2824	49.3710	0.1511	23.9131	1.7074	25.6205	11.5079	1.5864	13.0943	0.0000	15,098.6951	15,098.6951	2.0593	0.0000	15,150.1786
2026	16.5445	26.8210	30.4094	0.1101	5.6990	0.6187	6.3178	1.5380	0.5848	2.1228	0.0000	11,121.5323	11,121.5323	0.8553	0.0000	11,142.9143
2027	28.6764	54.5842	56.4167	0.1719	23.9132	1.7489	25.6179	11.5079	1.6245	13.0918	0.0000	17,107.2586	17,107.2586	2.7925	0.0000	17,177.0699
2028	28.6013	26.4532	29.2172	0.1073	5.6991	0.6152	6.3142	1.5380	0.5814	2.1195	0.0000	10,844.0258	10,844.0258	0.8402	0.0000	10,865.0311
Maximum	**28.6764**	**54.5842**	**56.4167**	**0.1719**	**23.9132**	**1.7489**	**25.6205**	**11.5079**	**1.6245**	**13.0943**	**0.0000**	**17,107.2586**	**17,107.2586**	**2.7925**	**0.0000**	**17,177.0699**

2.1 Overall Construction (Maximum Daily Emission)

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					
2022	11.8070	34.1262	35.6448	0.1186	20.7659	1.3719	21.5873	10.2462	1.2744	11.0387	0.0000	11,968.6495	11,968.6495	1.9474	0.0000	11,992.1760
2023	11.4451	28.6027	34.2094	0.1156	5.6989	0.7642	6.4631	1.5380	0.7312	2.2692	0.0000	11,669.6317	11,669.6317	0.8941	0.0000	11,691.9843
2024	11.2427	27.6248	33.2264	0.1137	5.6990	0.6790	6.3779	1.5380	0.6500	2.1880	0.0000	11,477.0091	11,477.0091	0.8782	0.0000	11,498.9629
2025	16.4733	44.1434	55.1381	0.1511	23.9131	1.2702	25.1833	11.5079	1.2282	12.7361	0.0000	15,098.6951	15,098.6951	2.0593	0.0000	15,150.1786
2026	16.3948	26.4475	31.5779	0.1101	5.6990	0.5919	6.2909	1.5380	0.5673	2.1053	0.0000	11,121.5323	11,121.5323	0.8553	0.0000	11,142.9143
2027	28.5267	51.6222	59.1181	0.1719	23.9132	1.5853	25.1807	11.5079	1.4935	12.7336	0.0000	17,107.2586	17,107.2586	2.7925	0.0000	17,177.0699
2028	28.4516	26.0797	30.3857	0.1073	5.6991	0.5883	6.2874	1.5380	0.5640	2.1020	0.0000	10,844.0258	10,844.0258	0.8402	0.0000	10,865.0311
Maximum	**28.5267**	**51.6222**	**59.1181**	**0.1719**	**23.9132**	**1.5853**	**25.1833**	**11.5079**	**1.4935**	**12.7361**	**0.0000**	**17,107.2586**	**17,107.2586**	**2.7925**	**0.0000**	**17,177.0699**

	ROG	NOx	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	**0.92**	**7.09**	**-5.30**	**0.00**	**0.00**	**12.78**	**1.82**	**0.00**	**11.17**	**3.23**	**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	238.8900	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834
Energy	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693
Mobile	2.2066	9.4343	22.1262	0.0986	10.1941	0.0651	10.2592	2.7259	0.0606	2.7865		10,025.3696	10,025.3696	0.3038		10,032.9640
Total	**241.2856**	**15.6475**	**335.8120**	**0.6652**	**10.1941**	**41.9914**	**52.1855**	**2.7259**	**41.9869**	**44.7128**	**4,483.2345**	**13,477.9009**	**17,961.1353**	**5.9179**	**0.3541**	**18,214.6167**

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	10.6054	3.1041	19.3672	0.0194		0.3347	0.3347		0.3347	0.3347	0.0000	3,728.6861	3,728.6861	0.1022	0.0678	3,751.4323
Energy	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
Mobile	2.1921	9.3604	21.7700	0.0968	9.9902	0.0639	10.0542	2.6714	0.0595	2.7309		9,841.0849	9,841.0849	0.2992		9,848.5646
Total	**12.9746**	**13.9782**	**41.7813**	**0.1259**	**9.9902**	**0.5210**	**10.5113**	**2.6714**	**0.5166**	**3.1880**	**0.0000**	**15,502.1817**	**15,502.1817**	**0.4384**	**0.1032**	**15,543.8910**

	ROG	NOx	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	**94.62**	**10.67**	**87.56**	**81.07**	**2.00**	**98.76**	**79.86**	**2.00**	**98.77**	**92.87**	**100.00**	**-15.02**	**13.69**	**92.59**	**70.86**	**14.66**

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 1	Site Preparation	1/1/2022	2/11/2022	5	30	
2	Grading 1	Grading	2/12/2022	5/27/2022	5	75	
3	Paving 1	Paving	5/28/2022	8/12/2022	5	55	
4	Building Construction 1	Building Construction	8/13/2022	6/13/2025	5	740	
5	Architectural Coating 1	Architectural Coating	8/27/2022	6/27/2025	5	740	
6	Site Prep 2	Site Preparation	6/6/2025	7/3/2025	5	20	
7	Grading 2	Grading	7/4/2025	9/4/2025	5	45	
8	Paving 2	Paving	9/5/2025	10/23/2025	5	35	
9	Building Construction 2	Building Construction	10/24/2025	7/1/2027	5	440	
10	Architectural Coating 2	Architectural Coating	11/7/2025	7/15/2027	5	440	
11	Site Prep 3	Site Preparation	6/24/2027	6/30/2027	5	5	
12	Grading 3	Grading	7/1/2027	7/12/2027	5	8	
13	Paving 3	Paving	7/13/2027	8/5/2027	5	18	
14	Building Construction 3	Building Construction	8/6/2027	6/22/2028	5	230	
15	Architectural Coating 3	Architectural Coating	8/20/2027	7/6/2028	5	230	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

Residential Indoor: 801,900; Residential Outdoor: 267,300; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 44,170 (Architectural Coating – sqft)

OffRoad Equipment

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

Grading 2	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving 2	Pavers	2	8.00	130	0.42
Paving 2	Paving Equipment	2	8.00	132	0.36
Paving 2	Rollers	2	8.00	80	0.38
Building Construction 2	Cranes	1	7.00	231	0.29
Building Construction 2	Forklifts	3	8.00	89	0.20
Building Construction 2	Generator Sets	1	8.00	84	0.74
Building Construction 2	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction 2	Welders	1	8.00	46	0.45
Architectural Coating 2	Air Compressors	1	6.00	78	0.48
Site Prep 3	Rubber Tired Dozers	3	8.00	247	0.40
Site Prep 3	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading 3	Excavators	2	8.00	158	0.38
Grading 3	Graders	1	8.00	187	0.41
Grading 3	Rubber Tired Dozers	1	8.00	247	0.40
Grading 3	Scrapers	2	8.00	367	0.48
Grading 3	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving 3	Pavers	2	8.00	130	0.42
Paving 3	Paving Equipment	2	8.00	132	0.36
Paving 3	Rollers	2	8.00	80	0.38
Building Construction 3	Cranes	1	7.00	231	0.29
Building Construction 3	Forklifts	3	8.00	89	0.20
Building Construction 3	Generator Sets	1	8.00	84	0.74
Building Construction 3	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction 3	Welders	1	8.00	46	0.45
Architectural Coating 3	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 1	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading 1	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving 1	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 1	9	460.00	172.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating 1	1	92.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Prep 2	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading 2	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving 2	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 2	9	460.00	172.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating 2	1	92.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Prep 3	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading 3	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving 3	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 3	9	460.00	172.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating 3	1	92.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Site Preparation 1 - 2022

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					20.6180	0.0000	20.6180	10.2070	0.0000	10.2070			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**20.6180**	**1.6126**	**22.2306**	**10.2070**	**1.4836**	**11.6905**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

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	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		137.3212	137.3212	2.8600e-003		137.3927
Total	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**137.3212**	**137.3212**	**2.8600e-003**		**137.3927**

3.2 Site Preparation 1 - 2022

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					20.6180	0.0000	20.6180	10.2070	0.0000	10.2070			0.0000			0.0000
Off-Road	1.2862	18.8306	22.5435	0.0380		0.8205	0.8205		0.7917	0.7917	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**1.2862**	**18.8306**	**22.5435**	**0.0380**	**20.6180**	**0.8205**	**21.4385**	**10.2070**	**0.7917**	**10.9986**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

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	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		137.3212	137.3212	2.8600e-003		137.3927
Total	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**137.3212**	**137.3212**	**2.8600e-003**		**137.3927**

3.3 Grading 1 - 2022

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**6.0221**	**1.6349**	**7.6570**	**3.3102**	**1.5041**	**4.8143**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

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	0.0599	0.0337	0.4527	1.5300e-003	0.1643	1.0100e-003	0.1653	0.0436	9.3000e-004	0.0445		152.5791	152.5791	3.1800e-003		152.6586
Total	**0.0599**	**0.0337**	**0.4527**	**1.5300e-003**	**0.1643**	**1.0100e-003**	**0.1653**	**0.0436**	**9.3000e-004**	**0.0445**		**152.5791**	**152.5791**	**3.1800e-003**		**152.6586**

3.3 Grading 1 - 2022

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.9968	34.0925	29.9901	0.0621		1.3709	1.3709		1.2735	1.2735	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**2.9968**	**34.0925**	**29.9901**	**0.0621**	**6.0221**	**1.3709**	**7.3930**	**3.3102**	**1.2735**	**4.5837**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

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	0.0599	0.0337	0.4527	1.5300e-003	0.1643	1.0100e-003	0.1653	0.0436	9.3000e-004	0.0445		152.5791	152.5791	3.1800e-003		152.6586
Total	**0.0599**	**0.0337**	**0.4527**	**1.5300e-003**	**0.1643**	**1.0100e-003**	**0.1653**	**0.0436**	**9.3000e-004**	**0.0445**		**152.5791**	**152.5791**	**3.1800e-003**		**152.6586**

3.4 Paving 1 - 2022

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.8051					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9079**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

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	0.0449	0.0253	0.3395	1.1500e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		114.4343	114.4343	2.3800e-003		114.4939
Total	**0.0449**	**0.0253**	**0.3395**	**1.1500e-003**	**0.1232**	**7.6000e-004**	**0.1240**	**0.0327**	**7.0000e-004**	**0.0334**		**114.4343**	**114.4343**	**2.3800e-003**		**114.4939**

3.4 Paving 1 - 2022

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.8051					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9079**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

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	0.0449	0.0253	0.3395	1.1500e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		114.4343	114.4343	2.3800e-003		114.4939
Total	**0.0449**	**0.0253**	**0.3395**	**1.1500e-003**	**0.1232**	**7.6000e-004**	**0.1240**	**0.0327**	**7.0000e-004**	**0.0334**		**114.4343**	**114.4343**	**2.3800e-003**		**114.4939**

3.5 Building Construction 1 - 2022

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

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	0.4975	16.8457	3.9419	0.0464	1.1643	0.0334	1.1977	0.3352	0.0319	0.3671		4,921.6854	4,921.6854	0.2230		4,927.2613
Worker	1.3767	0.7753	10.4114	0.0352	3.7788	0.0232	3.8020	1.0023	0.0214	1.0237		3,509.3187	3,509.3187	0.0731		3,511.1470
Total	**1.8742**	**17.6210**	**14.3534**	**0.0816**	**4.9431**	**0.0566**	**4.9997**	**1.3375**	**0.0533**	**1.3908**		**8,431.0041**	**8,431.0041**	**0.2962**		**8,438.4082**

3.5 Building Construction 1 - 2022

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	1.5039	14.3529	17.3955	0.0269		0.7480	0.7480		0.7123	0.7123	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.5039**	**14.3529**	**17.3955**	**0.0269**		**0.7480**	**0.7480**		**0.7123**	**0.7123**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

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	0.4975	16.8457	3.9419	0.0464	1.1643	0.0334	1.1977	0.3352	0.0319	0.3671		4,921.6854	4,921.6854	0.2230		4,927.2613
Worker	1.3767	0.7753	10.4114	0.0352	3.7788	0.0232	3.8020	1.0023	0.0214	1.0237		3,509.3187	3,509.3187	0.0731		3,511.1470
Total	**1.8742**	**17.6210**	**14.3534**	**0.0816**	**4.9431**	**0.0566**	**4.9997**	**1.3375**	**0.0533**	**1.3908**		**8,431.0041**	**8,431.0041**	**0.2962**		**8,438.4082**

3.5 Building Construction 1 - 2023

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	0.3728	13.0182	3.5487	0.0451	1.1644	0.0148	1.1792	0.3352	0.0142	0.3493		4,783.2325	4,783.2325	0.1906		4,787.9981
Worker	1.2852	0.6973	9.6023	0.0338	3.7788	0.0228	3.8015	1.0023	0.0209	1.0233		3,374.7843	3,374.7843	0.0657		3,376.4259
Total	**1.6580**	**13.7155**	**13.1510**	**0.0789**	**4.9432**	**0.0376**	**4.9807**	**1.3375**	**0.0351**	**1.3726**		**8,158.0169**	**8,158.0169**	**0.2563**		**8,164.4240**

3.5 Building Construction 1 - 2023

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	1.3893	13.4448	17.3268	0.0269		0.6513	0.6513		0.6211	0.6211	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.3893**	**13.4448**	**17.3268**	**0.0269**		**0.6513**	**0.6513**		**0.6211**	**0.6211**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	0.3728	13.0182	3.5487	0.0451	1.1644	0.0148	1.1792	0.3352	0.0142	0.3493		4,783.2325	4,783.2325	0.1906		4,787.9981
Worker	1.2852	0.6973	9.6023	0.0338	3.7788	0.0228	3.8015	1.0023	0.0209	1.0233		3,374.7843	3,374.7843	0.0657		3,376.4259
Total	**1.6580**	**13.7155**	**13.1510**	**0.0789**	**4.9432**	**0.0376**	**4.9807**	**1.3375**	**0.0351**	**1.3726**		**8,158.0169**	**8,158.0169**	**0.2563**		**8,164.4240**

3.5 Building Construction 1 - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	0.3607	12.8741	3.4190	0.0447	1.1644	0.0146	1.1790	0.3352	0.0139	0.3491		4,750.5587	4,750.5587	0.1869		4,755.2311
Worker	1.2057	0.6299	8.9128	0.0325	3.7788	0.0223	3.8011	1.0023	0.0205	1.0229		3,241.0862	3,241.0862	0.0592		3,242.5665
Total	**1.5664**	**13.5040**	**12.3318**	**0.0772**	**4.9432**	**0.0369**	**4.9801**	**1.3375**	**0.0345**	**1.3720**		**7,991.6449**	**7,991.6449**	**0.2461**		**7,997.7977**

3.5 Building Construction 1 - 2024

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	1.3053	12.7760	17.3019	0.0270		0.5767	0.5767		0.5505	0.5505	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.3053**	**12.7760**	**17.3019**	**0.0270**		**0.5767**	**0.5767**		**0.5505**	**0.5505**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	0.3607	12.8741	3.4190	0.0447	1.1644	0.0146	1.1790	0.3352	0.0139	0.3491		4,750.5587	4,750.5587	0.1869		4,755.2311
Worker	1.2057	0.6299	8.9128	0.0325	3.7788	0.0223	3.8011	1.0023	0.0205	1.0229		3,241.0862	3,241.0862	0.0592		3,242.5665
Total	**1.5664**	**13.5040**	**12.3318**	**0.0772**	**4.9432**	**0.0369**	**4.9801**	**1.3375**	**0.0345**	**1.3720**		**7,991.6449**	**7,991.6449**	**0.2461**		**7,997.7977**

3.5 Building Construction 1 - 2025

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3505	12.7236	3.3203	0.0444	1.1644	0.0143	1.1787	0.3352	0.0137	0.3489		4,719.1770	4,719.1770	0.1834		4,723.7612
Worker	1.1378	0.5727	8.2680	0.0312	3.7788	0.0220	3.8008	1.0023	0.0202	1.0226		3,109.0286	3,109.0286	0.0537		3,110.3711
Total	**1.4883**	**13.2964**	**11.5883**	**0.0756**	**4.9432**	**0.0363**	**4.9795**	**1.3375**	**0.0339**	**1.3714**		**7,828.2056**	**7,828.2056**	**0.2371**		**7,834.1323**

3.5 Building Construction 1 - 2025

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	1.2178	12.0962	17.2532	0.0270		0.5007	0.5007		0.4788	0.4788	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.2178**	**12.0962**	**17.2532**	**0.0270**		**0.5007**	**0.5007**		**0.4788**	**0.4788**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3505	12.7236	3.3203	0.0444	1.1644	0.0143	1.1787	0.3352	0.0137	0.3489		4,719.1770	4,719.1770	0.1834		4,723.7612
Worker	1.1378	0.5727	8.2680	0.0312	3.7788	0.0220	3.8008	1.0023	0.0202	1.0226		3,109.0286	3,109.0286	0.0537		3,110.3711
Total	**1.4883**	**13.2964**	**11.5883**	**0.0756**	**4.9432**	**0.0363**	**4.9795**	**1.3375**	**0.0339**	**1.3714**		**7,828.2056**	**7,828.2056**	**0.2371**		**7,834.1323**

3.6 Architectural Coating 1 - 2022

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**8.1536**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	0.2753	0.1551	2.0823	7.0400e-003	0.7558	4.6400e-003	0.7604	0.2005	4.2800e-003	0.2047		701.8637	701.8637	0.0146		702.2294
Total	**0.2753**	**0.1551**	**2.0823**	**7.0400e-003**	**0.7558**	**4.6400e-003**	**0.7604**	**0.2005**	**4.2800e-003**	**0.2047**		**701.8637**	**701.8637**	**0.0146**		**702.2294**

3.6 Architectural Coating 1 - 2022

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**8.1536**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	0.2753	0.1551	2.0823	7.0400e-003	0.7558	4.6400e-003	0.7604	0.2005	4.2800e-003	0.2047		701.8637	701.8637	0.0146		702.2294
Total	**0.2753**	**0.1551**	**2.0823**	**7.0400e-003**	**0.7558**	**4.6400e-003**	**0.7604**	**0.2005**	**4.2800e-003**	**0.2047**		**701.8637**	**701.8637**	**0.0146**		**702.2294**

3.6 Architectural Coating 1 - 2023

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**8.1407**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

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	0.2570	0.1395	1.9205	6.7700e-003	0.7558	4.5500e-003	0.7603	0.2005	4.1900e-003	0.2047		674.9569	674.9569	0.0131		675.2852
Total	**0.2570**	**0.1395**	**1.9205**	**6.7700e-003**	**0.7558**	**4.5500e-003**	**0.7603**	**0.2005**	**4.1900e-003**	**0.2047**		**674.9569**	**674.9569**	**0.0131**		**675.2852**

3.6 Architectural Coating 1 - 2023

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**8.1407**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

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	0.2570	0.1395	1.9205	6.7700e-003	0.7558	4.5500e-003	0.7603	0.2005	4.1900e-003	0.2047		674.9569	674.9569	0.0131		675.2852
Total	**0.2570**	**0.1395**	**1.9205**	**6.7700e-003**	**0.7558**	**4.5500e-003**	**0.7603**	**0.2005**	**4.1900e-003**	**0.2047**		**674.9569**	**674.9569**	**0.0131**		**675.2852**

3.6 Architectural Coating 1 - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**8.1298**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	0.2411	0.1260	1.7826	6.5000e-003	0.7558	4.4600e-003	0.7602	0.2005	4.1100e-003	0.2046		648.2172	648.2172	0.0118		648.5133
Total	**0.2411**	**0.1260**	**1.7826**	**6.5000e-003**	**0.7558**	**4.4600e-003**	**0.7602**	**0.2005**	**4.1100e-003**	**0.2046**		**648.2172**	**648.2172**	**0.0118**		**648.5133**

3.6 Architectural Coating 1 - 2024

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**8.1298**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	0.2411	0.1260	1.7826	6.5000e-003	0.7558	4.4600e-003	0.7602	0.2005	4.1100e-003	0.2046		648.2172	648.2172	0.0118		648.5133
Total	**0.2411**	**0.1260**	**1.7826**	**6.5000e-003**	**0.7558**	**4.4600e-003**	**0.7602**	**0.2005**	**4.1100e-003**	**0.2046**		**648.2172**	**648.2172**	**0.0118**		**648.5133**

3.6 Architectural Coating 1 - 2025

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**8.1199**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2276	0.1146	1.6536	6.2300e-003	0.7558	4.4000e-003	0.7602	0.2005	4.0500e-003	0.2045		621.8057	621.8057	0.0107		622.0742
Total	**0.2276**	**0.1146**	**1.6536**	**6.2300e-003**	**0.7558**	**4.4000e-003**	**0.7602**	**0.2005**	**4.0500e-003**	**0.2045**		**621.8057**	**621.8057**	**0.0107**		**622.0742**

3.6 Architectural Coating 1 - 2025

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**8.1199**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2276	0.1146	1.6536	6.2300e-003	0.7558	4.4000e-003	0.7602	0.2005	4.0500e-003	0.2045		621.8057	621.8057	0.0107		622.0742
Total	**0.2276**	**0.1146**	**1.6536**	**6.2300e-003**	**0.7558**	**4.4000e-003**	**0.7602**	**0.2005**	**4.0500e-003**	**0.2045**		**621.8057**	**621.8057**	**0.0107**		**622.0742**

3.7 Site Prep 2 - 2025

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	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

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	0.0445	0.0224	0.3235	1.2200e-003	0.1479	8.6000e-004	0.1487	0.0392	7.9000e-004	0.0400		121.6576	121.6576	2.1000e-003		121.7102
Total	**0.0445**	**0.0224**	**0.3235**	**1.2200e-003**	**0.1479**	**8.6000e-004**	**0.1487**	**0.0392**	**7.9000e-004**	**0.0400**		**121.6576**	**121.6576**	**2.1000e-003**		**121.7102**

3.7 Site Prep 2 - 2025

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	1.1558	17.4684	22.5104	0.0381		0.6764	0.6764		0.6591	0.6591	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**1.1558**	**17.4684**	**22.5104**	**0.0381**	**18.0663**	**0.6764**	**18.7427**	**9.9307**	**0.6591**	**10.5898**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

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	0.0445	0.0224	0.3235	1.2200e-003	0.1479	8.6000e-004	0.1487	0.0392	7.9000e-004	0.0400		121.6576	121.6576	2.1000e-003		121.7102
Total	**0.0445**	**0.0224**	**0.3235**	**1.2200e-003**	**0.1479**	**8.6000e-004**	**0.1487**	**0.0392**	**7.9000e-004**	**0.0400**		**121.6576**	**121.6576**	**2.1000e-003**		**121.7102**

3.8 Grading 2 - 2025

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404		6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**6.0221**	**1.1309**	**7.1530**	**3.3102**	**1.0404**	**4.3507**		**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

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	0.0495	0.0249	0.3595	1.3500e-003	0.1643	9.6000e-004	0.1653	0.0436	8.8000e-004	0.0445		135.1752	135.1752	2.3300e-003		135.2335
Total	**0.0495**	**0.0249**	**0.3595**	**1.3500e-003**	**0.1643**	**9.6000e-004**	**0.1653**	**0.0436**	**8.8000e-004**	**0.0445**		**135.1752**	**135.1752**	**2.3300e-003**		**135.2335**

3.8 Grading 2 - 2025

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.4623	25.3544	27.8640	0.0621		0.9941	0.9941		0.9268	0.9268	0.0000	6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.4623**	**25.3544**	**27.8640**	**0.0621**	**6.0221**	**0.9941**	**7.0162**	**3.3102**	**0.9268**	**4.2371**	**0.0000**	**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

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	0.0495	0.0249	0.3595	1.3500e-003	0.1643	9.6000e-004	0.1653	0.0436	8.8000e-004	0.0445		135.1752	135.1752	2.3300e-003		135.2335
Total	**0.0495**	**0.0249**	**0.3595**	**1.3500e-003**	**0.1643**	**9.6000e-004**	**0.1653**	**0.0436**	**8.8000e-004**	**0.0445**		**135.1752**	**135.1752**	**2.3300e-003**		**135.2335**

3.9 Paving 2 - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	1.2651					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.1802**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

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	0.0371	0.0187	0.2696	1.0200e-003	0.1232	7.2000e-004	0.1239	0.0327	6.6000e-004	0.0333		101.3814	101.3814	1.7500e-003		101.4251
Total	**0.0371**	**0.0187**	**0.2696**	**1.0200e-003**	**0.1232**	**7.2000e-004**	**0.1239**	**0.0327**	**6.6000e-004**	**0.0333**		**101.3814**	**101.3814**	**1.7500e-003**		**101.4251**

3.9 Paving 2 - 2025

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	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	1.2651					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.1802**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

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	0.0371	0.0187	0.2696	1.0200e-003	0.1232	7.2000e-004	0.1239	0.0327	6.6000e-004	0.0333		101.3814	101.3814	1.7500e-003		101.4251
Total	**0.0371**	**0.0187**	**0.2696**	**1.0200e-003**	**0.1232**	**7.2000e-004**	**0.1239**	**0.0327**	**6.6000e-004**	**0.0333**		**101.3814**	**101.3814**	**1.7500e-003**		**101.4251**

3.10 Building Construction 2 - 2025

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3505	12.7236	3.3203	0.0444	1.1644	0.0143	1.1787	0.3352	0.0137	0.3489		4,719.1770	4,719.1770	0.1834		4,723.7612
Worker	1.1378	0.5727	8.2680	0.0312	3.7788	0.0220	3.8008	1.0023	0.0202	1.0226		3,109.0286	3,109.0286	0.0537		3,110.3711
Total	**1.4883**	**13.2964**	**11.5883**	**0.0756**	**4.9432**	**0.0363**	**4.9795**	**1.3375**	**0.0339**	**1.3714**		**7,828.2056**	**7,828.2056**	**0.2371**		**7,834.1323**

3.10 Building Construction 2 - 2025

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	1.2178	12.0962	17.2532	0.0270		0.5007	0.5007		0.4788	0.4788	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.2178**	**12.0962**	**17.2532**	**0.0270**		**0.5007**	**0.5007**		**0.4788**	**0.4788**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3505	12.7236	3.3203	0.0444	1.1644	0.0143	1.1787	0.3352	0.0137	0.3489		4,719.1770	4,719.1770	0.1834		4,723.7612
Worker	1.1378	0.5727	8.2680	0.0312	3.7788	0.0220	3.8008	1.0023	0.0202	1.0226		3,109.0286	3,109.0286	0.0537		3,110.3711
Total	**1.4883**	**13.2964**	**11.5883**	**0.0756**	**4.9432**	**0.0363**	**4.9795**	**1.3375**	**0.0339**	**1.3714**		**7,828.2056**	**7,828.2056**	**0.2371**		**7,834.1323**

3.10 Building Construction 2 - 2026

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3420	12.5764	3.2489	0.0441	1.1645	0.0141	1.1785	0.3352	0.0134	0.3487		4,690.6524	4,690.6524	0.1802		4,695.1571
Worker	1.0795	0.5246	7.7222	0.0300	3.7788	0.0214	3.8001	1.0023	0.0197	1.0220		2,994.1312	2,994.1312	0.0490		2,995.3561
Total	**1.4214**	**13.1009**	**10.9711**	**0.0742**	**4.9433**	**0.0354**	**4.9787**	**1.3375**	**0.0331**	**1.3706**		**7,684.7836**	**7,684.7836**	**0.2292**		**7,690.5132**

3.10 Building Construction 2 - 2026

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	1.2178	12.0962	17.2532	0.0270		0.5007	0.5007		0.4788	0.4788	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.2178**	**12.0962**	**17.2532**	**0.0270**		**0.5007**	**0.5007**		**0.4788**	**0.4788**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3420	12.5764	3.2489	0.0441	1.1645	0.0141	1.1785	0.3352	0.0134	0.3487		4,690.6524	4,690.6524	0.1802		4,695.1571
Worker	1.0795	0.5246	7.7222	0.0300	3.7788	0.0214	3.8001	1.0023	0.0197	1.0220		2,994.1312	2,994.1312	0.0490		2,995.3561
Total	**1.4214**	**13.1009**	**10.9711**	**0.0742**	**4.9433**	**0.0354**	**4.9787**	**1.3375**	**0.0331**	**1.3706**		**7,684.7836**	**7,684.7836**	**0.2292**		**7,690.5132**

3.10 Building Construction 2 - 2027

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3346	12.4271	3.1903	0.0439	1.1645	0.0138	1.1783	0.3352	0.0132	0.3484		4,664.1204	4,664.1204	0.1772		4,668.5513
Worker	1.0236	0.4818	7.2390	0.0290	3.7788	0.0202	3.7990	1.0023	0.0186	1.0209		2,892.6395	2,892.6395	0.0448		2,893.7597
Total	**1.3582**	**12.9088**	**10.4293**	**0.0729**	**4.9433**	**0.0340**	**4.9773**	**1.3375**	**0.0318**	**1.3693**		**7,556.7599**	**7,556.7599**	**0.2220**		**7,562.3109**

3.10 Building Construction 2 - 2027

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	1.2178	12.0962	17.2532	0.0270		0.5007	0.5007		0.4788	0.4788	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.2178**	**12.0962**	**17.2532**	**0.0270**		**0.5007**	**0.5007**		**0.4788**	**0.4788**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3346	12.4271	3.1903	0.0439	1.1645	0.0138	1.1783	0.3352	0.0132	0.3484		4,664.1204	4,664.1204	0.1772		4,668.5513
Worker	1.0236	0.4818	7.2390	0.0290	3.7788	0.0202	3.7990	1.0023	0.0186	1.0209		2,892.6395	2,892.6395	0.0448		2,893.7597
Total	**1.3582**	**12.9088**	**10.4293**	**0.0729**	**4.9433**	**0.0340**	**4.9773**	**1.3375**	**0.0318**	**1.3693**		**7,556.7599**	**7,556.7599**	**0.2220**		**7,562.3109**

3.11 Architectural Coating 2 - 2025

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2276	0.1146	1.6536	6.2300e-003	0.7558	4.4000e-003	0.7602	0.2005	4.0500e-003	0.2045		621.8057	621.8057	0.0107		622.0742
Total	**0.2276**	**0.1146**	**1.6536**	**6.2300e-003**	**0.7558**	**4.4000e-003**	**0.7602**	**0.2005**	**4.0500e-003**	**0.2045**		**621.8057**	**621.8057**	**0.0107**		**622.0742**

3.11 Architectural Coating 2 - 2025

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2276	0.1146	1.6536	6.2300e-003	0.7558	4.4000e-003	0.7602	0.2005	4.0500e-003	0.2045		621.8057	621.8057	0.0107		622.0742
Total	**0.2276**	**0.1146**	**1.6536**	**6.2300e-003**	**0.7558**	**4.4000e-003**	**0.7602**	**0.2005**	**4.0500e-003**	**0.2045**		**621.8057**	**621.8057**	**0.0107**		**622.0742**

3.11 Architectural Coating 2 - 2026

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2159	0.1049	1.5444	6.0000e-003	0.7558	4.2700e-003	0.7600	0.2005	3.9300e-003	0.2044		598.8263	598.8263	9.8000e-003		599.0712
Total	**0.2159**	**0.1049**	**1.5444**	**6.0000e-003**	**0.7558**	**4.2700e-003**	**0.7600**	**0.2005**	**3.9300e-003**	**0.2044**		**598.8263**	**598.8263**	**9.8000e-003**		**599.0712**

3.11 Architectural Coating 2 - 2026

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2159	0.1049	1.5444	6.0000e-003	0.7558	4.2700e-003	0.7600	0.2005	3.9300e-003	0.2044		598.8263	598.8263	9.8000e-003		599.0712
Total	**0.2159**	**0.1049**	**1.5444**	**6.0000e-003**	**0.7558**	**4.2700e-003**	**0.7600**	**0.2005**	**3.9300e-003**	**0.2044**		**598.8263**	**598.8263**	**9.8000e-003**		**599.0712**

3.11 Architectural Coating 2 - 2027

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2047	0.0964	1.4478	5.8000e-003	0.7558	4.0500e-003	0.7598	0.2005	3.7200e-003	0.2042		578.5279	578.5279	8.9600e-003		578.7519
Total	**0.2047**	**0.0964**	**1.4478**	**5.8000e-003**	**0.7558**	**4.0500e-003**	**0.7598**	**0.2005**	**3.7200e-003**	**0.2042**		**578.5279**	**578.5279**	**8.9600e-003**		**578.7519**

3.11 Architectural Coating 2 - 2027

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2047	0.0964	1.4478	5.8000e-003	0.7558	4.0500e-003	0.7598	0.2005	3.7200e-003	0.2042		578.5279	578.5279	8.9600e-003		578.7519
Total	**0.2047**	**0.0964**	**1.4478**	**5.8000e-003**	**0.7558**	**4.0500e-003**	**0.7598**	**0.2005**	**3.7200e-003**	**0.2042**		**578.5279**	**578.5279**	**8.9600e-003**		**578.7519**

3.12 Site Prep 3 - 2027

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	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

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	0.0401	0.0189	0.2833	1.1300e-003	0.1479	7.9000e-004	0.1487	0.0392	7.3000e-004	0.0400		113.1902	113.1902	1.7500e-003		113.2341
Total	**0.0401**	**0.0189**	**0.2833**	**1.1300e-003**	**0.1479**	**7.9000e-004**	**0.1487**	**0.0392**	**7.3000e-004**	**0.0400**		**113.1902**	**113.1902**	**1.7500e-003**		**113.2341**

3.12 Site Prep 3 - 2027

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	1.1558	17.4684	22.5104	0.0381		0.6764	0.6764		0.6591	0.6591	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**1.1558**	**17.4684**	**22.5104**	**0.0381**	**18.0663**	**0.6764**	**18.7427**	**9.9307**	**0.6591**	**10.5898**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

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	0.0401	0.0189	0.2833	1.1300e-003	0.1479	7.9000e-004	0.1487	0.0392	7.3000e-004	0.0400		113.1902	113.1902	1.7500e-003		113.2341
Total	**0.0401**	**0.0189**	**0.2833**	**1.1300e-003**	**0.1479**	**7.9000e-004**	**0.1487**	**0.0392**	**7.3000e-004**	**0.0400**		**113.1902**	**113.1902**	**1.7500e-003**		**113.2341**

3.13 Grading 3 - 2027

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404		6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**6.0221**	**1.1309**	**7.1530**	**3.3102**	**1.0404**	**4.3507**		**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

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	0.0445	0.0210	0.3147	1.2600e-003	0.1643	8.8000e-004	0.1652	0.0436	8.1000e-004	0.0444		125.7669	125.7669	1.9500e-003		125.8156
Total	**0.0445**	**0.0210**	**0.3147**	**1.2600e-003**	**0.1643**	**8.8000e-004**	**0.1652**	**0.0436**	**8.1000e-004**	**0.0444**		**125.7669**	**125.7669**	**1.9500e-003**		**125.8156**

3.13 Grading 3 - 2027

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.4623	25.3544	27.8640	0.0621		0.9941	0.9941		0.9268	0.9268	0.0000	6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.4623**	**25.3544**	**27.8640**	**0.0621**	**6.0221**	**0.9941**	**7.0162**	**3.3102**	**0.9268**	**4.2371**	**0.0000**	**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

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	0.0445	0.0210	0.3147	1.2600e-003	0.1643	8.8000e-004	0.1652	0.0436	8.1000e-004	0.0444		125.7669	125.7669	1.9500e-003		125.8156
Total	**0.0445**	**0.0210**	**0.3147**	**1.2600e-003**	**0.1643**	**8.8000e-004**	**0.1652**	**0.0436**	**8.1000e-004**	**0.0444**		**125.7669**	**125.7669**	**1.9500e-003**		**125.8156**

3.14 Paving 3 - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	2.4599					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.3750**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

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	0.0334	0.0157	0.2361	9.5000e-004	0.1232	6.6000e-004	0.1239	0.0327	6.1000e-004	0.0333		94.3252	94.3252	1.4600e-003		94.3617
Total	**0.0334**	**0.0157**	**0.2361**	**9.5000e-004**	**0.1232**	**6.6000e-004**	**0.1239**	**0.0327**	**6.1000e-004**	**0.0333**		**94.3252**	**94.3252**	**1.4600e-003**		**94.3617**

3.14 Paving 3 - 2027

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	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	2.4599					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.3750**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

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	0.0334	0.0157	0.2361	9.5000e-004	0.1232	6.6000e-004	0.1239	0.0327	6.1000e-004	0.0333		94.3252	94.3252	1.4600e-003		94.3617
Total	**0.0334**	**0.0157**	**0.2361**	**9.5000e-004**	**0.1232**	**6.6000e-004**	**0.1239**	**0.0327**	**6.1000e-004**	**0.0333**		**94.3252**	**94.3252**	**1.4600e-003**		**94.3617**

3.15 Building Construction 3 - 2027

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3346	12.4271	3.1903	0.0439	1.1645	0.0138	1.1783	0.3352	0.0132	0.3484		4,664.1204	4,664.1204	0.1772		4,668.5513
Worker	1.0236	0.4818	7.2390	0.0290	3.7788	0.0202	3.7990	1.0023	0.0186	1.0209		2,892.6395	2,892.6395	0.0448		2,893.7597
Total	**1.3582**	**12.9088**	**10.4293**	**0.0729**	**4.9433**	**0.0340**	**4.9773**	**1.3375**	**0.0318**	**1.3693**		**7,556.7599**	**7,556.7599**	**0.2220**		**7,562.3109**

3.15 Building Construction 3 - 2027

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	1.2178	12.0962	17.2532	0.0270		0.5007	0.5007		0.4788	0.4788	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.2178**	**12.0962**	**17.2532**	**0.0270**		**0.5007**	**0.5007**		**0.4788**	**0.4788**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3346	12.4271	3.1903	0.0439	1.1645	0.0138	1.1783	0.3352	0.0132	0.3484		4,664.1204	4,664.1204	0.1772		4,668.5513
Worker	1.0236	0.4818	7.2390	0.0290	3.7788	0.0202	3.7990	1.0023	0.0186	1.0209		2,892.6395	2,892.6395	0.0448		2,893.7597
Total	**1.3582**	**12.9088**	**10.4293**	**0.0729**	**4.9433**	**0.0340**	**4.9773**	**1.3375**	**0.0318**	**1.3693**		**7,556.7599**	**7,556.7599**	**0.2220**		**7,562.3109**

3.15 Building Construction 3 - 2028

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3284	12.3053	3.1467	0.0437	1.1645	0.0135	1.1781	0.3352	0.0130	0.3482		4,642.0082	4,642.0082	0.1745		4,646.3706
Worker	0.9661	0.4439	6.8139	0.0281	3.7788	0.0188	3.7976	1.0023	0.0173	1.0196		2,803.4127	2,803.4127	0.0412		2,804.4422
Total	**1.2945**	**12.7493**	**9.9606**	**0.0717**	**4.9433**	**0.0323**	**4.9756**	**1.3376**	**0.0302**	**1.3678**		**7,445.4209**	**7,445.4209**	**0.2157**		**7,450.8128**

3.15 Building Construction 3 - 2028

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	1.2178	12.0962	17.2532	0.0270		0.5007	0.5007		0.4788	0.4788	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.2178**	**12.0962**	**17.2532**	**0.0270**		**0.5007**	**0.5007**		**0.4788**	**0.4788**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3284	12.3053	3.1467	0.0437	1.1645	0.0135	1.1781	0.3352	0.0130	0.3482		4,642.0082	4,642.0082	0.1745		4,646.3706
Worker	0.9661	0.4439	6.8139	0.0281	3.7788	0.0188	3.7976	1.0023	0.0173	1.0196		2,803.4127	2,803.4127	0.0412		2,804.4422
Total	**1.2945**	**12.7493**	**9.9606**	**0.0717**	**4.9433**	**0.0323**	**4.9756**	**1.3376**	**0.0302**	**1.3678**		**7,445.4209**	**7,445.4209**	**0.2157**		**7,450.8128**

3.16 Architectural Coating 3 - 2027

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	25.5752					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**25.7461**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2047	0.0964	1.4478	5.8000e-003	0.7558	4.0500e-003	0.7598	0.2005	3.7200e-003	0.2042		578.5279	578.5279	8.9600e-003		578.7519
Total	**0.2047**	**0.0964**	**1.4478**	**5.8000e-003**	**0.7558**	**4.0500e-003**	**0.7598**	**0.2005**	**3.7200e-003**	**0.2042**		**578.5279**	**578.5279**	**8.9600e-003**		**578.7519**

3.16 Architectural Coating 3 - 2027

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	25.5752					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**25.7461**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2047	0.0964	1.4478	5.8000e-003	0.7558	4.0500e-003	0.7598	0.2005	3.7200e-003	0.2042		578.5279	578.5279	8.9600e-003		578.7519
Total	**0.2047**	**0.0964**	**1.4478**	**5.8000e-003**	**0.7558**	**4.0500e-003**	**0.7598**	**0.2005**	**3.7200e-003**	**0.2042**		**578.5279**	**578.5279**	**8.9600e-003**		**578.7519**

3.16 Architectural Coating 3 - 2028

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	25.5752					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**25.7461**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.1932	0.0888	1.3628	5.6200e-003	0.7558	3.7600e-003	0.7595	0.2005	3.4600e-003	0.2039		560.6825	560.6825	8.2400e-003		560.8884
Total	**0.1932**	**0.0888**	**1.3628**	**5.6200e-003**	**0.7558**	**3.7600e-003**	**0.7595**	**0.2005**	**3.4600e-003**	**0.2039**		**560.6825**	**560.6825**	**8.2400e-003**		**560.8884**

3.16 Architectural Coating 3 - 2028

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	25.5752					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**25.7461**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.1932	0.0888	1.3628	5.6200e-003	0.7558	3.7600e-003	0.7595	0.2005	3.4600e-003	0.2039		560.6825	560.6825	8.2400e-003		560.8884
Total	**0.1932**	**0.0888**	**1.3628**	**5.6200e-003**	**0.7558**	**3.7600e-003**	**0.7595**	**0.2005**	**3.4600e-003**	**0.2039**		**560.6825**	**560.6825**	**8.2400e-003**		**560.8884**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive 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	2.1921	9.3604	21.7700	0.0968	9.9902	0.0639	10.0542	2.6714	0.0595	2.7309		9,841.0849	9,841.0849	0.2992		9,848.5646
Unmitigated	2.2066	9.4343	22.1262	0.0986	10.1941	0.0651	10.2592	2.7259	0.0606	2.7865		10,025.3696	10,025.3696	0.3038		10,032.9640

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	2,079.00	2,079.00	2079.00	4,801,674	4,705,640
Total	2,079.00	2,079.00	2,079.00	4,801,674	4,705,640

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
NaturalGas Unmitigated	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	17518.7	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693
Total		**0.1889**	**1.6145**	**0.6870**	**0.0103**		**0.1305**	**0.1305**		**0.1305**	**0.1305**		**2,061.0217**	**2,061.0217**	**0.0395**	**0.0378**	**2,073.2693**

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	16.4255	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
Total		**0.1771**	**1.5137**	**0.6441**	**9.6600e-003**		**0.1224**	**0.1224**		**0.1224**	**0.1224**		**1,932.4108**	**1,932.4108**	**0.0370**	**0.0354**	**1,943.8941**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive 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	10.6054	3.1041	19.3672	0.0194		0.3347	0.3347		0.3347	0.3347	0.0000	3,728.6861	3,728.6861	0.1022	0.0678	3,751.4323
Unmitigated	238.8900	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834

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	1.6116					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.7440					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	227.9898	4.3899	294.8635	0.5553		41.6952	41.6952		41.6952	41.6952	4,483.2345	1,358.8235	5,842.0580	5.5433	0.3164	6,074.9146
Landscaping	0.5446	0.2089	18.1352	9.6000e-004		0.1006	0.1006		0.1006	0.1006		32.6861	32.6861	0.0313		33.4688
Total	**238.8900**	**4.5987**	**312.9987**	**0.5563**		**41.7958**	**41.7958**		**41.7958**	**41.7958**	**4,483.2345**	**1,391.5096**	**5,874.7441**	**5.5746**	**0.3164**	**6,108.3834**

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	1.6116					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.1104					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3388	2.8952	1.2320	0.0185		0.2341	0.2341		0.2341	0.2341	0.0000	3,696.0000	3,696.0000	0.0708	0.0678	3,717.9635
Landscaping	0.5446	0.2089	18.1352	9.6000e-004		0.1006	0.1006		0.1006	0.1006		32.6861	32.6861	0.0313		33.4688
Total	**10.6054**	**3.1041**	**19.3672**	**0.0194**		**0.3347**	**0.3347**		**0.3347**	**0.3347**	**0.0000**	**3,728.6861**	**3,728.6861**	**0.1022**	**0.0678**	**3,751.4323**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards Project - Mitigated 1

Bay Area AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
City Park	3.92	Acre	3.92	170,755.20	0
Single Family Housing	220.00	Dwelling Unit	28.00	396,000.00	629

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per the site plan.

Construction Phase - Phasing adjusted based on default lengths for the number of units built under each phase.

Grading - Total acres graded changed to reflect grading plan.

Vehicle Trips - Trip generation rates adjusted per the Traffic Impact Assessment prepared for the proposed project.

Woodstoves -

Construction Off-road Equipment Mitigation - Some equipment set to Tier 3, per mitigation measure.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	55.00	440.00
tblConstructionPhase	NumDays	55.00	230.00
tblConstructionPhase	NumDays	55.00	740.00
tblConstructionPhase	NumDays	740.00	230.00
tblConstructionPhase	NumDays	740.00	440.00
tblConstructionPhase	NumDays	75.00	8.00
tblConstructionPhase	NumDays	75.00	45.00
tblConstructionPhase	NumDays	55.00	18.00
tblConstructionPhase	NumDays	55.00	35.00
tblConstructionPhase	NumDays	30.00	5.00

tblConstructionPhase	NumDays	30.00	20.00
tblGrading	AcresOfGrading	20.00	0.00
tblGrading	AcresOfGrading	187.50	0.00
tblGrading	AcresOfGrading	112.50	0.00
tblGrading	AcresOfGrading	0.00	71.70
tblGrading	MaterialImported	0.00	4,555.00
tblLandUse	LotAcreage	71.43	28.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblTripsAndVMT	HaulingTripNumber	569.00	0.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	9.45
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	9.45
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	9.45

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					
2022	12.1417	38.8851	34.3467	0.1141	20.7659	1.6359	22.3794	10.2462	1.5050	11.7306	0.0000	11,511.2228	11,511.2228	1.9472	0.0000	11,535.0459
2023	11.7535	29.8023	32.7680	0.1113	5.6989	0.8133	6.5122	1.5380	0.7692	2.3071	0.0000	11,229.8412	11,229.8412	0.9024	0.0000	11,252.4000
2024	11.5326	28.5309	31.7392	0.1095	5.6990	0.7162	6.4151	1.5380	0.6770	2.2149	0.0000	11,051.7537	11,051.7537	0.8863	0.0000	11,073.9099
2025	16.7454	52.5071	49.0138	0.1469	23.9131	1.7080	25.6211	11.5079	1.5869	13.0948	0.0000	14,678.0746	14,678.0746	2.0671	0.0000	14,729.7524
2026	16.6668	27.0242	30.0958	0.1062	5.6990	0.6192	6.3182	1.5380	0.5852	2.1232	0.0000	10,722.7426	10,722.7426	0.8631	0.0000	10,744.3193
2027	28.7979	54.7767	56.0955	0.1680	23.9132	1.7493	25.6183	11.5079	1.6249	13.0922	0.0000	16,709.1966	16,709.1966	2.8000	0.0000	16,779.1953
2028	28.7202	26.6282	28.9394	0.1036	5.6991	0.6155	6.3146	1.5380	0.5818	2.1198	0.0000	10,465.1567	10,465.1567	0.8478	0.0000	10,486.3503
Maximum	**28.7979**	**54.7767**	**56.0955**	**0.1680**	**23.9132**	**1.7493**	**25.6211**	**11.5079**	**1.6249**	**13.0948**	**0.0000**	**16,709.1966**	**16,709.1966**	**2.8000**	**0.0000**	**16,779.1953**

2.1 Overall Construction (Maximum Daily Emission)

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					
2022	11.9394	34.1341	35.3789	0.1141	20.7659	1.3719	21.5873	10.2462	1.2744	11.0387	0.0000	11,511.2228	11,511.2228	1.9472	0.0000	11,535.0459
2023	11.5700	28.8622	33.8508	0.1113	5.6989	0.7649	6.4638	1.5380	0.7319	2.2698	0.0000	11,229.8412	11,229.8412	0.9024	0.0000	11,252.4000
2024	11.3664	27.8631	32.8742	0.1095	5.6990	0.6796	6.3785	1.5380	0.6506	2.1885	0.0000	11,051.7537	11,051.7537	0.8863	0.0000	11,073.9099
2025	16.5957	44.3682	54.7809	0.1469	23.9131	1.2707	25.1838	11.5079	1.2287	12.7366	0.0000	14,678.0746	14,678.0746	2.0671	0.0000	14,729.7524
2026	16.5172	26.6507	31.2643	0.1062	5.6990	0.5924	6.2914	1.5380	0.5678	2.1058	0.0000	10,722.7426	10,722.7426	0.8631	0.0000	10,744.3193
2027	28.6483	51.8147	58.7969	0.1680	23.9132	1.5857	25.1811	11.5079	1.4939	12.7340	0.0000	16,709.1965	16,709.1965	2.8000	0.0000	16,779.1953
2028	28.5706	26.2547	30.1079	0.1036	5.6991	0.5887	6.2878	1.5380	0.5644	2.1024	0.0000	10,465.1567	10,465.1567	0.8478	0.0000	10,486.3503
Maximum	**28.6483**	**51.8147**	**58.7969**	**0.1680**	**23.9132**	**1.5857**	**25.1838**	**11.5079**	**1.4939**	**12.7366**	**0.0000**	**16,709.1965**	**16,709.1965**	**2.8000**	**0.0000**	**16,779.1953**

	ROG	NOx	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	**0.91**	**7.05**	**-5.34**	**0.00**	**0.00**	**12.77**	**1.82**	**0.00**	**11.16**	**3.23**	**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	238.8900	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834
Energy	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693
Mobile	1.8813	9.7690	22.1144	0.0926	10.1941	0.0653	10.2594	2.7259	0.0608	2.7867		9,411.4049	9,411.4049	0.3116		9,419.1939
Total	**240.9603**	**15.9822**	**335.8001**	**0.6591**	**10.1941**	**41.9916**	**52.1857**	**2.7259**	**41.9871**	**44.7130**	**4,483.2345**	**12,863.9362**	**17,347.1707**	**5.9257**	**0.3541**	**17,600.8465**

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	10.6054	3.1041	19.3672	0.0194		0.3347	0.3347		0.3347	0.3347	0.0000	3,728.6861	3,728.6861	0.1022	0.0678	3,751.4323
Energy	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
Mobile	1.8668	9.6872	21.7948	0.0908	9.9902	0.0642	10.0544	2.6714	0.0598	2.7311		9,237.8693	9,237.8693	0.3071		9,245.5465
Total	**12.6493**	**14.3050**	**41.8061**	**0.1199**	**9.9902**	**0.5213**	**10.5115**	**2.6714**	**0.5168**	**3.1882**	**0.0000**	**14,898.9662**	**14,898.9662**	**0.4463**	**0.1032**	**14,940.8729**

	ROG	NOx	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	**94.75**	**10.49**	**87.55**	**81.80**	**2.00**	**98.76**	**79.86**	**2.00**	**98.77**	**92.87**	**100.00**	**-15.82**	**14.11**	**92.47**	**70.86**	**15.11**

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 1	Site Preparation	1/1/2022	2/11/2022	5	30	
2	Grading 1	Grading	2/12/2022	5/27/2022	5	75	
3	Paving 1	Paving	5/28/2022	8/12/2022	5	55	
4	Building Construction 1	Building Construction	8/13/2022	6/13/2025	5	740	
5	Architectural Coating 1	Architectural Coating	8/27/2022	6/27/2025	5	740	
6	Site Prep 2	Site Preparation	6/6/2025	7/3/2025	5	20	
7	Grading 2	Grading	7/4/2025	9/4/2025	5	45	
8	Paving 2	Paving	9/5/2025	10/23/2025	5	35	
9	Building Construction 2	Building Construction	10/24/2025	7/1/2027	5	440	
10	Architectural Coating 2	Architectural Coating	11/7/2025	7/15/2027	5	440	
11	Site Prep 3	Site Preparation	6/24/2027	6/30/2027	5	5	
12	Grading 3	Grading	7/1/2027	7/12/2027	5	8	
13	Paving 3	Paving	7/13/2027	8/5/2027	5	18	
14	Building Construction 3	Building Construction	8/6/2027	6/22/2028	5	230	
15	Architectural Coating 3	Architectural Coating	8/20/2027	7/6/2028	5	230	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

Residential Indoor: 801,900; Residential Outdoor: 267,300; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 44,170 (Architectural Coating – sqft)

OffRoad Equipment

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

Grading 2	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving 2	Pavers	2	8.00	130	0.42
Paving 2	Paving Equipment	2	8.00	132	0.36
Paving 2	Rollers	2	8.00	80	0.38
Building Construction 2	Cranes	1	7.00	231	0.29
Building Construction 2	Forklifts	3	8.00	89	0.20
Building Construction 2	Generator Sets	1	8.00	84	0.74
Building Construction 2	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction 2	Welders	1	8.00	46	0.45
Architectural Coating 2	Air Compressors	1	6.00	78	0.48
Site Prep 3	Rubber Tired Dozers	3	8.00	247	0.40
Site Prep 3	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading 3	Excavators	2	8.00	158	0.38
Grading 3	Graders	1	8.00	187	0.41
Grading 3	Rubber Tired Dozers	1	8.00	247	0.40
Grading 3	Scrapers	2	8.00	367	0.48
Grading 3	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving 3	Pavers	2	8.00	130	0.42
Paving 3	Paving Equipment	2	8.00	132	0.36
Paving 3	Rollers	2	8.00	80	0.38
Building Construction 3	Cranes	1	7.00	231	0.29
Building Construction 3	Forklifts	3	8.00	89	0.20
Building Construction 3	Generator Sets	1	8.00	84	0.74
Building Construction 3	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction 3	Welders	1	8.00	46	0.45
Architectural Coating 3	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 1	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading 1	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving 1	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 1	9	460.00	172.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating 1	1	92.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Prep 2	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading 2	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving 2	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 2	9	460.00	172.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating 2	1	92.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Prep 3	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading 3	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving 3	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 3	9	460.00	172.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating 3	1	92.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Site Preparation 1 - 2022

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					20.6180	0.0000	20.6180	10.2070	0.0000	10.2070			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**20.6180**	**1.6126**	**22.2306**	**10.2070**	**1.4836**	**11.6905**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

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	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		126.5026	126.5026	2.6600e-003		126.5691
Total	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**126.5026**	**126.5026**	**2.6600e-003**		**126.5691**

3.2 Site Preparation 1 - 2022

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					20.6180	0.0000	20.6180	10.2070	0.0000	10.2070			0.0000			0.0000
Off-Road	1.2862	18.8306	22.5435	0.0380		0.8205	0.8205		0.7917	0.7917	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**1.2862**	**18.8306**	**22.5435**	**0.0380**	**20.6180**	**0.8205**	**21.4385**	**10.2070**	**0.7917**	**10.9986**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

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	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		126.5026	126.5026	2.6600e-003		126.5691
Total	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**126.5026**	**126.5026**	**2.6600e-003**		**126.5691**

3.3 Grading 1 - 2022

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**6.0221**	**1.6349**	**7.6570**	**3.3102**	**1.5041**	**4.8143**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

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	0.0636	0.0416	0.4218	1.4100e-003	0.1643	1.0100e-003	0.1653	0.0436	9.3000e-004	0.0445		140.5584	140.5584	2.9600e-003		140.6323
Total	**0.0636**	**0.0416**	**0.4218**	**1.4100e-003**	**0.1643**	**1.0100e-003**	**0.1653**	**0.0436**	**9.3000e-004**	**0.0445**		**140.5584**	**140.5584**	**2.9600e-003**		**140.6323**

3.3 Grading 1 - 2022

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.9968	34.0925	29.9901	0.0621		1.3709	1.3709		1.2735	1.2735	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**2.9968**	**34.0925**	**29.9901**	**0.0621**	**6.0221**	**1.3709**	**7.3930**	**3.3102**	**1.2735**	**4.5837**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

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	0.0636	0.0416	0.4218	1.4100e-003	0.1643	1.0100e-003	0.1653	0.0436	9.3000e-004	0.0445		140.5584	140.5584	2.9600e-003		140.6323
Total	**0.0636**	**0.0416**	**0.4218**	**1.4100e-003**	**0.1643**	**1.0100e-003**	**0.1653**	**0.0436**	**9.3000e-004**	**0.0445**		**140.5584**	**140.5584**	**2.9600e-003**		**140.6323**

3.4 Paving 1 - 2022

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.8051					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9079**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

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	0.0477	0.0312	0.3163	1.0600e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		105.4188	105.4188	2.2200e-003		105.4742
Total	**0.0477**	**0.0312**	**0.3163**	**1.0600e-003**	**0.1232**	**7.6000e-004**	**0.1240**	**0.0327**	**7.0000e-004**	**0.0334**		**105.4188**	**105.4188**	**2.2200e-003**		**105.4742**

3.4 Paving 1 - 2022

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.8051					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9079**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

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	0.0477	0.0312	0.3163	1.0600e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		105.4188	105.4188	2.2200e-003		105.4742
Total	**0.0477**	**0.0312**	**0.3163**	**1.0600e-003**	**0.1232**	**7.6000e-004**	**0.1240**	**0.0327**	**7.0000e-004**	**0.0334**		**105.4188**	**105.4188**	**2.2200e-003**		**105.4742**

3.5 Building Construction 1 - 2022

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

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	0.5269	16.9728	4.5288	0.0453	1.1643	0.0346	1.1989	0.3352	0.0331	0.3683		4,796.0292	4,796.0292	0.2411		4,802.0560
Worker	1.4625	0.9573	9.7008	0.0324	3.7788	0.0232	3.8020	1.0023	0.0214	1.0237		3,232.8433	3,232.8433	0.0680		3,234.5430
Total	**1.9894**	**17.9301**	**14.2296**	**0.0777**	**4.9431**	**0.0578**	**5.0009**	**1.3375**	**0.0545**	**1.3920**		**8,028.8725**	**8,028.8725**	**0.3091**		**8,036.5990**

3.5 Building Construction 1 - 2022

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	1.5039	14.3529	17.3955	0.0269		0.7480	0.7480		0.7123	0.7123	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.5039**	**14.3529**	**17.3955**	**0.0269**		**0.7480**	**0.7480**		**0.7123**	**0.7123**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

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	0.5269	16.9728	4.5288	0.0453	1.1643	0.0346	1.1989	0.3352	0.0331	0.3683		4,796.0292	4,796.0292	0.2411		4,802.0560
Worker	1.4625	0.9573	9.7008	0.0324	3.7788	0.0232	3.8020	1.0023	0.0214	1.0237		3,232.8433	3,232.8433	0.0680		3,234.5430
Total	**1.9894**	**17.9301**	**14.2296**	**0.0777**	**4.9431**	**0.0578**	**5.0009**	**1.3375**	**0.0545**	**1.3920**		**8,028.8725**	**8,028.8725**	**0.3091**		**8,036.5990**

3.5 Building Construction 1 - 2023

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	0.3961	13.0817	4.0215	0.0440	1.1644	0.0155	1.1798	0.3352	0.0148	0.3500		4,662.3359	4,662.3359	0.2047		4,667.4524
Worker	1.3699	0.8606	8.9095	0.0312	3.7788	0.0228	3.8015	1.0023	0.0209	1.0233		3,109.0395	3,109.0395	0.0608		3,110.5604
Total	**1.7660**	**13.9423**	**12.9309**	**0.0751**	**4.9432**	**0.0382**	**4.9814**	**1.3375**	**0.0357**	**1.3732**		**7,771.3754**	**7,771.3754**	**0.2655**		**7,778.0128**

3.5 Building Construction 1 - 2023

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	1.3893	13.4448	17.3268	0.0269		0.6513	0.6513		0.6211	0.6211	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.3893**	**13.4448**	**17.3268**	**0.0269**		**0.6513**	**0.6513**		**0.6211**	**0.6211**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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	0.3961	13.0817	4.0215	0.0440	1.1644	0.0155	1.1798	0.3352	0.0148	0.3500		4,662.3359	4,662.3359	0.2047		4,667.4524
Worker	1.3699	0.8606	8.9095	0.0312	3.7788	0.0228	3.8015	1.0023	0.0209	1.0233		3,109.0395	3,109.0395	0.0608		3,110.5604
Total	**1.7660**	**13.9423**	**12.9309**	**0.0751**	**4.9432**	**0.0382**	**4.9814**	**1.3375**	**0.0357**	**1.3732**		**7,771.3754**	**7,771.3754**	**0.2655**		**7,778.0128**

3.5 Building Construction 1 - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	0.3828	12.9357	3.8703	0.0436	1.1644	0.0152	1.1796	0.3352	0.0145	0.3497		4,631.4084	4,631.4084	0.2004		4,636.4186
Worker	1.2903	0.7772	8.2433	0.0299	3.7788	0.0223	3.8011	1.0023	0.0205	1.0229		2,985.9986	2,985.9986	0.0547		2,987.3661
Total	**1.6732**	**13.7129**	**12.1136**	**0.0736**	**4.9432**	**0.0375**	**4.9807**	**1.3375**	**0.0350**	**1.3725**		**7,617.4071**	**7,617.4071**	**0.2551**		**7,623.7847**

3.5 Building Construction 1 - 2024

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	1.3053	12.7760	17.3019	0.0270		0.5767	0.5767		0.5505	0.5505	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.3053**	**12.7760**	**17.3019**	**0.0270**		**0.5767**	**0.5767**		**0.5505**	**0.5505**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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	0.3828	12.9357	3.8703	0.0436	1.1644	0.0152	1.1796	0.3352	0.0145	0.3497		4,631.4084	4,631.4084	0.2004		4,636.4186
Worker	1.2903	0.7772	8.2433	0.0299	3.7788	0.0223	3.8011	1.0023	0.0205	1.0229		2,985.9986	2,985.9986	0.0547		2,987.3661
Total	**1.6732**	**13.7129**	**12.1136**	**0.0736**	**4.9432**	**0.0375**	**4.9807**	**1.3375**	**0.0350**	**1.3725**		**7,617.4071**	**7,617.4071**	**0.2551**		**7,623.7847**

3.5 Building Construction 1 - 2025

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3716	12.7828	3.7549	0.0433	1.1644	0.0148	1.1793	0.3352	0.0142	0.3494		4,601.6063	4,601.6063	0.1964		4,606.5152
Worker	1.2222	0.7064	7.6290	0.0287	3.7788	0.0220	3.8008	1.0023	0.0202	1.0226		2,864.4621	2,864.4621	0.0495		2,865.6994
Total	**1.5938**	**13.4892**	**11.3839**	**0.0720**	**4.9432**	**0.0368**	**4.9801**	**1.3375**	**0.0344**	**1.3719**		**7,466.0684**	**7,466.0684**	**0.2458**		**7,472.2146**

3.5 Building Construction 1 - 2025

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	1.2178	12.0962	17.2532	0.0270		0.5007	0.5007		0.4788	0.4788	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.2178**	**12.0962**	**17.2532**	**0.0270**		**0.5007**	**0.5007**		**0.4788**	**0.4788**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3716	12.7828	3.7549	0.0433	1.1644	0.0148	1.1793	0.3352	0.0142	0.3494		4,601.6063	4,601.6063	0.1964		4,606.5152
Worker	1.2222	0.7064	7.6290	0.0287	3.7788	0.0220	3.8008	1.0023	0.0202	1.0226		2,864.4621	2,864.4621	0.0495		2,865.6994
Total	**1.5938**	**13.4892**	**11.3839**	**0.0720**	**4.9432**	**0.0368**	**4.9801**	**1.3375**	**0.0344**	**1.3719**		**7,466.0684**	**7,466.0684**	**0.2458**		**7,472.2146**

3.6 Architectural Coating 1 - 2022

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**8.1536**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	0.2925	0.1915	1.9402	6.4800e-003	0.7558	4.6400e-003	0.7604	0.2005	4.2800e-003	0.2047		646.5687	646.5687	0.0136		646.9086
Total	**0.2925**	**0.1915**	**1.9402**	**6.4800e-003**	**0.7558**	**4.6400e-003**	**0.7604**	**0.2005**	**4.2800e-003**	**0.2047**		**646.5687**	**646.5687**	**0.0136**		**646.9086**

3.6 Architectural Coating 1 - 2022

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**8.1536**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	0.2925	0.1915	1.9402	6.4800e-003	0.7558	4.6400e-003	0.7604	0.2005	4.2800e-003	0.2047		646.5687	646.5687	0.0136		646.9086
Total	**0.2925**	**0.1915**	**1.9402**	**6.4800e-003**	**0.7558**	**4.6400e-003**	**0.7604**	**0.2005**	**4.2800e-003**	**0.2047**		**646.5687**	**646.5687**	**0.0136**		**646.9086**

3.6 Architectural Coating 1 - 2023

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**8.1407**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

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	0.2740	0.1721	1.7819	6.2300e-003	0.7558	4.5500e-003	0.7603	0.2005	4.1900e-003	0.2047		621.8079	621.8079	0.0122		622.1121
Total	**0.2740**	**0.1721**	**1.7819**	**6.2300e-003**	**0.7558**	**4.5500e-003**	**0.7603**	**0.2005**	**4.1900e-003**	**0.2047**		**621.8079**	**621.8079**	**0.0122**		**622.1121**

3.6 Architectural Coating 1 - 2023

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**8.1407**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

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	0.2740	0.1721	1.7819	6.2300e-003	0.7558	4.5500e-003	0.7603	0.2005	4.1900e-003	0.2047		621.8079	621.8079	0.0122		622.1121
Total	**0.2740**	**0.1721**	**1.7819**	**6.2300e-003**	**0.7558**	**4.5500e-003**	**0.7603**	**0.2005**	**4.1900e-003**	**0.2047**		**621.8079**	**621.8079**	**0.0122**		**622.1121**

3.6 Architectural Coating 1 - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**8.1298**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	0.2581	0.1554	1.6487	5.9900e-003	0.7558	4.4600e-003	0.7602	0.2005	4.1100e-003	0.2046		597.1997	597.1997	0.0109		597.4732
Total	**0.2581**	**0.1554**	**1.6487**	**5.9900e-003**	**0.7558**	**4.4600e-003**	**0.7602**	**0.2005**	**4.1100e-003**	**0.2046**		**597.1997**	**597.1997**	**0.0109**		**597.4732**

3.6 Architectural Coating 1 - 2024

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**8.1298**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

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	0.2581	0.1554	1.6487	5.9900e-003	0.7558	4.4600e-003	0.7602	0.2005	4.1100e-003	0.2046		597.1997	597.1997	0.0109		597.4732
Total	**0.2581**	**0.1554**	**1.6487**	**5.9900e-003**	**0.7558**	**4.4600e-003**	**0.7602**	**0.2005**	**4.1100e-003**	**0.2046**		**597.1997**	**597.1997**	**0.0109**		**597.4732**

3.6 Architectural Coating 1 - 2025

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**8.1199**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2444	0.1413	1.5258	5.7400e-003	0.7558	4.4000e-003	0.7602	0.2005	4.0500e-003	0.2045		572.8924	572.8924	9.9000e-003		573.1399
Total	**0.2444**	**0.1413**	**1.5258**	**5.7400e-003**	**0.7558**	**4.4000e-003**	**0.7602**	**0.2005**	**4.0500e-003**	**0.2045**		**572.8924**	**572.8924**	**9.9000e-003**		**573.1399**

3.6 Architectural Coating 1 - 2025

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	7.9491					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**8.1199**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2444	0.1413	1.5258	5.7400e-003	0.7558	4.4000e-003	0.7602	0.2005	4.0500e-003	0.2045		572.8924	572.8924	9.9000e-003		573.1399
Total	**0.2444**	**0.1413**	**1.5258**	**5.7400e-003**	**0.7558**	**4.4000e-003**	**0.7602**	**0.2005**	**4.0500e-003**	**0.2045**		**572.8924**	**572.8924**	**9.9000e-003**		**573.1399**

3.7 Site Prep 2 - 2025

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	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

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	0.0478	0.0276	0.2985	1.1200e-003	0.1479	8.6000e-004	0.1487	0.0392	7.9000e-004	0.0400		112.0877	112.0877	1.9400e-003		112.1361
Total	**0.0478**	**0.0276**	**0.2985**	**1.1200e-003**	**0.1479**	**8.6000e-004**	**0.1487**	**0.0392**	**7.9000e-004**	**0.0400**		**112.0877**	**112.0877**	**1.9400e-003**		**112.1361**

3.7 Site Prep 2 - 2025

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	1.1558	17.4684	22.5104	0.0381		0.6764	0.6764		0.6591	0.6591	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**1.1558**	**17.4684**	**22.5104**	**0.0381**	**18.0663**	**0.6764**	**18.7427**	**9.9307**	**0.6591**	**10.5898**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

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	0.0478	0.0276	0.2985	1.1200e-003	0.1479	8.6000e-004	0.1487	0.0392	7.9000e-004	0.0400		112.0877	112.0877	1.9400e-003		112.1361
Total	**0.0478**	**0.0276**	**0.2985**	**1.1200e-003**	**0.1479**	**8.6000e-004**	**0.1487**	**0.0392**	**7.9000e-004**	**0.0400**		**112.0877**	**112.0877**	**1.9400e-003**		**112.1361**

3.8 Grading 2 - 2025

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404		6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**6.0221**	**1.1309**	**7.1530**	**3.3102**	**1.0404**	**4.3507**		**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

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	0.0531	0.0307	0.3317	1.2500e-003	0.1643	9.6000e-004	0.1653	0.0436	8.8000e-004	0.0445		124.5418	124.5418	2.1500e-003		124.5956
Total	**0.0531**	**0.0307**	**0.3317**	**1.2500e-003**	**0.1643**	**9.6000e-004**	**0.1653**	**0.0436**	**8.8000e-004**	**0.0445**		**124.5418**	**124.5418**	**2.1500e-003**		**124.5956**

3.8 Grading 2 - 2025

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.4623	25.3544	27.8640	0.0621		0.9941	0.9941		0.9268	0.9268	0.0000	6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.4623**	**25.3544**	**27.8640**	**0.0621**	**6.0221**	**0.9941**	**7.0162**	**3.3102**	**0.9268**	**4.2371**	**0.0000**	**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

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	0.0531	0.0307	0.3317	1.2500e-003	0.1643	9.6000e-004	0.1653	0.0436	8.8000e-004	0.0445		124.5418	124.5418	2.1500e-003		124.5956
Total	**0.0531**	**0.0307**	**0.3317**	**1.2500e-003**	**0.1643**	**9.6000e-004**	**0.1653**	**0.0436**	**8.8000e-004**	**0.0445**		**124.5418**	**124.5418**	**2.1500e-003**		**124.5956**

3.9 Paving 2 - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	1.2651					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.1802**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

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	0.0399	0.0230	0.2488	9.4000e-004	0.1232	7.2000e-004	0.1239	0.0327	6.6000e-004	0.0333		93.4064	93.4064	1.6100e-003		93.4467
Total	**0.0399**	**0.0230**	**0.2488**	**9.4000e-004**	**0.1232**	**7.2000e-004**	**0.1239**	**0.0327**	**6.6000e-004**	**0.0333**		**93.4064**	**93.4064**	**1.6100e-003**		**93.4467**

3.9 Paving 2 - 2025

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	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	1.2651					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.1802**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

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	0.0399	0.0230	0.2488	9.4000e-004	0.1232	7.2000e-004	0.1239	0.0327	6.6000e-004	0.0333		93.4064	93.4064	1.6100e-003		93.4467
Total	**0.0399**	**0.0230**	**0.2488**	**9.4000e-004**	**0.1232**	**7.2000e-004**	**0.1239**	**0.0327**	**6.6000e-004**	**0.0333**		**93.4064**	**93.4064**	**1.6100e-003**		**93.4467**

3.10 Building Construction 2 - 2025

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3716	12.7828	3.7549	0.0433	1.1644	0.0148	1.1793	0.3352	0.0142	0.3494		4,601.6063	4,601.6063	0.1964		4,606.5152
Worker	1.2222	0.7064	7.6290	0.0287	3.7788	0.0220	3.8008	1.0023	0.0202	1.0226		2,864.4621	2,864.4621	0.0495		2,865.6994
Total	**1.5938**	**13.4892**	**11.3839**	**0.0720**	**4.9432**	**0.0368**	**4.9801**	**1.3375**	**0.0344**	**1.3719**		**7,466.0684**	**7,466.0684**	**0.2458**		**7,472.2146**

3.10 Building Construction 2 - 2025

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	1.2178	12.0962	17.2532	0.0270		0.5007	0.5007		0.4788	0.4788	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.2178**	**12.0962**	**17.2532**	**0.0270**		**0.5007**	**0.5007**		**0.4788**	**0.4788**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3716	12.7828	3.7549	0.0433	1.1644	0.0148	1.1793	0.3352	0.0142	0.3494		4,601.6063	4,601.6063	0.1964		4,606.5152
Worker	1.2222	0.7064	7.6290	0.0287	3.7788	0.0220	3.8008	1.0023	0.0202	1.0226		2,864.4621	2,864.4621	0.0495		2,865.6994
Total	**1.5938**	**13.4892**	**11.3839**	**0.0720**	**4.9432**	**0.0368**	**4.9801**	**1.3375**	**0.0344**	**1.3719**		**7,466.0684**	**7,466.0684**	**0.2458**		**7,472.2146**

3.10 Building Construction 2 - 2026

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3623	12.6328	3.6712	0.0431	1.1645	0.0145	1.1790	0.3352	0.0139	0.3491		4,574.4556	4,574.4556	0.1927		4,579.2729
Worker	1.1645	0.6468	7.1090	0.0277	3.7788	0.0214	3.8001	1.0023	0.0197	1.0220		2,758.6371	2,758.6371	0.0451		2,759.7637
Total	**1.5268**	**13.2796**	**10.7802**	**0.0707**	**4.9433**	**0.0359**	**4.9791**	**1.3375**	**0.0335**	**1.3711**		**7,333.0927**	**7,333.0927**	**0.2378**		**7,339.0367**

3.10 Building Construction 2 - 2026

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	1.2178	12.0962	17.2532	0.0270		0.5007	0.5007		0.4788	0.4788	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.2178**	**12.0962**	**17.2532**	**0.0270**		**0.5007**	**0.5007**		**0.4788**	**0.4788**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3623	12.6328	3.6712	0.0431	1.1645	0.0145	1.1790	0.3352	0.0139	0.3491		4,574.4556	4,574.4556	0.1927		4,579.2729
Worker	1.1645	0.6468	7.1090	0.0277	3.7788	0.0214	3.8001	1.0023	0.0197	1.0220		2,758.6371	2,758.6371	0.0451		2,759.7637
Total	**1.5268**	**13.2796**	**10.7802**	**0.0707**	**4.9433**	**0.0359**	**4.9791**	**1.3375**	**0.0335**	**1.3711**		**7,333.0927**	**7,333.0927**	**0.2378**		**7,339.0367**

3.10 Building Construction 2 - 2027

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3543	12.4800	3.6029	0.0428	1.1645	0.0142	1.1787	0.3352	0.0136	0.3488		4,549.0569	4,549.0569	0.1893		4,553.7895
Worker	1.1085	0.5940	6.6488	0.0267	3.7788	0.0202	3.7990	1.0023	0.0186	1.0209		2,665.0533	2,665.0533	0.0411		2,666.0815
Total	**1.4628**	**13.0740**	**10.2517**	**0.0695**	**4.9433**	**0.0344**	**4.9777**	**1.3375**	**0.0322**	**1.3697**		**7,214.1102**	**7,214.1102**	**0.2304**		**7,219.8710**

3.10 Building Construction 2 - 2027

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	1.2178	12.0962	17.2532	0.0270		0.5007	0.5007		0.4788	0.4788	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.2178**	**12.0962**	**17.2532**	**0.0270**		**0.5007**	**0.5007**		**0.4788**	**0.4788**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3543	12.4800	3.6029	0.0428	1.1645	0.0142	1.1787	0.3352	0.0136	0.3488		4,549.0569	4,549.0569	0.1893		4,553.7895
Worker	1.1085	0.5940	6.6488	0.0267	3.7788	0.0202	3.7990	1.0023	0.0186	1.0209		2,665.0533	2,665.0533	0.0411		2,666.0815
Total	**1.4628**	**13.0740**	**10.2517**	**0.0695**	**4.9433**	**0.0344**	**4.9777**	**1.3375**	**0.0322**	**1.3697**		**7,214.1102**	**7,214.1102**	**0.2304**		**7,219.8710**

3.11 Architectural Coating 2 - 2025

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2444	0.1413	1.5258	5.7400e-003	0.7558	4.4000e-003	0.7602	0.2005	4.0500e-003	0.2045		572.8924	572.8924	9.9000e-003		573.1399
Total	**0.2444**	**0.1413**	**1.5258**	**5.7400e-003**	**0.7558**	**4.4000e-003**	**0.7602**	**0.2005**	**4.0500e-003**	**0.2045**		**572.8924**	**572.8924**	**9.9000e-003**		**573.1399**

3.11 Architectural Coating 2 - 2025

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2444	0.1413	1.5258	5.7400e-003	0.7558	4.4000e-003	0.7602	0.2005	4.0500e-003	0.2045		572.8924	572.8924	9.9000e-003		573.1399
Total	**0.2444**	**0.1413**	**1.5258**	**5.7400e-003**	**0.7558**	**4.4000e-003**	**0.7602**	**0.2005**	**4.0500e-003**	**0.2045**		**572.8924**	**572.8924**	**9.9000e-003**		**573.1399**

3.11 Architectural Coating 2 - 2026

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2329	0.1294	1.4218	5.5300e-003	0.7558	4.2700e-003	0.7600	0.2005	3.9300e-003	0.2044		551.7274	551.7274	9.0100e-003		551.9527
Total	**0.2329**	**0.1294**	**1.4218**	**5.5300e-003**	**0.7558**	**4.2700e-003**	**0.7600**	**0.2005**	**3.9300e-003**	**0.2044**		**551.7274**	**551.7274**	**9.0100e-003**		**551.9527**

3.11 Architectural Coating 2 - 2026

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2329	0.1294	1.4218	5.5300e-003	0.7558	4.2700e-003	0.7600	0.2005	3.9300e-003	0.2044		551.7274	551.7274	9.0100e-003		551.9527
Total	**0.2329**	**0.1294**	**1.4218**	**5.5300e-003**	**0.7558**	**4.2700e-003**	**0.7600**	**0.2005**	**3.9300e-003**	**0.2044**		**551.7274**	**551.7274**	**9.0100e-003**		**551.9527**

3.11 Architectural Coating 2 - 2027

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2217	0.1188	1.3298	5.3400e-003	0.7558	4.0500e-003	0.7598	0.2005	3.7200e-003	0.2042		533.0107	533.0107	8.2300e-003		533.2163
Total	**0.2217**	**0.1188**	**1.3298**	**5.3400e-003**	**0.7558**	**4.0500e-003**	**0.7598**	**0.2005**	**3.7200e-003**	**0.2042**		**533.0107**	**533.0107**	**8.2300e-003**		**533.2163**

3.11 Architectural Coating 2 - 2027

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	13.3689					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**13.5397**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2217	0.1188	1.3298	5.3400e-003	0.7558	4.0500e-003	0.7598	0.2005	3.7200e-003	0.2042		533.0107	533.0107	8.2300e-003		533.2163
Total	**0.2217**	**0.1188**	**1.3298**	**5.3400e-003**	**0.7558**	**4.0500e-003**	**0.7598**	**0.2005**	**3.7200e-003**	**0.2042**		**533.0107**	**533.0107**	**8.2300e-003**		**533.2163**

3.12 Site Prep 3 - 2027

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	2.4727	25.2339	17.9118	0.0381		1.0868	1.0868		0.9999	0.9999		3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**2.4727**	**25.2339**	**17.9118**	**0.0381**	**18.0663**	**1.0868**	**19.1531**	**9.9307**	**0.9999**	**10.9305**		**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

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	0.0434	0.0232	0.2602	1.0400e-003	0.1479	7.9000e-004	0.1487	0.0392	7.3000e-004	0.0400		104.2847	104.2847	1.6100e-003		104.3249
Total	**0.0434**	**0.0232**	**0.2602**	**1.0400e-003**	**0.1479**	**7.9000e-004**	**0.1487**	**0.0392**	**7.3000e-004**	**0.0400**		**104.2847**	**104.2847**	**1.6100e-003**		**104.3249**

3.12 Site Prep 3 - 2027

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	1.1558	17.4684	22.5104	0.0381		0.6764	0.6764		0.6591	0.6591	0.0000	3,689.1037	3,689.1037	1.1931		3,718.9320
Total	**1.1558**	**17.4684**	**22.5104**	**0.0381**	**18.0663**	**0.6764**	**18.7427**	**9.9307**	**0.6591**	**10.5898**	**0.0000**	**3,689.1037**	**3,689.1037**	**1.1931**		**3,718.9320**

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	0.0434	0.0232	0.2602	1.0400e-003	0.1479	7.9000e-004	0.1487	0.0392	7.3000e-004	0.0400		104.2847	104.2847	1.6100e-003		104.3249
Total	**0.0434**	**0.0232**	**0.2602**	**1.0400e-003**	**0.1479**	**7.9000e-004**	**0.1487**	**0.0392**	**7.3000e-004**	**0.0400**		**104.2847**	**104.2847**	**1.6100e-003**		**104.3249**

3.13 Grading 3 - 2027

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404		6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**6.0221**	**1.1309**	**7.1530**	**3.3102**	**1.0404**	**4.3507**		**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

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	0.0482	0.0258	0.2891	1.1600e-003	0.1643	8.8000e-004	0.1652	0.0436	8.1000e-004	0.0444		115.8719	115.8719	1.7900e-003		115.9166
Total	**0.0482**	**0.0258**	**0.2891**	**1.1600e-003**	**0.1643**	**8.8000e-004**	**0.1652**	**0.0436**	**8.1000e-004**	**0.0444**		**115.8719**	**115.8719**	**1.7900e-003**		**115.9166**

3.13 Grading 3 - 2027

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					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.4623	25.3544	27.8640	0.0621		0.9941	0.9941		0.9268	0.9268	0.0000	6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.4623**	**25.3544**	**27.8640**	**0.0621**	**6.0221**	**0.9941**	**7.0162**	**3.3102**	**0.9268**	**4.2371**	**0.0000**	**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

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	0.0482	0.0258	0.2891	1.1600e-003	0.1643	8.8000e-004	0.1652	0.0436	8.1000e-004	0.0444		115.8719	115.8719	1.7900e-003		115.9166
Total	**0.0482**	**0.0258**	**0.2891**	**1.1600e-003**	**0.1643**	**8.8000e-004**	**0.1652**	**0.0436**	**8.1000e-004**	**0.0444**		**115.8719**	**115.8719**	**1.7900e-003**		**115.9166**

3.14 Paving 3 - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	2.4599					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.3750**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

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	0.0362	0.0194	0.2168	8.7000e-004	0.1232	6.6000e-004	0.1239	0.0327	6.1000e-004	0.0333		86.9039	86.9039	1.3400e-003		86.9374
Total	**0.0362**	**0.0194**	**0.2168**	**8.7000e-004**	**0.1232**	**6.6000e-004**	**0.1239**	**0.0327**	**6.1000e-004**	**0.0333**		**86.9039**	**86.9039**	**1.3400e-003**		**86.9374**

3.14 Paving 3 - 2027

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	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	2.4599					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.3750**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

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	0.0362	0.0194	0.2168	8.7000e-004	0.1232	6.6000e-004	0.1239	0.0327	6.1000e-004	0.0333		86.9039	86.9039	1.3400e-003		86.9374
Total	**0.0362**	**0.0194**	**0.2168**	**8.7000e-004**	**0.1232**	**6.6000e-004**	**0.1239**	**0.0327**	**6.1000e-004**	**0.0333**		**86.9039**	**86.9039**	**1.3400e-003**		**86.9374**

3.15 Building Construction 3 - 2027

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3543	12.4800	3.6029	0.0428	1.1645	0.0142	1.1787	0.3352	0.0136	0.3488		4,549.0569	4,549.0569	0.1893		4,553.7895
Worker	1.1085	0.5940	6.6488	0.0267	3.7788	0.0202	3.7990	1.0023	0.0186	1.0209		2,665.0533	2,665.0533	0.0411		2,666.0815
Total	**1.4628**	**13.0740**	**10.2517**	**0.0695**	**4.9433**	**0.0344**	**4.9777**	**1.3375**	**0.0322**	**1.3697**		**7,214.1102**	**7,214.1102**	**0.2304**		**7,219.8710**

3.15 Building Construction 3 - 2027

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	1.2178	12.0962	17.2532	0.0270		0.5007	0.5007		0.4788	0.4788	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.2178**	**12.0962**	**17.2532**	**0.0270**		**0.5007**	**0.5007**		**0.4788**	**0.4788**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3543	12.4800	3.6029	0.0428	1.1645	0.0142	1.1787	0.3352	0.0136	0.3488		4,549.0569	4,549.0569	0.1893		4,553.7895
Worker	1.1085	0.5940	6.6488	0.0267	3.7788	0.0202	3.7990	1.0023	0.0186	1.0209		2,665.0533	2,665.0533	0.0411		2,666.0815
Total	**1.4628**	**13.0740**	**10.2517**	**0.0695**	**4.9433**	**0.0344**	**4.9777**	**1.3375**	**0.0322**	**1.3697**		**7,214.1102**	**7,214.1102**	**0.2304**		**7,219.8710**

3.15 Building Construction 3 - 2028

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3476	12.3565	3.5517	0.0426	1.1645	0.0139	1.1784	0.3352	0.0133	0.3486		4,527.9864	4,527.9864	0.1862		4,532.6404
Worker	1.0493	0.5472	6.2449	0.0259	3.7788	0.0188	3.7976	1.0023	0.0173	1.0196		2,582.7065	2,582.7065	0.0377		2,583.6500
Total	**1.3969**	**12.9036**	**9.7966**	**0.0685**	**4.9433**	**0.0327**	**4.9760**	**1.3376**	**0.0306**	**1.3681**		**7,110.6929**	**7,110.6929**	**0.2239**		**7,116.2903**

3.15 Building Construction 3 - 2028

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	1.2178	12.0962	17.2532	0.0270		0.5007	0.5007		0.4788	0.4788	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.2178**	**12.0962**	**17.2532**	**0.0270**		**0.5007**	**0.5007**		**0.4788**	**0.4788**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

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	0.3476	12.3565	3.5517	0.0426	1.1645	0.0139	1.1784	0.3352	0.0133	0.3486		4,527.9864	4,527.9864	0.1862		4,532.6404
Worker	1.0493	0.5472	6.2449	0.0259	3.7788	0.0188	3.7976	1.0023	0.0173	1.0196		2,582.7065	2,582.7065	0.0377		2,583.6500
Total	**1.3969**	**12.9036**	**9.7966**	**0.0685**	**4.9433**	**0.0327**	**4.9760**	**1.3376**	**0.0306**	**1.3681**		**7,110.6929**	**7,110.6929**	**0.2239**		**7,116.2903**

3.16 Architectural Coating 3 - 2027

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	25.5752					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**25.7461**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2217	0.1188	1.3298	5.3400e-003	0.7558	4.0500e-003	0.7598	0.2005	3.7200e-003	0.2042		533.0107	533.0107	8.2300e-003		533.2163
Total	**0.2217**	**0.1188**	**1.3298**	**5.3400e-003**	**0.7558**	**4.0500e-003**	**0.7598**	**0.2005**	**3.7200e-003**	**0.2042**		**533.0107**	**533.0107**	**8.2300e-003**		**533.2163**

3.16 Architectural Coating 3 - 2027

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	25.5752					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**25.7461**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2217	0.1188	1.3298	5.3400e-003	0.7558	4.0500e-003	0.7598	0.2005	3.7200e-003	0.2042		533.0107	533.0107	8.2300e-003		533.2163
Total	**0.2217**	**0.1188**	**1.3298**	**5.3400e-003**	**0.7558**	**4.0500e-003**	**0.7598**	**0.2005**	**3.7200e-003**	**0.2042**		**533.0107**	**533.0107**	**8.2300e-003**		**533.2163**

3.16 Architectural Coating 3 - 2028

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	25.5752					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**25.7461**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2099	0.1094	1.2490	5.1800e-003	0.7558	3.7600e-003	0.7595	0.2005	3.4600e-003	0.2039		516.5413	516.5413	7.5500e-003		516.7300
Total	**0.2099**	**0.1094**	**1.2490**	**5.1800e-003**	**0.7558**	**3.7600e-003**	**0.7595**	**0.2005**	**3.4600e-003**	**0.2039**		**516.5413**	**516.5413**	**7.5500e-003**		**516.7300**

3.16 Architectural Coating 3 - 2028

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	25.5752					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**25.7461**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

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	0.2099	0.1094	1.2490	5.1800e-003	0.7558	3.7600e-003	0.7595	0.2005	3.4600e-003	0.2039		516.5413	516.5413	7.5500e-003		516.7300
Total	**0.2099**	**0.1094**	**1.2490**	**5.1800e-003**	**0.7558**	**3.7600e-003**	**0.7595**	**0.2005**	**3.4600e-003**	**0.2039**		**516.5413**	**516.5413**	**7.5500e-003**		**516.7300**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive 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	1.8668	9.6872	21.7948	0.0908	9.9902	0.0642	10.0544	2.6714	0.0598	2.7311		9,237.8693	9,237.8693	0.3071		9,245.5465
Unmitigated	1.8813	9.7690	22.1144	0.0926	10.1941	0.0653	10.2594	2.7259	0.0608	2.7867		9,411.4049	9,411.4049	0.3116		9,419.1939

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	2,079.00	2,079.00	2079.00	4,801,674	4,705,640
Total	2,079.00	2,079.00	2,079.00	4,801,674	4,705,640

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
NaturalGas Unmitigated	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	17518.7	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693
Total		**0.1889**	**1.6145**	**0.6870**	**0.0103**		**0.1305**	**0.1305**		**0.1305**	**0.1305**		**2,061.0217**	**2,061.0217**	**0.0395**	**0.0378**	**2,073.2693**

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	16.4255	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
Total		**0.1771**	**1.5137**	**0.6441**	**9.6600e-003**		**0.1224**	**0.1224**		**0.1224**	**0.1224**		**1,932.4108**	**1,932.4108**	**0.0370**	**0.0354**	**1,943.8941**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive 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	10.6054	3.1041	19.3672	0.0194		0.3347	0.3347		0.3347	0.3347	0.0000	3,728.6861	3,728.6861	0.1022	0.0678	3,751.4323
Unmitigated	238.8900	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834

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	1.6116					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.7440					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	227.9898	4.3899	294.8635	0.5553		41.6952	41.6952		41.6952	41.6952	4,483.2345	1,358.8235	5,842.0580	5.5433	0.3164	6,074.9146
Landscaping	0.5446	0.2089	18.1352	9.6000e-004		0.1006	0.1006		0.1006	0.1006		32.6861	32.6861	0.0313		33.4688
Total	**238.8900**	**4.5987**	**312.9987**	**0.5563**		**41.7958**	**41.7958**		**41.7958**	**41.7958**	**4,483.2345**	**1,391.5096**	**5,874.7441**	**5.5746**	**0.3164**	**6,108.3834**

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	1.6116					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.1104					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3388	2.8952	1.2320	0.0185		0.2341	0.2341		0.2341	0.2341	0.0000	3,696.0000	3,696.0000	0.0708	0.0678	3,717.9635
Landscaping	0.5446	0.2089	18.1352	9.6000e-004		0.1006	0.1006		0.1006	0.1006		32.6861	32.6861	0.0313		33.4688
Total	**10.6054**	**3.1041**	**19.3672**	**0.0194**		**0.3347**	**0.3347**		**0.3347**	**0.3347**	**0.0000**	**3,728.6861**	**3,728.6861**	**0.1022**	**0.0678**	**3,751.4323**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards Project - Mitigated 1

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 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating 2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating 3	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 1	0.06	0.03	-0.04	0.00	0.06	0.05	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction 2	0.05	0.01	-0.04	0.00	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction 3	0.06	0.01	-0.05	0.00	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Grading 1	0.17	0.12	-0.03	0.00	0.16	0.15	0.00	0.00	0.00	0.00	0.00	0.00
Grading 2	0.15	0.09	-0.06	0.00	0.12	0.11	0.00	0.00	0.00	0.00	0.00	0.00
Grading 3	0.15	0.09	-0.06	0.00	0.12	0.11	0.00	0.00	0.00	0.00	0.00	0.00
Paving 1	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 2	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 3	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 Prep 2	0.52	0.31	-0.25	0.00	0.38	0.34	0.00	0.00	0.00	0.00	0.00	0.00
Site Prep 3	0.52	0.31	-0.25	0.00	0.38	0.34	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation 1	0.58	0.43	-0.14	0.00	0.49	0.47	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	3	No Change	0.00
Cranes	Diesel	Tier 3	3	3	No Change	0.00
Excavators	Diesel	No Change	0	6	No Change	0.00
Forklifts	Diesel	No Change	0	9	No Change	0.00
Generator Sets	Diesel	No Change	0	3	No Change	0.00
Graders	Diesel	No Change	0	3	No Change	0.00
Pavers	Diesel	No Change	0	6	No Change	0.00
Paving Equipment	Diesel	No Change	0	6	No Change	0.00
Rollers	Diesel	No Change	0	6	No Change	0.00
Rubber Tired Dozers	Diesel	Tier 3	12	12	No Change	0.00
Scrapers	Diesel	No Change	0	6	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	27	No Change	0.00
Welders	Diesel	No Change	0	3	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	1.25970E-001	8.49490E-001	1.27603E+000	2.09000E-003	4.14100E-002	4.14100E-002	0.00000E+000	1.80004E+002	1.80004E+002	1.01700E-002	0.00000E+000	1.80259E+002
Cranes	2.02160E-001	2.11090E+000	1.09353E+000	3.56000E-003	8.88600E-002	8.17500E-002	0.00000E+000	3.12728E+002	3.12728E+002	1.01140E-001	0.00000E+000	3.15256E+002
Excavators	2.40400E-002	1.98020E-001	4.16880E-001	6.60000E-004	9.62000E-003	8.85000E-003	0.00000E+000	5.80771E+001	5.80771E+001	1.87800E-002	0.00000E+000	5.85467E+001
Forklifts	1.96750E-001	1.84725E+000	2.40737E+000	3.23000E-003	1.05460E-001	9.70200E-002	0.00000E+000	2.84026E+002	2.84026E+002	9.18600E-002	0.00000E+000	2.86323E+002
Generator Sets	1.98570E-001	1.77658E+000	2.58263E+000	4.64000E-003	7.61100E-002	7.61100E-002	0.00000E+000	3.98471E+002	3.98471E+002	1.58000E-002	0.00000E+000	3.98866E+002
Graders	2.38100E-002	2.88760E-001	1.06810E-001	4.20000E-004	9.22000E-003	8.48000E-003	0.00000E+000	3.72076E+001	3.72076E+001	1.20300E-002	0.00000E+000	3.75084E+001
Pavers	2.05900E-002	1.99340E-001	3.12090E-001	5.10000E-004	9.41000E-003	8.66000E-003	0.00000E+000	4.45916E+001	4.45916E+001	1.44200E-002	0.00000E+000	4.49522E+001
Paving Equipment	1.75800E-002	1.62600E-001	2.74990E-001	4.40000E-004	7.98000E-003	7.34000E-003	0.00000E+000	3.86412E+001	3.86412E+001	1.25000E-002	0.00000E+000	3.89536E+001
Rollers	1.64000E-002	1.71400E-001	2.00200E-001	2.80000E-004	9.32000E-003	8.57000E-003	0.00000E+000	2.48941E+001	2.48941E+001	8.05000E-003	0.00000E+000	2.50953E+001
Rubber Tired Dozers	1.10540E-001	1.14987E+000	4.87370E-001	1.25000E-003	5.30000E-002	4.87600E-002	0.00000E+000	1.09911E+002	1.09911E+002	3.55500E-002	0.00000E+000	1.10799E+002
Scrapers	9.70500E-002	1.00841E+000	7.63360E-001	1.94000E-003	3.94700E-002	3.63200E-002	0.00000E+000	1.70627E+002	1.70627E+002	5.51800E-002	0.00000E+000	1.72006E+002
Tractors/Loaders/ Backhoes	2.95260E-001	2.98654E+000	4.66174E+000	6.51000E-003	1.34240E-001	1.23500E-001	0.00000E+000	5.71890E+002	5.71890E+002	1.84960E-001	0.00000E+000	5.76514E+002
Welders	1.64410E-001	9.67460E-001	1.17162E+000	1.80000E-003	3.26900E-002	3.26900E-002	0.00000E+000	1.32696E+002	1.32696E+002	1.33600E-002	0.00000E+000	1.33030E+002

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	1.25970E-001	8.49490E-001	1.27603E+000	2.09000E-003	4.14100E-002	4.14100E-002	0.00000E+000	1.80004E+002	1.80004E+002	1.01700E-002	0.00000E+000	1.80259E+002
Cranes	8.74600E-002	1.69090E+000	1.89498E+000	3.56000E-003	6.41400E-002	6.41400E-002	0.00000E+000	3.12727E+002	3.12727E+002	1.01140E-001	0.00000E+000	3.15256E+002
Excavators	2.40400E-002	1.98020E-001	4.16880E-001	6.60000E-004	9.62000E-003	8.85000E-003	0.00000E+000	5.80770E+001	5.80770E+001	1.87800E-002	0.00000E+000	5.85466E+001
Forklifts	1.96750E-001	1.84724E+000	2.40737E+000	3.23000E-003	1.05460E-001	9.70200E-002	0.00000E+000	2.84026E+002	2.84026E+002	9.18600E-002	0.00000E+000	2.86322E+002
Generator Sets	1.98570E-001	1.77658E+000	2.58262E+000	4.64000E-003	7.61000E-002	7.61000E-002	0.00000E+000	3.98471E+002	3.98471E+002	1.58000E-002	0.00000E+000	3.98866E+002
Graders	2.38100E-002	2.88760E-001	1.06810E-001	4.20000E-004	9.22000E-003	8.48000E-003	0.00000E+000	3.72075E+001	3.72075E+001	1.20300E-002	0.00000E+000	3.75084E+001
Pavers	2.05900E-002	1.99340E-001	3.12090E-001	5.10000E-004	9.41000E-003	8.66000E-003	0.00000E+000	4.45916E+001	4.45916E+001	1.44200E-002	0.00000E+000	4.49521E+001
Paving Equipment	1.75800E-002	1.62600E-001	2.74990E-001	4.40000E-004	7.98000E-003	7.34000E-003	0.00000E+000	3.86411E+001	3.86411E+001	1.25000E-002	0.00000E+000	3.89535E+001
Rollers	1.64000E-002	1.71400E-001	2.00190E-001	2.80000E-004	9.32000E-003	8.57000E-003	0.00000E+000	2.48940E+001	2.48940E+001	8.05000E-003	0.00000E+000	2.50953E+001
Rubber Tired Dozers	3.06300E-002	5.92250E-001	6.63730E-001	1.25000E-003	2.24600E-002	2.24600E-002	0.00000E+000	1.09911E+002	1.09911E+002	3.55500E-002	0.00000E+000	1.10799E+002
Scrapers	9.70500E-002	1.00841E+000	7.63360E-001	1.94000E-003	3.94700E-002	3.63200E-002	0.00000E+000	1.70627E+002	1.70627E+002	5.51800E-002	0.00000E+000	1.72006E+002
Tractors/Loaders/Backhoes	2.95260E-001	2.98654E+000	4.66174E+000	6.51000E-003	1.34240E-001	1.23500E-001	0.00000E+000	5.71889E+002	5.71889E+002	1.84960E-001	0.00000E+000	5.76513E+002
Welders	1.64410E-001	9.67460E-001	1.17161E+000	1.80000E-003	3.26900E-002	3.26900E-002	0.00000E+000	1.32695E+002	1.32695E+002	1.33600E-002	0.00000E+000	1.33029E+002

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	1.16664E-006	1.16664E-006	0.00000E+000	0.00000E+000	1.22047E-006
Cranes	5.67372E-001	1.98967E-001	-7.32902E-001	0.00000E+000	2.78190E-001	2.15413E-001	0.00000E+000	1.18314E-006	1.18314E-006	0.00000E+000	0.00000E+000	1.20537E-006
Excavators	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20529E-006	1.20529E-006	0.00000E+000	0.00000E+000	1.19563E-006
Forklifts	0.00000E+000	5.41345E-006	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.19707E-006	1.19707E-006	0.00000E+000	0.00000E+000	1.18747E-006
Generator Sets	0.00000E+000	0.00000E+000	3.87202E-006	0.00000E+000	1.31389E-004	1.31389E-004	0.00000E+000	1.17951E-006	1.17951E-006	0.00000E+000	0.00000E+000	1.20341E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.34381E-006	1.34381E-006	0.00000E+000	0.00000E+000	1.33303E-006
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.12129E-006	1.12129E-006	0.00000E+000	0.00000E+000	1.11229E-006
Paving Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.29396E-006	1.29396E-006	0.00000E+000	0.00000E+000	1.28358E-006
Rollers	0.00000E+000	0.00000E+000	4.99500E-005	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20511E-006	1.20511E-006	0.00000E+000	0.00000E+000	1.19544E-006
Rubber Tired Dozers	7.22906E-001	4.84942E-001	-3.61861E-001	0.00000E+000	5.76226E-001	5.39377E-001	0.00000E+000	1.18278E-006	1.18278E-006	0.00000E+000	0.00000E+000	1.17329E-006
Scrapers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.17215E-006	1.17215E-006	0.00000E+000	0.00000E+000	1.16275E-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	1.18904E-006	1.18904E-006	0.00000E+000	0.00000E+000	1.17950E-006
Welders	0.00000E+000	0.00000E+000	8.53519E-006	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.13041E-006	1.13041E-006	0.00000E+000	0.00000E+000	1.20274E-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 1	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating 1	Roads	0.27	0.07	0.27	0.07	0.00	0.00
Architectural Coating 2	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating 2	Roads	0.16	0.04	0.16	0.04	0.00	0.00
Architectural Coating 3	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating 3	Roads	0.08	0.02	0.08	0.02	0.00	0.00
Building Construction 1	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction 1	Roads	1.76	0.48	1.76	0.48	0.00	0.00
Building Construction 2	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction 2	Roads	1.05	0.28	1.05	0.28	0.00	0.00
Building Construction 3	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction 3	Roads	0.55	0.15	0.55	0.15	0.00	0.00
Grading 1	Fugitive Dust	0.23	0.12	0.23	0.12	0.00	0.00
Grading 1	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Grading 2	Fugitive Dust	0.14	0.07	0.14	0.07	0.00	0.00
Grading 2	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Grading 3	Fugitive Dust	0.02	0.01	0.02	0.01	0.00	0.00
Grading 3	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Paving 1	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00

Paving 1	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Paving 2	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving 2	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Paving 3	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving 3	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Prep 2	Fugitive Dust	0.18	0.10	0.18	0.10	0.00	0.00
Site Prep 2	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Prep 3	Fugitive Dust	0.05	0.02	0.05	0.02	0.00	0.00
Site Prep 3	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation 1	Fugitive Dust	0.31	0.15	0.31	0.15	0.00	0.00
Site Preparation 1	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	7.25	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	100.00	100.00	100.00	100.00	100.00
Hearth	99.85	43.24	99.64	97.43	99.52	99.52	100.00	-172.00	46.38	99.32	78.75	48.71
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	0.75	0.82	1.50	1.82	1.69	1.72	0.00	1.84	1.84	1.46	0.00	1.84
Natural Gas	6.24	6.24	6.25	6.38	6.21	6.21	0.00	6.24	6.24	6.27	6.23	6.24
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: Low Density Suburban

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.18	0.45		
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			
Yes	Neighborhood Enhancements	Improve Pedestrian Network	2.00	Project Site and Connecting Off-Site		
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.02			
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	0.02			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"	3.00			
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	5.00			
	Commute	Commute Subtotal	0.00			
No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.02			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
Yes	Only Natural Gas Hearth	
No	No Hearth	
Yes	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
Yes	Use Low VOC Paint (Residential Exterior)	150.00
No	Use Low VOC Paint (Non-residential Interior)	100.00
Yes	Use Low VOC Paint (Non-residential Exterior)	150.00

Yes	Use Low VOC Paint (Parking)	150.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	7.00	
No	Install High Efficiency Lighting		
Yes	On-site Renewable		100.00

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	

CalEEMod Results – Year 2030

Creekside Vineyards Project - 2030

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
City Park	3.92	Acre	3.92	170,755.20	0
Single Family Housing	220.00	Dwelling Unit	28.00	396,000.00	629

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	175	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per the site plan.

Construction Phase - Phasing adjusted based on default lengths for the number of units built under each phase.

Grading - Total acres graded changed to reflect grading plan.

Vehicle Trips - Trip generation rates adjusted per the Traffic Impact Assessment prepared for the proposed project.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblGrading	AcresOfGrading	0.00	71.70
tblGrading	MaterialImported	0.00	4,555.00
tblLandUse	LotAcreage	71.43	28.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	175
tblTripsAndVMT	HaulingTripNumber	569.00	0.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	9.45
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	9.45
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	9.45

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					
2022	0.0483	0.4968	0.3010	5.9000e-004	0.3114	0.0242	0.3356	0.1537	0.0223	0.1759	0.0000	51.8965	51.8965	0.0163	0.0000	52.3030
Maximum	**0.0483**	**0.4968**	**0.3010**	**5.9000e-004**	**0.3114**	**0.0242**	**0.3356**	**0.1537**	**0.0223**	**0.1759**	**0.0000**	**51.8965**	**51.8965**	**0.0163**	**0.0000**	**52.3030**

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					
2022	0.0483	0.4968	0.3010	5.9000e-004	0.3114	0.0242	0.3356	0.1537	0.0223	0.1759	0.0000	51.8965	51.8965	0.0163	0.0000	52.3030
Maximum	**0.0483**	**0.4968**	**0.3010**	**5.9000e-004**	**0.3114**	**0.0242**	**0.3356**	**0.1537**	**0.0223**	**0.1759**	**0.0000**	**51.8965**	**51.8965**	**0.0163**	**0.0000**	**52.3030**

	ROG	**NOx**	**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	**1-1-2022**	**3-31-2022**	0.5452	0.5452
		Highest	0.5452	0.5452

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	3.2353	0.0472	3.5149	3.9700e-003		0.2810	0.2810		0.2810	0.2810	27.9644	9.5349	37.4993	0.0554	1.6000e-003	39.3601
Energy	0.0345	0.2946	0.1254	1.8800e-003		0.0238	0.0238		0.0238	0.0238	0.0000	482.5134	482.5134	0.0300	0.0111	486.5700
Mobile	0.3325	1.7228	3.6970	0.0167	1.7857	0.0111	1.7968	0.4790	0.0103	0.4893	0.0000	1,541.8554	1,541.8554	0.0488	0.0000	1,543.0760
Waste						0.0000	0.0000		0.0000	0.0000	53.6952	0.0000	53.6952	3.1733	0.0000	133.0275
Water						0.0000	0.0000		0.0000	0.0000	4.5475	9.9649	14.5124	0.4687	0.0114	29.6187
Total	**3.6023**	**2.0647**	**7.3373**	**0.0226**	**1.7857**	**0.3159**	**2.1016**	**0.4790**	**0.3151**	**0.7941**	**86.2071**	**2,043.8685**	**2,130.0756**	**3.7762**	**0.0241**	**2,231.6523**

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	3.1197	0.0472	3.5149	3.9700e-003		0.2810	0.2810		0.2810	0.2810	27.9644	9.5349	37.4993	0.0554	1.6000e-003	39.3601
Energy	0.0323	0.2763	0.1176	1.7600e-003		0.0223	0.0223		0.0223	0.0223	0.0000	319.9323	319.9323	6.1300e-003	5.8700e-003	321.8335
Mobile	0.3299	1.7091	3.6414	0.0164	1.7500	0.0109	1.7609	0.4694	0.0101	0.4796	0.0000	1,513.5677	1,513.5677	0.0481	0.0000	1,514.7704
Waste						0.0000	0.0000		0.0000	0.0000	53.6952	0.0000	53.6952	3.1733	0.0000	133.0275
Water						0.0000	0.0000		0.0000	0.0000	4.5475	9.9649	14.5124	0.4687	0.0114	29.6187
Total	**3.4820**	**2.0326**	**7.2739**	**0.0221**	**1.7500**	**0.3142**	**2.0642**	**0.4694**	**0.3134**	**0.7829**	**86.2071**	**1,852.9997**	**1,939.2068**	**3.7516**	**0.0188**	**2,038.6102**

	ROG	NOx	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	**3.34**	**1.55**	**0.86**	**1.91**	**2.00**	**0.53**	**1.78**	**2.00**	**0.53**	**1.41**	**0.00**	**9.34**	**8.96**	**0.65**	**21.73**	**8.65**

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 1	Site Preparation	1/1/2022	2/11/2022	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation 1	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation 1	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation 1	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation 1 - 2022

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					0.3093	0.0000	0.3093	0.1531	0.0000	0.1531	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0476	0.4963	0.2955	5.7000e-004		0.0242	0.0242		0.0223	0.0223	0.0000	50.1591	50.1591	0.0162	0.0000	50.5647
Total	**0.0476**	**0.4963**	**0.2955**	**5.7000e-004**	**0.3093**	**0.0242**	**0.3335**	**0.1531**	**0.0223**	**0.1754**	**0.0000**	**50.1591**	**50.1591**	**0.0162**	**0.0000**	**50.5647**

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	7.7000e-004	5.1000e-004	5.5700e-003	2.0000e-005	2.1300e-003	1.0000e-005	2.1500e-003	5.7000e-004	1.0000e-005	5.8000e-004	0.0000	1.7375	1.7375	4.0000e-005	0.0000	1.7384
Total	**7.7000e-004**	**5.1000e-004**	**5.5700e-003**	**2.0000e-005**	**2.1300e-003**	**1.0000e-005**	**2.1500e-003**	**5.7000e-004**	**1.0000e-005**	**5.8000e-004**	**0.0000**	**1.7375**	**1.7375**	**4.0000e-005**	**0.0000**	**1.7384**

3.2 Site Preparation 1 - 2022

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					0.3093	0.0000	0.3093	0.1531	0.0000	0.1531	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0476	0.4963	0.2955	5.7000e-004		0.0242	0.0242		0.0223	0.0223	0.0000	50.1590	50.1590	0.0162	0.0000	50.5646
Total	**0.0476**	**0.4963**	**0.2955**	**5.7000e-004**	**0.3093**	**0.0242**	**0.3335**	**0.1531**	**0.0223**	**0.1754**	**0.0000**	**50.1590**	**50.1590**	**0.0162**	**0.0000**	**50.5646**

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	7.7000e-004	5.1000e-004	5.5700e-003	2.0000e-005	2.1300e-003	1.0000e-005	2.1500e-003	5.7000e-004	1.0000e-005	5.8000e-004	0.0000	1.7375	1.7375	4.0000e-005	0.0000	1.7384
Total	**7.7000e-004**	**5.1000e-004**	**5.5700e-003**	**2.0000e-005**	**2.1300e-003**	**1.0000e-005**	**2.1500e-003**	**5.7000e-004**	**1.0000e-005**	**5.8000e-004**	**0.0000**	**1.7375**	**1.7375**	**4.0000e-005**	**0.0000**	**1.7384**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.3299	1.7091	3.6414	0.0164	1.7500	0.0109	1.7609	0.4694	0.0101	0.4796	0.0000	1,513.5677	1,513.5677	0.0481	0.0000	1,514.7704
Unmitigated	0.3325	1.7228	3.6970	0.0167	1.7857	0.0111	1.7968	0.4790	0.0103	0.4893	0.0000	1,541.8554	1,541.8554	0.0488	0.0000	1,543.0760

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	2,079.00	2,079.00	2079.00	4,801,674	4,705,640
Total	2,079.00	2,079.00	2,079.00	4,801,674	4,705,640

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.585795	0.036515	0.193581	0.106455	0.012789	0.005274	0.019465	0.028415	0.002699	0.001789	0.005626	0.000921	0.000676
Other Asphalt Surfaces	0.585795	0.036515	0.193581	0.106455	0.012789	0.005274	0.019465	0.028415	0.002699	0.001789	0.005626	0.000921	0.000676
Single Family Housing	0.585795	0.036515	0.193581	0.106455	0.012789	0.005274	0.019465	0.028415	0.002699	0.001789	0.005626	0.000921	0.000676

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	141.2881	141.2881	0.0234	4.8400e-003	143.3170
NaturalGas Mitigated	0.0323	0.2763	0.1176	1.7600e-003		0.0223	0.0223		0.0223	0.0223	0.0000	319.9323	319.9323	6.1300e-003	5.8700e-003	321.8335
NaturalGas Unmitigated	0.0345	0.2946	0.1254	1.8800e-003		0.0238	0.0238		0.0238	0.0238	0.0000	341.2253	341.2253	6.5400e-003	6.2600e-003	343.2530

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	6.39432e+006	0.0345	0.2946	0.1254	1.8800e-003		0.0238	0.0238		0.0238	0.0238	0.0000	341.2253	341.2253	6.5400e-003	6.2600e-003	343.2530
Total		**0.0345**	**0.2946**	**0.1254**	**1.8800e-003**		**0.0238**	**0.0238**		**0.0238**	**0.0238**	**0.0000**	**341.2253**	**341.2253**	**6.5400e-003**	**6.2600e-003**	**343.2530**

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	5.9953e+006	0.0323	0.2763	0.1176	1.7600e-003		0.0223	0.0223		0.0223	0.0223	0.0000	319.9323	319.9323	6.1300e-003	5.8700e-003	321.8335
Total		**0.0323**	**0.2763**	**0.1176**	**1.7600e-003**		**0.0223**	**0.0223**		**0.0223**	**0.0223**	**0.0000**	**319.9323**	**319.9323**	**6.1300e-003**	**5.8700e-003**	**321.8335**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.77993e+006	141.2881	0.0234	4.8400e-003	143.3170
Total		**141.2881**	**0.0234**	**4.8400e-003**	**143.3170**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	3.1197	0.0472	3.5149	3.9700e-003		0.2810	0.2810		0.2810	0.2810	27.9644	9.5349	37.4993	0.0554	1.6000e-003	39.3601
Unmitigated	3.2353	0.0472	3.5149	3.9700e-003		0.2810	0.2810		0.2810	0.2810	27.9644	9.5349	37.4993	0.0554	1.6000e-003	39.3601

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	0.2941					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5958					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2967	0.0284	1.8855	3.8900e-003		0.2719	0.2719		0.2719	0.2719	27.9644	6.8662	34.8306	0.0528	1.6000e-003	36.6279
Landscaping	0.0488	0.0188	1.6294	9.0000e-005		9.0600e-003	9.0600e-003		9.0600e-003	9.0600e-003	0.0000	2.6687	2.6687	2.5400e-003	0.0000	2.7323
Total	**3.2353**	**0.0472**	**3.5149**	**3.9800e-003**		**0.2810**	**0.2810**		**0.2810**	**0.2810**	**27.9644**	**9.5349**	**37.4993**	**0.0554**	**1.6000e-003**	**39.3601**

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	0.2941					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2967	0.0284	1.8855	3.8900e-003		0.2719	0.2719		0.2719	0.2719	27.9644	6.8662	34.8306	0.0528	1.6000e-003	36.6279
Landscaping	0.0488	0.0188	1.6294	9.0000e-005		9.0600e-003	9.0600e-003		9.0600e-003	9.0600e-003	0.0000	2.6687	2.6687	2.5400e-003	0.0000	2.7323
Total	**3.1197**	**0.0472**	**3.5149**	**3.9800e-003**		**0.2810**	**0.2810**		**0.2810**	**0.2810**	**27.9644**	**9.5349**	**37.4993**	**0.0554**	**1.6000e-003**	**39.3601**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	14.5124	0.4687	0.0114	29.6187
Unmitigated	14.5124	0.4687	0.0114	29.6187

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.67061	1.2976	2.2000e-004	4.0000e-005	1.3163
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	14.3339 / 9.03658	13.2147	0.4685	0.0113	28.3024
Total		**14.5123**	**0.4687**	**0.0114**	**29.6187**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.67061	1.2976	2.2000e-004	4.0000e-005	1.3163
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	14.3339 / 9.03658	13.2147	0.4685	0.0113	28.3024
Total		**14.5123**	**0.4687**	**0.0114**	**29.6187**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	53.6952	3.1733	0.0000	133.0275
Unmitigated	53.6952	3.1733	0.0000	133.0275

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.34	0.0690	4.0800e-003	0.0000	0.1710
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	264.18	53.6262	3.1692	0.0000	132.8565
Total		**53.6952**	**3.1733**	**0.0000**	**133.0275**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.34	0.0690	4.0800e-003	0.0000	0.1710
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	264.18	53.6262	3.1692	0.0000	132.8565
Total		**53.6952**	**3.1733**	**0.0000**	**133.0275**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Results – Alternatives

Existing Land Use Designation Alternative - Unmitigated

Creekside Vineyards (Existing Designation Alt)

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
Single Family Housing	273.00	Dwelling Unit	100.50	491,400.00	781

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per description of alternatives

Construction Phase - Construction not modeled

Off-road Equipment - Construction not modeled

Grading - Construction not modeled

Vehicle Trips - Trip generation rates adjusted per Alternatives Chapter

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblLandUse	LotAcreage	88.64	100.50
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblVehicleTrips	ST_TR	9.91	5.09
tblVehicleTrips	SU_TR	8.62	5.09
tblVehicleTrips	WD_TR	9.52	5.09

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					
2022	0.1933	1.9871	1.2041	2.3600e-003	1.0925	0.0968	1.1893	0.5981	0.0891	0.6872	0.0000	207.5862	207.5862	0.0650	0.0000	209.2120
Maximum	**0.1933**	**1.9871**	**1.2041**	**2.3600e-003**	**1.0925**	**0.0968**	**1.1893**	**0.5981**	**0.0891**	**0.6872**	**0.0000**	**207.5862**	**207.5862**	**0.0650**	**0.0000**	**209.2120**

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					
2022	0.1933	1.9871	1.2041	2.3600e-003	1.0925	0.0968	1.1893	0.5981	0.0891	0.6872	0.0000	207.5859	207.5859	0.0650	0.0000	209.2118
Maximum	**0.1933**	**1.9871**	**1.2041**	**2.3600e-003**	**1.0925**	**0.0968**	**1.1893**	**0.5981**	**0.0891**	**0.6872**	**0.0000**	**207.5859**	**207.5859**	**0.0650**	**0.0000**	**209.2118**

	ROG	**NOx**	**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	**1-1-2022**	**3-31-2022**	1.1683	1.1683
2	**4-1-2022**	**6-30-2022**	1.0123	1.0123
		Highest	1.1683	1.1683

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	3.9979	0.0586	4.3650	4.9300e-003		0.3486	0.3486		0.3486	0.3486	34.7013	11.8317	46.5330	0.0687	1.9800e-003	48.8426
Energy	0.0428	0.3656	0.1556	2.3300e-003		0.0296	0.0296		0.0296	0.0296	0.0000	610.5872	610.5872	0.0372	0.0138	615.6211
Mobile	0.2321	1.1735	2.5780	0.0114	1.1936	7.9200e-003	1.2015	0.3202	7.3700e-003	0.3276	0.0000	1,048.7595	1,048.7595	0.0335	0.0000	1,049.5977
Waste						0.0000	0.0000		0.0000	0.0000	66.5851	0.0000	66.5851	3.9351	0.0000	164.9618
Water						0.0000	0.0000		0.0000	0.0000	5.6430	11.4811	17.1241	0.5814	0.0141	35.8466
Total	**4.2728**	**1.5977**	**7.0987**	**0.0186**	**1.1936**	**0.3861**	**1.5797**	**0.3202**	**0.3856**	**0.7058**	**106.9294**	**1,682.6596**	**1,789.5890**	**4.6559**	**0.0298**	**1,914.8697**

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	3.8544	0.0586	4.3650	4.9300e-003		0.3486	0.3486		0.3486	0.3486	34.7013	11.8317	46.5330	0.0687	1.9800e-003	48.8426
Energy	0.0401	0.3428	0.1459	2.1900e-003		0.0277	0.0277		0.0277	0.0277	0.0000	397.0069	397.0069	7.6100e-003	7.2800e-003	399.3661
Mobile	0.2304	1.1639	2.5394	0.0112	1.1697	7.7800e-003	1.1775	0.3138	7.2400e-003	0.3210	0.0000	1,029.5016	1,029.5016	0.0330	0.0000	1,030.3275
Waste						0.0000	0.0000		0.0000	0.0000	66.5851	0.0000	66.5851	3.9351	0.0000	164.9618
Water						0.0000	0.0000		0.0000	0.0000	5.6430	11.4811	17.1241	0.5814	0.0141	35.8466
Total	**4.1249**	**1.5653**	**7.0503**	**0.0183**	**1.1697**	**0.3841**	**1.5538**	**0.3138**	**0.3836**	**0.6974**	**106.9294**	**1,449.8213**	**1,556.7507**	**4.6258**	**0.0233**	**1,679.3445**

	ROG	NOx	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	**3.46**	**2.03**	**0.68**	**1.88**	**2.00**	**0.51**	**1.64**	**2.00**	**0.51**	**1.19**	**0.00**	**13.84**	**13.01**	**0.65**	**21.78**	**12.30**

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	1/1/2022	6/17/2022	5	120	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0840	0.0000	1.0840	0.5958	0.0000	0.5958	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1902	1.9850	1.1819	2.2800e-003		0.0968	0.0968		0.0890	0.0890	0.0000	200.6363	200.6363	0.0649	0.0000	202.2586
Total	**0.1902**	**1.9850**	**1.1819**	**2.2800e-003**	**1.0840**	**0.0968**	**1.1807**	**0.5958**	**0.0890**	**0.6849**	**0.0000**	**200.6363**	**200.6363**	**0.0649**	**0.0000**	**202.2586**

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	3.0900e-003	2.0500e-003	0.0223	8.0000e-005	8.5300e-003	5.0000e-005	8.5900e-003	2.2700e-003	5.0000e-005	2.3200e-003	0.0000	6.9498	6.9498	1.5000e-004	0.0000	6.9534
Total	**3.0900e-003**	**2.0500e-003**	**0.0223**	**8.0000e-005**	**8.5300e-003**	**5.0000e-005**	**8.5900e-003**	**2.2700e-003**	**5.0000e-005**	**2.3200e-003**	**0.0000**	**6.9498**	**6.9498**	**1.5000e-004**	**0.0000**	**6.9534**

3.2 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0840	0.0000	1.0840	0.5958	0.0000	0.5958	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1902	1.9850	1.1819	2.2800e-003		0.0968	0.0968		0.0890	0.0890	0.0000	200.6361	200.6361	0.0649	0.0000	202.2584
Total	**0.1902**	**1.9850**	**1.1819**	**2.2800e-003**	**1.0840**	**0.0968**	**1.1807**	**0.5958**	**0.0890**	**0.6849**	**0.0000**	**200.6361**	**200.6361**	**0.0649**	**0.0000**	**202.2584**

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	3.0900e-003	2.0500e-003	0.0223	8.0000e-005	8.5300e-003	5.0000e-005	8.5900e-003	2.2700e-003	5.0000e-005	2.3200e-003	0.0000	6.9498	6.9498	1.5000e-004	0.0000	6.9534
Total	**3.0900e-003**	**2.0500e-003**	**0.0223**	**8.0000e-005**	**8.5300e-003**	**5.0000e-005**	**8.5900e-003**	**2.2700e-003**	**5.0000e-005**	**2.3200e-003**	**0.0000**	**6.9498**	**6.9498**	**1.5000e-004**	**0.0000**	**6.9534**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.2304	1.1639	2.5394	0.0112	1.1697	7.7800e-003	1.1775	0.3138	7.2400e-003	0.3210	0.0000	1,029.5016	1,029.5016	0.0330	0.0000	1,030.3275
Unmitigated	0.2321	1.1735	2.5780	0.0114	1.1936	7.9200e-003	1.2015	0.3202	7.3700e-003	0.3276	0.0000	1,048.7595	1,048.7595	0.0335	0.0000	1,049.5977

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	1,389.57	1,389.57	1389.57	3,209,361	3,145,174
Total	1,389.57	1,389.57	1,389.57	3,209,361	3,145,174

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
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	187.1577	187.1577	0.0291	6.0100e-003	189.6754
NaturalGas Mitigated	0.0401	0.3428	0.1459	2.1900e-003		0.0277	0.0277		0.0277	0.0277	0.0000	397.0069	397.0069	7.6100e-003	7.2800e-003	399.3661
NaturalGas Unmitigated	0.0428	0.3656	0.1556	2.3300e-003		0.0296	0.0296		0.0296	0.0296	0.0000	423.4295	423.4295	8.1200e-003	7.7600e-003	425.9458

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					
Other Asphalt Surfaces	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
Single Family Housing	7.93477e+006	0.0428	0.3656	0.1556	2.3300e-003		0.0296	0.0296		0.0296	0.0296	0.0000	423.4295	423.4295	8.1200e-003	7.7600e-003	425.9458
Total		**0.0428**	**0.3656**	**0.1556**	**2.3300e-003**		**0.0296**	**0.0296**		**0.0296**	**0.0296**	**0.0000**	**423.4295**	**423.4295**	**8.1200e-003**	**7.7600e-003**	**425.9458**

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					
Other Asphalt Surfaces	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
Single Family Housing	7.43963e+006	0.0401	0.3428	0.1459	2.1900e-003		0.0277	0.0277		0.0277	0.0277	0.0000	397.0069	397.0069	7.6100e-003	7.2800e-003	399.3661
Total		**0.0401**	**0.3428**	**0.1459**	**2.1900e-003**		**0.0277**	**0.0277**		**0.0277**	**0.0277**	**0.0000**	**397.0069**	**397.0069**	**7.6100e-003**	**7.2800e-003**	**399.3661**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2.20873e+006	187.1577	0.0291	6.0100e-003	189.6754
Total		**187.1577**	**0.0291**	**6.0100e-003**	**189.6754**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	3.8544	0.0586	4.3650	4.9300e-003		0.3486	0.3486		0.3486	0.3486	34.7013	11.8317	46.5330	0.0687	1.9800e-003	48.8426
Unmitigated	3.9979	0.0586	4.3650	4.9300e-003		0.3486	0.3486		0.3486	0.3486	34.7013	11.8317	46.5330	0.0687	1.9800e-003	48.8426

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	0.3613					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.9668					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.6091	0.0353	2.3397	4.8200e-003		0.3374	0.3374		0.3374	0.3374	34.7013	8.5203	43.2216	0.0656	1.9800e-003	45.4518
Landscaping	0.0608	0.0233	2.0253	1.1000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	3.3115	3.3115	3.1700e-003	0.0000	3.3908
Total	**3.9979**	**0.0586**	**4.3650**	**4.9300e-003**		**0.3487**	**0.3487**		**0.3487**	**0.3487**	**34.7013**	**11.8317**	**46.5330**	**0.0687**	**1.9800e-003**	**48.8426**

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	0.3613					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8233					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.6091	0.0353	2.3397	4.8200e-003		0.3374	0.3374		0.3374	0.3374	34.7013	8.5203	43.2216	0.0656	1.9800e-003	45.4518
Landscaping	0.0608	0.0233	2.0253	1.1000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	3.3115	3.3115	3.1700e-003	0.0000	3.3908
Total	**3.8544**	**0.0586**	**4.3650**	**4.9300e-003**		**0.3487**	**0.3487**		**0.3487**	**0.3487**	**34.7013**	**11.8317**	**46.5330**	**0.0687**	**1.9800e-003**	**48.8426**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	17.1241	0.5814	0.0141	35.8466
Unmitigated	17.1241	0.5814	0.0141	35.8466

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	17.787 / 11.2136	17.1241	0.5814	0.0141	35.8466
Total		**17.1241**	**0.5814**	**0.0141**	**35.8466**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	17.787 / 11.2136	17.1241	0.5814	0.0141	35.8466
Total		**17.1241**	**0.5814**	**0.0141**	**35.8466**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	66.5851	3.9351	0.0000	164.9618
Unmitigated	66.5851	3.9351	0.0000	164.9618

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	328.02	66.5851	3.9351	0.0000	164.9618
Total		**66.5851**	**3.9351**	**0.0000**	**164.9618**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	328.02	66.5851	3.9351	0.0000	164.9618
Total		**66.5851**	**3.9351**	**0.0000**	**164.9618**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards (Existing Designation Alt)

Bay Area AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
Single Family Housing	273.00	Dwelling Unit	100.50	491,400.00	781

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per description of alternatives

Construction Phase - Construction not modeled

Off-road Equipment - Construction not modeled

Grading - Construction not modeled

Vehicle Trips - Trip generation rates adjusted per Alternatives Chapter

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblLandUse	LotAcreage	88.64	100.50
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblVehicleTrips	ST_TR	9.91	5.09
tblVehicleTrips	SU_TR	8.62	5.09
tblVehicleTrips	WD_TR	9.52	5.09

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					
2022	3.2240	33.1139	20.1052	0.0394	18.2141	1.6135	19.8276	9.9699	1.4844	11.4543	0.0000	3,823.3830	3,823.3830	1.1950	0.0000	3,853.2582
Maximum	**3.2240**	**33.1139**	**20.1052**	**0.0394**	**18.2141**	**1.6135**	**19.8276**	**9.9699**	**1.4844**	**11.4543**	**0.0000**	**3,823.3830**	**3,823.3830**	**1.1950**	**0.0000**	**3,853.2582**

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					
2022	3.2240	33.1139	20.1052	0.0394	18.2141	1.6135	19.8276	9.9699	1.4844	11.4543	0.0000	3,823.3830	3,823.3830	1.1950	0.0000	3,853.2582
Maximum	**3.2240**	**33.1139**	**20.1052**	**0.0394**	**18.2141**	**1.6135**	**19.8276**	**9.9699**	**1.4844**	**11.4543**	**0.0000**	**3,823.3830**	**3,823.3830**	**1.1950**	**0.0000**	**3,853.2582**

	ROG	**NOx**	**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	296.3467	5.7066	388.4020	0.6903		51.8648	51.8648		51.8648	51.8648	5,563.2864	1,726.7350	7,290.0214	6.9176	0.3926	7,579.9464
Energy	0.2344	2.0034	0.8525	0.0128		0.1620	0.1620		0.1620	0.1620		2,557.5406	2,557.5406	0.0490	0.0469	2,572.7387
Mobile	1.4749	6.3057	14.7888	0.0659	6.8136	0.0435	6.8571	1.8219	0.0405	1.8624		6,700.7950	6,700.7950	0.2030		6,705.8710
Total	**298.0560**	**14.0158**	**404.0434**	**0.7690**	**6.8136**	**52.0702**	**58.8838**	**1.8219**	**52.0672**	**53.8892**	**5,563.2864**	**10,985.0705**	**16,548.3569**	**7.1697**	**0.4395**	**16,858.5561**

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	295.5605	5.7066	388.4020	0.6903		51.8648	51.8648		51.8648	51.8648	5,563.2864	1,726.7350	7,290.0214	6.9176	0.3926	7,579.9464
Energy	0.2198	1.8784	0.7993	0.0120		0.1519	0.1519		0.1519	0.1519		2,397.9461	2,397.9461	0.0460	0.0440	2,412.1959
Mobile	1.4651	6.2564	14.5507	0.0647	6.6773	0.0427	6.7200	1.7855	0.0398	1.8253		6,577.6221	6,577.6221	0.2000		6,582.6214
Total	**297.2454**	**13.8414**	**403.7520**	**0.7670**	**6.6773**	**52.0594**	**58.7367**	**1.7855**	**52.0564**	**53.8419**	**5,563.2864**	**10,702.3031**	**16,265.5895**	**7.1635**	**0.4365**	**16,574.7637**

	ROG	NOx	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	**0.27**	**1.24**	**0.07**	**0.26**	**2.00**	**0.02**	**0.25**	**2.00**	**0.02**	**0.09**	**0.00**	**2.57**	**1.71**	**0.09**	**0.67**	**1.68**

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	1/1/2022	6/17/2022	5	120	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

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	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**18.0663**	**1.6126**	**19.6788**	**9.9307**	**1.4836**	**11.4143**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

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	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		137.3212	137.3212	2.8600e-003		137.3927
Total	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**137.3212**	**137.3212**	**2.8600e-003**		**137.3927**

3.2 Site Preparation - 2022

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	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**18.0663**	**1.6126**	**19.6788**	**9.9307**	**1.4836**	**11.4143**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

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	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		137.3212	137.3212	2.8600e-003		137.3927
Total	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**137.3212**	**137.3212**	**2.8600e-003**		**137.3927**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive 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	1.4651	6.2564	14.5507	0.0647	6.6773	0.0427	6.7200	1.7855	0.0398	1.8253		6,577.6221	6,577.6221	0.2000		6,582.6214
Unmitigated	1.4749	6.3057	14.7888	0.0659	6.8136	0.0435	6.8571	1.8219	0.0405	1.8624		6,700.7950	6,700.7950	0.2030		6,705.8710

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	1,389.57	1,389.57	1389.57	3,209,361	3,145,174
Total	1,389.57	1,389.57	1,389.57	3,209,361	3,145,174

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
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.2198	1.8784	0.7993	0.0120		0.1519	0.1519		0.1519	0.1519		2,397.9461	2,397.9461	0.0460	0.0440	2,412.1959
NaturalGas Unmitigated	0.2344	2.0034	0.8525	0.0128		0.1620	0.1620		0.1620	0.1620		2,557.5406	2,557.5406	0.0490	0.0469	2,572.7387

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					
Other Asphalt Surfaces	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
Single Family Housing	21739.1	0.2344	2.0034	0.8525	0.0128		0.1620	0.1620		0.1620	0.1620		2,557.5406	2,557.5406	0.0490	0.0469	2,572.7387
Total		**0.2344**	**2.0034**	**0.8525**	**0.0128**		**0.1620**	**0.1620**		**0.1620**	**0.1620**		**2,557.5406**	**2,557.5406**	**0.0490**	**0.0469**	**2,572.7387**

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					
Other Asphalt Surfaces	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
Single Family Housing	20.3825	0.2198	1.8784	0.7993	0.0120		0.1519	0.1519		0.1519	0.1519		2,397.9461	2,397.9461	0.0460	0.0440	2,412.1959
Total		**0.2198**	**1.8784**	**0.7993**	**0.0120**		**0.1519**	**0.1519**		**0.1519**	**0.1519**		**2,397.9461**	**2,397.9461**	**0.0460**	**0.0440**	**2,412.1959**

6.0 Area Detail

6.1 Mitigation Measures Area

Creekside Vineyards (Existing Designation Alt) - Bay Area AQMD Air District, Summer

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive 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	295.5605	5.7066	388.4020	0.6903		51.8648	51.8648		51.8648	51.8648	5,563.2864	1,726.7350	7,290.0214	6.9176	0.3926	7,579.9464
Unmitigated	296.3467	5.7066	388.4020	0.6903		51.8648	51.8648		51.8648	51.8648	5,563.2864	1,726.7350	7,290.0214	6.9176	0.3926	7,579.9464

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	1.9796					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.7767					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	282.9147	5.4474	365.8988	0.6891		51.7399	51.7399		51.7399	51.7399	5,563.2864	1,686.1765	7,249.4629	6.8788	0.3926	7,538.4168
Landscaping	0.6758	0.2592	22.5032	1.1900e-003		0.1249	0.1249		0.1249	0.1249		40.5585	40.5585	0.0389		41.5296
Total	**296.3467**	**5.7066**	**388.4020**	**0.6903**		**51.8648**	**51.8648**		**51.8648**	**51.8648**	**5,563.2864**	**1,726.7350**	**7,290.0214**	**6.9176**	**0.3926**	**7,579.9464**

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	1.9796					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.9905					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	282.9147	5.4474	365.8988	0.6891		51.7399	51.7399		51.7399	51.7399	5,563.2864	1,686.1765	7,249.4629	6.8788	0.3926	7,538.4168
Landscaping	0.6758	0.2592	22.5032	1.1900e-003		0.1249	0.1249		0.1249	0.1249		40.5585	40.5585	0.0389		41.5296
Total	**295.5605**	**5.7066**	**388.4020**	**0.6903**		**51.8648**	**51.8648**		**51.8648**	**51.8648**	**5,563.2864**	**1,726.7350**	**7,290.0214**	**6.9176**	**0.3926**	**7,579.9464**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards (Existing Designation Alt)

Bay Area AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
Single Family Housing	273.00	Dwelling Unit	100.50	491,400.00	781

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per description of alternatives

Construction Phase - Construction not modeled

Off-road Equipment - Construction not modeled

Grading - Construction not modeled

Vehicle Trips - Trip generation rates adjusted per Alternatives Chapter

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblLandUse	LotAcreage	88.64	100.50
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblVehicleTrips	ST_TR	9.91	5.09
tblVehicleTrips	SU_TR	8.62	5.09
tblVehicleTrips	WD_TR	9.52	5.09

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					
2022	3.2274	33.1210	20.0774	0.0393	18.2141	1.6135	19.8276	9.9699	1.4844	11.4543	0.0000	3,812.5644	3,812.5644	1.1948	0.0000	3,842.4346
Maximum	**3.2274**	**33.1210**	**20.0774**	**0.0393**	**18.2141**	**1.6135**	**19.8276**	**9.9699**	**1.4844**	**11.4543**	**0.0000**	**3,812.5644**	**3,812.5644**	**1.1948**	**0.0000**	**3,842.4346**

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					
2022	3.2274	33.1210	20.0774	0.0393	18.2141	1.6135	19.8276	9.9699	1.4844	11.4543	0.0000	3,812.5644	3,812.5644	1.1948	0.0000	3,842.4346
Maximum	**3.2274**	**33.1210**	**20.0774**	**0.0393**	**18.2141**	**1.6135**	**19.8276**	**9.9699**	**1.4844**	**11.4543**	**0.0000**	**3,812.5644**	**3,812.5644**	**1.1948**	**0.0000**	**3,842.4346**

	ROG	**NOx**	**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	296.3467	5.7066	388.4020	0.6903		51.8648	51.8648		51.8648	51.8648	5,563.2864	1,726.7350	7,290.0214	6.9176	0.3926	7,579.9464
Energy	0.2344	2.0034	0.8525	0.0128		0.1620	0.1620		0.1620	0.1620		2,557.5406	2,557.5406	0.0490	0.0469	2,572.7387
Mobile	1.2575	6.5295	14.7809	0.0619	6.8136	0.0436	6.8572	1.8219	0.0406	1.8626		6,290.4310	6,290.4310	0.2082		6,295.6370
Total	**297.8386**	**14.2395**	**404.0354**	**0.7649**	**6.8136**	**52.0704**	**58.8840**	**1.8219**	**52.0674**	**53.8893**	**5,563.2864**	**10,574.7065**	**16,137.9929**	**7.1749**	**0.4395**	**16,448.3221**

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	295.5605	5.7066	388.4020	0.6903		51.8648	51.8648		51.8648	51.8648	5,563.2864	1,726.7350	7,290.0214	6.9176	0.3926	7,579.9464
Energy	0.2198	1.8784	0.7993	0.0120		0.1519	0.1519		0.1519	0.1519		2,397.9461	2,397.9461	0.0460	0.0440	2,412.1959
Mobile	1.2478	6.4747	14.5673	0.0607	6.6773	0.0429	6.7202	1.7855	0.0399	1.8254		6,174.4426	6,174.4426	0.2053		6,179.5739
Total	**297.0280**	**14.0597**	**403.7686**	**0.7630**	**6.6773**	**52.0595**	**58.7369**	**1.7855**	**52.0566**	**53.8421**	**5,563.2864**	**10,299.1236**	**15,862.4100**	**7.1688**	**0.4365**	**16,171.7162**

	ROG	NOx	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	**0.27**	**1.26**	**0.07**	**0.25**	**2.00**	**0.02**	**0.25**	**2.00**	**0.02**	**0.09**	**0.00**	**2.61**	**1.71**	**0.08**	**0.67**	**1.68**

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	1/1/2022	6/17/2022	5	120	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

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	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**18.0663**	**1.6126**	**19.6788**	**9.9307**	**1.4836**	**11.4143**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

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	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		126.5026	126.5026	2.6600e-003		126.5691
Total	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**126.5026**	**126.5026**	**2.6600e-003**		**126.5691**

3.2 Site Preparation - 2022

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	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**18.0663**	**1.6126**	**19.6788**	**9.9307**	**1.4836**	**11.4143**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

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	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		126.5026	126.5026	2.6600e-003		126.5691
Total	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**126.5026**	**126.5026**	**2.6600e-003**		**126.5691**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive 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	1.2478	6.4747	14.5673	0.0607	6.6773	0.0429	6.7202	1.7855	0.0399	1.8254		6,174.4426	6,174.4426	0.2053		6,179.5739
Unmitigated	1.2575	6.5295	14.7809	0.0619	6.8136	0.0436	6.8572	1.8219	0.0406	1.8626		6,290.4310	6,290.4310	0.2082		6,295.6370

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	1,389.57	1,389.57	1389.57	3,209,361	3,145,174
Total	1,389.57	1,389.57	1,389.57	3,209,361	3,145,174

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
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.2198	1.8784	0.7993	0.0120		0.1519	0.1519		0.1519	0.1519		2,397.9461	2,397.9461	0.0460	0.0440	2,412.1959
NaturalGas Unmitigated	0.2344	2.0034	0.8525	0.0128		0.1620	0.1620		0.1620	0.1620		2,557.5406	2,557.5406	0.0490	0.0469	2,572.7387

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					
Other Asphalt Surfaces	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
Single Family Housing	21739.1	0.2344	2.0034	0.8525	0.0128		0.1620	0.1620		0.1620	0.1620		2,557.5406	2,557.5406	0.0490	0.0469	2,572.7387
Total		**0.2344**	**2.0034**	**0.8525**	**0.0128**		**0.1620**	**0.1620**		**0.1620**	**0.1620**		**2,557.5406**	**2,557.5406**	**0.0490**	**0.0469**	**2,572.7387**

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					
Other Asphalt Surfaces	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
Single Family Housing	20.3825	0.2198	1.8784	0.7993	0.0120		0.1519	0.1519		0.1519	0.1519		2,397.9461	2,397.9461	0.0460	0.0440	2,412.1959
Total		**0.2198**	**1.8784**	**0.7993**	**0.0120**		**0.1519**	**0.1519**		**0.1519**	**0.1519**		**2,397.9461**	**2,397.9461**	**0.0460**	**0.0440**	**2,412.1959**

6.0 Area Detail

6.1 Mitigation Measures Area

Creekside Vineyards (Existing Designation Alt) - Bay Area AQMD Air District, Winter

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive 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	295.5605	5.7066	388.4020	0.6903		51.8648	51.8648		51.8648	51.8648	5,563.2864	1,726.7350	7,290.0214	6.9176	0.3926	7,579.9464
Unmitigated	296.3467	5.7066	388.4020	0.6903		51.8648	51.8648		51.8648	51.8648	5,563.2864	1,726.7350	7,290.0214	6.9176	0.3926	7,579.9464

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	1.9796					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.7767					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	282.9147	5.4474	365.8988	0.6891		51.7399	51.7399		51.7399	51.7399	5,563.2864	1,686.1765	7,249.4629	6.8788	0.3926	7,538.4168
Landscaping	0.6758	0.2592	22.5032	1.1900e-003		0.1249	0.1249		0.1249	0.1249		40.5585	40.5585	0.0389		41.5296
Total	**296.3467**	**5.7066**	**388.4020**	**0.6903**		**51.8648**	**51.8648**		**51.8648**	**51.8648**	**5,563.2864**	**1,726.7350**	**7,290.0214**	**6.9176**	**0.3926**	**7,579.9464**

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	1.9796					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.9905					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	282.9147	5.4474	365.8988	0.6891		51.7399	51.7399		51.7399	51.7399	5,563.2864	1,686.1765	7,249.4629	6.8788	0.3926	7,538.4168
Landscaping	0.6758	0.2592	22.5032	1.1900e-003		0.1249	0.1249		0.1249	0.1249		40.5585	40.5585	0.0389		41.5296
Total	**295.5605**	**5.7066**	**388.4020**	**0.6903**		**51.8648**	**51.8648**		**51.8648**	**51.8648**	**5,563.2864**	**1,726.7350**	**7,290.0214**	**6.9176**	**0.3926**	**7,579.9464**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards (Existing Designation Alt)

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												
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
Rubber Tired Dozers	Diesel	No Change	0	3	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	4	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					
Rubber Tired Dozers	1.50680E-001	1.58286E+000	6.44760E-001	1.54000E-003	7.51300E-002	6.91200E-002	0.00000E+000	1.35049E+002	1.35049E+002	4.36800E-002	0.00000E+000	1.36141E+002
Tractors/Loaders/ Backhoes	3.95300E-002	4.02150E-001	5.37110E-001	7.50000E-004	2.16300E-002	1.99000E-002	0.00000E+000	6.55871E+001	6.55871E+001	2.12100E-002	0.00000E+000	6.61174E+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					
Rubber Tired Dozers	1.50680E-001	1.58286E+000	6.44760E-001	1.54000E-003	7.51300E-002	6.91200E-002	0.00000E+000	1.35049E+002	1.35049E+002	4.36800E-002	0.00000E+000	1.36141E+002
Tractors/Loaders/Backhoes	3.95300E-002	4.02150E-001	5.37110E-001	7.50000E-004	2.16300E-002	1.99000E-002	0.00000E+000	6.55870E+001	6.55870E+001	2.12100E-002	0.00000E+000	6.61173E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.18475E-006	1.18475E-006	0.00000E+000	0.00000E+000	1.24870E-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	1.21975E-006	1.21975E-006	0.00000E+000	0.00000E+000	1.05872E-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
Site Preparation	Fugitive Dust	1.08	0.60	1.08	0.60	0.00	0.00
Site Preparation	Roads	0.01	0.00	0.01	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	7.30	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	100.00	100.00	100.00	100.00	100.00
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	0.75	0.81	1.50	1.85	1.77	1.76	0.00	1.84	1.84	1.46	0.00	1.84
Natural Gas	6.24	6.24	6.23	6.01	6.22	6.22	0.00	6.24	6.24	6.28	6.19	6.24
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: Low Density Suburban

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.11	0.33		
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			

Yes	Neighborhood Enhancements	Improve Pedestrian Network	2.00	Project Site and Connecting Off-Site		
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.02			
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	0.02			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"	3.00			
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	5.00			
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.02			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
Yes	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
Yes	Use Low VOC Paint (Residential Exterior)	150.00
No	Use Low VOC Paint (Non-residential Interior)	100.00
Yes	Use Low VOC Paint (Non-residential Exterior)	150.00
Yes	Use Low VOC Paint (Parking)	150.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	7.00	
No	Install High Efficiency Lighting		
Yes	On-site Renewable		100.00

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	

CalEEMod Results – Alternatives

Existing Land Use Designation Alternative - Mitigated

Creekside Vineyards (Existing Designation Alt) 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
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
Single Family Housing	273.00	Dwelling Unit	100.50	491,400.00	781

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per description of alternatives

Construction Phase - Construction not modeled

Off-road Equipment - Construction not modeled

Grading - Construction not modeled

Vehicle Trips - Trip generation rates adjusted per Alternatives Chapter

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	120.00	1.00
tblLandUse	LotAcreage	88.64	100.50
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblVehicleTrips	ST_TR	9.91	5.09
tblVehicleTrips	SU_TR	8.62	5.09
tblVehicleTrips	WD_TR	9.52	5.09

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					
2022	1.6100e-003	0.0166	0.0100	2.0000e-005	9.1000e-003	8.1000e-004	9.9100e-003	4.9800e-003	7.4000e-004	5.7300e-003	0.0000	1.7299	1.7299	5.4000e-004	0.0000	1.7434
Maximum	**1.6100e-003**	**0.0166**	**0.0100**	**2.0000e-005**	**9.1000e-003**	**8.1000e-004**	**9.9100e-003**	**4.9800e-003**	**7.4000e-004**	**5.7300e-003**	**0.0000**	**1.7299**	**1.7299**	**5.4000e-004**	**0.0000**	**1.7434**

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					
2022	1.6100e-003	0.0166	0.0100	2.0000e-005	9.1000e-003	8.1000e-004	9.9100e-003	4.9800e-003	7.4000e-004	5.7300e-003	0.0000	1.7299	1.7299	5.4000e-004	0.0000	1.7434
Maximum	**1.6100e-003**	**0.0166**	**0.0100**	**2.0000e-005**	**9.1000e-003**	**8.1000e-004**	**9.9100e-003**	**4.9800e-003**	**7.4000e-004**	**5.7300e-003**	**0.0000**	**1.7299**	**1.7299**	**5.4000e-004**	**0.0000**	**1.7434**

	ROG	**NOx**	**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	**1-1-2022**	**3-31-2022**	0.0389	0.0389
		Highest	0.0389	0.0389

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	3.9979	0.0586	4.3650	4.9300e-003		0.3486	0.3486		0.3486	0.3486	34.7013	11.8317	46.5330	0.0687	1.9800e-003	48.8426
Energy	0.0428	0.3656	0.1556	2.3300e-003		0.0296	0.0296		0.0296	0.0296	0.0000	610.5872	610.5872	0.0372	0.0138	615.6211
Mobile	0.2321	1.1735	2.5780	0.0114	1.1936	7.9200e-003	1.2015	0.3202	7.3700e-003	0.3276	0.0000	1,048.7595	1,048.7595	0.0335	0.0000	1,049.5977
Waste						0.0000	0.0000		0.0000	0.0000	66.5851	0.0000	66.5851	3.9351	0.0000	164.9618
Water						0.0000	0.0000		0.0000	0.0000	5.6430	11.4811	17.1241	0.5814	0.0141	35.8466
Total	**4.2728**	**1.5977**	**7.0987**	**0.0186**	**1.1936**	**0.3861**	**1.5797**	**0.3202**	**0.3856**	**0.7058**	**106.9294**	**1,682.6596**	**1,789.5890**	**4.6559**	**0.0298**	**1,914.8697**

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	2.2477	0.0433	2.0338	2.3000e-004		0.0129	0.0129		0.0129	0.0129	0.0000	26.4866	26.4866	3.6200e-003	4.2000e-004	26.7036
Energy	0.0401	0.3428	0.1459	2.1900e-003		0.0277	0.0277		0.0277	0.0277	0.0000	397.0069	397.0069	7.6100e-003	7.2800e-003	399.3661
Mobile	0.2304	1.1639	2.5394	0.0112	1.1697	7.7800e-003	1.1775	0.3138	7.2400e-003	0.3210	0.0000	1,029.5016	1,029.5016	0.0330	0.0000	1,030.3275
Waste						0.0000	0.0000		0.0000	0.0000	66.5851	0.0000	66.5851	3.9351	0.0000	164.9618
Water						0.0000	0.0000		0.0000	0.0000	5.6430	11.4811	17.1241	0.5814	0.0141	35.8466
Total	**2.5182**	**1.5501**	**4.7191**	**0.0136**	**1.1697**	**0.0484**	**1.2181**	**0.3138**	**0.0478**	**0.3616**	**72.2281**	**1,464.4762**	**1,536.7043**	**4.5607**	**0.0218**	**1,657.2056**

	ROG	NOx	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	**41.06**	**2.98**	**33.52**	**27.11**	**2.00**	**87.48**	**22.89**	**2.00**	**87.60**	**48.76**	**32.45**	**12.97**	**14.13**	**2.04**	**27.01**	**13.46**

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	1/1/2022	1/3/2022	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

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					9.0300e-003	0.0000	9.0300e-003	4.9700e-003	0.0000	4.9700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5900e-003	0.0165	9.8500e-003	2.0000e-005		8.1000e-004	8.1000e-004		7.4000e-004	7.4000e-004	0.0000	1.6720	1.6720	5.4000e-004	0.0000	1.6855
Total	**1.5900e-003**	**0.0165**	**9.8500e-003**	**2.0000e-005**	**9.0300e-003**	**8.1000e-004**	**9.8400e-003**	**4.9700e-003**	**7.4000e-004**	**5.7100e-003**	**0.0000**	**1.6720**	**1.6720**	**5.4000e-004**	**0.0000**	**1.6855**

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	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Total	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

3.2 Site Preparation - 2022

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					9.0300e-003	0.0000	9.0300e-003	4.9700e-003	0.0000	4.9700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5900e-003	0.0165	9.8500e-003	2.0000e-005		8.1000e-004	8.1000e-004		7.4000e-004	7.4000e-004	0.0000	1.6720	1.6720	5.4000e-004	0.0000	1.6855
Total	**1.5900e-003**	**0.0165**	**9.8500e-003**	**2.0000e-005**	**9.0300e-003**	**8.1000e-004**	**9.8400e-003**	**4.9700e-003**	**7.4000e-004**	**5.7100e-003**	**0.0000**	**1.6720**	**1.6720**	**5.4000e-004**	**0.0000**	**1.6855**

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	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Total	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.2304	1.1639	2.5394	0.0112	1.1697	7.7800e-003	1.1775	0.3138	7.2400e-003	0.3210	0.0000	1,029.5016	1,029.5016	0.0330	0.0000	1,030.3275
Unmitigated	0.2321	1.1735	2.5780	0.0114	1.1936	7.9200e-003	1.2015	0.3202	7.3700e-003	0.3276	0.0000	1,048.7595	1,048.7595	0.0335	0.0000	1,049.5977

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	1,389.57	1,389.57	1389.57	3,209,361	3,145,174
Total	1,389.57	1,389.57	1,389.57	3,209,361	3,145,174

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
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	187.1577	187.1577	0.0291	6.0100e-003	189.6754
NaturalGas Mitigated	0.0401	0.3428	0.1459	2.1900e-003		0.0277	0.0277		0.0277	0.0277	0.0000	397.0069	397.0069	7.6100e-003	7.2800e-003	399.3661
NaturalGas Unmitigated	0.0428	0.3656	0.1556	2.3300e-003		0.0296	0.0296		0.0296	0.0296	0.0000	423.4295	423.4295	8.1200e-003	7.7600e-003	425.9458

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					
Other Asphalt Surfaces	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
Single Family Housing	7.93477e+006	0.0428	0.3656	0.1556	2.3300e-003		0.0296	0.0296		0.0296	0.0296	0.0000	423.4295	423.4295	8.1200e-003	7.7600e-003	425.9458
Total		**0.0428**	**0.3656**	**0.1556**	**2.3300e-003**		**0.0296**	**0.0296**		**0.0296**	**0.0296**	**0.0000**	**423.4295**	**423.4295**	**8.1200e-003**	**7.7600e-003**	**425.9458**

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					
Other Asphalt Surfaces	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
Single Family Housing	7.43963e+006	0.0401	0.3428	0.1459	2.1900e-003		0.0277	0.0277		0.0277	0.0277	0.0000	397.0069	397.0069	7.6100e-003	7.2800e-003	399.3661
Total		**0.0401**	**0.3428**	**0.1459**	**2.1900e-003**		**0.0277**	**0.0277**		**0.0277**	**0.0277**	**0.0000**	**397.0069**	**397.0069**	**7.6100e-003**	**7.2800e-003**	**399.3661**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2.20873e+006	187.1577	0.0291	6.0100e-003	189.6754
Total		**187.1577**	**0.0291**	**6.0100e-003**	**189.6754**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	2.2477	0.0433	2.0338	2.3000e-004		0.0129	0.0129		0.0129	0.0129	0.0000	26.4866	26.4866	3.6200e-003	4.2000e-004	26.7036
Unmitigated	3.9979	0.0586	4.3650	4.9300e-003		0.3486	0.3486		0.3486	0.3486	34.7013	11.8317	46.5330	0.0687	1.9800e-003	48.8426

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	0.3613					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.9668					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.6091	0.0353	2.3397	4.8200e-003		0.3374	0.3374		0.3374	0.3374	34.7013	8.5203	43.2216	0.0656	1.9800e-003	45.4518
Landscaping	0.0608	0.0233	2.0253	1.1000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	3.3115	3.3115	3.1700e-003	0.0000	3.3908
Total	**3.9979**	**0.0586**	**4.3650**	**4.9300e-003**		**0.3487**	**0.3487**		**0.3487**	**0.3487**	**34.7013**	**11.8317**	**46.5330**	**0.0687**	**1.9800e-003**	**48.8426**

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	0.3613					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8233					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.3400e-003	0.0200	8.5200e-003	1.3000e-004		1.6200e-003	1.6200e-003		1.6200e-003	1.6200e-003	0.0000	23.1752	23.1752	4.4000e-004	4.2000e-004	23.3129
Landscaping	0.0608	0.0233	2.0253	1.1000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	3.3115	3.3115	3.1700e-003	0.0000	3.3908
Total	**2.2477**	**0.0433**	**2.0338**	**2.4000e-004**		**0.0129**	**0.0129**		**0.0129**	**0.0129**	**0.0000**	**26.4866**	**26.4866**	**3.6100e-003**	**4.2000e-004**	**26.7036**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	17.1241	0.5814	0.0141	35.8466
Unmitigated	17.1241	0.5814	0.0141	35.8466

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	17.787 / 11.2136	17.1241	0.5814	0.0141	35.8466
Total		**17.1241**	**0.5814**	**0.0141**	**35.8466**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	17.787 / 11.2136	17.1241	0.5814	0.0141	35.8466
Total		**17.1241**	**0.5814**	**0.0141**	**35.8466**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	66.5851	3.9351	0.0000	164.9618
Unmitigated	66.5851	3.9351	0.0000	164.9618

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	328.02	66.5851	3.9351	0.0000	164.9618
Total		**66.5851**	**3.9351**	**0.0000**	**164.9618**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	328.02	66.5851	3.9351	0.0000	164.9618
Total		**66.5851**	**3.9351**	**0.0000**	**164.9618**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards (Existing Designation Alt) 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
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
Single Family Housing	273.00	Dwelling Unit	100.50	491,400.00	781

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per description of alternatives

Construction Phase - Construction not modeled

Off-road Equipment - Construction not modeled

Grading - Construction not modeled

Vehicle Trips - Trip generation rates adjusted per Alternatives Chapter

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	120.00	1.00
tblLandUse	LotAcreage	88.64	100.50
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblVehicleTrips	ST_TR	9.91	5.09
tblVehicleTrips	SU_TR	8.62	5.09
tblVehicleTrips	WD_TR	9.52	5.09

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					
2022	3.2240	33.1139	20.1052	0.0394	18.2141	1.6135	19.8276	9.9699	1.4844	11.4543	0.0000	3,823.3830	3,823.3830	1.1950	0.0000	3,853.2582
Maximum	**3.2240**	**33.1139**	**20.1052**	**0.0394**	**18.2141**	**1.6135**	**19.8276**	**9.9699**	**1.4844**	**11.4543**	**0.0000**	**3,823.3830**	**3,823.3830**	**1.1950**	**0.0000**	**3,853.2582**

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					
2022	3.2240	33.1139	20.1052	0.0394	18.2141	1.6135	19.8276	9.9699	1.4844	11.4543	0.0000	3,823.3830	3,823.3830	1.1950	0.0000	3,853.2582
Maximum	**3.2240**	**33.1139**	**20.1052**	**0.0394**	**18.2141**	**1.6135**	**19.8276**	**9.9699**	**1.4844**	**11.4543**	**0.0000**	**3,823.3830**	**3,823.3830**	**1.1950**	**0.0000**	**3,853.2582**

	ROG	**NOx**	**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	296.3467	5.7066	388.4020	0.6903		51.8648	51.8648		51.8648	51.8648	5,563.2864	1,726.7350	7,290.0214	6.9176	0.3926	7,579.9464
Energy	0.2344	2.0034	0.8525	0.0128		0.1620	0.1620		0.1620	0.1620		2,557.5406	2,557.5406	0.0490	0.0469	2,572.7387
Mobile	1.4749	6.3057	14.7888	0.0659	6.8136	0.0435	6.8571	1.8219	0.0405	1.8624		6,700.7950	6,700.7950	0.2030		6,705.8710
Total	**298.0560**	**14.0158**	**404.0434**	**0.7690**	**6.8136**	**52.0702**	**58.8838**	**1.8219**	**52.0672**	**53.8892**	**5,563.2864**	**10,985.0705**	**16,548.3569**	**7.1697**	**0.4395**	**16,858.5561**

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	13.0662	3.8519	24.0320	0.0241		0.4153	0.4153		0.4153	0.4153	0.0000	4,626.9585	4,626.9585	0.1268	0.0841	4,655.1843
Energy	0.2198	1.8784	0.7993	0.0120		0.1519	0.1519		0.1519	0.1519		2,397.9461	2,397.9461	0.0460	0.0440	2,412.1959
Mobile	1.4651	6.2564	14.5507	0.0647	6.6773	0.0427	6.7200	1.7855	0.0398	1.8253		6,577.6221	6,577.6221	0.2000		6,582.6214
Total	**14.7512**	**11.9866**	**39.3820**	**0.1008**	**6.6773**	**0.6099**	**7.2872**	**1.7855**	**0.6070**	**2.3925**	**0.0000**	**13,602.5266**	**13,602.5266**	**0.3727**	**0.1280**	**13,650.0016**

	ROG	NOx	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	**95.05**	**14.48**	**90.25**	**86.89**	**2.00**	**98.83**	**87.62**	**2.00**	**98.83**	**95.56**	**100.00**	**-23.83**	**17.80**	**94.80**	**70.86**	**19.03**

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	1/1/2022	1/3/2022	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

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	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**18.0663**	**1.6126**	**19.6788**	**9.9307**	**1.4836**	**11.4143**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

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	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		137.3212	137.3212	2.8600e-003		137.3927
Total	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**137.3212**	**137.3212**	**2.8600e-003**		**137.3927**

3.2 Site Preparation - 2022

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	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**18.0663**	**1.6126**	**19.6788**	**9.9307**	**1.4836**	**11.4143**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

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	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		137.3212	137.3212	2.8600e-003		137.3927
Total	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**137.3212**	**137.3212**	**2.8600e-003**		**137.3927**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive 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	1.4651	6.2564	14.5507	0.0647	6.6773	0.0427	6.7200	1.7855	0.0398	1.8253		6,577.6221	6,577.6221	0.2000		6,582.6214
Unmitigated	1.4749	6.3057	14.7888	0.0659	6.8136	0.0435	6.8571	1.8219	0.0405	1.8624		6,700.7950	6,700.7950	0.2030		6,705.8710

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	1,389.57	1,389.57	1389.57	3,209,361	3,145,174
Total	1,389.57	1,389.57	1,389.57	3,209,361	3,145,174

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
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.2198	1.8784	0.7993	0.0120		0.1519	0.1519		0.1519	0.1519		2,397.9461	2,397.9461	0.0460	0.0440	2,412.1959
NaturalGas Unmitigated	0.2344	2.0034	0.8525	0.0128		0.1620	0.1620		0.1620	0.1620		2,557.5406	2,557.5406	0.0490	0.0469	2,572.7387

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					
Other Asphalt Surfaces	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
Single Family Housing	21739.1	0.2344	2.0034	0.8525	0.0128		0.1620	0.1620		0.1620	0.1620		2,557.5406	2,557.5406	0.0490	0.0469	2,572.7387
Total		**0.2344**	**2.0034**	**0.8525**	**0.0128**		**0.1620**	**0.1620**		**0.1620**	**0.1620**		**2,557.5406**	**2,557.5406**	**0.0490**	**0.0469**	**2,572.7387**

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					
Other Asphalt Surfaces	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
Single Family Housing	20.3825	0.2198	1.8784	0.7993	0.0120		0.1519	0.1519		0.1519	0.1519		2,397.9461	2,397.9461	0.0460	0.0440	2,412.1959
Total		**0.2198**	**1.8784**	**0.7993**	**0.0120**		**0.1519**	**0.1519**		**0.1519**	**0.1519**		**2,397.9461**	**2,397.9461**	**0.0460**	**0.0440**	**2,412.1959**

6.0 Area Detail

6.1 Mitigation Measures Area

Creekside Vineyards (Existing Designation Alt) Mitigated - Bay Area AQMD Air District, Summer

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive 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	13.0662	3.8519	24.0320	0.0241		0.4153	0.4153		0.4153	0.4153	0.0000	4,626.9585	4,626.9585	0.1268	0.0841	4,655.1843
Unmitigated	296.3467	5.7066	388.4020	0.6903		51.8648	51.8648		51.8648	51.8648	5,563.2864	1,726.7350	7,290.0214	6.9176	0.3926	7,579.9464

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	1.9796					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.7767					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	282.9147	5.4474	365.8988	0.6891		51.7399	51.7399		51.7399	51.7399	5,563.2864	1,686.1765	7,249.4629	6.8788	0.3926	7,538.4168
Landscaping	0.6758	0.2592	22.5032	1.1900e-003		0.1249	0.1249		0.1249	0.1249		40.5585	40.5585	0.0389		41.5296
Total	**296.3467**	**5.7066**	**388.4020**	**0.6903**		**51.8648**	**51.8648**		**51.8648**	**51.8648**	**5,563.2864**	**1,726.7350**	**7,290.0214**	**6.9176**	**0.3926**	**7,579.9464**

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	1.9796					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.9905					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4204	3.5927	1.5288	0.0229		0.2905	0.2905		0.2905	0.2905	0.0000	4,586.4000	4,586.4000	0.0879	0.0841	4,613.6547
Landscaping	0.6758	0.2592	22.5032	1.1900e-003		0.1249	0.1249		0.1249	0.1249		40.5585	40.5585	0.0389		41.5296
Total	**13.0662**	**3.8519**	**24.0320**	**0.0241**		**0.4153**	**0.4153**		**0.4153**	**0.4153**	**0.0000**	**4,626.9585**	**4,626.9585**	**0.1268**	**0.0841**	**4,655.1843**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards (Existing Designation Alt) 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
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
Single Family Housing	273.00	Dwelling Unit	100.50	491,400.00	781

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per description of alternatives

Construction Phase - Construction not modeled

Off-road Equipment - Construction not modeled

Grading - Construction not modeled

Vehicle Trips - Trip generation rates adjusted per Alternatives Chapter

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	120.00	1.00
tblLandUse	LotAcreage	88.64	100.50
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblVehicleTrips	ST_TR	9.91	5.09
tblVehicleTrips	SU_TR	8.62	5.09
tblVehicleTrips	WD_TR	9.52	5.09

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					
2022	3.2274	33.1210	20.0774	0.0393	18.2141	1.6135	19.8276	9.9699	1.4844	11.4543	0.0000	3,812.5644	3,812.5644	1.1948	0.0000	3,842.4346
Maximum	**3.2274**	**33.1210**	**20.0774**	**0.0393**	**18.2141**	**1.6135**	**19.8276**	**9.9699**	**1.4844**	**11.4543**	**0.0000**	**3,812.5644**	**3,812.5644**	**1.1948**	**0.0000**	**3,842.4346**

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					
2022	3.2274	33.1210	20.0774	0.0393	18.2141	1.6135	19.8276	9.9699	1.4844	11.4543	0.0000	3,812.5644	3,812.5644	1.1948	0.0000	3,842.4346
Maximum	**3.2274**	**33.1210**	**20.0774**	**0.0393**	**18.2141**	**1.6135**	**19.8276**	**9.9699**	**1.4844**	**11.4543**	**0.0000**	**3,812.5644**	**3,812.5644**	**1.1948**	**0.0000**	**3,842.4346**

	ROG	**NOx**	**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	296.3467	5.7066	388.4020	0.6903		51.8648	51.8648		51.8648	51.8648	5,563.2864	1,726.7350	7,290.0214	6.9176	0.3926	7,579.9464
Energy	0.2344	2.0034	0.8525	0.0128		0.1620	0.1620		0.1620	0.1620		2,557.5406	2,557.5406	0.0490	0.0469	2,572.7387
Mobile	1.2575	6.5295	14.7809	0.0619	6.8136	0.0436	6.8572	1.8219	0.0406	1.8626		6,290.4310	6,290.4310	0.2082		6,295.6370
Total	**297.8386**	**14.2395**	**404.0354**	**0.7649**	**6.8136**	**52.0704**	**58.8840**	**1.8219**	**52.0674**	**53.8893**	**5,563.2864**	**10,574.7065**	**16,137.9929**	**7.1749**	**0.4395**	**16,448.3221**

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	13.0662	3.8519	24.0320	0.0241		0.4153	0.4153		0.4153	0.4153	0.0000	4,626.9585	4,626.9585	0.1268	0.0841	4,655.1843
Energy	0.2198	1.8784	0.7993	0.0120		0.1519	0.1519		0.1519	0.1519		2,397.9461	2,397.9461	0.0460	0.0440	2,412.1959
Mobile	1.2478	6.4747	14.5673	0.0607	6.6773	0.0429	6.7202	1.7855	0.0399	1.8254		6,174.4426	6,174.4426	0.2053		6,179.5739
Total	**14.5338**	**12.2050**	**39.3986**	**0.0968**	**6.6773**	**0.6101**	**7.2874**	**1.7855**	**0.6071**	**2.3926**	**0.0000**	**13,199.3471**	**13,199.3471**	**0.3780**	**0.1280**	**13,246.9541**

	ROG	NOx	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	**95.12**	**14.29**	**90.25**	**87.34**	**2.00**	**98.83**	**87.62**	**2.00**	**98.83**	**95.56**	**100.00**	**-24.82**	**18.21**	**94.73**	**70.86**	**19.46**

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	1/1/2022	1/3/2022	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

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	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**18.0663**	**1.6126**	**19.6788**	**9.9307**	**1.4836**	**11.4143**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

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	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		126.5026	126.5026	2.6600e-003		126.5691
Total	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**126.5026**	**126.5026**	**2.6600e-003**		**126.5691**

3.2 Site Preparation - 2022

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	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**18.0663**	**1.6126**	**19.6788**	**9.9307**	**1.4836**	**11.4143**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

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	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		126.5026	126.5026	2.6600e-003		126.5691
Total	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**126.5026**	**126.5026**	**2.6600e-003**		**126.5691**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive 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	1.2478	6.4747	14.5673	0.0607	6.6773	0.0429	6.7202	1.7855	0.0399	1.8254		6,174.4426	6,174.4426	0.2053		6,179.5739
Unmitigated	1.2575	6.5295	14.7809	0.0619	6.8136	0.0436	6.8572	1.8219	0.0406	1.8626		6,290.4310	6,290.4310	0.2082		6,295.6370

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	1,389.57	1,389.57	1389.57	3,209,361	3,145,174
Total	1,389.57	1,389.57	1,389.57	3,209,361	3,145,174

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
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.2198	1.8784	0.7993	0.0120		0.1519	0.1519		0.1519	0.1519		2,397.9461	2,397.9461	0.0460	0.0440	2,412.1959
NaturalGas Unmitigated	0.2344	2.0034	0.8525	0.0128		0.1620	0.1620		0.1620	0.1620		2,557.5406	2,557.5406	0.0490	0.0469	2,572.7387

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					
Other Asphalt Surfaces	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
Single Family Housing	21739.1	0.2344	2.0034	0.8525	0.0128		0.1620	0.1620		0.1620	0.1620		2,557.5406	2,557.5406	0.0490	0.0469	2,572.7387
Total		**0.2344**	**2.0034**	**0.8525**	**0.0128**		**0.1620**	**0.1620**		**0.1620**	**0.1620**		**2,557.5406**	**2,557.5406**	**0.0490**	**0.0469**	**2,572.7387**

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					
Other Asphalt Surfaces	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
Single Family Housing	20.3825	0.2198	1.8784	0.7993	0.0120		0.1519	0.1519		0.1519	0.1519		2,397.9461	2,397.9461	0.0460	0.0440	2,412.1959
Total		**0.2198**	**1.8784**	**0.7993**	**0.0120**		**0.1519**	**0.1519**		**0.1519**	**0.1519**		**2,397.9461**	**2,397.9461**	**0.0460**	**0.0440**	**2,412.1959**

6.0 Area Detail

6.1 Mitigation Measures Area

Creekside Vineyards (Existing Designation Alt) Mitigated - Bay Area AQMD Air District, Winter

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive 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	13.0662	3.8519	24.0320	0.0241		0.4153	0.4153		0.4153	0.4153	0.0000	4,626.9585	4,626.9585	0.1268	0.0841	4,655.1843
Unmitigated	296.3467	5.7066	388.4020	0.6903		51.8648	51.8648		51.8648	51.8648	5,563.2864	1,726.7350	7,290.0214	6.9176	0.3926	7,579.9464

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	1.9796					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.7767					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	282.9147	5.4474	365.8988	0.6891		51.7399	51.7399		51.7399	51.7399	5,563.2864	1,686.1765	7,249.4629	6.8788	0.3926	7,538.4168
Landscaping	0.6758	0.2592	22.5032	1.1900e-003		0.1249	0.1249		0.1249	0.1249		40.5585	40.5585	0.0389		41.5296
Total	**296.3467**	**5.7066**	**388.4020**	**0.6903**		**51.8648**	**51.8648**		**51.8648**	**51.8648**	**5,563.2864**	**1,726.7350**	**7,290.0214**	**6.9176**	**0.3926**	**7,579.9464**

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	1.9796					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.9905					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4204	3.5927	1.5288	0.0229		0.2905	0.2905		0.2905	0.2905	0.0000	4,586.4000	4,586.4000	0.0879	0.0841	4,613.6547
Landscaping	0.6758	0.2592	22.5032	1.1900e-003		0.1249	0.1249		0.1249	0.1249		40.5585	40.5585	0.0389		41.5296
Total	**13.0662**	**3.8519**	**24.0320**	**0.0241**		**0.4153**	**0.4153**		**0.4153**	**0.4153**	**0.0000**	**4,626.9585**	**4,626.9585**	**0.1268**	**0.0841**	**4,655.1843**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards (Existing Designation Alt) 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												
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
Rubber Tired Dozers	Diesel	No Change	0	3	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	4	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					
Rubber Tired Dozers	1.26000E-003	1.31900E-002	5.37000E-003	1.00000E-005	6.30000E-004	5.80000E-004	0.00000E+000	1.12541E+000	1.12541E+000	3.60000E-004	0.00000E+000	1.13451E+000
Tractors/Loaders/ Backhoes	3.30000E-004	3.35000E-003	4.48000E-003	1.00000E-005	1.80000E-004	1.70000E-004	0.00000E+000	5.46560E-001	5.46560E-001	1.80000E-004	0.00000E+000	5.50980E-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					
Rubber Tired Dozers	1.26000E-003	1.31900E-002	5.37000E-003	1.00000E-005	6.30000E-004	5.80000E-004	0.00000E+000	1.12541E+000	1.12541E+000	3.60000E-004	0.00000E+000	1.13451E+000
Tractors/Loaders/Backhoes	3.30000E-004	3.35000E-003	4.48000E-003	1.00000E-005	1.80000E-004	1.70000E-004	0.00000E+000	5.46560E-001	5.46560E-001	1.80000E-004	0.00000E+000	5.50980E-001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Rubber Tired Dozers	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	0.00000E+000
Tractors/Loaders/Backhoes	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	0.00000E+000

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
Site Preparation	Fugitive Dust	0.01	0.00	0.01	0.00	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	7.30	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	100.00	100.00	100.00	100.00	100.00
Hearth	99.85	43.25	99.64	97.30	99.52	99.52	100.00	-172.00	46.38	99.33	78.79	48.71
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	0.75	0.81	1.50	1.85	1.77	1.76	0.00	1.84	1.84	1.46	0.00	1.84
Natural Gas	6.24	6.24	6.23	6.01	6.22	6.22	0.00	6.24	6.24	6.28	6.19	6.24
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: Low Density Suburban

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.11	0.33		
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			

Yes	Neighborhood Enhancements	Improve Pedestrian Network	2.00	Project Site and Connecting Off-Site		
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.02			
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	0.02			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"	3.00			
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	5.00			
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.02			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
Yes	Only Natural Gas Hearth	
No	No Hearth	
Yes	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
Yes	Use Low VOC Paint (Residential Exterior)	150.00
No	Use Low VOC Paint (Non-residential Interior)	100.00
Yes	Use Low VOC Paint (Non-residential Exterior)	150.00
Yes	Use Low VOC Paint (Parking)	150.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	7.00	
No	Install High Efficiency Lighting		
Yes	On-site Renewable		100.00

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	

CalEEMod Results – Alternatives

Existing Land Use Designation Alternative – Year 2030

Creekside Vineyards (Existing Designation Alt Mit 2030)

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
Single Family Housing	273.00	Dwelling Unit	100.50	491,400.00	781

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	163.33	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per description of alternatives

Construction Phase - Construction not modeled

Off-road Equipment - Construction not modeled

Grading - Construction not modeled

Vehicle Trips - Trip generation rates adjusted per Alternatives Chapter

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	120.00	1.00
tblLandUse	LotAcreage	88.64	100.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	163.33
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblVehicleTrips	ST_TR	9.91	5.09
tblVehicleTrips	SU_TR	8.62	5.09
tblVehicleTrips	WD_TR	9.52	5.09

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					
2022	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Maximum	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

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					
2022	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Maximum	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

	ROG	**NOx**	**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	**1-1-2022**	**3-31-2022**	0.0001	0.0001
		Highest	0.0001	0.0001

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	3.9976	0.0586	4.3616	4.9300e-003		0.3487	0.3487		0.3487	0.3487	34.7013	11.8317	46.5330	0.0687	1.9800e-003	48.8422
Energy	0.0428	0.3656	0.1556	2.3300e-003		0.0296	0.0296		0.0296	0.0296	0.0000	587.0635	587.0635	0.0372	0.0138	592.0974
Mobile	0.2222	1.1515	2.4710	0.0112	1.1936	7.4100e-003	1.2010	0.3202	6.9000e-003	0.3271	0.0000	1,030.5512	1,030.5512	0.0326	0.0000	1,031.3671
Waste						0.0000	0.0000		0.0000	0.0000	66.5851	0.0000	66.5851	3.9351	0.0000	164.9618
Water						0.0000	0.0000		0.0000	0.0000	5.6430	10.0381	15.6811	0.5814	0.0141	34.4035
Total	**4.2626**	**1.5757**	**6.9882**	**0.0184**	**1.1936**	**0.3856**	**1.5792**	**0.3202**	**0.3851**	**0.7053**	**106.9294**	**1,639.4845**	**1,746.4139**	**4.6550**	**0.0298**	**1,871.6720**

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	2.2450	0.0233	2.0219	1.1000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	3.3115	3.3115	3.1600e-003	0.0000	3.3904
Energy	0.0401	0.3428	0.1459	2.1900e-003		0.0277	0.0277		0.0277	0.0277	0.0000	397.0069	397.0069	7.6100e-003	7.2800e-003	399.3661
Mobile	0.2205	1.1424	2.4339	0.0110	1.1697	7.2800e-003	1.1770	0.3138	6.7800e-003	0.3205	0.0000	1,011.6442	1,011.6442	0.0322	0.0000	1,012.4481
Waste						0.0000	0.0000		0.0000	0.0000	66.5851	0.0000	66.5851	3.9351	0.0000	164.9618
Water						0.0000	0.0000		0.0000	0.0000	5.6430	10.0381	15.6811	0.5814	0.0141	34.4035
Total	**2.5057**	**1.5085**	**4.6016**	**0.0133**	**1.1697**	**0.0462**	**1.2159**	**0.3138**	**0.0457**	**0.3595**	**72.2281**	**1,422.0006**	**1,494.2287**	**4.5594**	**0.0213**	**1,614.5698**

	ROG	NOx	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	**41.22**	**4.27**	**34.15**	**28.01**	**2.00**	**88.01**	**23.00**	**2.00**	**88.12**	**49.03**	**32.45**	**13.27**	**14.44**	**2.05**	**28.42**	**13.74**

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	1/1/2022	1/3/2022	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

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

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	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Total	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

3.2 Site Preparation - 2022

Mitigated Construction On-Site

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

Mitigated Construction 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	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Total	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.2205	1.1424	2.4339	0.0110	1.1697	7.2800e-003	1.1770	0.3138	6.7800e-003	0.3205	0.0000	1,011.6442	1,011.6442	0.0322	0.0000	1,012.4481
Unmitigated	0.2222	1.1515	2.4710	0.0112	1.1936	7.4100e-003	1.2010	0.3202	6.9000e-003	0.3271	0.0000	1,030.5512	1,030.5512	0.0326	0.0000	1,031.3671

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	1,389.57	1,389.57	1389.57	3,209,361	3,145,174
Total	1,389.57	1,389.57	1,389.57	3,209,361	3,145,174

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
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.585795	0.036515	0.193581	0.106455	0.012789	0.005274	0.019465	0.028415	0.002699	0.001789	0.005626	0.000921	0.000676
Single Family Housing	0.585795	0.036515	0.193581	0.106455	0.012789	0.005274	0.019465	0.028415	0.002699	0.001789	0.005626	0.000921	0.000676

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	163.6340	163.6340	0.0291	6.0100e-003	166.1517
NaturalGas Mitigated	0.0401	0.3428	0.1459	2.1900e-003		0.0277	0.0277		0.0277	0.0277	0.0000	397.0069	397.0069	7.6100e-003	7.2800e-003	399.3661
NaturalGas Unmitigated	0.0428	0.3656	0.1556	2.3300e-003		0.0296	0.0296		0.0296	0.0296	0.0000	423.4295	423.4295	8.1200e-003	7.7600e-003	425.9458

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					
Other Asphalt Surfaces	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
Single Family Housing	7.93477e+006	0.0428	0.3656	0.1556	2.3300e-003		0.0296	0.0296		0.0296	0.0296	0.0000	423.4295	423.4295	8.1200e-003	7.7600e-003	425.9458
Total		**0.0428**	**0.3656**	**0.1556**	**2.3300e-003**		**0.0296**	**0.0296**		**0.0296**	**0.0296**	**0.0000**	**423.4295**	**423.4295**	**8.1200e-003**	**7.7600e-003**	**425.9458**

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					
Other Asphalt Surfaces	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
Single Family Housing	7.43963e+006	0.0401	0.3428	0.1459	2.1900e-003		0.0277	0.0277		0.0277	0.0277	0.0000	397.0069	397.0069	7.6100e-003	7.2800e-003	399.3661
Total		**0.0401**	**0.3428**	**0.1459**	**2.1900e-003**		**0.0277**	**0.0277**		**0.0277**	**0.0277**	**0.0000**	**397.0069**	**397.0069**	**7.6100e-003**	**7.2800e-003**	**399.3661**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2.20873e+006	163.6340	0.0291	6.0100e-003	166.1517
Total		**163.6340**	**0.0291**	**6.0100e-003**	**166.1517**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	2.2450	0.0233	2.0219	1.1000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	3.3115	3.3115	3.1600e-003	0.0000	3.3904
Unmitigated	3.9976	0.0586	4.3616	4.9300e-003		0.3487	0.3487		0.3487	0.3487	34.7013	11.8317	46.5330	0.0687	1.9800e-003	48.8422

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	0.3613					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.9668					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.6091	0.0353	2.3397	4.8200e-003		0.3374	0.3374		0.3374	0.3374	34.7013	8.5203	43.2216	0.0656	1.9800e-003	45.4518
Landscaping	0.0605	0.0233	2.0219	1.1000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	3.3115	3.3115	3.1600e-003	0.0000	3.3904
Total	**3.9976**	**0.0586**	**4.3616**	**4.9300e-003**		**0.3487**	**0.3487**		**0.3487**	**0.3487**	**34.7013**	**11.8317**	**46.5330**	**0.0687**	**1.9800e-003**	**48.8422**

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	0.3613					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8233					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0605	0.0233	2.0219	1.1000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	3.3115	3.3115	3.1600e-003	0.0000	3.3904
Total	**2.2450**	**0.0233**	**2.0219**	**1.1000e-004**		**0.0112**	**0.0112**		**0.0112**	**0.0112**	**0.0000**	**3.3115**	**3.3115**	**3.1600e-003**	**0.0000**	**3.3904**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	15.6811	0.5814	0.0141	34.4035
Unmitigated	15.6811	0.5814	0.0141	34.4035

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	17.787 / 11.2136	15.6811	0.5814	0.0141	34.4035
Total		**15.6811**	**0.5814**	**0.0141**	**34.4035**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	17.787 / 11.2136	15.6811	0.5814	0.0141	34.4035
Total		**15.6811**	**0.5814**	**0.0141**	**34.4035**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	66.5851	3.9351	0.0000	164.9618
Unmitigated	66.5851	3.9351	0.0000	164.9618

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	328.02	66.5851	3.9351	0.0000	164.9618
Total		**66.5851**	**3.9351**	**0.0000**	**164.9618**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	328.02	66.5851	3.9351	0.0000	164.9618
Total		**66.5851**	**3.9351**	**0.0000**	**164.9618**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Results – Alternatives

Reduced Density Alternative – Unmitigated

Creekside Vineyards (Reduce Denisty Alt)

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
City Park	3.92	Acre	3.92	170,755.20	0
Single Family Housing	110.00	Dwelling Unit	58.90	198,000.00	315

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Creekside Vineyards (Reduce Denisty Alt) - Bay Area AQMD Air District, Annual

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per description of alternatives

Construction Phase - Construction not modeled

Off-road Equipment - Construction not modeled

Grading - Construction not modeled

Vehicle Trips - Trip generation rates adjusted per Alternatives Chapter

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	60.00	1.00
tblConstructionPhase	PhaseEndDate	3/25/2022	1/3/2022
tblLandUse	LotAcreage	35.71	58.90
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	9.45
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	9.45
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	9.45

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					
2022	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Maximum	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

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					
2022	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Maximum	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

	ROG	NOx	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	**1-1-2022**	**3-31-2022**	0.0001	0.0001
		Highest	0.0001	0.0001

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	1.6501	0.0236	1.7589	1.9900e-003		0.1405	0.1405		0.1405	0.1405	13.9822	4.7676	18.7498	0.0277	8.0000e-004	19.6804
Energy	0.0172	0.1473	0.0627	9.4000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	246.0241	246.0241	0.0150	5.5500e-003	248.0525
Mobile	0.1736	0.8779	1.9286	8.5000e-003	0.8929	5.9200e-003	0.8988	0.2395	5.5100e-003	0.2450	0.0000	784.5488	784.5488	0.0251	0.0000	785.1758
Waste						0.0000	0.0000		0.0000	0.0000	26.9247	0.0000	26.9247	1.5912	0.0000	66.7049
Water						0.0000	0.0000		0.0000	0.0000	2.2737	6.0113	8.2850	0.2345	5.7100e-003	15.8475
Total	**1.8410**	**1.0488**	**3.7502**	**0.0114**	**0.8929**	**0.1583**	**1.0512**	**0.2395**	**0.1579**	**0.3974**	**43.1807**	**1,041.3519**	**1,084.5325**	**1.8934**	**0.0121**	**1,135.4611**

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	1.5923	0.0236	1.7589	1.9900e-003		0.1405	0.1405		0.1405	0.1405	13.9822	4.7676	18.7498	0.0277	8.0000e-004	19.6804
Energy	0.0162	0.1381	0.0588	8.8000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	159.9661	159.9661	3.0700e-003	2.9300e-003	160.9167
Mobile	0.1723	0.8707	1.8996	8.3500e-003	0.8750	5.8200e-003	0.8808	0.2347	5.4200e-003	0.2402	0.0000	770.1425	770.1425	0.0247	0.0000	770.7603
Waste						0.0000	0.0000		0.0000	0.0000	26.9247	0.0000	26.9247	1.5912	0.0000	66.7049
Water						0.0000	0.0000		0.0000	0.0000	2.2737	6.0113	8.2850	0.2345	5.7100e-003	15.8475
Total	**1.7808**	**1.0325**	**3.7174**	**0.0112**	**0.8750**	**0.1575**	**1.0325**	**0.2347**	**0.1571**	**0.3918**	**43.1807**	**940.8875**	**984.0682**	**1.8812**	**9.4400e-003**	**1,033.9099**

	ROG	NOx	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	**3.27**	**1.56**	**0.88**	**1.84**	**2.00**	**0.53**	**1.78**	**2.00**	**0.53**	**1.41**	**0.00**	**9.65**	**9.26**	**0.65**	**21.72**	**8.94**

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	1/1/2022	1/3/2022	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

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

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	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Total	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

3.2 Site Preparation - 2022

Mitigated Construction On-Site

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

Mitigated Construction 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	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Total	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1723	0.8707	1.8996	8.3500e-003	0.8750	5.8200e-003	0.8808	0.2347	5.4200e-003	0.2402	0.0000	770.1425	770.1425	0.0247	0.0000	770.7603
Unmitigated	0.1736	0.8779	1.9286	8.5000e-003	0.8929	5.9200e-003	0.8988	0.2395	5.5100e-003	0.2450	0.0000	784.5488	784.5488	0.0251	0.0000	785.1758

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	1,039.50	1,039.50	1039.50	2,400,837	2,352,820
Total	1,039.50	1,039.50	1,039.50	2,400,837	2,352,820

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	75.4115	75.4115	0.0117	2.4200e-003	76.4260
NaturalGas Mitigated	0.0162	0.1381	0.0588	8.8000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	159.9661	159.9661	3.0700e-003	2.9300e-003	160.9167
NaturalGas Unmitigated	0.0172	0.1473	0.0627	9.4000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	170.6126	170.6126	3.2700e-003	3.1300e-003	171.6265

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	3.19716e+006	0.0172	0.1473	0.0627	9.4000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	170.6126	170.6126	3.2700e-003	3.1300e-003	171.6265
Total		**0.0172**	**0.1473**	**0.0627**	**9.4000e-004**		**0.0119**	**0.0119**		**0.0119**	**0.0119**	**0.0000**	**170.6126**	**170.6126**	**3.2700e-003**	**3.1300e-003**	**171.6265**

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	2.99765e+006	0.0162	0.1381	0.0588	8.8000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	159.9661	159.9661	3.0700e-003	2.9300e-003	160.9167
Total		**0.0162**	**0.1381**	**0.0588**	**8.8000e-004**		**0.0112**	**0.0112**		**0.0112**	**0.0112**	**0.0000**	**159.9661**	**159.9661**	**3.0700e-003**	**2.9300e-003**	**160.9167**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	889963	75.4115	0.0117	2.4200e-003	76.4260
Total		**75.4115**	**0.0117**	**2.4200e-003**	**76.4260**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.5923	0.0236	1.7589	1.9900e-003		0.1405	0.1405		0.1405	0.1405	13.9822	4.7676	18.7498	0.0277	8.0000e-004	19.6804
Unmitigated	1.6501	0.0236	1.7589	1.9900e-003		0.1405	0.1405		0.1405	0.1405	13.9822	4.7676	18.7498	0.0277	8.0000e-004	19.6804

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	0.1547					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8225					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.6483	0.0142	0.9428	1.9400e-003		0.1360	0.1360		0.1360	0.1360	13.9822	3.4331	17.4153	0.0264	8.0000e-004	18.3139
Landscaping	0.0245	9.4000e-003	0.8162	4.0000e-005		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	1.3345	1.3345	1.2800e-003	0.0000	1.3665
Total	**1.6501**	**0.0236**	**1.7589**	**1.9800e-003**		**0.1405**	**0.1405**		**0.1405**	**0.1405**	**13.9822**	**4.7676**	**18.7498**	**0.0277**	**8.0000e-004**	**19.6804**

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	0.1547					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7647					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.6483	0.0142	0.9428	1.9400e-003		0.1360	0.1360		0.1360	0.1360	13.9822	3.4331	17.4153	0.0264	8.0000e-004	18.3139
Landscaping	0.0245	9.4000e-003	0.8162	4.0000e-005		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	1.3345	1.3345	1.2800e-003	0.0000	1.3665
Total	**1.5923**	**0.0236**	**1.7589**	**1.9800e-003**		**0.1405**	**0.1405**		**0.1405**	**0.1405**	**13.9822**	**4.7676**	**18.7498**	**0.0277**	**8.0000e-004**	**19.6804**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	8.2850	0.2345	5.7100e-003	15.8475
Unmitigated	8.2850	0.2345	5.7100e-003	15.8475

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.67061	1.3852	2.2000e-004	4.0000e-005	1.4038
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	7.16694 / 4.51829	6.8998	0.2343	5.6600e-003	14.4437
Total		**8.2850**	**0.2345**	**5.7000e-003**	**15.8475**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.67061	1.3852	2.2000e-004	4.0000e-005	1.4038
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	7.16694 / 4.51829	6.8998	0.2343	5.6600e-003	14.4437
Total		**8.2850**	**0.2345**	**5.7000e-003**	**15.8475**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	26.9247	1.5912	0.0000	66.7049
Unmitigated	26.9247	1.5912	0.0000	66.7049

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.34	0.0690	4.0800e-003	0.0000	0.1710
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	132.3	26.8557	1.5871	0.0000	66.5339
Total		**26.9247**	**1.5912**	**0.0000**	**66.7049**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.34	0.0690	4.0800e-003	0.0000	0.1710
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	132.3	26.8557	1.5871	0.0000	66.5339
Total		**26.9247**	**1.5912**	**0.0000**	**66.7049**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards (Reduce Denisty Alt)

Bay Area AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
City Park	3.92	Acre	3.92	170,755.20	0
Single Family Housing	110.00	Dwelling Unit	58.90	198,000.00	315

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Creekside Vineyards (Reduce Denisty Alt) - Bay Area AQMD Air District, Summer

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per description of alternatives

Construction Phase - Construction not modeled

Off-road Equipment - Construction not modeled

Grading - Construction not modeled

Vehicle Trips - Trip generation rates adjusted per Alternatives Chapter

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	60.00	1.00
tblConstructionPhase	PhaseEndDate	3/25/2022	1/3/2022
tblLandUse	LotAcreage	35.71	58.90
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	9.45
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	9.45
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	9.45

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					
2022	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401	0.0000	137.3212	137.3212	2.8600e-003	0.0000	137.3927
Maximum	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**	**0.0000**	**137.3212**	**137.3212**	**2.8600e-003**	**0.0000**	**137.3927**

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					
2022	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401	0.0000	137.3212	137.3212	2.8600e-003	0.0000	137.3927
Maximum	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**	**0.0000**	**137.3212**	**137.3212**	**2.8600e-003**	**0.0000**	**137.3927**

Creekside Vineyards (Reduce Denisty Alt) - Bay Area AQMD Air District, Summer

	ROG	NOx	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	119.6219	2.2994	156.5004	0.2781		20.8979	20.8979		20.8979	20.8979	2,241.6172	695.7571	2,937.3743	2.7873	0.1582	3,054.1941
Energy	0.0945	0.8072	0.3435	5.1500e-003		0.0653	0.0653		0.0653	0.0653		1,030.5109	1,030.5109	0.0198	0.0189	1,036.6347
Mobile	1.1033	4.7172	11.0631	0.0493	5.0971	0.0325	5.1296	1.3630	0.0303	1.3932		5,012.6848	5,012.6848	0.1519		5,016.4820
Total	**120.8197**	**7.8238**	**167.9070**	**0.3326**	**5.0971**	**20.9957**	**26.0928**	**1.3630**	**20.9935**	**22.3564**	**2,241.6172**	**6,738.9527**	**8,980.5700**	**2.9590**	**0.1771**	**9,107.3108**

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	119.3051	2.2994	156.5004	0.2781		20.8979	20.8979		20.8979	20.8979	2,241.6172	695.7571	2,937.3743	2.7873	0.1582	3,054.1941
Energy	0.0886	0.7569	0.3221	4.8300e-003		0.0612	0.0612		0.0612	0.0612		966.2054	966.2054	0.0185	0.0177	971.9471
Mobile	1.0960	4.6802	10.8850	0.0484	4.9951	0.0320	5.0271	1.3357	0.0298	1.3655		4,920.5424	4,920.5424	0.1496		4,924.2823
Total	**120.4897**	**7.7365**	**167.7075**	**0.3314**	**4.9951**	**20.9911**	**25.9862**	**1.3357**	**20.9889**	**22.3245**	**2,241.6172**	**6,582.5049**	**8,824.1221**	**2.9554**	**0.1759**	**8,950.4235**

	ROG	NOx	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	**0.27**	**1.12**	**0.12**	**0.37**	**2.00**	**0.02**	**0.41**	**2.00**	**0.02**	**0.14**	**0.00**	**2.32**	**1.74**	**0.12**	**0.67**	**1.72**

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	1/1/2022	1/3/2022	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		137.3212	137.3212	2.8600e-003		137.3927
Total	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**137.3212**	**137.3212**	**2.8600e-003**		**137.3927**

3.2 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		137.3212	137.3212	2.8600e-003		137.3927
Total	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**137.3212**	**137.3212**	**2.8600e-003**		**137.3927**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive 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	1.0960	4.6802	10.8850	0.0484	4.9951	0.0320	5.0271	1.3357	0.0298	1.3655		4,920.5424	4,920.5424	0.1496		4,924.2823
Unmitigated	1.1033	4.7172	11.0631	0.0493	5.0971	0.0325	5.1296	1.3630	0.0303	1.3932		5,012.6848	5,012.6848	0.1519		5,016.4820

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	1,039.50	1,039.50	1039.50	2,400,837	2,352,820
Total	1,039.50	1,039.50	1,039.50	2,400,837	2,352,820

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.0886	0.7569	0.3221	4.8300e-003		0.0612	0.0612		0.0612	0.0612		966.2054	966.2054	0.0185	0.0177	971.9471
NaturalGas Unmitigated	0.0945	0.8072	0.3435	5.1500e-003		0.0653	0.0653		0.0653	0.0653		1,030.5109	1,030.5109	0.0198	0.0189	1,036.6347

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	8759.34	0.0945	0.8072	0.3435	5.1500e-003		0.0653	0.0653		0.0653	0.0653		1,030.5109	1,030.5109	0.0198	0.0189	1,036.6347
Total		**0.0945**	**0.8072**	**0.3435**	**5.1500e-003**		**0.0653**	**0.0653**		**0.0653**	**0.0653**		**1,030.5109**	**1,030.5109**	**0.0198**	**0.0189**	**1,036.6347**

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	8.21275	0.0886	0.7569	0.3221	4.8300e-003		0.0612	0.0612		0.0612	0.0612		966.2054	966.2054	0.0185	0.0177	971.9471
Total		**0.0886**	**0.7569**	**0.3221**	**4.8300e-003**		**0.0612**	**0.0612**		**0.0612**	**0.0612**		**966.2054**	**966.2054**	**0.0185**	**0.0177**	**971.9471**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive 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	119.3051	2.2994	156.5004	0.2781		20.8979	20.8979		20.8979	20.8979	2,241.6172	695.7571	2,937.3743	2.7873	0.1582	3,054.1941
Unmitigated	119.6219	2.2994	156.5004	0.2781		20.8979	20.8979		20.8979	20.8979	2,241.6172	695.7571	2,937.3743	2.7873	0.1582	3,054.1941

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	0.8479					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.5068					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	113.9949	2.1949	147.4318	0.2777		20.8476	20.8476		20.8476	20.8476	2,241.6172	679.4118	2,921.0290	2.7717	0.1582	3,037.4573
Landscaping	0.2724	0.1045	9.0687	4.8000e-004		0.0503	0.0503		0.0503	0.0503		16.3453	16.3453	0.0157		16.7368
Total	**119.6219**	**2.2994**	**156.5004**	**0.2781**		**20.8979**	**20.8979**		**20.8979**	**20.8979**	**2,241.6172**	**695.7571**	**2,937.3743**	**2.7873**	**0.1582**	**3,054.1941**

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	0.8479					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.1900					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	113.9949	2.1949	147.4318	0.2777		20.8476	20.8476		20.8476	20.8476	2,241.6172	679.4118	2,921.0290	2.7717	0.1582	3,037.4573
Landscaping	0.2724	0.1045	9.0687	4.8000e-004		0.0503	0.0503		0.0503	0.0503		16.3453	16.3453	0.0157		16.7368
Total	**119.3051**	**2.2994**	**156.5004**	**0.2781**		**20.8979**	**20.8979**		**20.8979**	**20.8979**	**2,241.6172**	**695.7571**	**2,937.3743**	**2.7873**	**0.1582**	**3,054.1941**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards (Reduce Denisty Alt)

Bay Area AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
City Park	3.92	Acre	3.92	170,755.20	0
Single Family Housing	110.00	Dwelling Unit	58.90	198,000.00	315

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Creekside Vineyards (Reduce Denisty Alt) - Bay Area AQMD Air District, Winter

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per description of alternatives

Construction Phase - Construction not modeled

Off-road Equipment - Construction not modeled

Grading - Construction not modeled

Vehicle Trips - Trip generation rates adjusted per Alternatives Chapter

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	60.00	1.00
tblConstructionPhase	PhaseEndDate	3/25/2022	1/3/2022
tblLandUse	LotAcreage	35.71	58.90
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	9.45
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	9.45
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	9.45

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					
2022	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401	0.0000	126.5026	126.5026	2.6600e-003	0.0000	126.5691
Maximum	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**	**0.0000**	**126.5026**	**126.5026**	**2.6600e-003**	**0.0000**	**126.5691**

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					
2022	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401	0.0000	126.5026	126.5026	2.6600e-003	0.0000	126.5691
Maximum	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**	**0.0000**	**126.5026**	**126.5026**	**2.6600e-003**	**0.0000**	**126.5691**

Creekside Vineyards (Reduce Denisty Alt) - Bay Area AQMD Air District, Winter

	ROG	NOx	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	119.6219	2.2994	156.5004	0.2781		20.8979	20.8979		20.8979	20.8979	2,241.6172	695.7571	2,937.3743	2.7873	0.1582	3,054.1941
Energy	0.0945	0.8072	0.3435	5.1500e-003		0.0653	0.0653		0.0653	0.0653		1,030.5109	1,030.5109	0.0198	0.0189	1,036.6347
Mobile	0.9407	4.8845	11.0572	0.0463	5.0971	0.0326	5.1297	1.3630	0.0304	1.3933		4,705.7025	4,705.7025	0.1558		4,709.5969
Total	**120.6571**	**7.9911**	**167.9011**	**0.3296**	**5.0971**	**20.9958**	**26.0929**	**1.3630**	**20.9936**	**22.3565**	**2,241.6172**	**6,431.9704**	**8,673.5876**	**2.9629**	**0.1771**	**8,800.4257**

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	119.3051	2.2994	156.5004	0.2781		20.8979	20.8979		20.8979	20.8979	2,241.6172	695.7571	2,937.3743	2.7873	0.1582	3,054.1941
Energy	0.0886	0.7569	0.3221	4.8300e-003		0.0612	0.0612		0.0612	0.0612		966.2054	966.2054	0.0185	0.0177	971.9471
Mobile	0.9334	4.8436	10.8974	0.0454	4.9951	0.0321	5.0272	1.3357	0.0299	1.3656		4,618.9347	4,618.9347	0.1535		4,622.7733
Total	**120.3271**	**7.8998**	**167.7199**	**0.3284**	**4.9951**	**20.9912**	**25.9863**	**1.3357**	**20.9890**	**22.3247**	**2,241.6172**	**6,280.8971**	**8,522.5144**	**2.9594**	**0.1759**	**8,648.9144**

	ROG	NOx	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	**0.27**	**1.14**	**0.11**	**0.36**	**2.00**	**0.02**	**0.41**	**2.00**	**0.02**	**0.14**	**0.00**	**2.35**	**1.74**	**0.12**	**0.67**	**1.72**

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	1/1/2022	1/3/2022	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		126.5026	126.5026	2.6600e-003		126.5691
Total	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**126.5026**	**126.5026**	**2.6600e-003**		**126.5691**

3.2 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		126.5026	126.5026	2.6600e-003		126.5691
Total	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**126.5026**	**126.5026**	**2.6600e-003**		**126.5691**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive 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	0.9334	4.8436	10.8974	0.0454	4.9951	0.0321	5.0272	1.3357	0.0299	1.3656		4,618.9347	4,618.9347	0.1535		4,622.7733
Unmitigated	0.9407	4.8845	11.0572	0.0463	5.0971	0.0326	5.1297	1.3630	0.0304	1.3933		4,705.7025	4,705.7025	0.1558		4,709.5969

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	1,039.50	1,039.50	1039.50	2,400,837	2,352,820
Total	1,039.50	1,039.50	1,039.50	2,400,837	2,352,820

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.0886	0.7569	0.3221	4.8300e-003		0.0612	0.0612		0.0612	0.0612		966.2054	966.2054	0.0185	0.0177	971.9471
NaturalGas Unmitigated	0.0945	0.8072	0.3435	5.1500e-003		0.0653	0.0653		0.0653	0.0653		1,030.5109	1,030.5109	0.0198	0.0189	1,036.6347

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	8759.34	0.0945	0.8072	0.3435	5.1500e-003		0.0653	0.0653		0.0653	0.0653		1,030.5109	1,030.5109	0.0198	0.0189	1,036.6347
Total		**0.0945**	**0.8072**	**0.3435**	**5.1500e-003**		**0.0653**	**0.0653**		**0.0653**	**0.0653**		**1,030.5109**	**1,030.5109**	**0.0198**	**0.0189**	**1,036.6347**

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	8.21275	0.0886	0.7569	0.3221	4.8300e-003		0.0612	0.0612		0.0612	0.0612		966.2054	966.2054	0.0185	0.0177	971.9471
Total		**0.0886**	**0.7569**	**0.3221**	**4.8300e-003**		**0.0612**	**0.0612**		**0.0612**	**0.0612**		**966.2054**	**966.2054**	**0.0185**	**0.0177**	**971.9471**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive 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	119.3051	2.2994	156.5004	0.2781		20.8979	20.8979		20.8979	20.8979	2,241.6172	695.7571	2,937.3743	2.7873	0.1582	3,054.1941
Unmitigated	119.6219	2.2994	156.5004	0.2781		20.8979	20.8979		20.8979	20.8979	2,241.6172	695.7571	2,937.3743	2.7873	0.1582	3,054.1941

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	0.8479					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.5068					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	113.9949	2.1949	147.4318	0.2777		20.8476	20.8476		20.8476	20.8476	2,241.6172	679.4118	2,921.0290	2.7717	0.1582	3,037.4573
Landscaping	0.2724	0.1045	9.0687	4.8000e-004		0.0503	0.0503		0.0503	0.0503		16.3453	16.3453	0.0157		16.7368
Total	**119.6219**	**2.2994**	**156.5004**	**0.2781**		**20.8979**	**20.8979**		**20.8979**	**20.8979**	**2,241.6172**	**695.7571**	**2,937.3743**	**2.7873**	**0.1582**	**3,054.1941**

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	0.8479					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.1900					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	113.9949	2.1949	147.4318	0.2777		20.8476	20.8476		20.8476	20.8476	2,241.6172	679.4118	2,921.0290	2.7717	0.1582	3,037.4573
Landscaping	0.2724	0.1045	9.0687	4.8000e-004		0.0503	0.0503		0.0503	0.0503		16.3453	16.3453	0.0157		16.7368
Total	**119.3051**	**2.2994**	**156.5004**	**0.2781**		**20.8979**	**20.8979**		**20.8979**	**20.8979**	**2,241.6172**	**695.7571**	**2,937.3743**	**2.7873**	**0.1582**	**3,054.1941**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards (Reduce Denisty Alt)

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												
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
Rubber Tired Dozers	Diesel	No Change	0	0	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	0	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					
Rubber Tired Dozers	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	0.00000E+000
Tractors/Loaders/ Backhoes	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	0.00000E+000

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					
Rubber Tired Dozers	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	0.00000E+000
Tractors/Loaders/Backhoes	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	0.00000E+000

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Rubber Tired Dozers	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	0.00000E+000
Tractors/Loaders/Backhoes	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	0.00000E+000

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
Site Preparation	Fugitive Dust	0.00	0.00	0.00	0.00	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	7.03	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	100.00	100.00	100.00	100.00	100.00
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	0.75	0.82	1.50	1.76	1.69	1.63	0.00	1.84	1.84	1.48	0.00	1.84
Natural Gas	6.26	6.24	6.24	6.38	6.21	6.21	0.00	6.24	6.24	6.12	6.39	6.24
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: Low Density Suburban

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.17	0.44		
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			

Yes	Neighborhood Enhancements	Improve Pedestrian Network	2.00	Project Site and Connecting Off-Site		
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.02			
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	0.02			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"	3.00			
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	5.00			
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.02			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
Yes	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
Yes	Use Low VOC Paint (Residential Exterior)	150.00
No	Use Low VOC Paint (Non-residential Interior)	100.00
Yes	Use Low VOC Paint (Non-residential Exterior)	150.00
Yes	Use Low VOC Paint (Parking)	150.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	7.00	
No	Install High Efficiency Lighting		
Yes	On-site Renewable		100.00

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	

CalEEMod Results – Alternatives

Reduced Density Alternative – Mitigated

Creekside Vineyards (Reduce Denisty Alt Mit)

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
City Park	3.92	Acre	3.92	170,755.20	0
Single Family Housing	110.00	Dwelling Unit	58.90	198,000.00	315

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Creekside Vineyards (Reduce Denisty Alt Mit) - Bay Area AQMD Air District, Annual

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per description of alternatives

Construction Phase - Construction not modeled

Off-road Equipment - Construction not modeled

Grading - Construction not modeled

Vehicle Trips - Trip generation rates adjusted per Alternatives Chapter

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	60.00	1.00
tblConstructionPhase	PhaseEndDate	3/25/2022	1/3/2022
tblLandUse	LotAcreage	35.71	58.90
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	9.45
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	9.45
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	9.45

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					
2022	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Maximum	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

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					
2022	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Maximum	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

	ROG	NOx	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	**1-1-2022**	**3-31-2022**	0.0001	0.0001
		Highest	0.0001	0.0001

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	1.6501	0.0236	1.7589	1.9900e-003		0.1405	0.1405		0.1405	0.1405	13.9822	4.7676	18.7498	0.0277	8.0000e-004	19.6804
Energy	0.0172	0.1473	0.0627	9.4000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	246.0241	246.0241	0.0150	5.5500e-003	248.0525
Mobile	0.1736	0.8779	1.9286	8.5000e-003	0.8929	5.9200e-003	0.8988	0.2395	5.5100e-003	0.2450	0.0000	784.5488	784.5488	0.0251	0.0000	785.1758
Waste						0.0000	0.0000		0.0000	0.0000	26.9247	0.0000	26.9247	1.5912	0.0000	66.7049
Water						0.0000	0.0000		0.0000	0.0000	2.2737	6.0113	8.2850	0.2345	5.7100e-003	15.8475
Total	**1.8410**	**1.0488**	**3.7502**	**0.0114**	**0.8929**	**0.1583**	**1.0512**	**0.2395**	**0.1579**	**0.3974**	**43.1807**	**1,041.3519**	**1,084.5325**	**1.8934**	**0.0121**	**1,135.4611**

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	0.9439	9.4000e-003	0.8162	4.0000e-005		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	1.3345	1.3345	1.2800e-003	0.0000	1.3665
Energy	0.0162	0.1381	0.0588	8.8000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	159.9661	159.9661	3.0700e-003	2.9300e-003	160.9167
Mobile	0.1723	0.8707	1.8996	8.3500e-003	0.8750	5.8200e-003	0.8808	0.2347	5.4200e-003	0.2402	0.0000	770.1425	770.1425	0.0247	0.0000	770.7603
Waste						0.0000	0.0000		0.0000	0.0000	26.9247	0.0000	26.9247	1.5912	0.0000	66.7049
Water						0.0000	0.0000		0.0000	0.0000	2.2737	6.0113	8.2850	0.2345	5.7100e-003	15.8475
Total	**1.1324**	**1.0182**	**2.7746**	**9.2700e-003**	**0.8750**	**0.0215**	**0.8965**	**0.2347**	**0.0211**	**0.2559**	**29.1985**	**937.4544**	**966.6529**	**1.8547**	**8.6400e-003**	**1,015.5959**

	ROG	NOx	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	**38.49**	**2.91**	**26.01**	**18.90**	**2.00**	**86.41**	**14.71**	**2.00**	**86.62**	**35.62**	**32.38**	**9.98**	**10.87**	**2.04**	**28.36**	**10.56**

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	1/1/2022	1/3/2022	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

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

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	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Total	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

3.2 Site Preparation - 2022

Mitigated Construction On-Site

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

Mitigated Construction 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	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Total	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1723	0.8707	1.8996	8.3500e-003	0.8750	5.8200e-003	0.8808	0.2347	5.4200e-003	0.2402	0.0000	770.1425	770.1425	0.0247	0.0000	770.7603
Unmitigated	0.1736	0.8779	1.9286	8.5000e-003	0.8929	5.9200e-003	0.8988	0.2395	5.5100e-003	0.2450	0.0000	784.5488	784.5488	0.0251	0.0000	785.1758

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	1,039.50	1,039.50	1039.50	2,400,837	2,352,820
Total	1,039.50	1,039.50	1,039.50	2,400,837	2,352,820

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	75.4115	75.4115	0.0117	2.4200e-003	76.4260
NaturalGas Mitigated	0.0162	0.1381	0.0588	8.8000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	159.9661	159.9661	3.0700e-003	2.9300e-003	160.9167
NaturalGas Unmitigated	0.0172	0.1473	0.0627	9.4000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	170.6126	170.6126	3.2700e-003	3.1300e-003	171.6265

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	3.19716e+006	0.0172	0.1473	0.0627	9.4000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	170.6126	170.6126	3.2700e-003	3.1300e-003	171.6265
Total		**0.0172**	**0.1473**	**0.0627**	**9.4000e-004**		**0.0119**	**0.0119**		**0.0119**	**0.0119**	**0.0000**	**170.6126**	**170.6126**	**3.2700e-003**	**3.1300e-003**	**171.6265**

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	2.99765e+006	0.0162	0.1381	0.0588	8.8000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	159.9661	159.9661	3.0700e-003	2.9300e-003	160.9167
Total		**0.0162**	**0.1381**	**0.0588**	**8.8000e-004**		**0.0112**	**0.0112**		**0.0112**	**0.0112**	**0.0000**	**159.9661**	**159.9661**	**3.0700e-003**	**2.9300e-003**	**160.9167**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	889963	75.4115	0.0117	2.4200e-003	76.4260
Total		**75.4115**	**0.0117**	**2.4200e-003**	**76.4260**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.9439	9.4000e-003	0.8162	4.0000e-005		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	1.3345	1.3345	1.2800e-003	0.0000	1.3665
Unmitigated	1.6501	0.0236	1.7589	1.9900e-003		0.1405	0.1405		0.1405	0.1405	13.9822	4.7676	18.7498	0.0277	8.0000e-004	19.6804

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	0.1547					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8225					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.6483	0.0142	0.9428	1.9400e-003		0.1360	0.1360		0.1360	0.1360	13.9822	3.4331	17.4153	0.0264	8.0000e-004	18.3139
Landscaping	0.0245	9.4000e-003	0.8162	4.0000e-005		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	1.3345	1.3345	1.2800e-003	0.0000	1.3665
Total	**1.6501**	**0.0236**	**1.7589**	**1.9800e-003**		**0.1405**	**0.1405**		**0.1405**	**0.1405**	**13.9822**	**4.7676**	**18.7498**	**0.0277**	**8.0000e-004**	**19.6804**

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	0.1547					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7647					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0245	9.4000e-003	0.8162	4.0000e-005		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	1.3345	1.3345	1.2800e-003	0.0000	1.3665
Total	**0.9439**	**9.4000e-003**	**0.8162**	**4.0000e-005**		**4.5300e-003**	**4.5300e-003**		**4.5300e-003**	**4.5300e-003**	**0.0000**	**1.3345**	**1.3345**	**1.2800e-003**	**0.0000**	**1.3665**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	8.2850	0.2345	5.7100e-003	15.8475
Unmitigated	8.2850	0.2345	5.7100e-003	15.8475

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.67061	1.3852	2.2000e-004	4.0000e-005	1.4038
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	7.16694 / 4.51829	6.8998	0.2343	5.6600e-003	14.4437
Total		**8.2850**	**0.2345**	**5.7000e-003**	**15.8475**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.67061	1.3852	2.2000e-004	4.0000e-005	1.4038
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	7.16694 / 4.51829	6.8998	0.2343	5.6600e-003	14.4437
Total		**8.2850**	**0.2345**	**5.7000e-003**	**15.8475**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	26.9247	1.5912	0.0000	66.7049
Unmitigated	26.9247	1.5912	0.0000	66.7049

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.34	0.0690	4.0800e-003	0.0000	0.1710
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	132.3	26.8557	1.5871	0.0000	66.5339
Total		**26.9247**	**1.5912**	**0.0000**	**66.7049**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.34	0.0690	4.0800e-003	0.0000	0.1710
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	132.3	26.8557	1.5871	0.0000	66.5339
Total		**26.9247**	**1.5912**	**0.0000**	**66.7049**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards (Reduce Denisty Alt Mit)

Bay Area AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
City Park	3.92	Acre	3.92	170,755.20	0
Single Family Housing	110.00	Dwelling Unit	58.90	198,000.00	315

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Creekside Vineyards (Reduce Denisty Alt Mit) - Bay Area AQMD Air District, Summer

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per description of alternatives

Construction Phase - Construction not modeled

Off-road Equipment - Construction not modeled

Grading - Construction not modeled

Vehicle Trips - Trip generation rates adjusted per Alternatives Chapter

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	60.00	1.00
tblConstructionPhase	PhaseEndDate	3/25/2022	1/3/2022
tblLandUse	LotAcreage	35.71	58.90
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	9.45
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	9.45
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	9.45

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					
2022	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401	0.0000	137.3212	137.3212	2.8600e-003	0.0000	137.3927
Maximum	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**	**0.0000**	**137.3212**	**137.3212**	**2.8600e-003**	**0.0000**	**137.3927**

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					
2022	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401	0.0000	137.3212	137.3212	2.8600e-003	0.0000	137.3927
Maximum	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**	**0.0000**	**137.3212**	**137.3212**	**2.8600e-003**	**0.0000**	**137.3927**

Creekside Vineyards (Reduce Denisty Alt Mit) - Bay Area AQMD Air District, Summer

	ROG	NOx	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	119.6219	2.2994	156.5004	0.2781		20.8979	20.8979		20.8979	20.8979	2,241.6172	695.7571	2,937.3743	2.7873	0.1582	3,054.1941
Energy	0.0945	0.8072	0.3435	5.1500e-003		0.0653	0.0653		0.0653	0.0653		1,030.5109	1,030.5109	0.0198	0.0189	1,036.6347
Mobile	1.1033	4.7172	11.0631	0.0493	5.0971	0.0325	5.1296	1.3630	0.0303	1.3932		5,012.6848	5,012.6848	0.1519		5,016.4820
Total	**120.8197**	**7.8238**	**167.9070**	**0.3326**	**5.0971**	**20.9957**	**26.0928**	**1.3630**	**20.9935**	**22.3564**	**2,241.6172**	**6,738.9527**	**8,980.5700**	**2.9590**	**0.1771**	**9,107.3108**

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	5.3102	0.1045	9.0687	4.8000e-004		0.0503	0.0503		0.0503	0.0503	0.0000	16.3453	16.3453	0.0157	0.0000	16.7368
Energy	0.0886	0.7569	0.3221	4.8300e-003		0.0612	0.0612		0.0612	0.0612		966.2054	966.2054	0.0185	0.0177	971.9471
Mobile	1.0960	4.6802	10.8850	0.0484	4.9951	0.0320	5.0271	1.3357	0.0298	1.3655		4,920.5424	4,920.5424	0.1496		4,924.2823
Total	**6.4948**	**5.5415**	**20.2757**	**0.0537**	**4.9951**	**0.1435**	**5.1386**	**1.3357**	**0.1413**	**1.4770**	**0.0000**	**5,903.0931**	**5,903.0931**	**0.1838**	**0.0177**	**5,912.9662**

	ROG	NOx	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	**94.62**	**29.17**	**87.92**	**83.85**	**2.00**	**99.32**	**80.31**	**2.00**	**99.33**	**93.39**	**100.00**	**12.40**	**34.27**	**93.79**	**90.00**	**35.07**

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	1/1/2022	1/3/2022	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		137.3212	137.3212	2.8600e-003		137.3927
Total	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**137.3212**	**137.3212**	**2.8600e-003**		**137.3927**

3.2 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		137.3212	137.3212	2.8600e-003		137.3927
Total	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**137.3212**	**137.3212**	**2.8600e-003**		**137.3927**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive 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	1.0960	4.6802	10.8850	0.0484	4.9951	0.0320	5.0271	1.3357	0.0298	1.3655		4,920.5424	4,920.5424	0.1496		4,924.2823
Unmitigated	1.1033	4.7172	11.0631	0.0493	5.0971	0.0325	5.1296	1.3630	0.0303	1.3932		5,012.6848	5,012.6848	0.1519		5,016.4820

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	1,039.50	1,039.50	1039.50	2,400,837	2,352,820
Total	1,039.50	1,039.50	1,039.50	2,400,837	2,352,820

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.0886	0.7569	0.3221	4.8300e-003		0.0612	0.0612		0.0612	0.0612		966.2054	966.2054	0.0185	0.0177	971.9471
NaturalGas Unmitigated	0.0945	0.8072	0.3435	5.1500e-003		0.0653	0.0653		0.0653	0.0653		1,030.5109	1,030.5109	0.0198	0.0189	1,036.6347

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	8759.34	0.0945	0.8072	0.3435	5.1500e-003		0.0653	0.0653		0.0653	0.0653		1,030.5109	1,030.5109	0.0198	0.0189	1,036.6347
Total		**0.0945**	**0.8072**	**0.3435**	**5.1500e-003**		**0.0653**	**0.0653**		**0.0653**	**0.0653**		**1,030.5109**	**1,030.5109**	**0.0198**	**0.0189**	**1,036.6347**

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	8.21275	0.0886	0.7569	0.3221	4.8300e-003		0.0612	0.0612		0.0612	0.0612		966.2054	966.2054	0.0185	0.0177	971.9471
Total		**0.0886**	**0.7569**	**0.3221**	**4.8300e-003**		**0.0612**	**0.0612**		**0.0612**	**0.0612**		**966.2054**	**966.2054**	**0.0185**	**0.0177**	**971.9471**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive 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	5.3102	0.1045	9.0687	4.8000e-004		0.0503	0.0503		0.0503	0.0503	0.0000	16.3453	16.3453	0.0157	0.0000	16.7368
Unmitigated	119.6219	2.2994	156.5004	0.2781		20.8979	20.8979		20.8979	20.8979	2,241.6172	695.7571	2,937.3743	2.7873	0.1582	3,054.1941

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	0.8479					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.5068					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	113.9949	2.1949	147.4318	0.2777		20.8476	20.8476		20.8476	20.8476	2,241.6172	679.4118	2,921.0290	2.7717	0.1582	3,037.4573
Landscaping	0.2724	0.1045	9.0687	4.8000e-004		0.0503	0.0503		0.0503	0.0503		16.3453	16.3453	0.0157		16.7368
Total	**119.6219**	**2.2994**	**156.5004**	**0.2781**		**20.8979**	**20.8979**		**20.8979**	**20.8979**	**2,241.6172**	**695.7571**	**2,937.3743**	**2.7873**	**0.1582**	**3,054.1941**

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	0.8479					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.1900					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2724	0.1045	9.0687	4.8000e-004		0.0503	0.0503		0.0503	0.0503		16.3453	16.3453	0.0157		16.7368
Total	**5.3102**	**0.1045**	**9.0687**	**4.8000e-004**		**0.0503**	**0.0503**		**0.0503**	**0.0503**	**0.0000**	**16.3453**	**16.3453**	**0.0157**	**0.0000**	**16.7368**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards (Reduce Denisty Alt Mit)

Bay Area AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
City Park	3.92	Acre	3.92	170,755.20	0
Single Family Housing	110.00	Dwelling Unit	58.90	198,000.00	315

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Creekside Vineyards (Reduce Denisty Alt Mit) - Bay Area AQMD Air District, Winter

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per description of alternatives

Construction Phase - Construction not modeled

Off-road Equipment - Construction not modeled

Grading - Construction not modeled

Vehicle Trips - Trip generation rates adjusted per Alternatives Chapter

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	60.00	1.00
tblConstructionPhase	PhaseEndDate	3/25/2022	1/3/2022
tblLandUse	LotAcreage	35.71	58.90
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	9.45
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	9.45
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	9.45

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					
2022	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401	0.0000	126.5026	126.5026	2.6600e-003	0.0000	126.5691
Maximum	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**	**0.0000**	**126.5026**	**126.5026**	**2.6600e-003**	**0.0000**	**126.5691**

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					
2022	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401	0.0000	126.5026	126.5026	2.6600e-003	0.0000	126.5691
Maximum	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**	**0.0000**	**126.5026**	**126.5026**	**2.6600e-003**	**0.0000**	**126.5691**

Creekside Vineyards (Reduce Denisty Alt Mit) - Bay Area AQMD Air District, Winter

	ROG	NOx	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	119.6219	2.2994	156.5004	0.2781		20.8979	20.8979		20.8979	20.8979	2,241.6172	695.7571	2,937.3743	2.7873	0.1582	3,054.1941
Energy	0.0945	0.8072	0.3435	5.1500e-003		0.0653	0.0653		0.0653	0.0653		1,030.5109	1,030.5109	0.0198	0.0189	1,036.6347
Mobile	0.9407	4.8845	11.0572	0.0463	5.0971	0.0326	5.1297	1.3630	0.0304	1.3933		4,705.7025	4,705.7025	0.1558		4,709.5969
Total	**120.6571**	**7.9911**	**167.9011**	**0.3296**	**5.0971**	**20.9958**	**26.0929**	**1.3630**	**20.9936**	**22.3565**	**2,241.6172**	**6,431.9704**	**8,673.5876**	**2.9629**	**0.1771**	**8,800.4257**

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	5.3102	0.1045	9.0687	4.8000e-004		0.0503	0.0503		0.0503	0.0503	0.0000	16.3453	16.3453	0.0157	0.0000	16.7368
Energy	0.0886	0.7569	0.3221	4.8300e-003		0.0612	0.0612		0.0612	0.0612		966.2054	966.2054	0.0185	0.0177	971.9471
Mobile	0.9334	4.8436	10.8974	0.0454	4.9951	0.0321	5.0272	1.3357	0.0299	1.3656		4,618.9347	4,618.9347	0.1535		4,622.7733
Total	**6.3322**	**5.7049**	**20.2881**	**0.0507**	**4.9951**	**0.1436**	**5.1387**	**1.3357**	**0.1414**	**1.4771**	**0.0000**	**5,601.4854**	**5,601.4854**	**0.1877**	**0.0177**	**5,611.4571**

	ROG	NOx	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	**94.75**	**28.61**	**87.92**	**84.61**	**2.00**	**99.32**	**80.31**	**2.00**	**99.33**	**93.39**	**100.00**	**12.91**	**35.42**	**93.66**	**90.00**	**36.24**

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	1/1/2022	1/3/2022	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		126.5026	126.5026	2.6600e-003		126.5691
Total	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**126.5026**	**126.5026**	**2.6600e-003**		**126.5691**

3.2 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		126.5026	126.5026	2.6600e-003		126.5691
Total	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**126.5026**	**126.5026**	**2.6600e-003**		**126.5691**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive 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	0.9334	4.8436	10.8974	0.0454	4.9951	0.0321	5.0272	1.3357	0.0299	1.3656		4,618.9347	4,618.9347	0.1535		4,622.7733
Unmitigated	0.9407	4.8845	11.0572	0.0463	5.0971	0.0326	5.1297	1.3630	0.0304	1.3933		4,705.7025	4,705.7025	0.1558		4,709.5969

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	1,039.50	1,039.50	1039.50	2,400,837	2,352,820
Total	1,039.50	1,039.50	1,039.50	2,400,837	2,352,820

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.0886	0.7569	0.3221	4.8300e-003		0.0612	0.0612		0.0612	0.0612		966.2054	966.2054	0.0185	0.0177	971.9471
NaturalGas Unmitigated	0.0945	0.8072	0.3435	5.1500e-003		0.0653	0.0653		0.0653	0.0653		1,030.5109	1,030.5109	0.0198	0.0189	1,036.6347

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	8759.34	0.0945	0.8072	0.3435	5.1500e-003		0.0653	0.0653		0.0653	0.0653		1,030.5109	1,030.5109	0.0198	0.0189	1,036.6347
Total		**0.0945**	**0.8072**	**0.3435**	**5.1500e-003**		**0.0653**	**0.0653**		**0.0653**	**0.0653**		**1,030.5109**	**1,030.5109**	**0.0198**	**0.0189**	**1,036.6347**

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	8.21275	0.0886	0.7569	0.3221	4.8300e-003		0.0612	0.0612		0.0612	0.0612		966.2054	966.2054	0.0185	0.0177	971.9471
Total		**0.0886**	**0.7569**	**0.3221**	**4.8300e-003**		**0.0612**	**0.0612**		**0.0612**	**0.0612**		**966.2054**	**966.2054**	**0.0185**	**0.0177**	**971.9471**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive 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	5.3102	0.1045	9.0687	4.8000e-004		0.0503	0.0503		0.0503	0.0503	0.0000	16.3453	16.3453	0.0157	0.0000	16.7368
Unmitigated	119.6219	2.2994	156.5004	0.2781		20.8979	20.8979		20.8979	20.8979	2,241.6172	695.7571	2,937.3743	2.7873	0.1582	3,054.1941

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	0.8479					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.5068					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	113.9949	2.1949	147.4318	0.2777		20.8476	20.8476		20.8476	20.8476	2,241.6172	679.4118	2,921.0290	2.7717	0.1582	3,037.4573
Landscaping	0.2724	0.1045	9.0687	4.8000e-004		0.0503	0.0503		0.0503	0.0503		16.3453	16.3453	0.0157		16.7368
Total	**119.6219**	**2.2994**	**156.5004**	**0.2781**		**20.8979**	**20.8979**		**20.8979**	**20.8979**	**2,241.6172**	**695.7571**	**2,937.3743**	**2.7873**	**0.1582**	**3,054.1941**

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	0.8479					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.1900					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2724	0.1045	9.0687	4.8000e-004		0.0503	0.0503		0.0503	0.0503		16.3453	16.3453	0.0157		16.7368
Total	**5.3102**	**0.1045**	**9.0687**	**4.8000e-004**		**0.0503**	**0.0503**		**0.0503**	**0.0503**	**0.0000**	**16.3453**	**16.3453**	**0.0157**	**0.0000**	**16.7368**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards (Reduce Denisty Alt Mit)

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												
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
Rubber Tired Dozers	Diesel	No Change	0	0	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	0	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					
Rubber Tired Dozers	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	0.00000E+000
Tractors/Loaders/ Backhoes	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	0.00000E+000

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					
Rubber Tired Dozers	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	0.00000E+000
Tractors/Loaders/Backhoes	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	0.00000E+000

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Rubber Tired Dozers	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	0.00000E+000
Tractors/Loaders/Backhoes	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	0.00000E+000

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
Site Preparation	Fugitive Dust	0.00	0.00	0.00	0.00	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	7.03	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	100.00	100.00	100.00	100.00	100.00
Hearth	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
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	0.75	0.82	1.50	1.76	1.69	1.63	0.00	1.84	1.84	1.48	0.00	1.84
Natural Gas	6.26	6.24	6.24	6.38	6.21	6.21	0.00	6.24	6.24	6.12	6.39	6.24
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: Low Density Suburban

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.17	0.44		
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			

Yes	Neighborhood Enhancements	Improve Pedestrian Network	2.00	Project Site and Connecting Off-Site		
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.02			
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	0.02			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"	3.00			
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	5.00			
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.02			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
Yes	No Hearth	
Yes	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
Yes	Use Low VOC Paint (Residential Exterior)	150.00
No	Use Low VOC Paint (Non-residential Interior)	100.00
Yes	Use Low VOC Paint (Non-residential Exterior)	150.00
Yes	Use Low VOC Paint (Parking)	150.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	7.00	
No	Install High Efficiency Lighting		
Yes	On-site Renewable		100.00

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	

CalEEMod Results – Alternatives

Reduced Density Alternative – Year 2030

Creekside Vineyards (Reduce Denisty Alt 2030 Mit)

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
City Park	3.92	Acre	3.92	170,755.20	0
Single Family Housing	110.00	Dwelling Unit	58.90	198,000.00	315

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	163.33	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per description of alternatives

Construction Phase - Construction not modeled

Off-road Equipment - Construction not modeled

Grading - Construction not modeled

Vehicle Trips - Trip generation rates adjusted per Alternatives Chapter

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	60.00	1.00
tblLandUse	LotAcreage	35.71	58.90
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	163.33
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	9.45
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	9.45
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	9.45

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					
2022	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Maximum	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

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					
2022	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Maximum	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

	ROG	NOx	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	**1-1-2022**	**3-31-2022**	0.0001	0.0001
		Highest	0.0001	0.0001

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	1.6499	0.0236	1.7576	1.9900e-003		0.1405	0.1405		0.1405	0.1405	13.9822	4.7676	18.7498	0.0277	8.0000e-004	19.6803
Energy	0.0172	0.1473	0.0627	9.4000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	236.5457	236.5457	0.0150	5.5500e-003	238.5740
Mobile	0.1662	0.8614	1.8485	8.3500e-003	0.8929	5.5400e-003	0.8984	0.2395	5.1600e-003	0.2447	0.0000	770.9277	770.9277	0.0244	0.0000	771.5380
Waste						0.0000	0.0000		0.0000	0.0000	26.9247	0.0000	26.9247	1.5912	0.0000	66.7049
Water						0.0000	0.0000		0.0000	0.0000	2.2737	5.2557	7.5295	0.2345	5.7100e-003	15.0920
Total	**1.8334**	**1.0323**	**3.6688**	**0.0113**	**0.8929**	**0.1579**	**1.0508**	**0.2395**	**0.1576**	**0.3971**	**43.1807**	**1,017.4968**	**1,060.6774**	**1.8928**	**0.0121**	**1,111.5891**

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	0.9438	9.3900e-003	0.8148	4.0000e-005		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	1.3345	1.3345	1.2700e-003	0.0000	1.3663
Energy	0.0162	0.1381	0.0588	8.8000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	159.9661	159.9661	3.0700e-003	2.9300e-003	160.9167
Mobile	0.1650	0.8546	1.8207	8.2000e-003	0.8750	5.4500e-003	0.8805	0.2347	5.0700e-003	0.2398	0.0000	756.7839	756.7839	0.0241	0.0000	757.3852
Waste						0.0000	0.0000		0.0000	0.0000	26.9247	0.0000	26.9247	1.5912	0.0000	66.7049
Water						0.0000	0.0000		0.0000	0.0000	2.2737	5.2557	7.5295	0.2345	5.7100e-003	15.0920
Total	**1.1249**	**1.0021**	**2.6943**	**9.1200e-003**	**0.8750**	**0.0212**	**0.8962**	**0.2347**	**0.0208**	**0.2555**	**29.1985**	**923.3403**	**952.5387**	**1.8541**	**8.6400e-003**	**1,001.4651**

	ROG	NOx	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	**38.64**	**2.93**	**26.56**	**19.15**	**2.00**	**86.61**	**14.72**	**2.00**	**86.82**	**35.65**	**32.38**	**9.25**	**10.20**	**2.04**	**28.36**	**9.91**

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	1/1/2022	1/3/2022	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

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

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	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Total	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

3.2 Site Preparation - 2022

Mitigated Construction On-Site

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

Mitigated Construction 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	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Total	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1650	0.8546	1.8207	8.2000e-003	0.8750	5.4500e-003	0.8805	0.2347	5.0700e-003	0.2398	0.0000	756.7839	756.7839	0.0241	0.0000	757.3852
Unmitigated	0.1662	0.8614	1.8485	8.3500e-003	0.8929	5.5400e-003	0.8984	0.2395	5.1600e-003	0.2447	0.0000	770.9277	770.9277	0.0244	0.0000	771.5380

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	1,039.50	1,039.50	1039.50	2,400,837	2,352,820
Total	1,039.50	1,039.50	1,039.50	2,400,837	2,352,820

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.585795	0.036515	0.193581	0.106455	0.012789	0.005274	0.019465	0.028415	0.002699	0.001789	0.005626	0.000921	0.000676
Other Asphalt Surfaces	0.585795	0.036515	0.193581	0.106455	0.012789	0.005274	0.019465	0.028415	0.002699	0.001789	0.005626	0.000921	0.000676
Single Family Housing	0.585795	0.036515	0.193581	0.106455	0.012789	0.005274	0.019465	0.028415	0.002699	0.001789	0.005626	0.000921	0.000676

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	65.9331	65.9331	0.0117	2.4200e-003	66.9476
NaturalGas Mitigated	0.0162	0.1381	0.0588	8.8000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	159.9661	159.9661	3.0700e-003	2.9300e-003	160.9167
NaturalGas Unmitigated	0.0172	0.1473	0.0627	9.4000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	170.6126	170.6126	3.2700e-003	3.1300e-003	171.6265

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	3.19716e+006	0.0172	0.1473	0.0627	9.4000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	170.6126	170.6126	3.2700e-003	3.1300e-003	171.6265
Total		**0.0172**	**0.1473**	**0.0627**	**9.4000e-004**		**0.0119**	**0.0119**		**0.0119**	**0.0119**	**0.0000**	**170.6126**	**170.6126**	**3.2700e-003**	**3.1300e-003**	**171.6265**

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	2.99765e+006	0.0162	0.1381	0.0588	8.8000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	159.9661	159.9661	3.0700e-003	2.9300e-003	160.9167
Total		**0.0162**	**0.1381**	**0.0588**	**8.8000e-004**		**0.0112**	**0.0112**		**0.0112**	**0.0112**	**0.0000**	**159.9661**	**159.9661**	**3.0700e-003**	**2.9300e-003**	**160.9167**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	889963	65.9331	0.0117	2.4200e-003	66.9476
Total		**65.9331**	**0.0117**	**2.4200e-003**	**66.9476**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.9438	9.3900e-003	0.8148	4.0000e-005		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	1.3345	1.3345	1.2700e-003	0.0000	1.3663
Unmitigated	1.6499	0.0236	1.7576	1.9900e-003		0.1405	0.1405		0.1405	0.1405	13.9822	4.7676	18.7498	0.0277	8.0000e-004	19.6803

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	0.1547					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8225					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.6483	0.0142	0.9428	1.9400e-003		0.1360	0.1360		0.1360	0.1360	13.9822	3.4331	17.4153	0.0264	8.0000e-004	18.3139
Landscaping	0.0244	9.3900e-003	0.8148	4.0000e-005		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	1.3345	1.3345	1.2700e-003	0.0000	1.3663
Total	**1.6499**	**0.0236**	**1.7575**	**1.9800e-003**		**0.1405**	**0.1405**		**0.1405**	**0.1405**	**13.9822**	**4.7676**	**18.7498**	**0.0277**	**8.0000e-004**	**19.6803**

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	0.1547					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7647					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0244	9.3900e-003	0.8148	4.0000e-005		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	1.3345	1.3345	1.2700e-003	0.0000	1.3663
Total	**0.9438**	**9.3900e-003**	**0.8148**	**4.0000e-005**		**4.5300e-003**	**4.5300e-003**		**4.5300e-003**	**4.5300e-003**	**0.0000**	**1.3345**	**1.3345**	**1.2700e-003**	**0.0000**	**1.3663**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	7.5295	0.2345	5.7100e-003	15.0920
Unmitigated	7.5295	0.2345	5.7100e-003	15.0920

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.67061	1.2111	2.2000e-004	4.0000e-005	1.2297
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	7.16694 / 4.51829	6.3184	0.2343	5.6600e-003	13.8622
Total		**7.5295**	**0.2345**	**5.7000e-003**	**15.0919**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.67061	1.2111	2.2000e-004	4.0000e-005	1.2297
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	7.16694 / 4.51829	6.3184	0.2343	5.6600e-003	13.8622
Total		**7.5295**	**0.2345**	**5.7000e-003**	**15.0919**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	26.9247	1.5912	0.0000	66.7049
Unmitigated	26.9247	1.5912	0.0000	66.7049

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.34	0.0690	4.0800e-003	0.0000	0.1710
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	132.3	26.8557	1.5871	0.0000	66.5339
Total		**26.9247**	**1.5912**	**0.0000**	**66.7049**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.34	0.0690	4.0800e-003	0.0000	0.1710
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	132.3	26.8557	1.5871	0.0000	66.5339
Total		**26.9247**	**1.5912**	**0.0000**	**66.7049**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Results – Alternatives

Senior Housing Alternative – Unmitigated

Creekside Vineyards (Senior Housing Alt)

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
City Park	3.92	Acre	3.92	170,755.20	0
Single Family Housing	220.00	Dwelling Unit	28.00	396,000.00	629

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Creekside Vineyards (Senior Housing Alt) - Bay Area AQMD Air District, Annual

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per description of alternatives

Construction Phase - Construction not modeled

Off-road Equipment - Construction not modeled

Grading - Construction not modeled

Vehicle Trips - Trip generation rates adjusted per Alternatives Chapter

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	30.00	1.00
tblConstructionPhase	PhaseEndDate	2/11/2022	1/3/2022
tblLandUse	LotAcreage	71.43	28.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	4.27
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	4.27
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	4.27

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					
2022	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Maximum	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

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					
2022	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Maximum	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

	ROG	NOx	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	**1-1-2022**	**3-31-2022**	0.0001	0.0001
		Highest	0.0001	0.0001

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	3.2356	0.0472	3.5177	3.9700e-003		0.2810	0.2810		0.2810	0.2810	27.9644	9.5349	37.4993	0.0554	1.6000e-003	39.3605
Energy	0.0345	0.2946	0.1254	1.8800e-003		0.0238	0.0238		0.0238	0.0238	0.0000	492.0483	492.0483	0.0300	0.0111	496.1049
Mobile	0.1569	0.7933	1.7429	7.6800e-003	0.8069	5.3500e-003	0.8123	0.2165	4.9800e-003	0.2214	0.0000	708.9997	708.9997	0.0227	0.0000	709.5663
Waste						0.0000	0.0000		0.0000	0.0000	53.6952	0.0000	53.6952	3.1733	0.0000	133.0275
Water						0.0000	0.0000		0.0000	0.0000	4.5475	10.6374	15.1848	0.4687	0.0114	30.2912
Total	**3.4270**	**1.1352**	**5.3859**	**0.0135**	**0.8069**	**0.3101**	**1.1170**	**0.2165**	**0.3098**	**0.5262**	**86.2071**	**1,221.2202**	**1,307.4273**	**3.7500**	**0.0241**	**1,408.3504**

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	3.1199	0.0472	3.5177	3.9700e-003		0.2810	0.2810		0.2810	0.2810	27.9644	9.5349	37.4993	0.0554	1.6000e-003	39.3605
Energy	0.0323	0.2763	0.1176	1.7600e-003		0.0223	0.0223		0.0223	0.0223	0.0000	319.9323	319.9323	6.1300e-003	5.8700e-003	321.8335
Mobile	0.1557	0.7869	1.7167	7.5400e-003	0.7908	5.2600e-003	0.7960	0.2121	4.9000e-003	0.2170	0.0000	695.9806	695.9806	0.0223	0.0000	696.5390
Waste						0.0000	0.0000		0.0000	0.0000	53.6952	0.0000	53.6952	3.1733	0.0000	133.0275
Water						0.0000	0.0000		0.0000	0.0000	4.5475	10.6374	15.1848	0.4687	0.0114	30.2912
Total	**3.3080**	**1.1103**	**5.3520**	**0.0133**	**0.7908**	**0.3086**	**1.0993**	**0.2121**	**0.3082**	**0.5203**	**86.2071**	**1,036.0851**	**1,122.2922**	**3.7259**	**0.0188**	**1,221.0516**

	ROG	NOx	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	**3.47**	**2.19**	**0.63**	**1.92**	**2.00**	**0.51**	**1.59**	**2.00**	**0.50**	**1.12**	**0.00**	**15.16**	**14.16**	**0.64**	**21.73**	**13.30**

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	1/1/2022	1/3/2022	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

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

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	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Total	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

3.2 Site Preparation - 2022

Mitigated Construction On-Site

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

Mitigated Construction 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	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Total	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1557	0.7869	1.7167	7.5400e-003	0.7908	5.2600e-003	0.7960	0.2121	4.9000e-003	0.2170	0.0000	695.9806	695.9806	0.0223	0.0000	696.5390
Unmitigated	0.1569	0.7933	1.7429	7.6800e-003	0.8069	5.3500e-003	0.8123	0.2165	4.9800e-003	0.2214	0.0000	708.9997	708.9997	0.0227	0.0000	709.5663

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	939.40	939.40	939.40	2,169,645	2,126,252
Total	939.40	939.40	939.40	2,169,645	2,126,252

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	150.8230	150.8230	0.0234	4.8400e-003	152.8519
NaturalGas Mitigated	0.0323	0.2763	0.1176	1.7600e-003		0.0223	0.0223		0.0223	0.0223	0.0000	319.9323	319.9323	6.1300e-003	5.8700e-003	321.8335
NaturalGas Unmitigated	0.0345	0.2946	0.1254	1.8800e-003		0.0238	0.0238		0.0238	0.0238	0.0000	341.2253	341.2253	6.5400e-003	6.2600e-003	343.2530

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	6.39432e+006	0.0345	0.2946	0.1254	1.8800e-003		0.0238	0.0238		0.0238	0.0238	0.0000	341.2253	341.2253	6.5400e-003	6.2600e-003	343.2530
Total		**0.0345**	**0.2946**	**0.1254**	**1.8800e-003**		**0.0238**	**0.0238**		**0.0238**	**0.0238**	**0.0000**	**341.2253**	**341.2253**	**6.5400e-003**	**6.2600e-003**	**343.2530**

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	5.9953e+006	0.0323	0.2763	0.1176	1.7600e-003		0.0223	0.0223		0.0223	0.0223	0.0000	319.9323	319.9323	6.1300e-003	5.8700e-003	321.8335
Total		**0.0323**	**0.2763**	**0.1176**	**1.7600e-003**		**0.0223**	**0.0223**		**0.0223**	**0.0223**	**0.0000**	**319.9323**	**319.9323**	**6.1300e-003**	**5.8700e-003**	**321.8335**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.77993e+006	150.8230	0.0234	4.8400e-003	152.8519
Total		**150.8230**	**0.0234**	**4.8400e-003**	**152.8519**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	3.1199	0.0472	3.5177	3.9700e-003		0.2810	0.2810		0.2810	0.2810	27.9644	9.5349	37.4993	0.0554	1.6000e-003	39.3605
Unmitigated	3.2356	0.0472	3.5177	3.9700e-003		0.2810	0.2810		0.2810	0.2810	27.9644	9.5349	37.4993	0.0554	1.6000e-003	39.3605

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	0.2941					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5958					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2967	0.0284	1.8855	3.8900e-003		0.2719	0.2719		0.2719	0.2719	27.9644	6.8662	34.8306	0.0528	1.6000e-003	36.6279
Landscaping	0.0490	0.0188	1.6322	9.0000e-005		9.0600e-003	9.0600e-003		9.0600e-003	9.0600e-003	0.0000	2.6687	2.6687	2.5600e-003	0.0000	2.7326
Total	**3.2356**	**0.0472**	**3.5177**	**3.9800e-003**		**0.2810**	**0.2810**		**0.2810**	**0.2810**	**27.9644**	**9.5349**	**37.4993**	**0.0554**	**1.6000e-003**	**39.3605**

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	0.2941					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2967	0.0284	1.8855	3.8900e-003		0.2719	0.2719		0.2719	0.2719	27.9644	6.8662	34.8306	0.0528	1.6000e-003	36.6279
Landscaping	0.0490	0.0188	1.6322	9.0000e-005		9.0600e-003	9.0600e-003		9.0600e-003	9.0600e-003	0.0000	2.6687	2.6687	2.5600e-003	0.0000	2.7326
Total	**3.1200**	**0.0472**	**3.5177**	**3.9800e-003**		**0.2810**	**0.2810**		**0.2810**	**0.2810**	**27.9644**	**9.5349**	**37.4993**	**0.0554**	**1.6000e-003**	**39.3605**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	15.1848	0.4687	0.0114	30.2912
Unmitigated	15.1848	0.4687	0.0114	30.2912

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.67061	1.3852	2.2000e-004	4.0000e-005	1.4038
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	14.3339 / 9.03658	13.7997	0.4685	0.0113	28.8874
Total		**15.1848**	**0.4687**	**0.0114**	**30.2912**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.67061	1.3852	2.2000e-004	4.0000e-005	1.4038
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	14.3339 / 9.03658	13.7997	0.4685	0.0113	28.8874
Total		**15.1848**	**0.4687**	**0.0114**	**30.2912**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	53.6952	3.1733	0.0000	133.0275
Unmitigated	53.6952	3.1733	0.0000	133.0275

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.34	0.0690	4.0800e-003	0.0000	0.1710
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	264.18	53.6262	3.1692	0.0000	132.8565
Total		**53.6952**	**3.1733**	**0.0000**	**133.0275**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.34	0.0690	4.0800e-003	0.0000	0.1710
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	264.18	53.6262	3.1692	0.0000	132.8565
Total		**53.6952**	**3.1733**	**0.0000**	**133.0275**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards (Senior Housing Alt)

Bay Area AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
City Park	3.92	Acre	3.92	170,755.20	0
Single Family Housing	220.00	Dwelling Unit	28.00	396,000.00	629

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Creekside Vineyards (Senior Housing Alt) - Bay Area AQMD Air District, Summer

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per description of alternatives

Construction Phase - Construction not modeled

Off-road Equipment - Construction not modeled

Grading - Construction not modeled

Vehicle Trips - Trip generation rates adjusted per Alternatives Chapter

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	30.00	1.00
tblConstructionPhase	PhaseEndDate	2/11/2022	1/3/2022
tblLandUse	LotAcreage	71.43	28.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	4.27
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	4.27
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	4.27

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					
2022	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401	0.0000	137.3212	137.3212	2.8600e-003	0.0000	137.3927
Maximum	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**	**0.0000**	**137.3212**	**137.3212**	**2.8600e-003**	**0.0000**	**137.3927**

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					
2022	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401	0.0000	137.3212	137.3212	2.8600e-003	0.0000	137.3927
Maximum	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**	**0.0000**	**137.3212**	**137.3212**	**2.8600e-003**	**0.0000**	**137.3927**

Creekside Vineyards (Senior Housing Alt) - Bay Area AQMD Air District, Summer

	ROG	NOx	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	238.8900	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834
Energy	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693
Mobile	0.9971	4.2629	9.9978	0.0446	4.6062	0.0294	4.6356	1.2317	0.0274	1.2591		4,529.9818	4,529.9818	0.1373		4,533.4134
Total	**240.0760**	**10.4761**	**323.6835**	**0.6111**	**4.6062**	**41.9557**	**46.5619**	**1.2317**	**41.9537**	**43.1854**	**4,483.2345**	**7,982.5131**	**12,465.7476**	**5.7514**	**0.3541**	**12,715.0660**

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	238.2564	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834
Energy	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
Mobile	0.9905	4.2295	9.8368	0.0438	4.5141	0.0289	4.5430	1.2071	0.0269	1.2340		4,446.7124	4,446.7124	0.1352		4,450.0922
Total	**239.4240**	**10.3420**	**323.4796**	**0.6097**	**4.5141**	**41.9471**	**46.4612**	**1.2071**	**41.9451**	**43.1521**	**4,483.2345**	**7,770.6328**	**12,253.8673**	**5.7469**	**0.3518**	**12,502.3697**

	ROG	NOx	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	**0.27**	**1.28**	**0.06**	**0.24**	**2.00**	**0.02**	**0.22**	**2.00**	**0.02**	**0.08**	**0.00**	**2.65**	**1.70**	**0.08**	**0.67**	**1.67**

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	1/1/2022	1/3/2022	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		137.3212	137.3212	2.8600e-003		137.3927
Total	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**137.3212**	**137.3212**	**2.8600e-003**		**137.3927**

3.2 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		137.3212	137.3212	2.8600e-003		137.3927
Total	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**137.3212**	**137.3212**	**2.8600e-003**		**137.3927**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive 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	0.9905	4.2295	9.8368	0.0438	4.5141	0.0289	4.5430	1.2071	0.0269	1.2340		4,446.7124	4,446.7124	0.1352		4,450.0922
Unmitigated	0.9971	4.2629	9.9978	0.0446	4.6062	0.0294	4.6356	1.2317	0.0274	1.2591		4,529.9818	4,529.9818	0.1373		4,533.4134

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	939.40	939.40	939.40	2,169,645	2,126,252
Total	939.40	939.40	939.40	2,169,645	2,126,252

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
NaturalGas Unmitigated	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	17518.7	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693
Total		**0.1889**	**1.6145**	**0.6870**	**0.0103**		**0.1305**	**0.1305**		**0.1305**	**0.1305**		**2,061.0217**	**2,061.0217**	**0.0395**	**0.0378**	**2,073.2693**

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	16.4255	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
Total		**0.1771**	**1.5137**	**0.6441**	**9.6600e-003**		**0.1224**	**0.1224**		**0.1224**	**0.1224**		**1,932.4108**	**1,932.4108**	**0.0370**	**0.0354**	**1,943.8941**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive 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	238.2564	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834
Unmitigated	238.8900	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834

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	1.6116					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.7440					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	227.9898	4.3899	294.8635	0.5553		41.6952	41.6952		41.6952	41.6952	4,483.2345	1,358.8235	5,842.0580	5.5433	0.3164	6,074.9146
Landscaping	0.5446	0.2089	18.1352	9.6000e-004		0.1006	0.1006		0.1006	0.1006		32.6861	32.6861	0.0313		33.4688
Total	**238.8900**	**4.5987**	**312.9987**	**0.5563**		**41.7958**	**41.7958**		**41.7958**	**41.7958**	**4,483.2345**	**1,391.5096**	**5,874.7441**	**5.5746**	**0.3164**	**6,108.3834**

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	1.6116					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.1104					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	227.9898	4.3899	294.8635	0.5553		41.6952	41.6952		41.6952	41.6952	4,483.2345	1,358.8235	5,842.0580	5.5433	0.3164	6,074.9146
Landscaping	0.5446	0.2089	18.1352	9.6000e-004		0.1006	0.1006		0.1006	0.1006		32.6861	32.6861	0.0313		33.4688
Total	**238.2564**	**4.5987**	**312.9987**	**0.5563**		**41.7958**	**41.7958**		**41.7958**	**41.7958**	**4,483.2345**	**1,391.5096**	**5,874.7441**	**5.5746**	**0.3164**	**6,108.3834**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards (Senior Housing Alt)

Bay Area AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
City Park	3.92	Acre	3.92	170,755.20	0
Single Family Housing	220.00	Dwelling Unit	28.00	396,000.00	629

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per description of alternatives

Construction Phase - Construction not modeled

Off-road Equipment - Construction not modeled

Grading - Construction not modeled

Vehicle Trips - Trip generation rates adjusted per Alternatives Chapter

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	30.00	1.00
tblConstructionPhase	PhaseEndDate	2/11/2022	1/3/2022
tblLandUse	LotAcreage	71.43	28.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	4.27
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	4.27
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	4.27

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					
2022	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401	0.0000	126.5026	126.5026	2.6600e-003	0.0000	126.5691
Maximum	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**	**0.0000**	**126.5026**	**126.5026**	**2.6600e-003**	**0.0000**	**126.5691**

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					
2022	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401	0.0000	126.5026	126.5026	2.6600e-003	0.0000	126.5691
Maximum	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**	**0.0000**	**126.5026**	**126.5026**	**2.6600e-003**	**0.0000**	**126.5691**

Creekside Vineyards (Senior Housing Alt) - Bay Area AQMD Air District, Winter

	ROG	NOx	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	238.8900	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834
Energy	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693
Mobile	0.8501	4.4142	9.9924	0.0418	4.6062	0.0295	4.6357	1.2317	0.0275	1.2592		4,252.5608	4,252.5608	0.1408		4,256.0802
Total	**239.9290**	**10.6274**	**323.6781**	**0.6084**	**4.6062**	**41.9558**	**46.5621**	**1.2317**	**41.9538**	**43.1855**	**4,483.2345**	**7,705.0920**	**12,188.3265**	**5.7549**	**0.3541**	**12,437.7329**

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	238.2564	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834
Energy	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
Mobile	0.8435	4.3772	9.8480	0.0411	4.5141	0.0290	4.5431	1.2071	0.0270	1.2341		4,174.1484	4,174.1484	0.1388		4,177.6173
Total	**239.2771**	**10.4896**	**323.4909**	**0.6070**	**4.5141**	**41.9472**	**46.4613**	**1.2071**	**41.9452**	**43.1522**	**4,483.2345**	**7,498.0687**	**11,981.3032**	**5.7504**	**0.3518**	**12,229.8948**

	ROG	NOx	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	**0.27**	**1.30**	**0.06**	**0.23**	**2.00**	**0.02**	**0.22**	**2.00**	**0.02**	**0.08**	**0.00**	**2.69**	**1.70**	**0.08**	**0.67**	**1.67**

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	1/1/2022	1/3/2022	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		126.5026	126.5026	2.6600e-003		126.5691
Total	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**126.5026**	**126.5026**	**2.6600e-003**		**126.5691**

3.2 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		126.5026	126.5026	2.6600e-003		126.5691
Total	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**126.5026**	**126.5026**	**2.6600e-003**		**126.5691**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive 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	0.8435	4.3772	9.8480	0.0411	4.5141	0.0290	4.5431	1.2071	0.0270	1.2341		4,174.1484	4,174.1484	0.1388		4,177.6173
Unmitigated	0.8501	4.4142	9.9924	0.0418	4.6062	0.0295	4.6357	1.2317	0.0275	1.2592		4,252.5608	4,252.5608	0.1408		4,256.0802

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	939.40	939.40	939.40	2,169,645	2,126,252
Total	939.40	939.40	939.40	2,169,645	2,126,252

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
NaturalGas Unmitigated	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	17518.7	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693
Total		**0.1889**	**1.6145**	**0.6870**	**0.0103**		**0.1305**	**0.1305**		**0.1305**	**0.1305**		**2,061.0217**	**2,061.0217**	**0.0395**	**0.0378**	**2,073.2693**

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	16.4255	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
Total		**0.1771**	**1.5137**	**0.6441**	**9.6600e-003**		**0.1224**	**0.1224**		**0.1224**	**0.1224**		**1,932.4108**	**1,932.4108**	**0.0370**	**0.0354**	**1,943.8941**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive 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	238.2564	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834
Unmitigated	238.8900	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834

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	1.6116					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.7440					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	227.9898	4.3899	294.8635	0.5553		41.6952	41.6952		41.6952	41.6952	4,483.2345	1,358.8235	5,842.0580	5.5433	0.3164	6,074.9146
Landscaping	0.5446	0.2089	18.1352	9.6000e-004		0.1006	0.1006		0.1006	0.1006		32.6861	32.6861	0.0313		33.4688
Total	**238.8900**	**4.5987**	**312.9987**	**0.5563**		**41.7958**	**41.7958**		**41.7958**	**41.7958**	**4,483.2345**	**1,391.5096**	**5,874.7441**	**5.5746**	**0.3164**	**6,108.3834**

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	1.6116					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.1104					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	227.9898	4.3899	294.8635	0.5553		41.6952	41.6952		41.6952	41.6952	4,483.2345	1,358.8235	5,842.0580	5.5433	0.3164	6,074.9146
Landscaping	0.5446	0.2089	18.1352	9.6000e-004		0.1006	0.1006		0.1006	0.1006		32.6861	32.6861	0.0313		33.4688
Total	**238.2564**	**4.5987**	**312.9987**	**0.5563**		**41.7958**	**41.7958**		**41.7958**	**41.7958**	**4,483.2345**	**1,391.5096**	**5,874.7441**	**5.5746**	**0.3164**	**6,108.3834**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards (Senior Housing Alt)

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												
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
Rubber Tired Dozers	Diesel	No Change	0	0	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	0	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					
Rubber Tired Dozers	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	0.00000E+000
Tractors/Loaders/ Backhoes	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	0.00000E+000

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					
Rubber Tired Dozers	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	0.00000E+000
Tractors/Loaders/Backhoes	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	0.00000E+000

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Rubber Tired Dozers	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	0.00000E+000
Tractors/Loaders/Backhoes	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	0.00000E+000

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
Site Preparation	Fugitive Dust	0.00	0.00	0.00	0.00	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	7.25	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	100.00	100.00	100.00	100.00	100.00
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	0.75	0.81	1.50	1.82	1.68	1.61	0.00	1.84	1.84	1.50	0.00	1.84
Natural Gas	6.24	6.24	6.25	6.38	6.21	6.21	0.00	6.24	6.24	6.27	6.23	6.24
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: Low Density Suburban

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.18	0.45		
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			

Yes	Neighborhood Enhancements	Improve Pedestrian Network	2.00	Project Site and Connecting Off-Site		
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.02			
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	0.02			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"	3.00			
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	5.00			
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.02			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
Yes	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
Yes	Use Low VOC Paint (Residential Exterior)	150.00
No	Use Low VOC Paint (Non-residential Interior)	100.00
Yes	Use Low VOC Paint (Non-residential Exterior)	150.00
Yes	Use Low VOC Paint (Parking)	150.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	7.00	
No	Install High Efficiency Lighting		
Yes	On-site Renewable		100.00

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	

CalEEMod Results – Alternatives

Senior Housing Alternative – Mitigated

Creekside Vineyards (Senior Housing Alt Mit)

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
City Park	3.92	Acre	3.92	170,755.20	0
Single Family Housing	220.00	Dwelling Unit	28.00	396,000.00	629

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per description of alternatives

Construction Phase - Construction not modeled

Off-road Equipment - Construction not modeled

Grading - Construction not modeled

Vehicle Trips - Trip generation rates adjusted per Alternatives Chapter

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	30.00	1.00
tblConstructionPhase	PhaseEndDate	2/11/2022	1/3/2022
tblLandUse	LotAcreage	71.43	28.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	4.27
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	4.27
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	4.27

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					
2022	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Maximum	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

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					
2022	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Maximum	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

	ROG	NOx	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	**1-1-2022**	**3-31-2022**	0.0001	0.0001
		Highest	0.0001	0.0001

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	3.2356	0.0472	3.5177	3.9700e-003		0.2810	0.2810		0.2810	0.2810	27.9644	9.5349	37.4993	0.0554	1.6000e-003	39.3605
Energy	0.0345	0.2946	0.1254	1.8800e-003		0.0238	0.0238		0.0238	0.0238	0.0000	492.0483	492.0483	0.0300	0.0111	496.1049
Mobile	0.1569	0.7933	1.7429	7.6800e-003	0.8069	5.3500e-003	0.8123	0.2165	4.9800e-003	0.2214	0.0000	708.9997	708.9997	0.0227	0.0000	709.5663
Waste						0.0000	0.0000		0.0000	0.0000	53.6952	0.0000	53.6952	3.1733	0.0000	133.0275
Water						0.0000	0.0000		0.0000	0.0000	4.5475	10.6374	15.1848	0.4687	0.0114	30.2912
Total	**3.4270**	**1.1352**	**5.3859**	**0.0135**	**0.8069**	**0.3101**	**1.1170**	**0.2165**	**0.3098**	**0.5262**	**86.2071**	**1,221.2202**	**1,307.4273**	**3.7500**	**0.0241**	**1,408.3504**

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	1.8233	0.0188	1.6322	9.0000e-005		9.0600e-003	9.0600e-003		9.0600e-003	9.0600e-003	0.0000	2.6687	2.6687	2.5600e-003	0.0000	2.7326
Energy	0.0323	0.2763	0.1176	1.7600e-003		0.0223	0.0223		0.0223	0.0223	0.0000	319.9323	319.9323	6.1300e-003	5.8700e-003	321.8335
Mobile	0.1557	0.7869	1.7167	7.5400e-003	0.7908	5.2600e-003	0.7960	0.2121	4.9000e-003	0.2170	0.0000	695.9806	695.9806	0.0223	0.0000	696.5390
Waste						0.0000	0.0000		0.0000	0.0000	53.6952	0.0000	53.6952	3.1733	0.0000	133.0275
Water						0.0000	0.0000		0.0000	0.0000	4.5475	10.6374	15.1848	0.4687	0.0114	30.2912
Total	**2.0113**	**1.0819**	**3.4664**	**9.3900e-003**	**0.7908**	**0.0367**	**0.8274**	**0.2121**	**0.0363**	**0.2484**	**58.2427**	**1,029.2190**	**1,087.4616**	**3.6730**	**0.0172**	**1,184.4237**

	ROG	NOx	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	**41.31**	**4.69**	**35.64**	**30.60**	**2.00**	**88.18**	**25.93**	**2.00**	**88.28**	**52.79**	**32.44**	**15.72**	**16.82**	**2.05**	**28.38**	**15.90**

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	1/1/2022	1/3/2022	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

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

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	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Total	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

3.2 Site Preparation - 2022

Mitigated Construction On-Site

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

Mitigated Construction 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	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Total	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1557	0.7869	1.7167	7.5400e-003	0.7908	5.2600e-003	0.7960	0.2121	4.9000e-003	0.2170	0.0000	695.9806	695.9806	0.0223	0.0000	696.5390
Unmitigated	0.1569	0.7933	1.7429	7.6800e-003	0.8069	5.3500e-003	0.8123	0.2165	4.9800e-003	0.2214	0.0000	708.9997	708.9997	0.0227	0.0000	709.5663

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	939.40	939.40	939.40	2,169,645	2,126,252
Total	939.40	939.40	939.40	2,169,645	2,126,252

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	150.8230	150.8230	0.0234	4.8400e-003	152.8519
NaturalGas Mitigated	0.0323	0.2763	0.1176	1.7600e-003		0.0223	0.0223		0.0223	0.0223	0.0000	319.9323	319.9323	6.1300e-003	5.8700e-003	321.8335
NaturalGas Unmitigated	0.0345	0.2946	0.1254	1.8800e-003		0.0238	0.0238		0.0238	0.0238	0.0000	341.2253	341.2253	6.5400e-003	6.2600e-003	343.2530

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	6.39432e+006	0.0345	0.2946	0.1254	1.8800e-003		0.0238	0.0238		0.0238	0.0238	0.0000	341.2253	341.2253	6.5400e-003	6.2600e-003	343.2530
Total		**0.0345**	**0.2946**	**0.1254**	**1.8800e-003**		**0.0238**	**0.0238**		**0.0238**	**0.0238**	**0.0000**	**341.2253**	**341.2253**	**6.5400e-003**	**6.2600e-003**	**343.2530**

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	5.9953e+006	0.0323	0.2763	0.1176	1.7600e-003		0.0223	0.0223		0.0223	0.0223	0.0000	319.9323	319.9323	6.1300e-003	5.8700e-003	321.8335
Total		**0.0323**	**0.2763**	**0.1176**	**1.7600e-003**		**0.0223**	**0.0223**		**0.0223**	**0.0223**	**0.0000**	**319.9323**	**319.9323**	**6.1300e-003**	**5.8700e-003**	**321.8335**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.77993e+006	150.8230	0.0234	4.8400e-003	152.8519
Total		**150.8230**	**0.0234**	**4.8400e-003**	**152.8519**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.8233	0.0188	1.6322	9.0000e-005		9.0600e-003	9.0600e-003		9.0600e-003	9.0600e-003	0.0000	2.6687	2.6687	2.5600e-003	0.0000	2.7326
Unmitigated	3.2356	0.0472	3.5177	3.9700e-003		0.2810	0.2810		0.2810	0.2810	27.9644	9.5349	37.4993	0.0554	1.6000e-003	39.3605

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	0.2941					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5958					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2967	0.0284	1.8855	3.8900e-003		0.2719	0.2719		0.2719	0.2719	27.9644	6.8662	34.8306	0.0528	1.6000e-003	36.6279
Landscaping	0.0490	0.0188	1.6322	9.0000e-005		9.0600e-003	9.0600e-003		9.0600e-003	9.0600e-003	0.0000	2.6687	2.6687	2.5600e-003	0.0000	2.7326
Total	**3.2356**	**0.0472**	**3.5177**	**3.9800e-003**		**0.2810**	**0.2810**		**0.2810**	**0.2810**	**27.9644**	**9.5349**	**37.4993**	**0.0554**	**1.6000e-003**	**39.3605**

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	0.2941					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0490	0.0188	1.6322	9.0000e-005		9.0600e-003	9.0600e-003		9.0600e-003	9.0600e-003	0.0000	2.6687	2.6687	2.5600e-003	0.0000	2.7326
Total	**1.8233**	**0.0188**	**1.6322**	**9.0000e-005**		**9.0600e-003**	**9.0600e-003**		**9.0600e-003**	**9.0600e-003**	**0.0000**	**2.6687**	**2.6687**	**2.5600e-003**	**0.0000**	**2.7326**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	15.1848	0.4687	0.0114	30.2912
Unmitigated	15.1848	0.4687	0.0114	30.2912

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.67061	1.3852	2.2000e-004	4.0000e-005	1.4038
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	14.3339 / 9.03658	13.7997	0.4685	0.0113	28.8874
Total		**15.1848**	**0.4687**	**0.0114**	**30.2912**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.67061	1.3852	2.2000e-004	4.0000e-005	1.4038
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	14.3339 / 9.03658	13.7997	0.4685	0.0113	28.8874
Total		**15.1848**	**0.4687**	**0.0114**	**30.2912**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	53.6952	3.1733	0.0000	133.0275
Unmitigated	53.6952	3.1733	0.0000	133.0275

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.34	0.0690	4.0800e-003	0.0000	0.1710
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	264.18	53.6262	3.1692	0.0000	132.8565
Total		**53.6952**	**3.1733**	**0.0000**	**133.0275**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.34	0.0690	4.0800e-003	0.0000	0.1710
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	264.18	53.6262	3.1692	0.0000	132.8565
Total		**53.6952**	**3.1733**	**0.0000**	**133.0275**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards (Senior Housing Alt Mit)

Bay Area AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
City Park	3.92	Acre	3.92	170,755.20	0
Single Family Housing	220.00	Dwelling Unit	28.00	396,000.00	629

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per description of alternatives

Construction Phase - Construction not modeled

Off-road Equipment - Construction not modeled

Grading - Construction not modeled

Vehicle Trips - Trip generation rates adjusted per Alternatives Chapter

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	30.00	1.00
tblConstructionPhase	PhaseEndDate	2/11/2022	1/3/2022
tblLandUse	LotAcreage	71.43	28.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	4.27
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	4.27
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	4.27

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					
2022	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401	0.0000	137.3212	137.3212	2.8600e-003	0.0000	137.3927
Maximum	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**	**0.0000**	**137.3212**	**137.3212**	**2.8600e-003**	**0.0000**	**137.3927**

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					
2022	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401	0.0000	137.3212	137.3212	2.8600e-003	0.0000	137.3927
Maximum	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**	**0.0000**	**137.3212**	**137.3212**	**2.8600e-003**	**0.0000**	**137.3927**

Creekside Vineyards (Senior Housing Alt Mit) - Bay Area AQMD Air District, Summer

	ROG	NOx	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	238.8900	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834
Energy	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693
Mobile	0.9971	4.2629	9.9978	0.0446	4.6062	0.0294	4.6356	1.2317	0.0274	1.2591		4,529.9818	4,529.9818	0.1373		4,533.4134
Total	**240.0760**	**10.4761**	**323.6835**	**0.6111**	**4.6062**	**41.9557**	**46.5619**	**1.2317**	**41.9537**	**43.1854**	**4,483.2345**	**7,982.5131**	**12,465.7476**	**5.7514**	**0.3541**	**12,715.0660**

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	10.2666	0.2089	18.1352	9.6000e-004		0.1006	0.1006		0.1006	0.1006	0.0000	32.6861	32.6861	0.0313	0.0000	33.4688
Energy	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
Mobile	0.9905	4.2295	9.8368	0.0438	4.5141	0.0289	4.5430	1.2071	0.0269	1.2340		4,446.7124	4,446.7124	0.1352		4,450.0922
Total	**11.4342**	**5.9521**	**28.6161**	**0.0544**	**4.5141**	**0.2519**	**4.7660**	**1.2071**	**0.2499**	**1.4570**	**0.0000**	**6,411.8093**	**6,411.8093**	**0.2035**	**0.0354**	**6,427.4551**

	ROG	NOx	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	**95.24**	**43.18**	**91.16**	**91.10**	**2.00**	**99.40**	**89.76**	**2.00**	**99.40**	**96.63**	**100.00**	**19.68**	**48.56**	**96.46**	**90.00**	**49.45**

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	1/1/2022	1/3/2022	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		137.3212	137.3212	2.8600e-003		137.3927
Total	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**137.3212**	**137.3212**	**2.8600e-003**		**137.3927**

3.2 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0539	0.0303	0.4074	1.3800e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		137.3212	137.3212	2.8600e-003		137.3927
Total	**0.0539**	**0.0303**	**0.4074**	**1.3800e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**137.3212**	**137.3212**	**2.8600e-003**		**137.3927**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive 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	0.9905	4.2295	9.8368	0.0438	4.5141	0.0289	4.5430	1.2071	0.0269	1.2340		4,446.7124	4,446.7124	0.1352		4,450.0922
Unmitigated	0.9971	4.2629	9.9978	0.0446	4.6062	0.0294	4.6356	1.2317	0.0274	1.2591		4,529.9818	4,529.9818	0.1373		4,533.4134

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	939.40	939.40	939.40	2,169,645	2,126,252
Total	939.40	939.40	939.40	2,169,645	2,126,252

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
NaturalGas Unmitigated	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	17518.7	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693
Total		**0.1889**	**1.6145**	**0.6870**	**0.0103**		**0.1305**	**0.1305**		**0.1305**	**0.1305**		**2,061.0217**	**2,061.0217**	**0.0395**	**0.0378**	**2,073.2693**

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	16.4255	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
Total		**0.1771**	**1.5137**	**0.6441**	**9.6600e-003**		**0.1224**	**0.1224**		**0.1224**	**0.1224**		**1,932.4108**	**1,932.4108**	**0.0370**	**0.0354**	**1,943.8941**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive 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	10.2666	0.2089	18.1352	9.6000e-004		0.1006	0.1006		0.1006	0.1006	0.0000	32.6861	32.6861	0.0313	0.0000	33.4688
Unmitigated	238.8900	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834

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	1.6116					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.7440					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	227.9898	4.3899	294.8635	0.5553		41.6952	41.6952		41.6952	41.6952	4,483.2345	1,358.8235	5,842.0580	5.5433	0.3164	6,074.9146
Landscaping	0.5446	0.2089	18.1352	9.6000e-004		0.1006	0.1006		0.1006	0.1006		32.6861	32.6861	0.0313		33.4688
Total	**238.8900**	**4.5987**	**312.9987**	**0.5563**		**41.7958**	**41.7958**		**41.7958**	**41.7958**	**4,483.2345**	**1,391.5096**	**5,874.7441**	**5.5746**	**0.3164**	**6,108.3834**

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	1.6116					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.1104					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5446	0.2089	18.1352	9.6000e-004		0.1006	0.1006		0.1006	0.1006		32.6861	32.6861	0.0313		33.4688
Total	**10.2666**	**0.2089**	**18.1352**	**9.6000e-004**		**0.1006**	**0.1006**		**0.1006**	**0.1006**	**0.0000**	**32.6861**	**32.6861**	**0.0313**	**0.0000**	**33.4688**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards (Senior Housing Alt Mit)

Bay Area AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
City Park	3.92	Acre	3.92	170,755.20	0
Single Family Housing	220.00	Dwelling Unit	28.00	396,000.00	629

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2029
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	186.81	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per description of alternatives

Construction Phase - Construction not modeled

Off-road Equipment - Construction not modeled

Grading - Construction not modeled

Vehicle Trips - Trip generation rates adjusted per Alternatives Chapter

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	30.00	1.00
tblConstructionPhase	PhaseEndDate	2/11/2022	1/3/2022
tblLandUse	LotAcreage	71.43	28.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	186.81
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	4.27
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	4.27
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	4.27

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					
2022	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401	0.0000	126.5026	126.5026	2.6600e-003	0.0000	126.5691
Maximum	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**	**0.0000**	**126.5026**	**126.5026**	**2.6600e-003**	**0.0000**	**126.5691**

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					
2022	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401	0.0000	126.5026	126.5026	2.6600e-003	0.0000	126.5691
Maximum	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**	**0.0000**	**126.5026**	**126.5026**	**2.6600e-003**	**0.0000**	**126.5691**

Creekside Vineyards (Senior Housing Alt Mit) - Bay Area AQMD Air District, Winter

	ROG	NOx	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	238.8900	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834
Energy	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693
Mobile	0.8501	4.4142	9.9924	0.0418	4.6062	0.0295	4.6357	1.2317	0.0275	1.2592		4,252.5608	4,252.5608	0.1408		4,256.0802
Total	**239.9290**	**10.6274**	**323.6781**	**0.6084**	**4.6062**	**41.9558**	**46.5621**	**1.2317**	**41.9538**	**43.1855**	**4,483.2345**	**7,705.0920**	**12,188.3265**	**5.7549**	**0.3541**	**12,437.7329**

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	10.2666	0.2089	18.1352	9.6000e-004		0.1006	0.1006		0.1006	0.1006	0.0000	32.6861	32.6861	0.0313	0.0000	33.4688
Energy	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
Mobile	0.8435	4.3772	9.8480	0.0411	4.5141	0.0290	4.5431	1.2071	0.0270	1.2341		4,174.1484	4,174.1484	0.1388		4,177.6173
Total	**11.2872**	**6.0998**	**28.6274**	**0.0517**	**4.5141**	**0.2520**	**4.7661**	**1.2071**	**0.2500**	**1.4571**	**0.0000**	**6,139.2452**	**6,139.2452**	**0.2071**	**0.0354**	**6,154.9802**

	ROG	NOx	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	**95.30**	**42.60**	**91.16**	**91.51**	**2.00**	**99.40**	**89.76**	**2.00**	**99.40**	**96.63**	**100.00**	**20.32**	**49.63**	**96.40**	**90.00**	**50.51**

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	1/1/2022	1/3/2022	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		126.5026	126.5026	2.6600e-003		126.5691
Total	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**126.5026**	**126.5026**	**2.6600e-003**		**126.5691**

3.2 Site Preparation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0572	0.0375	0.3796	1.2700e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		126.5026	126.5026	2.6600e-003		126.5691
Total	**0.0572**	**0.0375**	**0.3796**	**1.2700e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**126.5026**	**126.5026**	**2.6600e-003**		**126.5691**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive 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	0.8435	4.3772	9.8480	0.0411	4.5141	0.0290	4.5431	1.2071	0.0270	1.2341		4,174.1484	4,174.1484	0.1388		4,177.6173
Unmitigated	0.8501	4.4142	9.9924	0.0418	4.6062	0.0295	4.6357	1.2317	0.0275	1.2592		4,252.5608	4,252.5608	0.1408		4,256.0802

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	939.40	939.40	939.40	2,169,645	2,126,252
Total	939.40	939.40	939.40	2,169,645	2,126,252

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Other Asphalt Surfaces	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682
Single Family Housing	0.585310	0.036704	0.193678	0.106768	0.013058	0.005276	0.019312	0.028136	0.002690	0.001821	0.005648	0.000918	0.000682

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
NaturalGas Unmitigated	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	17518.7	0.1889	1.6145	0.6870	0.0103		0.1305	0.1305		0.1305	0.1305		2,061.0217	2,061.0217	0.0395	0.0378	2,073.2693
Total		**0.1889**	**1.6145**	**0.6870**	**0.0103**		**0.1305**	**0.1305**		**0.1305**	**0.1305**		**2,061.0217**	**2,061.0217**	**0.0395**	**0.0378**	**2,073.2693**

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	16.4255	0.1771	1.5137	0.6441	9.6600e-003		0.1224	0.1224		0.1224	0.1224		1,932.4108	1,932.4108	0.0370	0.0354	1,943.8941
Total		**0.1771**	**1.5137**	**0.6441**	**9.6600e-003**		**0.1224**	**0.1224**		**0.1224**	**0.1224**		**1,932.4108**	**1,932.4108**	**0.0370**	**0.0354**	**1,943.8941**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive 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	10.2666	0.2089	18.1352	9.6000e-004		0.1006	0.1006		0.1006	0.1006	0.0000	32.6861	32.6861	0.0313	0.0000	33.4688
Unmitigated	238.8900	4.5987	312.9987	0.5563		41.7958	41.7958		41.7958	41.7958	4,483.2345	1,391.5096	5,874.7441	5.5746	0.3164	6,108.3834

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	1.6116					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.7440					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	227.9898	4.3899	294.8635	0.5553		41.6952	41.6952		41.6952	41.6952	4,483.2345	1,358.8235	5,842.0580	5.5433	0.3164	6,074.9146
Landscaping	0.5446	0.2089	18.1352	9.6000e-004		0.1006	0.1006		0.1006	0.1006		32.6861	32.6861	0.0313		33.4688
Total	**238.8900**	**4.5987**	**312.9987**	**0.5563**		**41.7958**	**41.7958**		**41.7958**	**41.7958**	**4,483.2345**	**1,391.5096**	**5,874.7441**	**5.5746**	**0.3164**	**6,108.3834**

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	1.6116					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.1104					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5446	0.2089	18.1352	9.6000e-004		0.1006	0.1006		0.1006	0.1006		32.6861	32.6861	0.0313		33.4688
Total	**10.2666**	**0.2089**	**18.1352**	**9.6000e-004**		**0.1006**	**0.1006**		**0.1006**	**0.1006**	**0.0000**	**32.6861**	**32.6861**	**0.0313**	**0.0000**	**33.4688**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Creekside Vineyards (Senior Housing Alt Mit)

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												
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
Rubber Tired Dozers	Diesel	No Change	0	0	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	0	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					
Rubber Tired Dozers	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	0.00000E+000
Tractors/Loaders/ Backhoes	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	0.00000E+000

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					
Rubber Tired Dozers	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	0.00000E+000
Tractors/Loaders/Backhoes	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	0.00000E+000

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Rubber Tired Dozers	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	0.00000E+000
Tractors/Loaders/Backhoes	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	0.00000E+000

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
Site Preparation	Fugitive Dust	0.00	0.00	0.00	0.00	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	7.25	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	100.00	100.00	100.00	100.00	100.00
Hearth	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
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	0.75	0.81	1.50	1.82	1.68	1.61	0.00	1.84	1.84	1.50	0.00	1.84
Natural Gas	6.24	6.24	6.25	6.38	6.21	6.21	0.00	6.24	6.24	6.27	6.23	6.24
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: Low Density Suburban

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.18	0.45		
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			

Yes	Neighborhood Enhancements	Improve Pedestrian Network	2.00	Project Site and Connecting Off-Site		
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.02			
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	0.02			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"	3.00			
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	5.00			
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.02			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
Yes	No Hearth	
Yes	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
Yes	Use Low VOC Paint (Residential Exterior)	150.00
No	Use Low VOC Paint (Non-residential Interior)	100.00
Yes	Use Low VOC Paint (Non-residential Exterior)	150.00
Yes	Use Low VOC Paint (Parking)	150.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	7.00	
No	Install High Efficiency Lighting		
Yes	On-site Renewable		100.00

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	

CalEEMod Results – Alternatives

Senior Housing Alternative – Year 2030

Creekside Vineyards (Senior Housing Alt 2030 Mit)

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	16.90	Acre	16.90	736,164.00	0
City Park	3.92	Acre	3.92	170,755.20	0
Single Family Housing	220.00	Dwelling Unit	28.00	396,000.00	629

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	163.33	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity adjusted per PG&E's RPS projections.

Land Use - Acreage of residences adjusted per description of alternatives

Construction Phase - Construction not modeled

Off-road Equipment - Construction not modeled

Grading - Construction not modeled

Vehicle Trips - Trip generation rates adjusted per Alternatives Chapter

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	30.00	1.00
tblLandUse	LotAcreage	71.43	28.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	163.33
tblTripsAndVMT	WorkerTripNumber	0.00	18.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	4.27
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	4.27
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	4.27

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					
2022	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Maximum	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

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					
2022	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Maximum	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

	ROG	NOx	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	**1-1-2022**	**3-31-2022**	0.0001	0.0001
		Highest	0.0001	0.0001

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	3.2353	0.0472	3.5149	3.9700e-003		0.2810	0.2810		0.2810	0.2810	27.9644	9.5349	37.4993	0.0554	1.6000e-003	39.3601
Energy	0.0345	0.2946	0.1254	1.8800e-003		0.0238	0.0238		0.0238	0.0238	0.0000	473.0915	473.0915	0.0300	0.0111	477.1481
Mobile	0.1502	0.7785	1.6705	7.5500e-003	0.8069	5.0100e-003	0.8119	0.2164	4.6600e-003	0.2211	0.0000	696.6902	696.6902	0.0221	0.0000	697.2418
Waste						0.0000	0.0000		0.0000	0.0000	53.6952	0.0000	53.6952	3.1733	0.0000	133.0275
Water						0.0000	0.0000		0.0000	0.0000	4.5475	9.3004	13.8478	0.4687	0.0114	28.9542
Total	**3.4200**	**1.1203**	**5.3108**	**0.0134**	**0.8069**	**0.3098**	**1.1167**	**0.2164**	**0.3094**	**0.5259**	**86.2071**	**1,188.6169**	**1,274.8240**	**3.7494**	**0.0241**	**1,375.7317**

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	1.8230	0.0188	1.6294	9.0000e-005		9.0600e-003	9.0600e-003		9.0600e-003	9.0600e-003	0.0000	2.6687	2.6687	2.5400e-003	0.0000	2.7323
Energy	0.0323	0.2763	0.1176	1.7600e-003		0.0223	0.0223		0.0223	0.0223	0.0000	319.9323	319.9323	6.1300e-003	5.8700e-003	321.8335
Mobile	0.1491	0.7723	1.6454	7.4100e-003	0.7907	4.9200e-003	0.7957	0.2121	4.5800e-003	0.2167	0.0000	683.9084	683.9084	0.0217	0.0000	684.4518
Waste						0.0000	0.0000		0.0000	0.0000	53.6952	0.0000	53.6952	3.1733	0.0000	133.0275
Water						0.0000	0.0000		0.0000	0.0000	4.5475	9.3004	13.8478	0.4687	0.0114	28.9542
Total	**2.0044**	**1.0673**	**3.3923**	**9.2600e-003**	**0.7907**	**0.0363**	**0.8271**	**0.2121**	**0.0360**	**0.2481**	**58.2427**	**1,015.8097**	**1,074.0524**	**3.6724**	**0.0172**	**1,170.9993**

	ROG	NOx	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	**41.39**	**4.73**	**36.12**	**30.90**	**2.00**	**88.28**	**25.93**	**2.00**	**88.37**	**52.82**	**32.44**	**14.54**	**15.75**	**2.05**	**28.38**	**14.88**

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	1/1/2022	1/3/2022	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 16.9

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	0	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

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

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	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Total	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

3.2 Site Preparation - 2022

Mitigated Construction On-Site

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

Mitigated Construction 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	3.0000e-005	2.0000e-005	1.9000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0579	0.0579	0.0000	0.0000	0.0580
Total	**3.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0579**	**0.0579**	**0.0000**	**0.0000**	**0.0580**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1491	0.7723	1.6454	7.4100e-003	0.7907	4.9200e-003	0.7957	0.2121	4.5800e-003	0.2167	0.0000	683.9084	683.9084	0.0217	0.0000	684.4518
Unmitigated	0.1502	0.7785	1.6705	7.5500e-003	0.8069	5.0100e-003	0.8119	0.2164	4.6600e-003	0.2211	0.0000	696.6902	696.6902	0.0221	0.0000	697.2418

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	939.40	939.40	939.40	2,169,645	2,126,252
Total	939.40	939.40	939.40	2,169,645	2,126,252

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.585795	0.036515	0.193581	0.106455	0.012789	0.005274	0.019465	0.028415	0.002699	0.001789	0.005626	0.000921	0.000676
Other Asphalt Surfaces	0.585795	0.036515	0.193581	0.106455	0.012789	0.005274	0.019465	0.028415	0.002699	0.001789	0.005626	0.000921	0.000676
Single Family Housing	0.585795	0.036515	0.193581	0.106455	0.012789	0.005274	0.019465	0.028415	0.002699	0.001789	0.005626	0.000921	0.000676

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable 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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	131.8662	131.8662	0.0234	4.8400e-003	133.8951
NaturalGas Mitigated	0.0323	0.2763	0.1176	1.7600e-003		0.0223	0.0223		0.0223	0.0223	0.0000	319.9323	319.9323	6.1300e-003	5.8700e-003	321.8335
NaturalGas Unmitigated	0.0345	0.2946	0.1254	1.8800e-003		0.0238	0.0238		0.0238	0.0238	0.0000	341.2253	341.2253	6.5400e-003	6.2600e-003	343.2530

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	6.39432e+006	0.0345	0.2946	0.1254	1.8800e-003		0.0238	0.0238		0.0238	0.0238	0.0000	341.2253	341.2253	6.5400e-003	6.2600e-003	343.2530
Total		**0.0345**	**0.2946**	**0.1254**	**1.8800e-003**		**0.0238**	**0.0238**		**0.0238**	**0.0238**	**0.0000**	**341.2253**	**341.2253**	**6.5400e-003**	**6.2600e-003**	**343.2530**

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					
City Park	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
Other Asphalt Surfaces	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
Single Family Housing	5.9953e+006	0.0323	0.2763	0.1176	1.7600e-003		0.0223	0.0223		0.0223	0.0223	0.0000	319.9323	319.9323	6.1300e-003	5.8700e-003	321.8335
Total		**0.0323**	**0.2763**	**0.1176**	**1.7600e-003**		**0.0223**	**0.0223**		**0.0223**	**0.0223**	**0.0000**	**319.9323**	**319.9323**	**6.1300e-003**	**5.8700e-003**	**321.8335**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.77993e+006	131.8662	0.0234	4.8400e-003	133.8951
Total		**131.8662**	**0.0234**	**4.8400e-003**	**133.8951**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.8230	0.0188	1.6294	9.0000e-005		9.0600e-003	9.0600e-003		9.0600e-003	9.0600e-003	0.0000	2.6687	2.6687	2.5400e-003	0.0000	2.7323
Unmitigated	3.2353	0.0472	3.5149	3.9700e-003		0.2810	0.2810		0.2810	0.2810	27.9644	9.5349	37.4993	0.0554	1.6000e-003	39.3601

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	0.2941					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5958					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2967	0.0284	1.8855	3.8900e-003		0.2719	0.2719		0.2719	0.2719	27.9644	6.8662	34.8306	0.0528	1.6000e-003	36.6279
Landscaping	0.0488	0.0188	1.6294	9.0000e-005		9.0600e-003	9.0600e-003		9.0600e-003	9.0600e-003	0.0000	2.6687	2.6687	2.5400e-003	0.0000	2.7323
Total	**3.2353**	**0.0472**	**3.5149**	**3.9800e-003**		**0.2810**	**0.2810**		**0.2810**	**0.2810**	**27.9644**	**9.5349**	**37.4993**	**0.0554**	**1.6000e-003**	**39.3601**

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	0.2941					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0488	0.0188	1.6294	9.0000e-005		9.0600e-003	9.0600e-003		9.0600e-003	9.0600e-003	0.0000	2.6687	2.6687	2.5400e-003	0.0000	2.7323
Total	**1.8230**	**0.0188**	**1.6294**	**9.0000e-005**		**9.0600e-003**	**9.0600e-003**		**9.0600e-003**	**9.0600e-003**	**0.0000**	**2.6687**	**2.6687**	**2.5400e-003**	**0.0000**	**2.7323**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	13.8478	0.4687	0.0114	28.9542
Unmitigated	13.8478	0.4687	0.0114	28.9542

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.67061	1.2111	2.2000e-004	4.0000e-005	1.2297
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	14.3339 / 9.03658	12.6368	0.4685	0.0113	27.7245
Total		**13.8478**	**0.4687**	**0.0114**	**28.9542**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.67061	1.2111	2.2000e-004	4.0000e-005	1.2297
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	14.3339 / 9.03658	12.6368	0.4685	0.0113	27.7245
Total		**13.8478**	**0.4687**	**0.0114**	**28.9542**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	53.6952	3.1733	0.0000	133.0275
Unmitigated	53.6952	3.1733	0.0000	133.0275

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.34	0.0690	4.0800e-003	0.0000	0.1710
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	264.18	53.6262	3.1692	0.0000	132.8565
Total		**53.6952**	**3.1733**	**0.0000**	**133.0275**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.34	0.0690	4.0800e-003	0.0000	0.1710
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	264.18	53.6262	3.1692	0.0000	132.8565
Total		**53.6952**	**3.1733**	**0.0000**	**133.0275**

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix D

Prepared by
FEHR PEERS

100 Pringle Avenue
Suite 600
Walnut Creek, CA 94596

June 2020

Transportation Impact Assessment

Creekside (Vineyards at Sand Creek)

Prepared for:
GBN Partners

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Creekside (Vineyards at Sand Creek)

Draft Final

Transportation Impact Assessment

Prepared for:
GBN Partners

June 2020

WC19-3593

FEHR PEERS

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1. Introduction

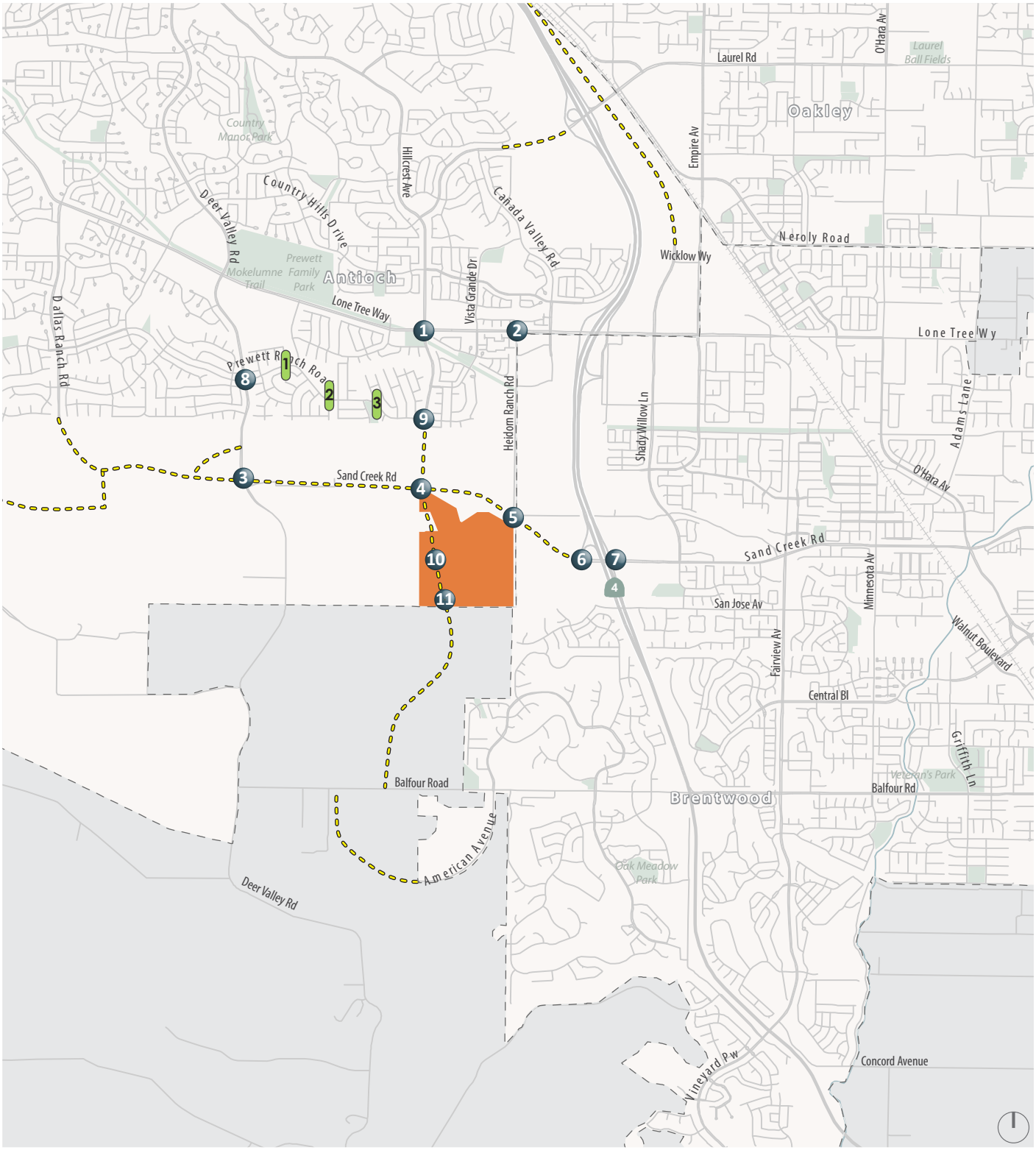
This report presents the analysis and findings of the Transportation Impact Assessment (TIA) prepared for Creekside (project), a proposed residential neighborhood within the Vineyards at Sand Creek. The project site is located in the City of Antioch, Contra Costa County. This chapter discusses the TIA purpose, study locations and analysis scenarios, analysis methods, criteria used to identify significant impacts, and report organization.

Study Purpose and Project Description

The study's purpose is to evaluate the transportation impacts of Creekside, a residential development on approximately 158-acres in the southeastern portion of the City of Antioch, as shown on **Figure 1**. As currently contemplated, the site would be developed with up to 220 detached homes. While the project could include some or all of the proposed dwelling units as age restricted detached homes, for purposes of this study, all units are assumed to be traditional (unrestricted) detached homes. Residential development would occur on approximately 25 acres, with approximately 112 acres set aside as public or private open space, 3 acres for water quality/detention, and 18-acres of streets. Hillcrest Avenue would be constructed from south of Sand Creek Road to the southern property line as a public street. The remainder of streets throughout the site would be private and gated. The project would also include other community facilities, including parks and trails. A conceptual project site plan is shown on **Figure 2a** for the near-term condition **Figure 2b** for the buildout condition.

Study Locations and Analysis Scenarios

Project effects on study area roadway facilities were determined by measuring how project traffic could change the operations of off-site intersections in the vicinity of the site during the morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak periods. The following intersections were selected based on a review of the project location, estimates of the added traffic from the project, and locations of planned roadways in the area:

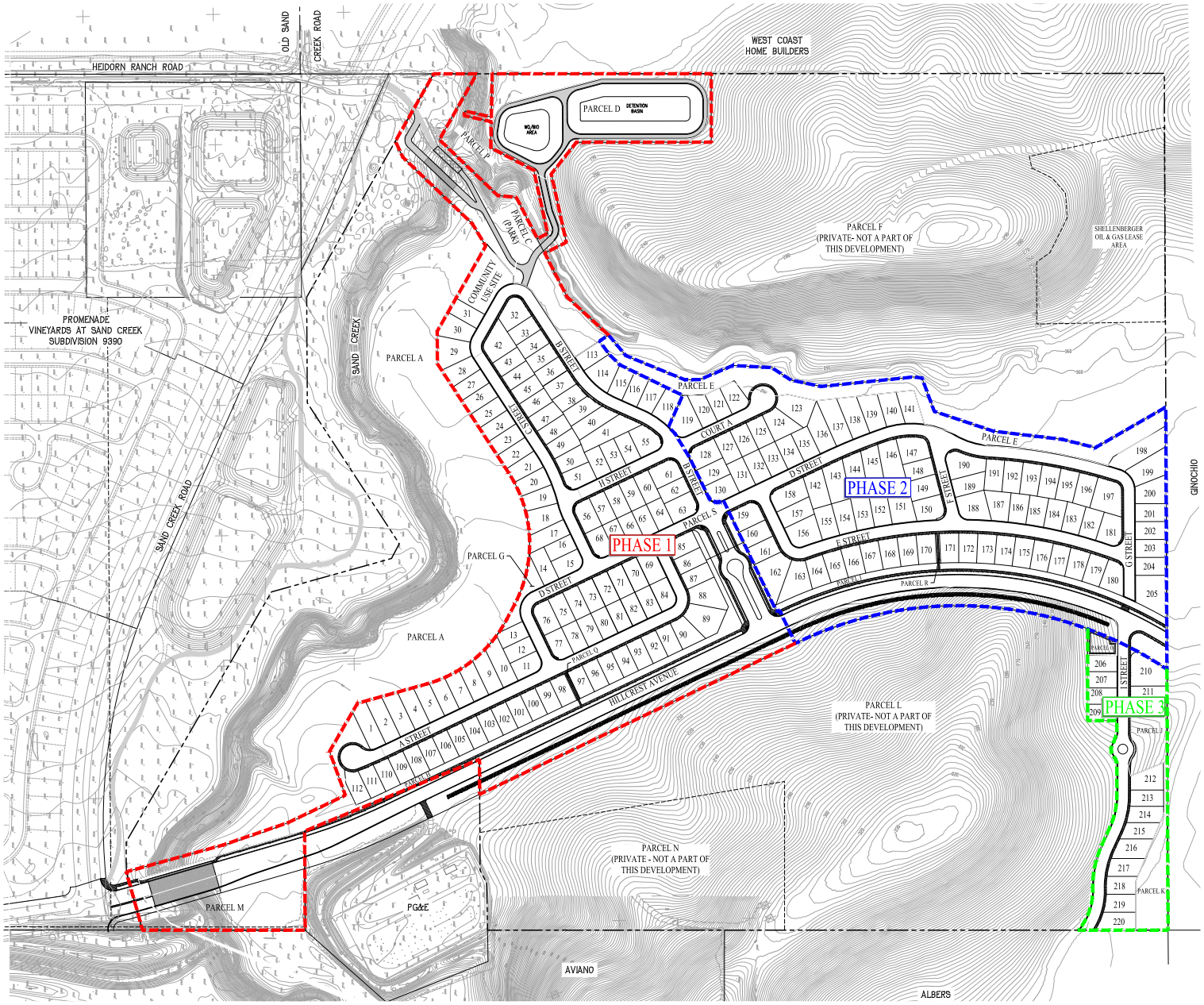


Project Site | Future Roadway | Study Intersection | Study Roadway Segment

Figure 1

Site Vicinity Map and Study Intersection Locations

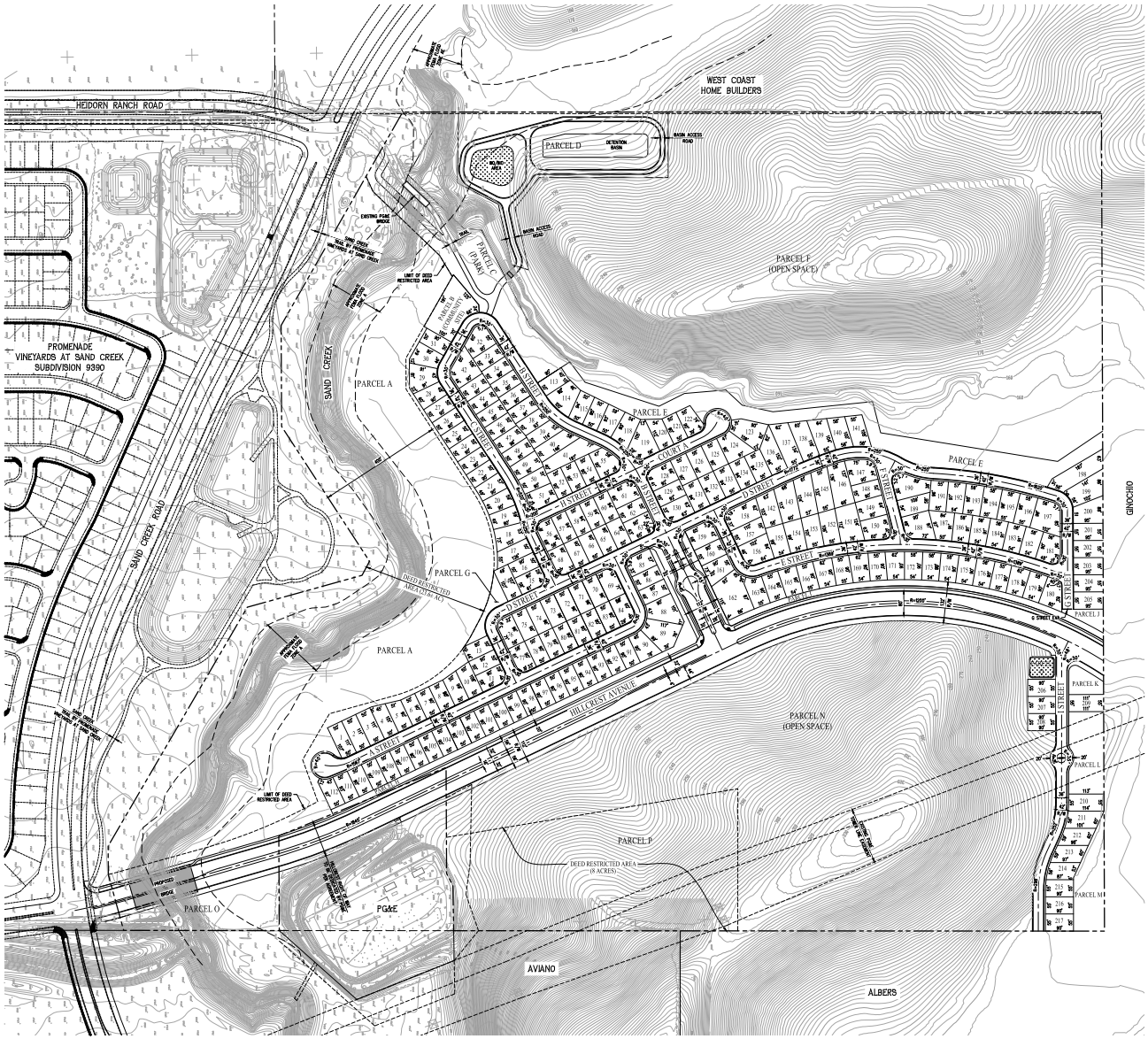
WC19-3593_1_SiteVicinity



Site Plan Source: Carlson, Barbee & Gisbon, Inc., Dec. 10, 2019

Figure 2a

Near-Term Conceptual Project Site Plan



Site Plan Source: Carlson, Barbee & Gisbon, Inc., June 14, 2019

Figure 2b

Buildout Conceptual Site Plan

1. Lone Tree Way at Hillcrest Avenue
2. Lone Tree Way at Heidorn Ranch Road
3. Sand Creek Road at Deer Valley Road
4. Sand Creek Road at Hillcrest Avenue (Future Intersection)
5. Sand Creek Road at Heidorn Ranch Road (Future Intersection)
6. Sand Creek Road at State Route 4 Eastbound Ramps
7. Sand Creek Road at State Route 4 Westbound Ramps
8. Deer Valley Road at Prewett Ranch Drive
9. Hillcrest Avenue at Prewett Ranch Drive
10. Hillcrest Avenue at B Street (Future Intersection)
11. Hillcrest Avenue at I Street (Future Intersection)

In addition to the analysis of peak hour intersection operations, a daily roadway segment analysis was conducted for the following roadway segments:

1. Prewett Ranch Drive, east of Deer Valley Road
2. Prewett Ranch Drive at Diablo Vista Elementary School
3. Prewett Ranch Drive, west of Hillcrest Avenue

The following freeway segments were evaluated:

1. State Route 4, west (north) of Lone Tree Way
2. State Route 4, west (north) of Sand Creek Road
3. State Route 4, west (north) of Balfour Road
4. State Route 4, east (south) of Balfour Road

The following scenarios were evaluated:

- ***Existing*** – Existing (2019) conditions based on recent traffic counts.
- ***Existing with Project*** – Existing (2019) conditions with project-related traffic. This scenario assumes development of the Promenade neighborhood of the Vineyards at Sand Creek (Promenade) project, as that project would construct roadways that would provide access to the site. Without construction of that project, vehicular access to the site would not be feasible.
- ***Near-Term without Project*** – Existing (2019) conditions with approved projects within the study area that could be constructed over the next five to ten years. Additional details are provided in Chapter 5.
- ***Near-Term with Project*** – Near-Term conditions with project-related traffic.

- ***Cumulative without Project*** – Forecasts for the cumulative scenario based on traffic growth trends as described in both the Antioch and Brentwood General Plan EIR, the Priority Area One Specific Plan and associated EIR, and supplemented by a check of traffic forecasts for the study area in the most recent Contra Costa Transportation Authority Countywide travel demand model. The scenario reflects expected conditions in 2040. Additional details are provided in Chapter 6.
- ***Cumulative with Project*** – Future forecast conditions with project-related traffic.

Analysis Methods

The operations of roadway facilities are described with the term "level of service" (LOS). LOS is a qualitative description of traffic flow from a vehicle driver's perspective based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined ranging from LOS A (free-flow conditions) to LOS F (over capacity conditions). LOS E corresponds to operations "at capacity." When volumes exceed capacity, stop-and-go conditions result and operations are designated LOS F.

Signalized Intersections

Traffic conditions at signalized intersections were evaluated using methods developed by the Transportation Research Board (TRB), as documented in the 2010 *Highway Capacity Manual* (2010 HCM) for vehicles using the analysis software Synchro 10.0. The HCM method calculates control delay at an intersection based on inputs such as traffic volumes, lane geometry, signal phasing and timing, pedestrian crossing times, and peak hour factors. Control delay is defined as the delay directly associated with the traffic control device (i.e., a stop sign or a traffic signal) and specifically includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The relationship between LOS and control delay is summarized in **Table 1.**

Table 1: Signalized Intersection LOS Criteria

Level of Service	Description	Delay in Seconds
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	< 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0
F	This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 80.0

Source: 2010 *Highway Capacity Manual*

Unsignalized Intersections

For unsignalized (all-way stop controlled and side-street stop controlled) intersections, the 2010 HCM method for unsignalized intersections was used. With this method, operations are defined by the average control delay per vehicle (measured in seconds). The control delay incorporates delay associated with deceleration, acceleration, stopping, and moving up in queue. **Table 2** summarizes the relationship between LOS and delay for unsignalized intersections. At side-street stop controlled intersections, the delay is calculated for each stop-controlled movement, the left turn movement from the major street, as well as the intersection average. The intersection average delay and highest movement/approach delay are reported for side-street stop controlled intersections.

Table 2: Unsignalized Intersection LOS Criteria

Level of Service	Description	Delay in Seconds
A	Little or no delays	≤ 10.0
B	Short traffic delays	> 10.0 to 15.0
C	Average traffic delays	> 15.0 to 25.0
D	Long traffic delays	> 25.0 to 35.0
E	Very long traffic delays	> 35.0 to 50.0
F	Extreme traffic, delays where intersection capacity exceeded	> 50.0

Source: 2010 *Highway Capacity Manual*

Roadway Segments

Roadway segments are evaluated by comparing daily traffic volumes on the roadway without and with the Project. For residential streets the maximum desired level of vehicle traffic is 1,500 vehicles per day (vpd). For residential collector streets with front-on housing, the maximum desired level of traffic is 3,000 vpd. For residential collectors without front-on housing, the maximum desired level of traffic is 10,000 vpd. For roadway segments that already exceed the desired threshold, the percent increase in traffic from a project is compared to the typical daily fluctuations in traffic volume, calculated using weekday traffic counts collected on each roadway segment.

Freeway Segments

For freeway segments, the *East County Action Plan for Routes of Regional Significance,* September 2017, CCTA, has established the delay index as the Multimodal Transportation Service Objective (MTSO) for State Route 4 (SR 4) through the study area. The delay index is the ratio of travel time on a facility divided by the travel times that occur during non-congested free-flow periods. Should the delay index exceed 2.5 during either the AM or PM peak period, freeway operations would be considered deficient. This would equate to peak hour travel taking 2.5 times as long as off-peak travel or an average travel speed below 26 miles per hour assuming a non-congested free-flow speed of 65 miles per hour.

Vehicle Miles of Travel

In response to Senate Bill 743 (SB 743), the Office of Planning and Research (OPR) has updated the California Environmental Quality Act (CEQA) guidelines to include new transportation-related evaluation metrics. Draft guidelines were developed in August 2014, with final guidelines published in November 2017

incorporating public comments from the August 2014 and January 2016 guidelines. In December 2018, the California Natural Resources Agency certified and adopted the CEQA Guidelines update package along with an updated Technical Advisory related to Evaluating Transportation Impacts in CEQA (December 2018). Full compliance with the guidelines is expected by July 2020. With the establishment of new guidelines, vehicle-delay based level of service calculations cannot be a metric used to evaluate a projects impacts to the environment, and instead a vehicle miles of travel (VMT) metric is to be evaluated. In response to the final guidelines, an assessment of VMT generated by the proposed project was prepared. Additional details are provided in Chapter 9.

Regulatory Setting and Significance Criteria

The project would have a significant impact on the environment if it would cause an increase in traffic which is substantial in relation to the traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, or delay and congestion at intersections), or change the condition of an existing street (e.g., street closures, changing direction of travel) in a manner that would substantially impact access or traffic load and capacity of the street system. Significance criteria are used to determine whether a project impact is considered significant and therefore requires mitigation. The City of Antioch strives to maintain mid-LOS D operations at signalized intersections not on Routes of Regional significance. Based on CCTA guidelines, the standard is a high-LOS D for intersections on Routes of Regional significance.

The following thresholds of significance were developed based on City of Antioch and East County Action Plan policies, as well as the CEQA Checklist criteria as shown below.

Would the project:

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

   Roadway System - The project could create a significant impact related to intersection operations if the following criteria is met:

1. Would the operations of a study intersection on a route of regional significance decline from LOS high-D (an average delay of 55 seconds for signalized intersections) or better to LOS E or F, based on the HCM LOS method, with the addition of Project traffic[1]?

2. Would the operations of a study intersection not on a route of regional significance decline from the established performance standard for the roadway facility type?

    a. LOS Low-E (an average delay of 65 seconds for signalized intersections) or better to a high- LOS E or F, based on the HCM LOS method, with the addition of Project traffic for intersections within 1,000 feet of a freeway interchange? [2]

    b. LOS high-D (an average delay of 55 seconds for signalized intersections) or better to a LOS E or F, based on the HCM LOS method, with the addition of Project traffic for residential and commercial portions of the Rivertown Focus Area[3]?

    c. LOS mid-D (an average delay of 50 seconds for signalized intersections) or better to a high-LOS D, LOS E or F, based on the HCM LOS method, with the addition of Project traffic for residential and arterial roadways in non-regional commercial areas[4]?

3. Would the Project deteriorate already unacceptable operations at a signalized intersection by adding traffic?

4. Would the operations of an unsignalized study intersection decline from acceptable to unacceptable with the addition of Project traffic, <u>and</u> would the installation of a traffic signal based on the *Manual on Uniform Traffic Control Devices* (MUTCD) Peak Hour Signal Warrant (Warrant 3), be warranted?

5. Would the Project result in or worsen unacceptable conditions on the State Route 4 mainline, based on delay index calculations?

    a. The delay index should not exceed 2.5 during the AM or PM peak hour, meaning that congested travel times should not be more than 2.5 times the uncongested travel times.

Transit System - The project would create a significant impact related to transit service if the following criteria is met:

[1] Per the East County Action Plan, study intersections 1-8 are on a designated Route of Regional Significance.
[2] No study intersections are within this area.
[3] No study intersections are within this area.
[4] Study intersections 9-11 are on a designated residential or arterial roadway in non-regional commercial areas.

1. The project interferes with existing transit facilities or precludes the construction of planned transit facilities.

Bicycle System - The project would create a significant impact related to the bicycle system if any of the following criteria are met:

1. Disrupt existing bicycle facilities; or
2. Interfere with planned bicycle facilities; or
3. Create inconsistencies with adopted bicycle system plans, guidelines, policies, or standards.

Pedestrian System - The project would create a significant impact related to the pedestrian system if any of the following criteria are met:

1. Disrupt existing pedestrian facilities; or
2. Interfere with planned pedestrian facilities; or
3. Create inconsistencies with adopted pedestrian system plans, guidelines, policies, or standards.

B. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)[5]?

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

D. Result in inadequate emergency access?

[5] This section of the CEQA Guidelines relates to the evaluation of vehicle miles of travel (VMT). Although neither the City of Antioch nor the Contra Costa Transportation Authority (CCTA) have adopted guidelines and compliance with this section of the CEQA guidelines is not required until July 2020, an assessment of VMT was conducted as presented in Chapter 9.

Report Organization

This report is divided into nine chapters as described below:

- **Chapter 1 – Introduction** discusses the purpose and organization of the report.
- **Chapter 2 – Existing Conditions** describes the transportation system in the project vicinity, including the surrounding roadway network, morning and evening peak period intersection turning movement volumes, existing bicycle, pedestrian, and transit facilities, and intersection operations.
- **Chapter 3 – Project Characteristics** presents relevant project information, such as the project components and project trip generation, distribution, and assignment.
- **Chapter 4 – Existing with Project Traffic Conditions** addresses the existing conditions with the project, and discusses project vehicular impacts.
- **Chapter 5 – Near-Term Traffic Conditions** addresses the near-term condition (five to ten years), both without and with the project, and discusses project vehicular impacts.
- **Chapter 6 – Cumulative Traffic Conditions** addresses the long-term future conditions (2040), both without and with the project, and discusses project vehicular impacts.
- **Chapter 7 – Freeway Analysis** presents the results of the freeway analysis under existing, near-term and cumulative conditions, and discusses project vehicular impacts to the freeway system.
- **Chapter 8 – Site Plan Review** describes project access and circulation for all travel modes. An assessment of significance criteria related to transit, bicycle, and pedestrians, as well as criteria B through D is also provided as the significance criteria related to the operations of intersections and freeway system was discussed in prior chapters.
- **Chapter 9 – Vehicle Miles of Travel** presents the results of the VMT assessment conducted for the project.

2. Existing Conditions

This chapter describes transportation facilities in the project study area, including the surrounding roadway network, transit, pedestrian, and bicycle facilities in the project site vicinity. Existing intersection operations are also described.

Roadway System

The project is located in the southeast corner of the Sand Creek Focus Area in the City of Antioch. The City of Antioch is located in eastern Contra Costa County, adjacent to the cities of Oakley and Brentwood, located east and southeast, respectively. The General Plan designation for the site is residential and open space, with interim agricultural uses surrounding the project site; approved residential developments are located to the northwest, north and northeast of the site, with pending residential development to the west.

Regional access to the site vicinity is provided by State Route 4, Lone Tree Way and Deer Valley Road. The site is located south of the future Sand Creek Road extension and bisected by the future Hillcrest Avenue extension, which would provide local access to the site once constructed. The following discusses the roadways that would provide access to the site and are most likely to experience direct traffic impacts, if any, from the proposed project.

State Route 4 (SR 4) is an east-west freeway that extends from Hercules in the west to Stockton and beyond in the east. In the study area, SR 4 has an east/west orientation from west of SR 160 and a northwest/southeast orientation between SR 160 and Walnut Boulevard in eastern Contra Costa County. The facility is an eight-lane freeway in the west to State Route 160, a six lane freeway from Route 160 to Laurel Road and a four lane freeway from Laurel Road to Sand Creek Road. Between Sand Creek Road and Walnut Boulevard, the facility is a two-lane highway with at-grade intersections at Balfour Road and Marsh Creek Road. Each intersection is signalized and operated by the California Department of Transportation (Caltrans). State Route 4 is a designated route of regional significance by the Contra Costa County Transportation Agency (CCTA). Routes of regional significance are roadways that connect two or more subareas of Contra Costa, cross County boundaries, carry significant through traffic, and/or provide access to a regional highway or transit facility.

Lone Tree Way is an east-west roadway located north of the project site. The roadway provides two travel lanes in both directions to the west of Hillcrest Avenue, and three travel lanes in both directions east of

Hillcrest Avenue. The posted speed limit is 45 miles per hour (mph). No on-street parking is permitted. Lone Tree Way is a designated route of regional significance.

Sand Creek Road is a four-lane, east-west roadway that extends east from State Route 4 through Brentwood. The posted speed limit is 45 mph. No on-street parking is permitted on Sand Creek Road. Class II bicycle lanes and sidewalks are provided along most of the roadway through Brentwood. Sand Creek Road from Brentwood Boulevard to its current terminus at State Route 4 is a route of regional significance. To the west of State Route 4, Sand Creek Road is planned to be constructed as part of adjacent development, ultimately connecting State Route 4 to Deer Valley Road. West of Deer Valley Road, Sand Creek Road would continue as Dallas Ranch Road, ultimately providing a connection from Lone Tree Way to the existing terminus at State Route 4 in Brentwood. When constructed, the future extension of Sand Creek Road/Dallas Ranch Road would be a designated route of regional significance.

Deer Valley Road is a north-south roadway connecting Brentwood to Antioch. From Balfour Road north to the Sand Creek Focus Area, it is two-lane rural road with adjacent areas mostly undeveloped and agricultural ranchettes. Along the rural section there are no bicycle or pedestrian facilities, or paved shoulders. North of Sand Creek Road at Kaiser Medical Center, Deer Valley Road has been improved to provide two-travel lanes in the northbound direction, sidewalks and Class II bicycle facilities on the east side of the roadway. At Mammoth Way, Deer Valley Road provides two travel lanes in each direction, Class II bicycle lanes and sidewalks. North of Sand Creek Road, a center median allows for the provision of left-turn pockets at intersections. Deer Valley has a posted speed limit of 45 miles per hour and is a designated Route of Regional Significance.

Hillcrest Avenue is a north-south oriented roadway that provides two travel lanes per direction from north of Prewett Ranch Drive in the project study area. Hillcrest Avenue provides a connection of the project area to SR 4 with a posted speed limit of 45 mph. Sidewalks and bicycle facilities are provided along the full length of Hillcrest Avenue from north of Prewett Ranch Drive. Hillcrest Avenue, north of Lone Tree Way is a designated route of regional significance.

Prewett Ranch Drive is an east-west residential collector roadway that extends from Heidorn Ranch Road to west of Dallas Ranch Road where it terminates in a residential neighborhood. It provides one travel lane in each direction with a median, turn pockets at intersections, and a Class II bicycle facility. Most intersections on Prewett Ranch Drive are side-street stop-controlled, although a few a signalized. Most sections on this roadway in the immediate project vicinity do not have fronting housing, expect for a portion between Grass Valley Way and Hillcrest Avenue.

Between Prewett Ranch Drive and the future Sand Creek Road extension, Hillcrest Avenue is being constructed to provide two travel lanes in each direction along with a median to facilitate left-turn access

at intersections, as well as pedestrian and bicycle facilities. Two lanes are being constructed by the Vineyards at Sand Creek Project, which is bound on its west side by the roadway extension, and two lanes are being constructed by the Aviano development, which is bound on its east side by the roadway extension.

Existing Pedestrian and Bicycle Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signals and multi-use trails. Improved roadways in the study area generally provide sidewalks on both sides of the street. As roadways are being improved, bicycle and pedestrian facilities are being provided. At the existing signalized intersections in the area, crosswalks and pedestrian push-button actuated signals are provided. Bicycle facilities include the following:

- **Bike paths (Class I)** – Paved trails that are separated from roadways. These trails are also shared with pedestrians.
- **Bike lanes (Class II)** – Lanes on roadways designated for use by bicycles through striping, pavement legends, and signs.
- **Bike routes (Class III)** – Roadways designated for bicycle use by signs only; may or may not include additional pavement width for cyclists.
- **Separated Bikeway (Class IV)** – Separated bikeways, also referred to as cycle tracks or protected bikeways, are bikeways for the exclusive use of bicycles which are physically separated from vehicle traffic. Separated Bikeways were recently adopted by Caltrans in 2015. Types of separation may include, but are not limited to, grade separation, flexible posts, physical barriers, or on-street parking.

North of Sand Creek Road, Deer Valley Road provides Class II bicycle facilities with separate lanes designated for bicycle travel. Hillcrest Avenue provides Class II bicycle lanes throughout its length. Prewett Ranch Drive provides Class II bicycle lanes from west of Cedar Point Way to west of Dallas Ranch Road. Portions of Lone Tree Way in the vicinity have a striped shoulder that can be used by bicyclists, but it is a not a designated bicycle lane; the Class I Mokelumne Trail generally parallels Lone Tree Way from west of Hillcrest Avenue to Janes Donlon Boulevard, where it continues until its current terminus at Buchanan Road, east of Somersville Road.

Existing Transit Service

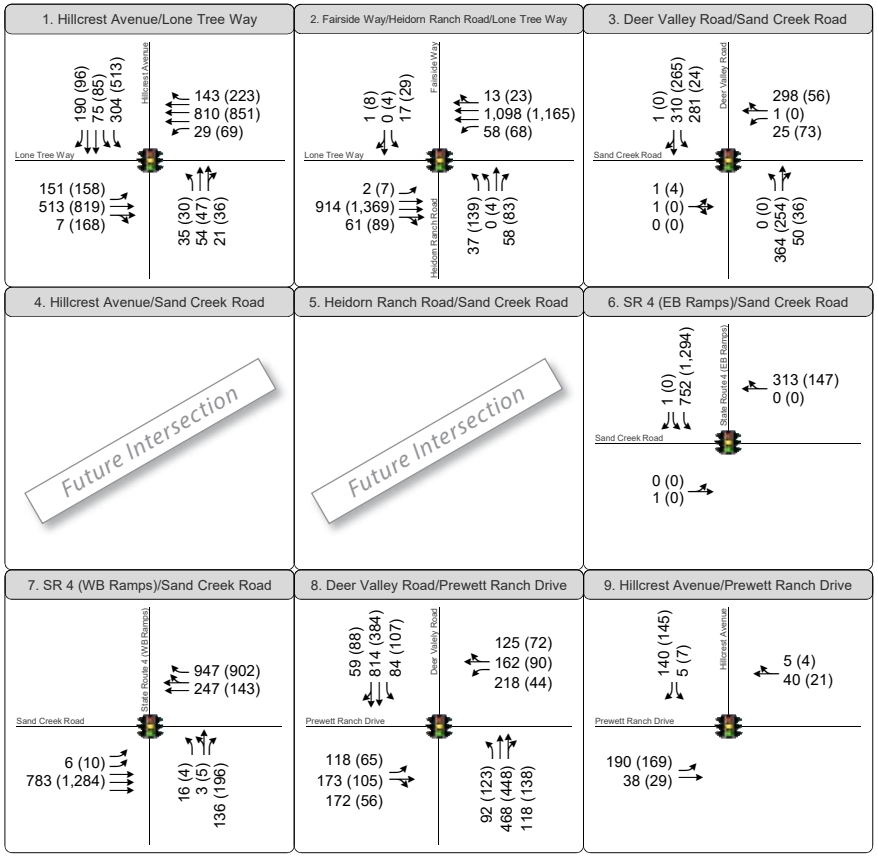
The Eastern Contra Costa Transit Authority (Tri Delta Transit) provides transit service in eastern Contra Costa County, serving the communities of Brentwood, Antioch, Oakley, Concord, Discovery Bay, Bay Point and Pittsburg. Thirteen routes operate on weekdays, with four routes operating on weekends. In the vicinity of the project site, Tri Delta Transit operates along Deer Valley Road, serving the Kaiser Medical Center, and along Lone Tree Way. Dial-a-ride door-to-door service is also provided within Eastern Contra Costa County by Tri Delta Transit for disabled people of all ages and senior citizens provided the trip begins and ends within the Paratransit Area. Tri Delta Transit continually monitors its service area, and as the project site and surrounding parcels are developed and new roadway connections added, transit service may be extended along Sand Creek Road between Deer Valley Road and SR 4, or along Hillcrest Avenue between Lone Tree Way and Balfour Road to better serve the project site and adjacent planned communities.

Bay Area Rapid Transit (BART) provides fixed rail transit to Eastern Contra Costa County. Currently, the terminus station is located in Antioch at the Hillcrest Avenue interchange, approximately 5-miles from the project site. Weekday service is provided on approximately 15-minute headways and weekend service is provided on approximately 20-minute headways. The Antioch Line connects to key regional employment centers, including Concord, Pleasant Hill, Walnut Creek, Oakland and San Francisco. Transfers to other lines can be made in Oakland.

Existing Traffic Counts

Weekday morning (6:00 to 9:00 AM) and evening (3:00 to 6:00 PM) peak period intersection turning movement counts were collected at the study intersections, including separate counts of pedestrians and bicyclists, in January 2019 with area schools in normal session. Peak hour intersection vehicle volumes are summarized on **Figure 3** along with existing lane configurations and traffic controls. The traffic counts for existing conditions are provided in **Appendix A**.

Automatic machine traffic counts were conducted over a 72-hour period (Tuesday through Thursday) on clear days in August 2019 with area schools in session along Prewett Ranch Drive as some vehicle traffic accessing the site could travel through Prewett Ranch Drive to access Deer Valley Road prior to the completion of the Sand Creek Road extension between Hillcrest Avenue and Deer Valley Road. The average daily traffic volumes on these roadways are summarized below in **Table 3** and previously on **Figure 3**.



XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Project Site

Future Roadway

Study Intersection

Study Roadway Segment

Figure 3

Existing Peak Hour Intersection Volumes, Lane Configurations and Traffic Controls

Table 3: Average Daily Traffic

Segment	Daily Traffic[1]	Peak Hourly Traffic[2]	Daily Fluctuation[3]
1. Prewett Ranch Drive, east of Deer Valley Road	7,510	850	± 1.2%
2. Prewett Ranch Drive at Diablo Vista Elementary School	4,050	460	± 1.8%
3. Prewett Ranch Drive, west of Hillcrest Avenue	3,970	430	± 2.9%

Notes: 1. Average daily two-way traffic measured over three days.
2. Average peak hour volume from the three weekdays of data collection.
3. Percent difference between the three days of data collection.

Source: Fehr & Peers, 2020

Prewett Ranch Drive carries approximately 7,510 vehicles per day east of Deer Valley Road. In the vicinity of the school, traffic volumes are approximately 4,050 per day. West of Hillcrest Avenue, average daily traffic volumes decrease to approximately 3,970, which is higher than the desired amount for a residential collector roadway that has front-on housing. The peak hour of travel along the Prewett Ranch Drive corridor tends to align with school bell times.

Existing Intersection Levels of Service

Existing intersection lane configurations, signal timings, and peak hour turning movement volumes were used to calculate the levels of service for the study intersections during each peak hour, using the Synchro 10.0 software program, as presented in **Table 4.** Observed peak hour factors[6] were used at all intersections for the existing analysis. Pedestrian and bicycle activity was also factored into the analysis. Detailed intersection LOS calculation worksheets are presented in **Appendix B**. As shown, the study intersections operate within the level of service standards set by the City of Antioch and CCTA.

[6] The peak hour factor is the relationship between the peak 15-minute flow rate and the full hourly volume: PHF = Hourly volume / (4 x (volume during the peak 15 minutes of flow)). The analysis level of service is based on peak rates of flow occurring within the peak hour because substantial short term fluctuations typically occurring during an hour.

Table 4: Existing Conditions Peak Hour Intersection LOS Summary

Intersection	Control[1]	Peak Hour	Delay[2]	LOS
1. Lone Tree Way at Hillcrest Avenue	Signal	AM PM	18 21	B C
2. Lone Tree Way at Heidorn Ranch Road	Signal	AM PM	11 12	B B
3. Sand Creek Road at Deer Valley Road	Signal	AM PM	10 15	A B
4. Sand Creek Road at Hillcrest Avenue (Future Intersection)	Signal	AM PM	-- --	-- --
5. Sand Creek Road at Heidorn Ranch Road (Future Intersection)	Signal	AM PM	-- --	-- --
6. Sand Creek Road at State Route 4 Eastbound Ramps	Signal	AM PM	9 7	A A
7. Sand Creek Road at State Route 4 Westbound Ramps	Signal	AM PM	5 5	A A
8. Prewett Ranch Drive/Deer Valley Road	Signal	AM PM	27 14	C B
9. Prewett Ranch Drive at Hillcrest Avenue	Signal	AM PM	19 16	B B

Notes:
1. Signal = signalized intersection
2. Average intersection delay is calculated for all signalized intersections using the HCM 10 method for vehicles.
Source: Fehr & Peers, 2020

Vehicle queues were also calculated by Synchro 10.0 and the queuing reports are provided in **Appendix C** along with a summary table. In the existing condition, average left-turn vehicle queues are contained within the available storage at the study intersections.

3. Project Characteristics

This chapter provides an overview of the proposed project components and addresses the proposed project trip generation, distribution, and assignment characteristics, allowing for an evaluation of project impacts on the surrounding roadway network. The amount of traffic associated with the project was estimated using a three-step process:

1. **Trip Generation** – The *amount* of vehicle traffic entering/exiting the project site was estimated.
2. **Trip Distribution** – The *direction* trips would use to approach and depart the site was projected.
3. **Trip Assignment** – Trips were then *assigned* to specific roadway segments and intersection turning movements.

Project Description

As currently contemplated, the approximately 158-acre site would be developed with up to 220 unrestricted detached homes. Residential development would occur on approximately 25 acres, with approximately 112 acres set aside as public or private open space, 3 acres for water quality/detention, and 18-acres of streets. Hillcrest Avenue would be constructed from south of Sand Creek Road to the southern property line as a public street. The remainder of streets throughout the site would be private and gated. The project would also include other community facilities, including parks and trails. A project variant that includes some age restricted active adult detached homes as opposed to non-restricted detached homes is also contemplated within the total 220 unit count.

The project would not be constructed until the Hillcrest Avenue extension from its current terminus at Prewett Ranch Drive to the future Sand Creek Road extension is constructed. Two lanes of the four lane Hillcrest Avenue extension between Prewett Ranch Drive and Sand Creek Road would be constructed as part of the Promenade development, which is currently under construction. The project would then construct Hillcrest Avenue into the project site.

For the analysis of project impacts in the existing condition, all access is assumed to be provided from Hillcrest Avenue. In the near-term condition as development in the area occurs and additional roadway connections are constructed, access would also be provided via an extension of Sand Creek Road from west of Hillcrest Avenue connecting to the existing Sand Creek Road interchange at State Route 4; access to Deer Valley Road from Sand Creek Road would not be provided in the near-term condition. Access to Heidorn

Ranch Road would also be provided from the future Sand Creek Road extension. In the Cumulative condition, Sand Creek Road would be extended to Deer Valley Road, and beyond, connecting Deer Valley Road to Dallas Ranch Road.

As part of the project, Hillcrest Avenue from Sand Creek Road to the southern property line would initially be constructed as a two-lane roadway within a four lane right-of-way.

Construction of Hillcrest Avenue from the southern project boundary is proposed as part of the Vineyards at Deer Creek project in Brentwood; that roadway is proposed to be access restricted to residents of the Vineyards to Deer Creek as well as allow for emergency vehicle circulation. No through traffic on Hillcrest Avenue between Sand Creek Road and Balfour Road would be permitted.

Project Trip Generation

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the surrounding roadway system. Estimates are created for the daily condition and for the peak one-hour period during the morning and evening commute when traffic volumes on the adjacent streets are typically the highest. Project trip generation was estimated using rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition) for unrestricted detached homes. For the age-restricted detached homes, Fehr & Peers conducted a trip generation survey of over 1,700 age-restricted detached homes in Brentwood over a two-day weekday period. The trip generation study is provided in **Appendix D**. Using the ITE rates and locally collected rates, separate trip generation estimates were developed for the proposed project and the project variant, as presented in **Table 5.**

The proposed project is expected to generate approximately 2,080 daily vehicle trips, including approximately 163 morning peak hour and 218 evening peak hour trips. An age-restricted project alternative would generate 940 daily trips, including 53 morning peak hour and 66 evening peak hour trips.

The trip generating potential of a blended alternative was also estimated – with 110 unrestricted detached homes and 110 age-restricted detached homes, as presented in Table 4. This alternative would generate approximately 1,510 daily vehicle trips, including approximately 108 morning peak hour and 142 evening peak hour trips.

As the vehicle trip generating potential of the proposed project is higher than that of the fully age-restricted detached home alternative or the blended alternative, the evaluation of potential off-site transportation effects of the proposed project present a worst-case assessment. Should age-restricted detached housing be incorporated into the project, the overall trip generation would decrease as compared to the level evaluated in this document.

Table 5: Vehicle Trip Generation Estimates

Use	Size	Weekday						
		Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Proposed Project – Traditional Community								
Unrestricted Detached Homes[1]	220 dwelling units	2,080	41	122	163	137	81	218
Project Alternative – Active Adult								
Age-Restricted Detached [2]	220 dwelling units	940	17	35	53	40	26	66
Project Alternative – Blended Project								
Unrestricted Detached Homes[1]	110 dwelling units	1,040	20	61	81	69	40	169
Age-Restricted Detached [2]	110 dwelling units	470	9	18	26	20	13	33
Total	*220 dwelling units*	1,510	29	79	108	89	53	142

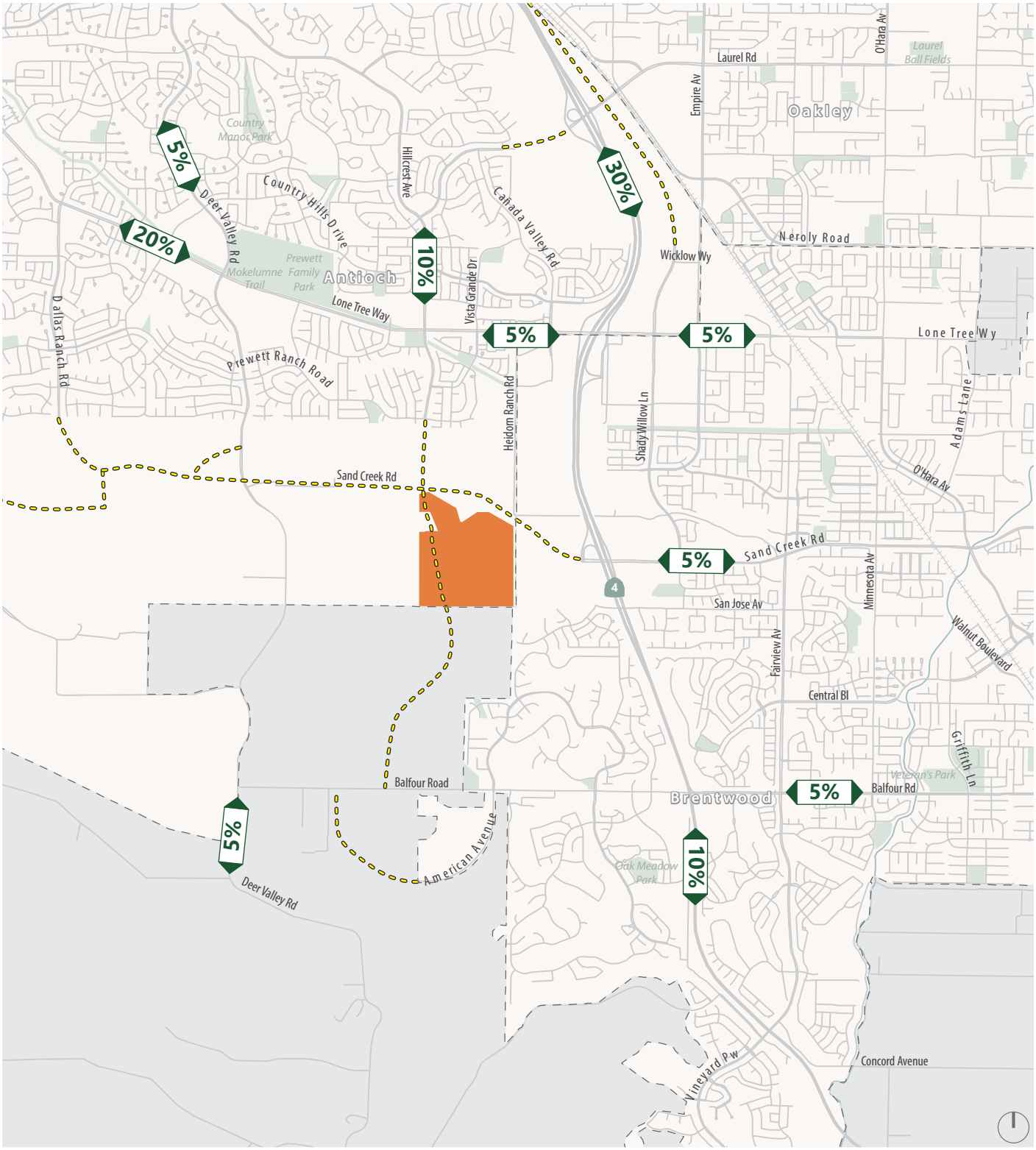
Notes:
1. ITE land use category 210 – Single-Family Homes (Adj Streets, 7-9A, 4-6P):
   Daily: (T) = 9.44 (X)
   AM Peak Hour: T = 0.74 (X); Enter = 25%; Exit = 75%
   PM Peak Hour: T = 0.99 (X); Enter = 63%; Exit = 37%

Source: *Trip Generation Manual* (10th Edition), Web Version 2.3, ITE, 2019; Fehr & Peers, 2020.

2. Based on trip generation study, provided as Appendix D, where:
   Daily: (T) = 4.27 (X)
   AM Peak Hour: T = 0.24 (X); Enter = 33%; Exit = 67%
   PM Peak Hour: T = 0.30 (X); Enter = 60%; Exit = 40%

Project Trip Distribution and Assignment

Project trip distribution refers to the directions of approach and departure that vehicles would take to access and leave the site. Estimates of regional project trip distribution were developed based on existing travel patterns in the area, a select zone analysis using the Contra Costa Transportation Authority (CCTA) travel demand model, and the location of complementary land uses, such as schools, employment centers, and retail/recreational opportunities, as well as regional rural routes, such as Marsh Creek Road, that connect to Vacso Road in the east and the Clayton/Concord area to the west. The resulting trip distribution percentages are shown on **Figure 4.** Project trips were then assigned to the roadway network for each of the project alternatives, as show on **Figure 5** for the existing roadway network, **Figure 6** for the near-term roadway network, and **Figure 7** for the cumulative roadway network.

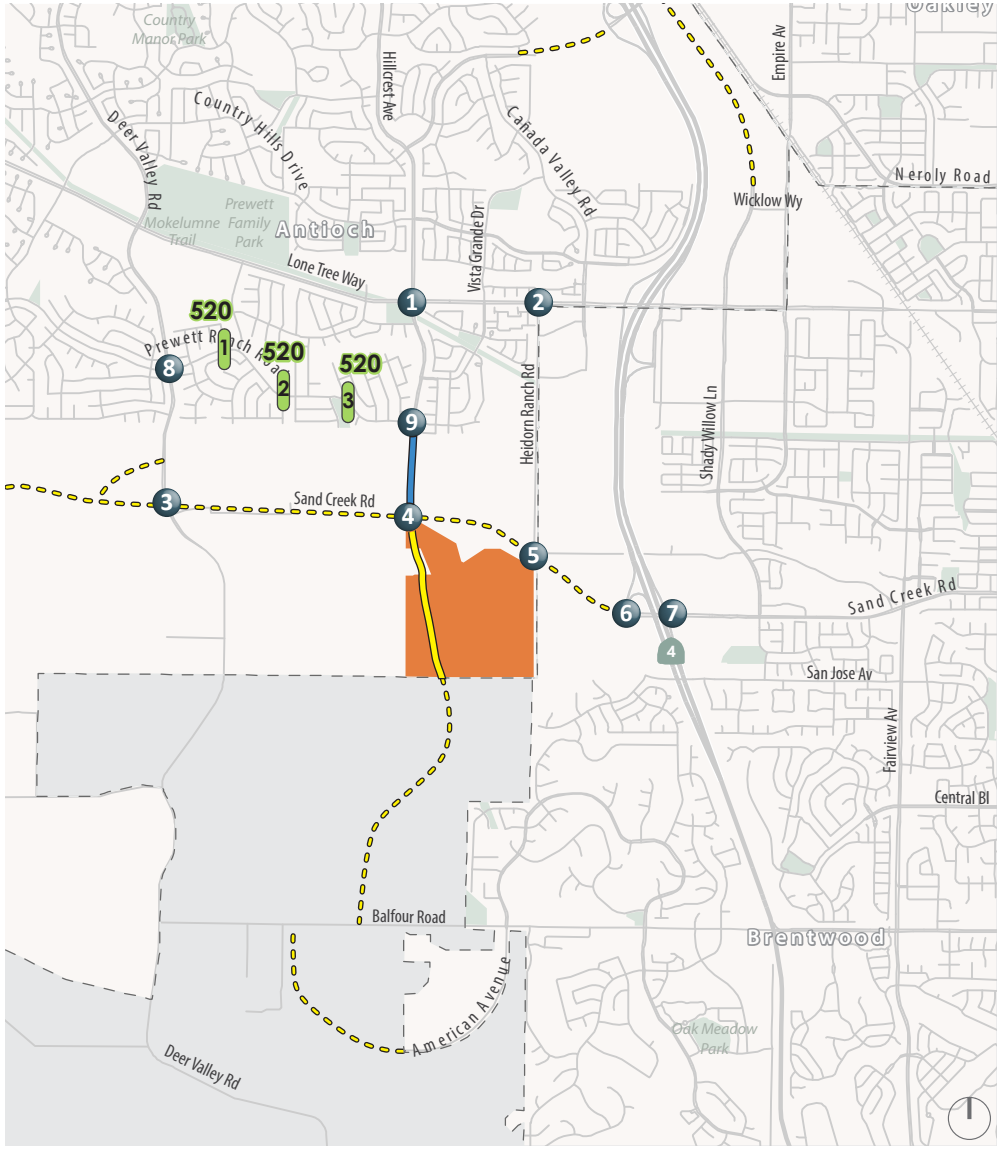


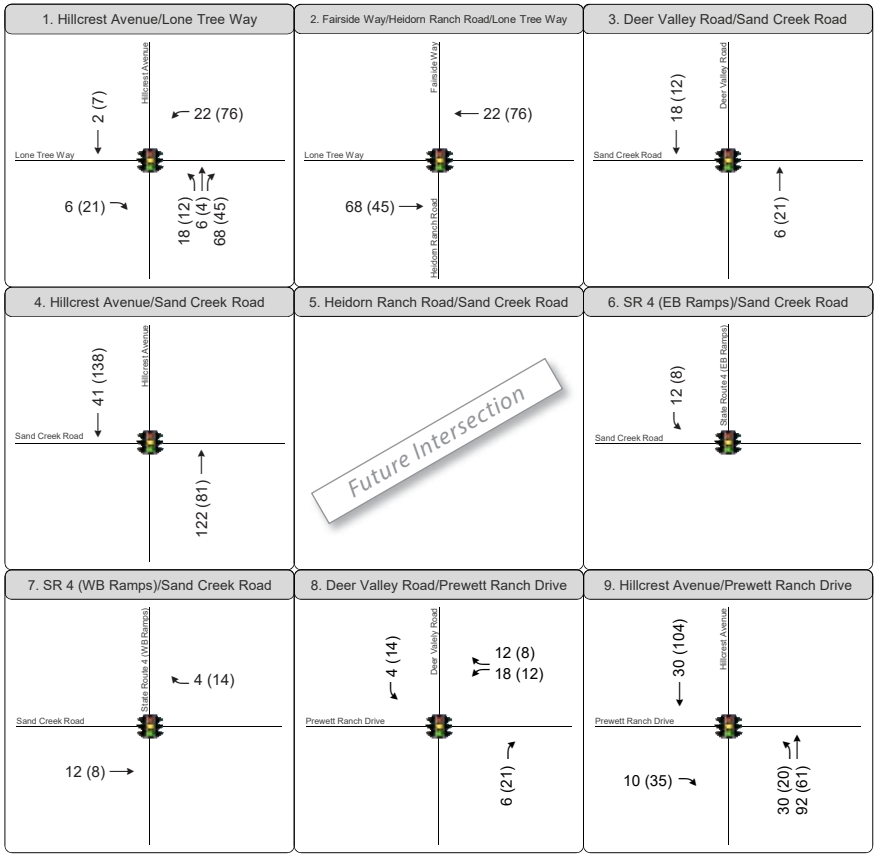
Project Site — Future Roadway — XX% Project Trip Distribution

Figure 4

Project Trip Distribution

WC19-3593_4_TripDistro





XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Project Site

Future Roadway (To Be Constructed)

Study Intersection

Study Roadway Segment

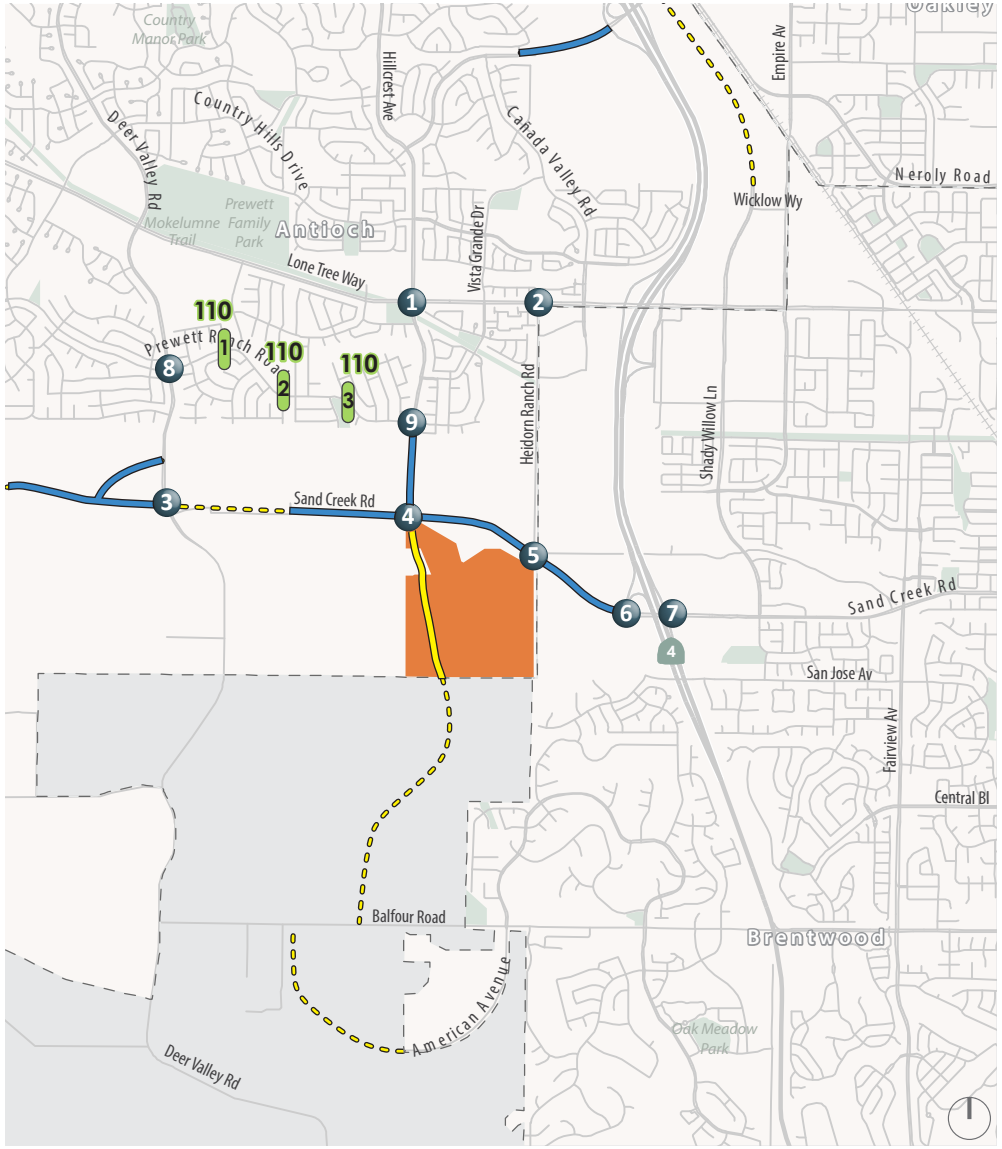
Roadway Constructed as Part of Project

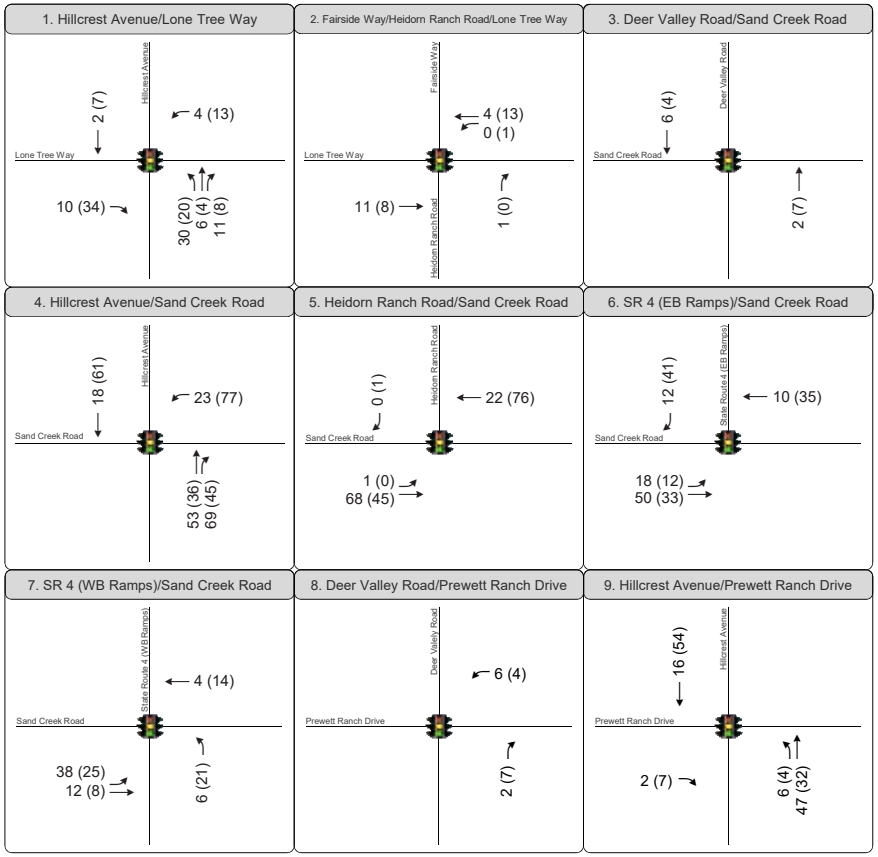
Roadway to be Constructed by Others Prior to Project Development in Existing Condition

Figure 5

Project Trip Assignment — Existing Roadway Network

WC19-3593_X_Volumes





XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Project Site

Future Roadway (To Be Constructed)

Study Intersection

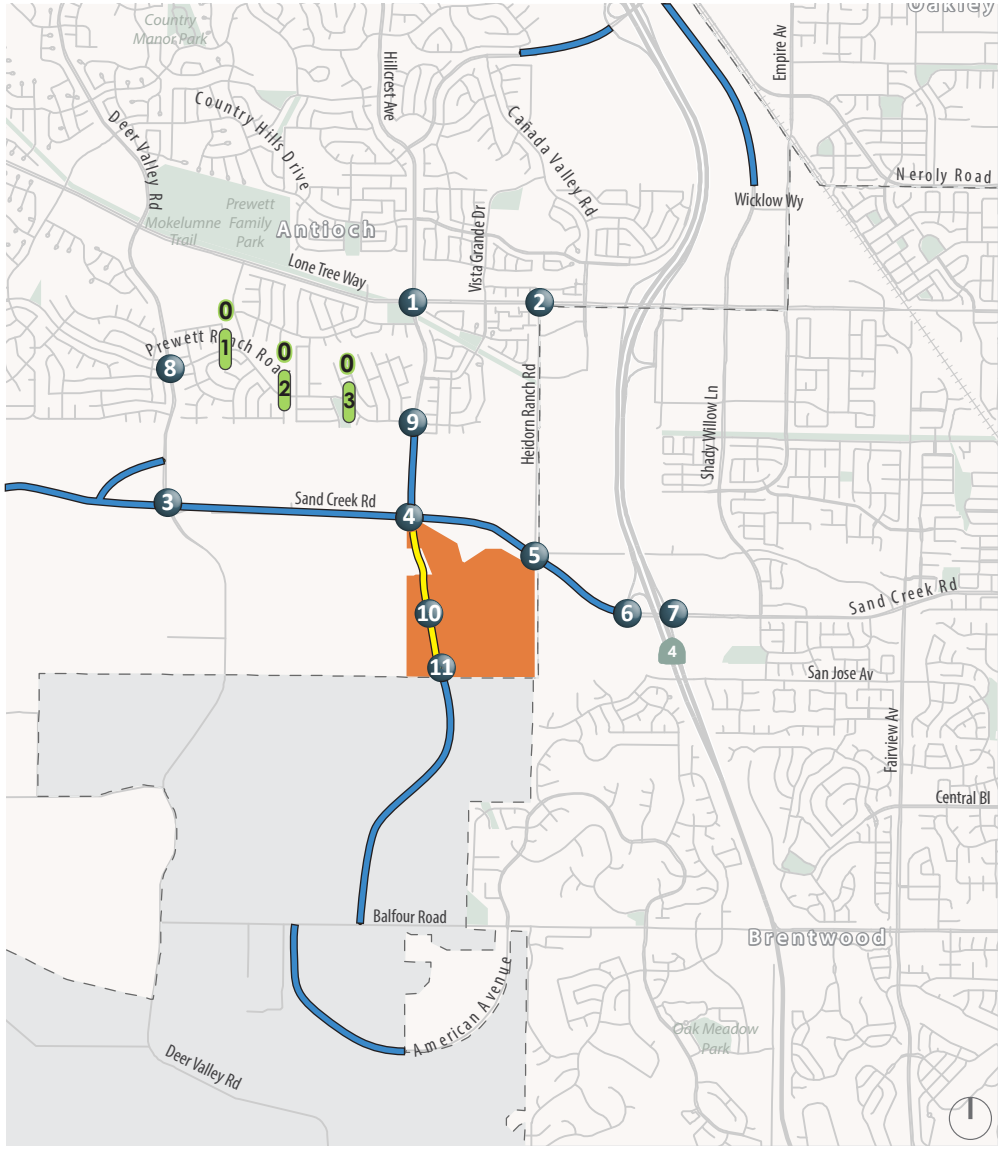
Study Roadway Segment

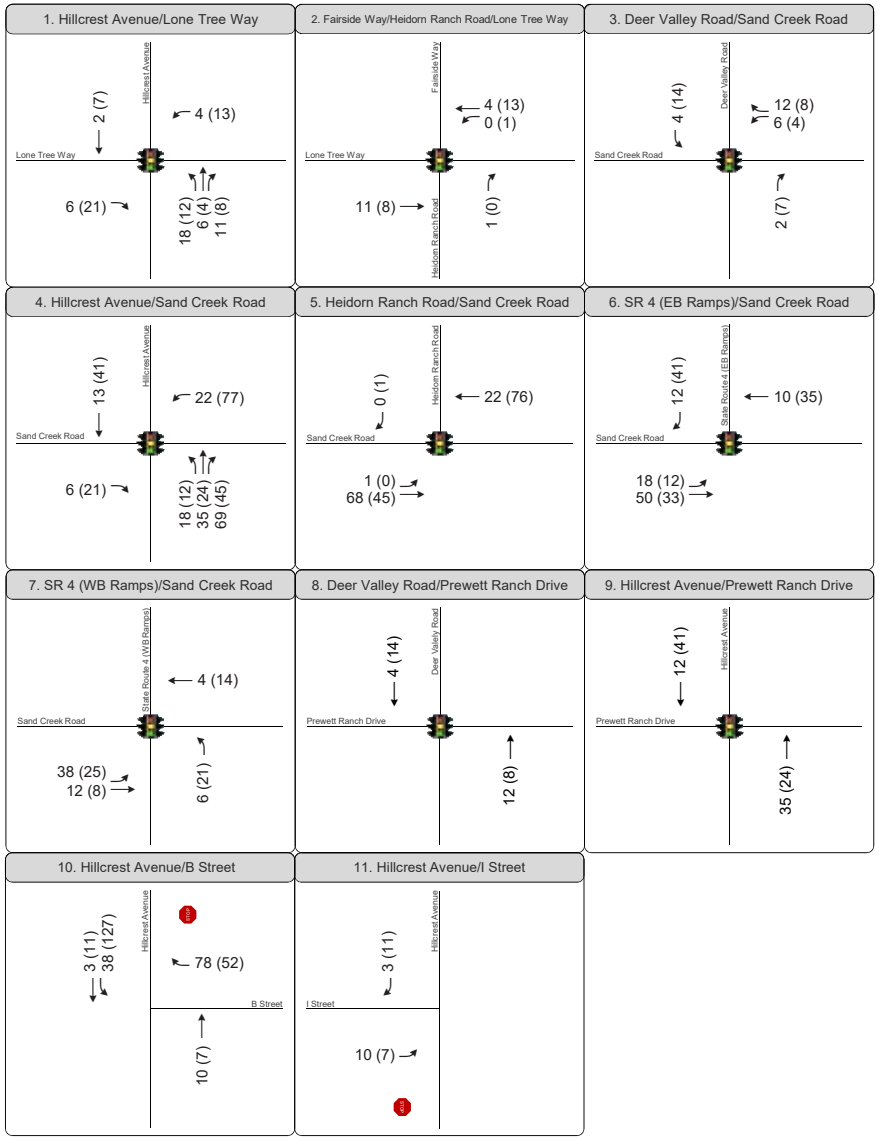
Roadway Constructed as Part of Project

Roadway to be Constructed by Others in Near-term Condition

Figure 6

Project Trip Assignment — Near-Term Roadway Network





XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Project Site

Study Intersection

Study Roadway Segment

Roadway Constructed as Part of Project

Roadway to be Constructed by Others by Cumulative Condition

Figure 7

Project Trip Assignment — Cumulative Roadway Network

WC19-3593_X_Volumes

4. Existing with Project Conditions

This chapter evaluates potential off-site traffic effects under Existing with Project conditions.

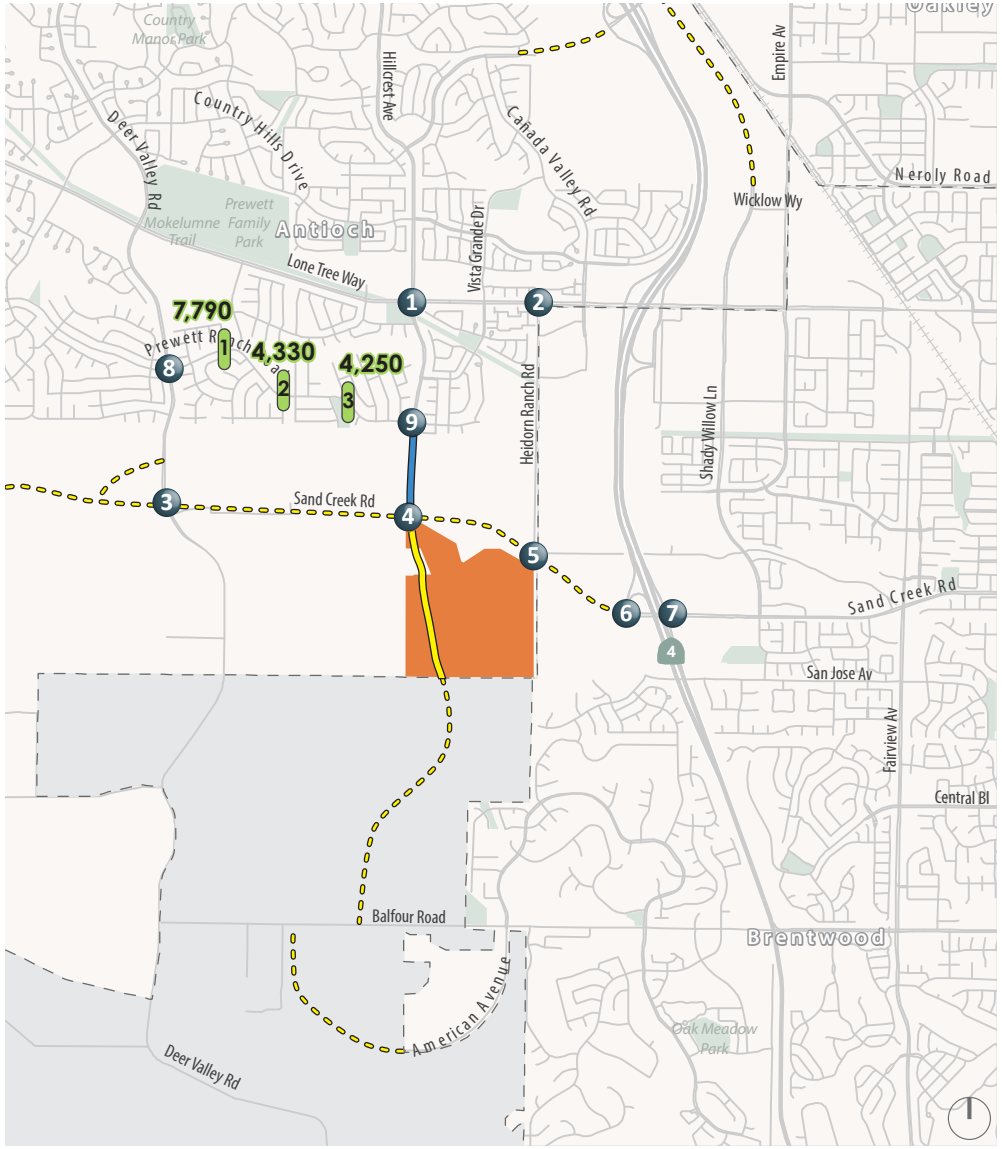
Existing with Project Traffic Volumes

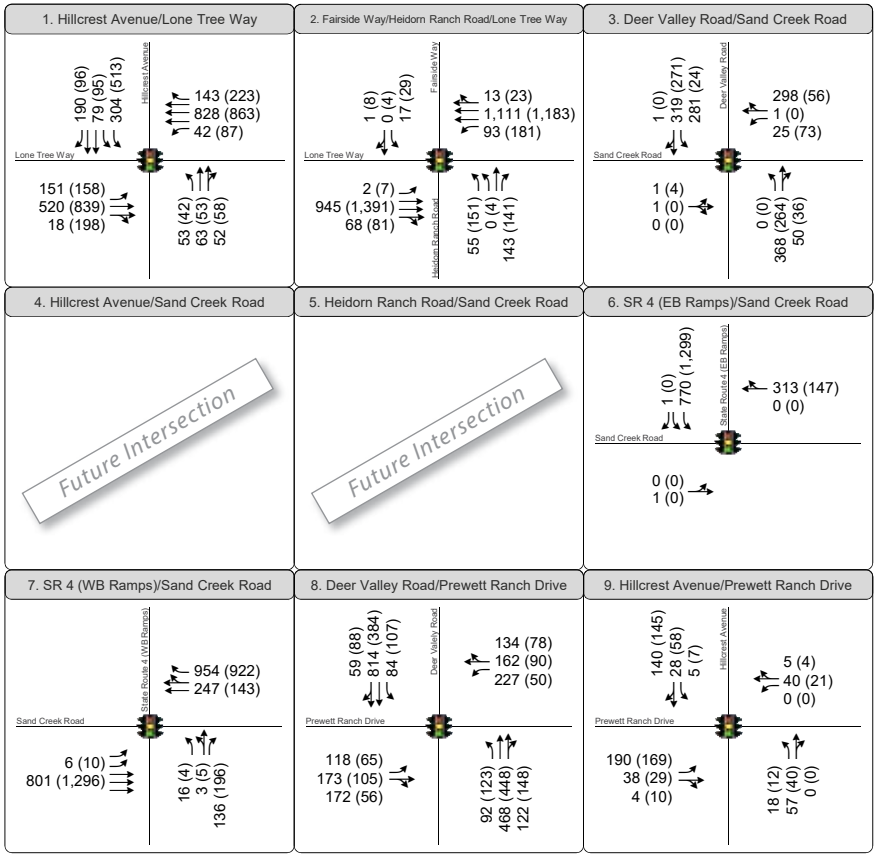
The project would not be constructed until at least a portion of the Vineyards at Sand Creek Promenade neighborhood is constructed, along with the associated Hillcrest Avenue extension from its current terminus at Prewett Ranch Drive to Sand Creek Road. This is because access to the project site could not be provided until Hillcrest Avenue is extended to the Sand Creek Road alignment; this roadway would be constructed as part of the Promenade development. The project would then construct Hillcrest Avenue into the project site.

The Promenade[7] development (model homes under construction at the time of data collection) will ultimately include 632 detached homes at buildout, including 192 market-rate homes and 440 age-restricted detached homes, generating approximately 3,690 daily trips, 248 morning peak hour and 322 evening peak hour trips. This level of trip generation from buildout of the Promenade was assumed in conjunction with the construction of Hillcrest Avenue along its project frontage to Sand Creek Road. Improvements to Heidorn Ranch Road would also be constructed such that vehicle trips generated by the Promenade would access the regional roadway network from Hillcrest Avenue and Heidorn Ranch Road; however, for the purposes of this analysis the connection of Sand Creek Road between Hillcrest Avenue and Heidorn Ranch Road was not assumed to present a conservative assessment of the effects of project traffic in the existing condition by assuming all project traffic would be concentrated along Hillcrest Avenue. This assumption allows for some flexibility in project construction timing, as construction of the proposed project could begin prior to buildout of the Promenade project, and construction of Sand Creek Road between Hillcrest Avenue and Heidorn Ranch Road.

The resulting Promenade trip estimates were then added to the existing traffic volumes from Figure 3 to estimate the Existing with Promenade traffic volumes, as shown on **Figure 8**. Project trips from Figure 5 were then added to develop Existing with Promenade with Project traffic volumes, as presented on **Figure 9**.

[7] Vineyards at Sand Creek Promenade was originally entitled to construct 641 homes. Current plans call for up to 632 homes.





XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Project Site

Future Roadway

Study Intersection

Study Roadway Segment

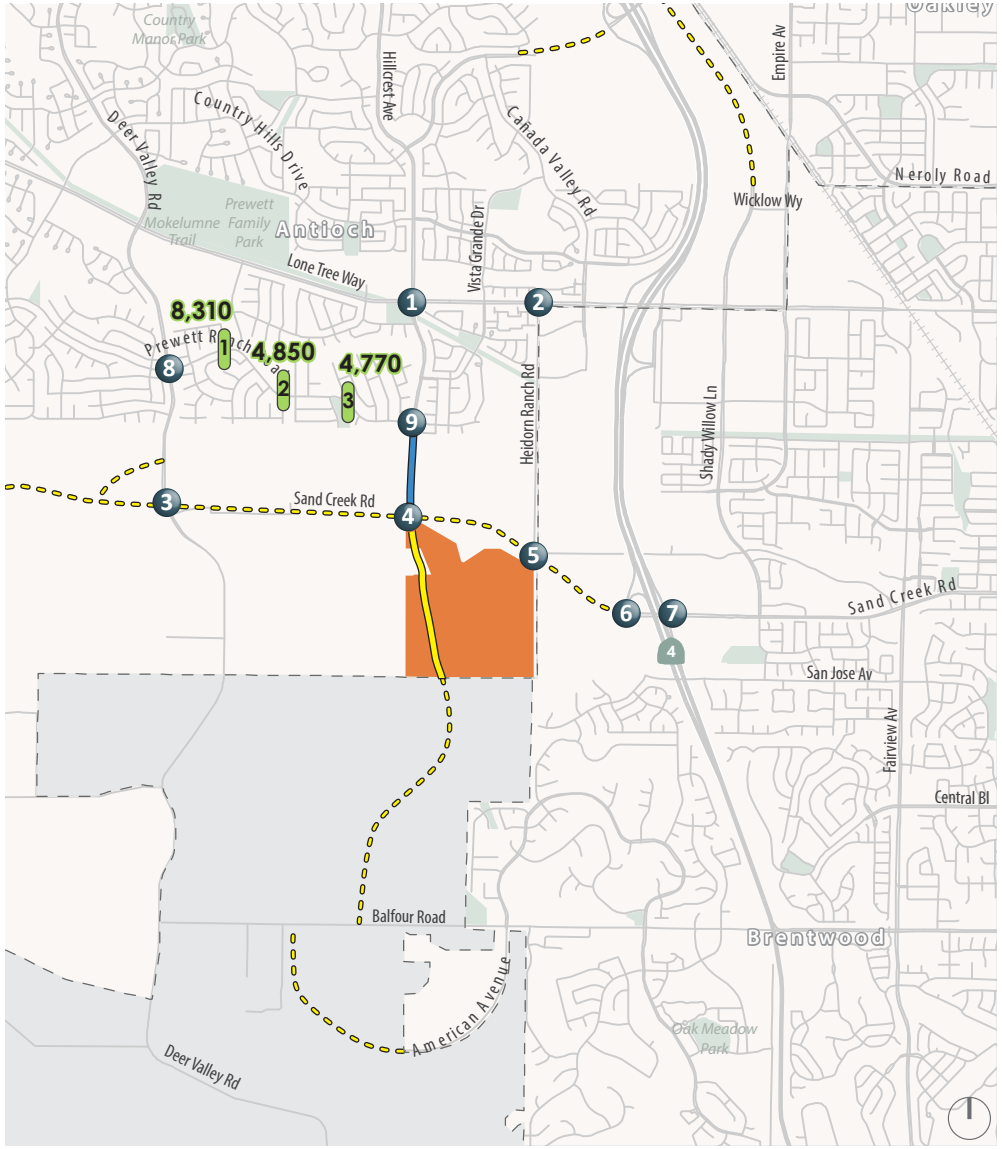
Roadway Constructed as Part of Project

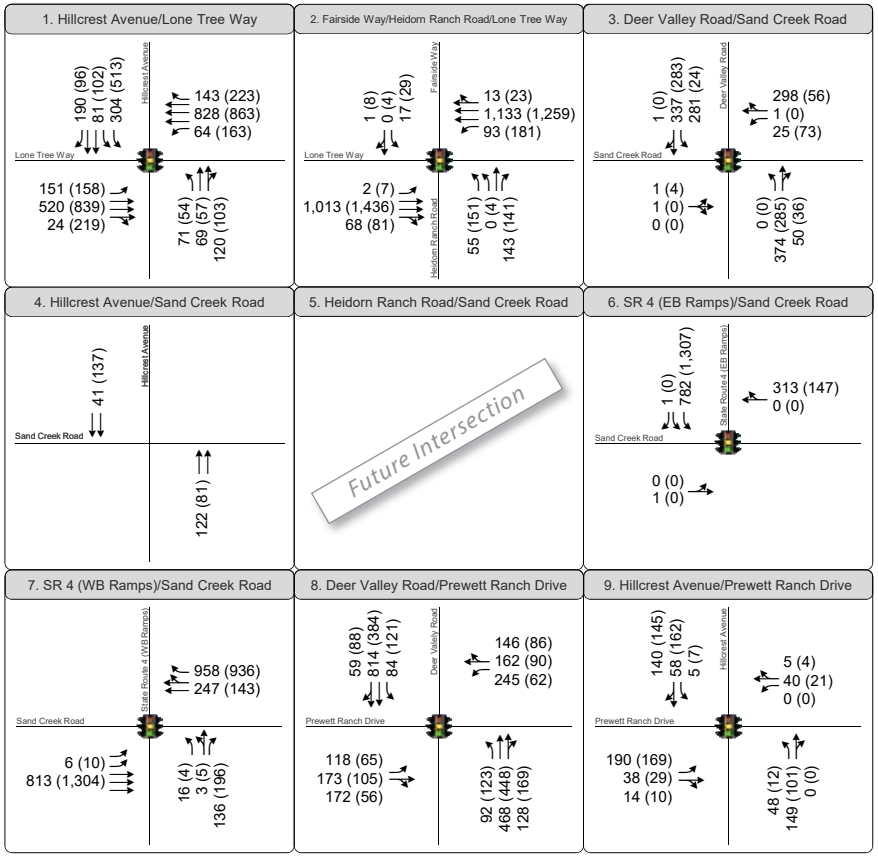
Roadway to be Constructed by Others Prior to Project Development in Existing Condition

Figure 8

Existing with Promenade Project Peak Hour Intersection Volumes, Lane Configurations and Traffic Controls

WC19-3593_X_Volumes





XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Project Site

Future Roadway

Study Intersection

Study Roadway Segment

Roadway Constructed as Part of Project

Roadway to be Constructed by Others Prior to Project Development in Existing Condition

Figure 9

Existing with Promenade Project Plus Project Peak Hour Intersection Volumes, Lane Configurations and Traffic Controls

WC19-3593_X_Volumes

Analysis of Existing with Project Conditions

Intersection Operations

Existing with Project intersection operations were evaluated using the same methods described in Chapter 1. The Existing with Project analysis results are presented in **Table 6**, based on the traffic volumes and intersection configurations presented on Figure 8 and 9. Table 6 also includes the operations results for Existing conditions, as well as the Existing with Promenade condition. The addition of traffic from the Promenade project would increase delay at the study intersections, which would then further increase with the addition of project traffic. However, no study intersections are projected to degrade beyond the established level of service standard with the addition of project traffic in the existing condition.

Table 6: Existing With Project Conditions Peak Hour Intersection LOS Summary

Intersection	Control[1]	Peak Hour	Existing		Existing with Promenade		Existing with Promenade With Project	
			Delay[2]	LOS	Delay[2]	LOS	Delay[2]	LOS
1. Lone Tree Way at Hillcrest Avenue	Signal	AM PM	18 21	B C	19 21	B C	21 26	C C
2. Lone Tree Way at Heidorn Ranch Road	Signal	AM PM	11 12	B B	12 16	B B	12 16	B B
3. Sand Creek Road at Deer Valley Road	Signal	AM PM	10 15	A B	10 15	A B	10 15	A B
4. Sand Creek Road at Hillcrest Avenue (Future Intersection)	Signal	AM PM	-- --	-- --	-- --	-- --	-- --	-- --
5. Sand Creek Road at Heidorn Ranch Road (Future Intersection)	Signal	AM PM	-- --	-- --	-- --	-- --	-- --	-- --
6. Sand Creek Road at State Route 4 Eastbound Ramps	Signal	AM PM	9 7	A A	9 7	A A	9 7	A A
7. Sand Creek Road at State Route 4 Westbound Ramps	Signal	AM PM	5 5	A A	5 5	A A	5 5	A A
8. Prewett Ranch Drive/Deer Valley Road	Signal	AM PM	27 14	C B	29 14	C B	30 15	C B

Table 6: Existing With Project Conditions Peak Hour Intersection LOS Summary

Intersection	Control[1]	Peak Hour	Existing		Existing with Promenade		Existing with Promenade With Project	
			Delay[2]	LOS	Delay[2]	LOS	Delay[2]	LOS
9. Prewett Ranch Drive at Hillcrest Avenue	Signal	AM	19	B	29	C	30	C
		PM	16	B	24	C	23	C

Notes:
1. Signal = signalized intersection
2. Average intersection delay is calculated for all signalized intersections using the 2010 HCM method for vehicles.
Source: Fehr & Peers, 2020

Vehicle queues are expected to increase slightly with the addition of project traffic, but would be generally contained within the available storage space. For signalized intersections that are projected to operate at LOS D or better during the morning and evening peak hours, it is expected that vehicle queue spillback can be managed through signal timing adjustments which the City of Antioch periodically undertakes to optimize travel flow along major corridors.

Daily Roadway Segment Operations

As described in chapter 2, automatic machine traffic counts were conducted over a 72-hour period (Tuesday through Thursday) on clear days in August 2019 with area schools in session along Prewett Ranch Drive as some vehicle traffic accessing the site could travel through Prewett Ranch Drive to access Deer Valley Road prior to the completion of the Sand Creek Road extension between Hillcrest Avenue and Deer Valley Road. To assess the effects of the addition of project traffic on Prewett Ranch Drive in the existing condition, the daily trip generation estimates were applied to the project trip assignment. The resulting trips where then added to the existing traffic volumes. The percent increase in project trips was also calculated, with the results presented in **Table 7**.

Table 7: Existing With Project Conditions Average Daily Traffic

Segment	Daily Traffic[1]	Existing with Promenade	Project Traffic[2]	Existing With Project	Daily Fluctuation[3]	Project Increase
1. Prewett Ranch Drive, east of Deer Valley Road	7,510	7,790	520	8,310	± 1.2%	7%
2. Prewett Ranch Drive at Diablo Vista Elementary School	4,050	4,330	520	4,850	± 1.8%	12%

Table 7: Existing With Project Conditions Average Daily Traffic

Segment	Daily Traffic[1]	Existing with Promenade	Project Traffic[2]	Existing With Project	Daily Fluctuation[3]	Project Increase
3. Prewett Ranch Drive, west of Hillcrest Avenue	3,970	4,250	520	4,770	± 2.9%	12%

Notes: 1. Average daily two-way traffic measured over three days.
2. Average peak hour volume from the three weekdays of data collection.
3. Percent difference between the three days of data collection.

Source: Fehr & Peers, 2020

For Segments 1 and 2, the Existing with Project daily traffic volumes are below the maximum desired level for a residential collector roadway without front-on housing. For Segment 3 between Grass Valley Way and Hillcrest Avenue, existing traffic volumes exceed the desired level for a residential collector roadway with front-on housing (3,000 vehicles per day), with the project expected to increase vehicle traffic by up to 12 percent. As the City of Antioch does not have an established standard for the maximum desired level of daily vehicle traffic roadways, nor established thresholds related to how much additional traffic could be considered a significant impact on a roadway where existing volumes exceed the desired level, this assessment was prepared for informational purposes only and no findings of significance were made.

Construction Assessment

The assessment of construction activity considers construction vehicles (including vehicles removing or delivering fill material, bulldozers, and other heavy machinery, as well as building materials delivery) and construction worker activity. Based on the preliminary construction plan, the site is being designed to be balanced on-site. As such, no import and/or export of fill is expected. Any truck traffic to the site would follow designated truck routes, and project construction would likely stage any large vehicles (i.e., earth-moving equipment, cranes, etc.) on the site prior to beginning site work and remove these vehicles at project completion. However, detailed information relating to the construction schedule during site development or a construction management plan is not available. Once the construction schedule is finalized, it should be reviewed in conjunction with the schedule of construction of neighboring projects. As such, there could be temporary significant impacts to the transportation system during the construction period.

Existing Conditions Impacts and Mitigation

There could be temporary, although significant impacts during the construction phase of the Project.

Impact Statement 1: Construction related activities could create potential conflicts with other roadway users along primary travel routes to/from the site. Although transportation construction impacts would be temporary in nature this impact is considered ***potentially significant***.

Mitigation Measure 1: Although transportation construction impacts would be temporary, development of a construction management plan would reduce the potential for construction vehicle conflicts with other roadway users. The plan should include:

- Project staging plan to maximize on-site storage of materials and equipment
- A set of comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak hours; lane closure proceedings; signs, cones, and other warning devices for drivers; and designation of construction access routes
- Permitted construction hours
- Location of construction staging
- Identification of parking areas for construction employees, site visitors, and inspectors, including on-site locations
- Provisions for street sweeping to remove construction related debris on public streets

Implementation of the construction management plan would reduce the temporary construction impact to a ***less-than-significant*** level.

5. Near-Term Traffic Conditions

The near-term scenario reflects existing traffic counts plus traffic from approved and pending developments that are expected to be completed and occupied in the next five to ten years. Near-term conditions without and with the project are evaluated. It also includes transportation projects programmed for implementation around the time that the project is completed, and construction of required transportation mitigation measures for approved projects. The analysis of cumulative conditions (see Chapter 6 for details) considers development within the City of Antioch and surrounding jurisdictions (Brentwood, Oakley, and Unincorporated Contra Costa County) as described in their respective General Plans and approved General Plan Amendments.

Near-Term Forecasts

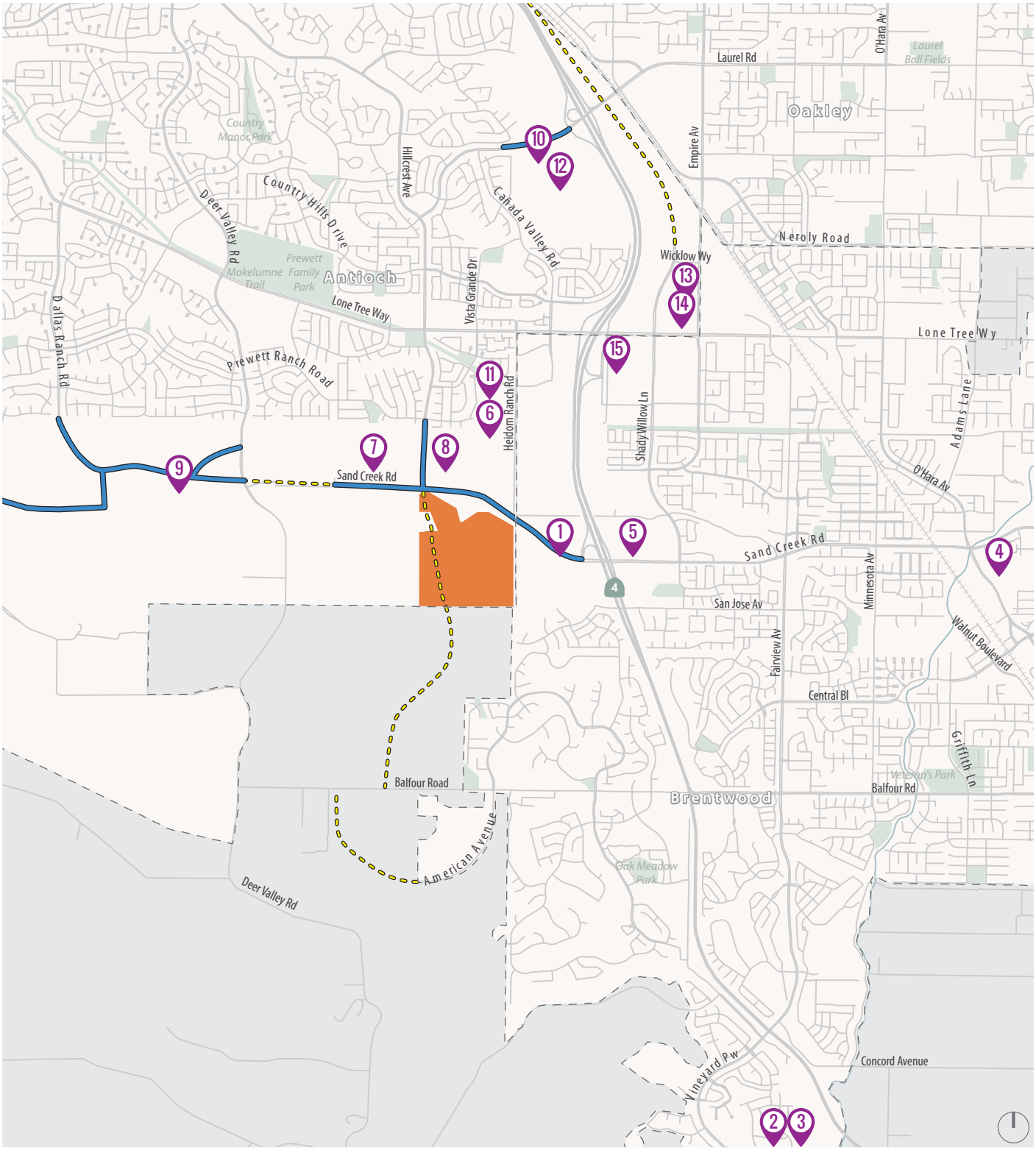
The available *City of Brentwood Project Status* as of May 2019 and *City of Antioch Project Pipeline* (as of May 2019) were reviewed to identify developments to include in this scenario. Copies of these reports are provided in **Appendix E**. Developments that could generate additional traffic through the study area are summarized in **Table 8** and their locations shown on **Figure 10.**

Near-Term project vehicle trip generation was estimated using trip generation rates and equations from ITE's *Trip Generation Manual* (10th Edition). The results are provided in **Appendix E**. Traffic generated by approved and pending developments was added to the existing traffic volumes to provide the basis for the Near-Term without Project analysis, as presented on **Figure 11.** The existing traffic counts were also increased by 5 percent to account for traffic growth from projects outside the immediate study area that could add through traffic to the area in the near-term condition. Project traffic volumes from **Figure 6** were added to the Near-Term without Project forecasts to estimate Near-Term with Project volumes at the study intersections, as presented on **Figure 12.**

Table 8: Approved Projects Summary

Map Location (City)	Project Name	Size	Land Use	Status
1 (Brentwood)	Bridle Gate Residential Elementary School Commercial	252 dwelling units 258 dwelling units 700 students 150,000 square-feet	Unrestricted Single Family Homes Apartments Elementary School Commercial	Pending; construction not yet started
2 (Brentwood)	Trilogy at the Vineyards Pioneer Square	1,600 units 72 units	Age-restricted Single Family Homes Age-restricted Attached Homes	Under Construction; 707 units remaining Under Construction; 72 units remaining
3 (Brentwood)	Contra Costa County Community College District	5,000 students	Community College	Under Construction; not yet occupied
4 (Brentwood)	Sciortino Ranch (9356)	326 units	Unrestricted Single Family Homes	Under Construction
5 (Brentwood)	Streets of Brentwood	320 dwelling units 32,000 square feet	Multi-family Units Shopping Center	Pending; construction not yet started
6 (Antioch)	Heidorn Village	117 dwelling units	Unrestricted Single Family Homes	Approved; construction not yet started
7 (Antioch)	Aviano	533 dwelling units	Unrestricted Single Family Homes	Approved; construction not yet started
8 (Antioch)	Vineyard at Sand Creek (Promenade)	192 dwelling units 440 dwelling units	Unrestricted Single Family Homes Age Restricted Single Family Homes	Under Construction; not yet occupied
9 (Antioch)	The Ranch	755 dwelling units 422 dwelling units 54,000 square feet	Unrestricted Homes Age Restricted Homes Commercial	Initiative adopted by Council; construction not yet started
10 (Antioch)	Laurel Ranch	180 dwelling units 10 acres commercial	Unrestricted Single Family Homes Commercial	Approved; construction not yet started
11 (Antioch)	Quail Cove	32 dwelling units	Unrestricted Single Family Homes	Approved; construction not yet started
12 (Antioch)	Park Ridge	525 dwelling units	Unrestricted Single Family Homes	Under Construction; 178 units remaining
13 (Brentwood)	Orfanos, Brentwood	160 dwelling units	Single Family Homes	Under Construction
14 (Brentwood)	Alvarez Partners, Brentwood	48 dwelling units	Single Family Homes	Approved
15 (Brentwood)	Shops at Lone Tree Village, Brentwood	54,000 square feet	Shopping Center	Under Construction

Source: Source: *City of Brentwood Project Status* as of May 2019 and City of Antioch Development Project Pipeline (February 2019).



Project Site

Future Roadway

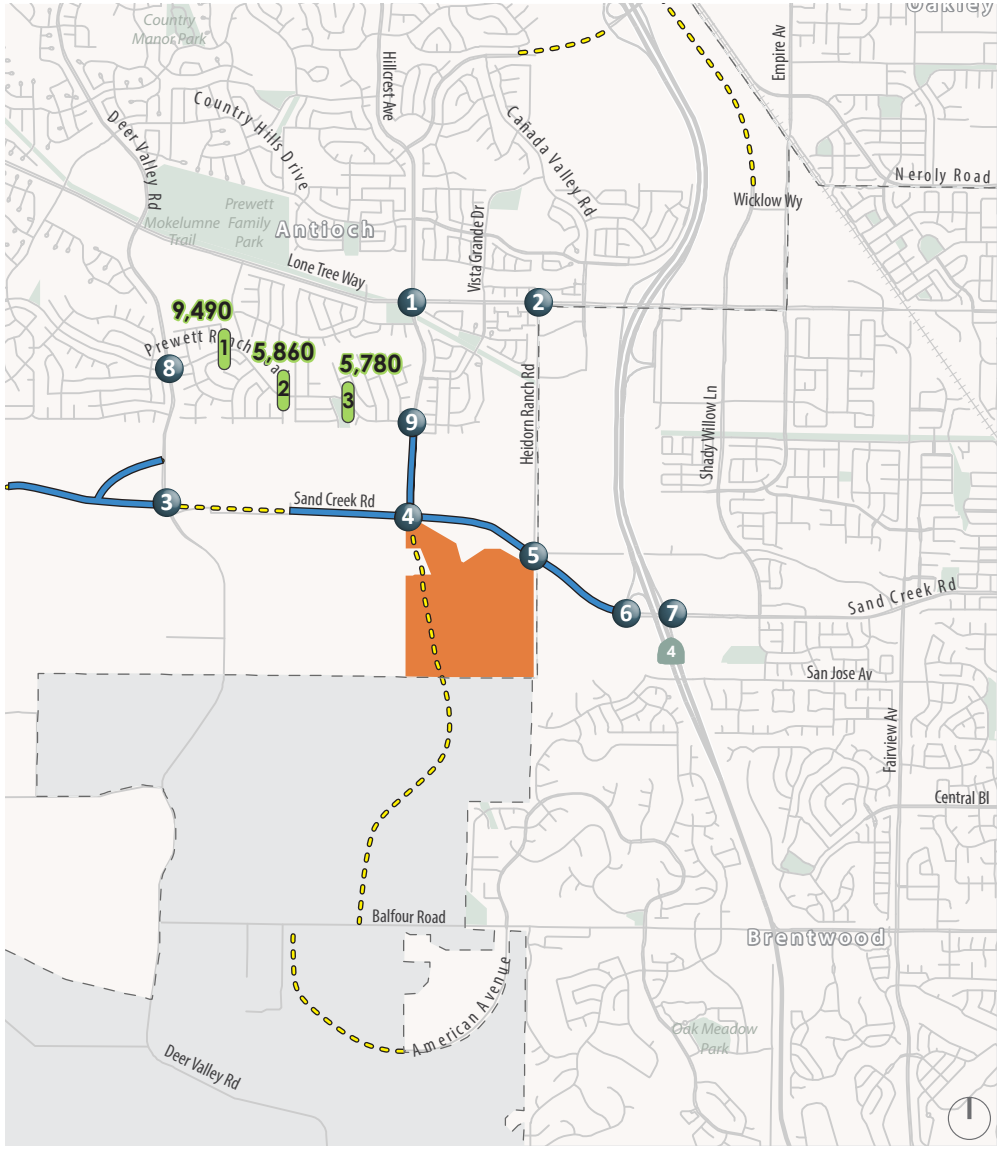
Approved Project Location

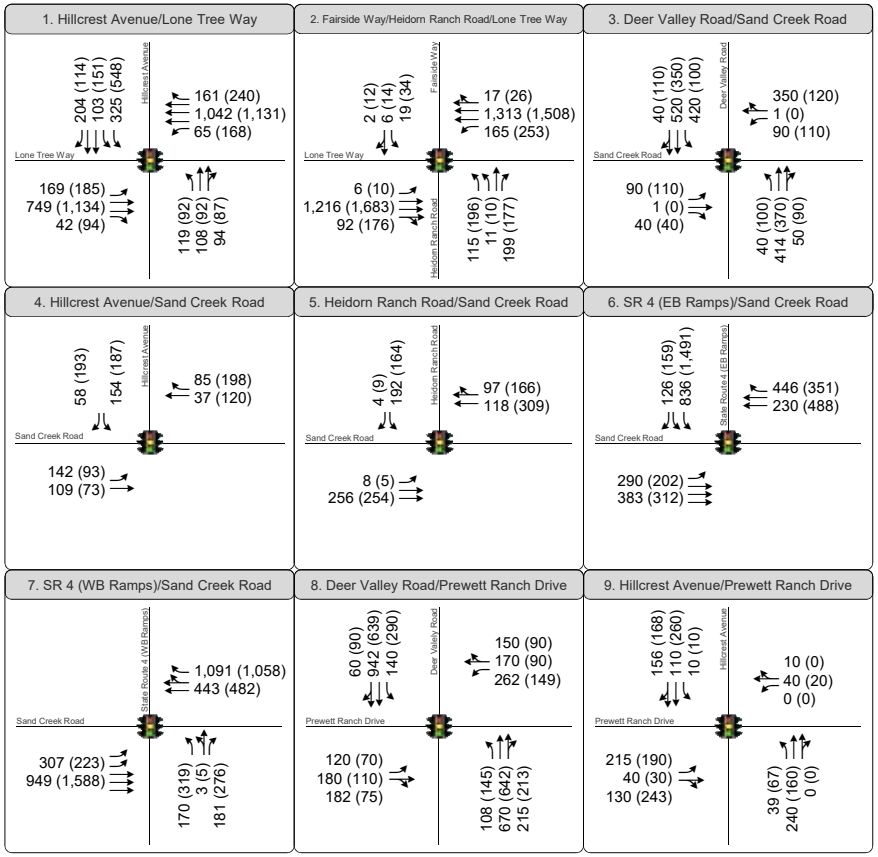
Roadway to Be Constructed as Part of Approved/Pending Development

Figure 10

Approved Project Locations

WC19-3593_10_ApprovedProj





XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Project Site

Future Roadway

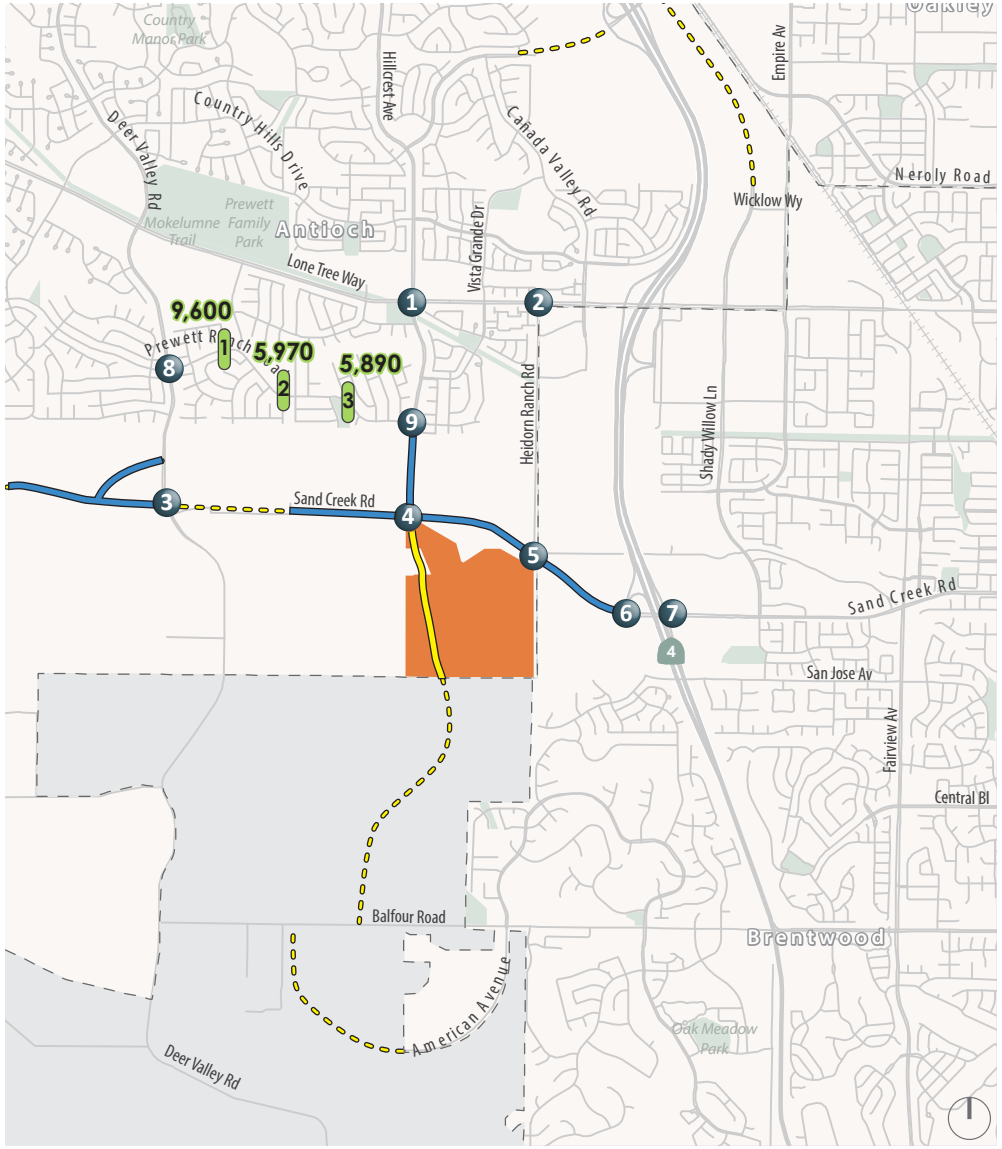
Study Intersection

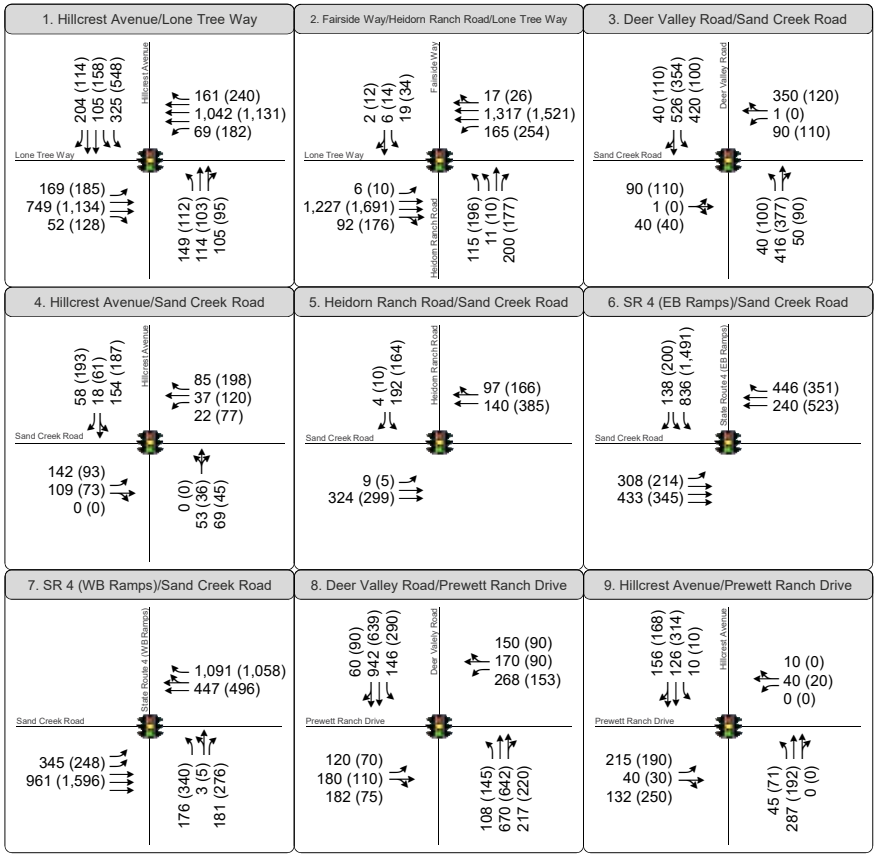
Study Roadway Segment

Roadway to be Constructed by Others in Near-term Condition

Figure 11

Near-Term without Project Peak Hour Intersection Volumes, Lane Configurations and Traffic Controls





XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Project Site

Future Roadway

Study Intersection

Study Roadway Segment

Roadway Constructed as Part of Project

Roadway to be Constructed by Others in Near-term Condition

Figure 12

Near-Term with Project Peak Hour Intersection Volumes, Lane Configurations and Traffic Controls

WC19-3593_X_Volumes

Near-Term Roadway Assumptions

A number of roadway improvements are conditioned on near-term developments and considered in the near-term forecasts, including:

- Extension of Hillcrest Avenue from its current terminus to an extension of Sand Creek Road
- Improvements to Heidorn Ranch Road along the frontage of the Vineyards at Sand Creek (Promenade) project and Heidorn Village Project
- Extension of Sand Creek Road from State Route 4 in the east to a new terminus by the Dozier-Libbey Medical High School (no change to the existing high school access is assumed in the near-term condition, with all access assumed to continue through Sand Creek Road to the west of the campus, adjacent to the Kaiser Hospital facility)
- Extension of Laurel Road from State Route 4 to its current terminus east of Canada Valley Road
- Extension of Prewett Ranch Drive to Heidorn Ranch Road
- Extension of Sand Creek Road to Dallas Ranch Road
- Improvements to Deer Valley Road along the frontage of the Ranch development

For the extension of Sand Creek Road, no direct through travel would be permitted between Deer Valley Road and Hillcrest Avenue; however, vehicles would be able to travel through Prewett Ranch Drive between Hillcrest Avenue and Deer Valley Road to access destinations to the west.

As part of the project, roadway improvements would be constructed to extend Hillcrest Avenue from Sand Creek Road through the project site as a two lane facility. An assessment of on-site intersections with both two and four lanes is provided Chapter 9.

Analysis of Near-Term Conditions

Intersection Operations

Near-Term without and with Project conditions were evaluated using the same methods described in Chapter 1; signal timings were left unchanged for intersections along Lone Tree Way. For existing or new signalized intersections on Sand Creek Road, signal timings were optimized with the same timings used for the evaluation of without and with project impacts. Where peak hour factors were less than 0.90 in the existing condition and preliminary analysis indicted poor operations, the peak hour factor was increased to 0.95.

The analysis results are presented in **Table 9**, based on the traffic volumes and lane configurations presented on Figure 11 and Figure 12. In the near-term condition, all study intersections would continue to operate at acceptable service levels prior to the addition of project traffic. With the addition of project traffic, all study intersections would continue to operate within established level of service ranges.

Table 9: Near-Term Conditions Peak Hour Intersection LOS Summary

Intersection	Control[1]	Peak Hour	Near-Term without Project		Near-Term with Project	
			Delay[2]	LOS	Delay[2]	LOS
1. Lone Tree Way at Hillcrest Avenue	Signal	AM PM	21 37	C D	21 45	C D
2. Lone Tree Way at Heidorn Ranch Road	Signal	AM PM	17 27	B C	17 27	B C
3. Sand Creek Road at Deer Valley Road	Signal	AM PM	21 18	C B	21 18	C B
4. Sand Creek Road at Hillcrest Avenue	Signal	AM PM	9 11	A B	22 21	C C
5. Sand Creek Road at Heidorn Ranch Road	Signal	AM PM	18 19	B B	19 19	B B
6. Sand Creek Road at State Route 4 Eastbound Ramps	Signal	AM PM	13 39	B D	26 39	C D
7. Sand Creek Road at State Route 4 Westbound Ramps	Signal	AM PM	9 9	A A	9 9	A A
8. Prewett Ranch Drive/Deer Valley Road	Signal	AM PM	46 25	D C	48 26	D C
9. Prewett Ranch Drive at Hillcrest Avenue	Signal	AM PM	21 15	C B	21 16	C C

Notes:
1. Signal = signalized intersection
2. Average intersection delay is calculated for all signalized intersections using the 2010 HCM method for vehicles.
Source: Fehr & Peers, 2020

Vehicle queues are expected to increase at study intersections as traffic volumes increase, which would further increase with the addition of project traffic. Monitoring and adjusting traffic signal timings in response to actual traffic volumes to minimize the potential for vehicle queue spillback is recommended.

Daily Roadway Segment Operations

Traffic from near-term projects was added to the existing daily traffic volumes on Prewett Ranch Drive, with the resulting volumes shown in **Table 10**. Project trips that could use the roadway were then estimated considering the changes to the roadway network in the near-term condition discussed previously and added to the Near-term without Project volumes. The percent increase in project trips was also calculated, with the results presented in **Table 10**.

Table 10: Near-Term Conditions Average Daily Traffic

Segment	Near-term Without Project Daily Traffic[1]	Project Traffic[2]	Near-term With Project	Existing Daily Fluctuation[3]	Project Increase
1. Prewett Ranch Drive, east of Deer Valley Road	9,490	110	9,600	± 1.2%	1%
2. Prewett Ranch Drive at Diablo Vista Elementary School	5,860	110	5,970	± 1.8%	2%
3. Prewett Ranch Drive, west of Hillcrest Avenue	5,780	110	5,890	± 2.9%	2%

Notes: 1. Average daily two-way traffic measured over three days.
2. Average peak hour volume from the three weekdays of data collection.
3. Percent difference between the three days of data collection.

Source: Fehr & Peers, 2020

For Segments 1 and 2, the near-term daily traffic volumes considering the addition of project traffic are below the maximum desired level for a residential collector roadway without front-on housing. For Segment 3 between Grass Valley Way and Hillcrest Avenue, existing traffic volumes exceed the desired level for a residential collector roadway with front-on housing (3,000 vehicles per day). In the Near-Term condition, volumes are expected to further increase and the addition of project traffic would further add vehicle travel to the roadway, with the project expected to increase traffic volumes on this roadway segment less than the existing daily fluctuation.

As the City of Antioch does not have an established standard for the maximum desired level of daily vehicle traffic roadways, nor established thresholds related to how much additional traffic could be considered a significant impact on a roadway where existing volumes exceed the desired level, this assessment was prepared for informational purposes only and no findings of significance were made.

6. Cumulative Traffic Conditions

This chapter discusses Cumulative traffic conditions both without and with the project. The future conditions analysis considers development within the City of Antioch as described in the General Plan, as well as development in in the surrounding communities, including Brentwood and Oakley.

Cumulative Traffic Forecasts

To assess future growth with planned development in the East County Area, several sources of data were reviewed, including the Contra Costa Transportation Authority Travel Demand Model (CCTA Model), future traffic projections as documented in the administrative draft Antioch Transportation Impact Fee, future projections from the City of Brentwood Priority Area 1 Specific Plan EIR, June 2018, and projections developed as part of the Aviano and Promenade transportation impact studies. Traffic forecasts within the immediate study area were reviewed to ensure that known developments were adequately reflected in the forecasts, such as the Bridle Gate project located on the north and south side of the proposed Sand Creek extensions, west of State Route 4, and development of the Albers Property, west of the project site. Minor adjustments were made to the forecasts to balance traffic volumes between closely spaced intersections in the study area.

The Albers Property has a designated access point to Sand Creek Road, and the potential for a secondary emergency vehicle access to Deer Valley Road. Access through the project site has been contemplated, although a General Plan Amendment would be required. For purposes of this assessment, access to Albers Ranch is assumed to occur from Sand Creek Road as access through the project site has not been evaluated or approved. For informational purposes, a secondary assessment of intersection operations with Albers Property development taking primary access through the project site, via Street I, is provided in Chapter 8.

In November 2019, voters in the City of Brentwood defeated Measure L that would have permitted the construction of the Vineyards at Deer Creek project. That project would have extended Hillcrest Avenue from the southern property line to Balfour Road as a private roadway, in conjunction with other development. As Measure L was defeated, development of that parcel and extension of Hillcrest Avenue to the south of the project site is not expected to occur until there is a successful referendum. However, as this roadway connection is shown in the City of Brentwood Circulation Element, and development assumed on that parcel within the City of Brentwood General Plan, development of the Vineyards at Deer Creek project was considered as part of the background cumulative condition. As no project traffic would use

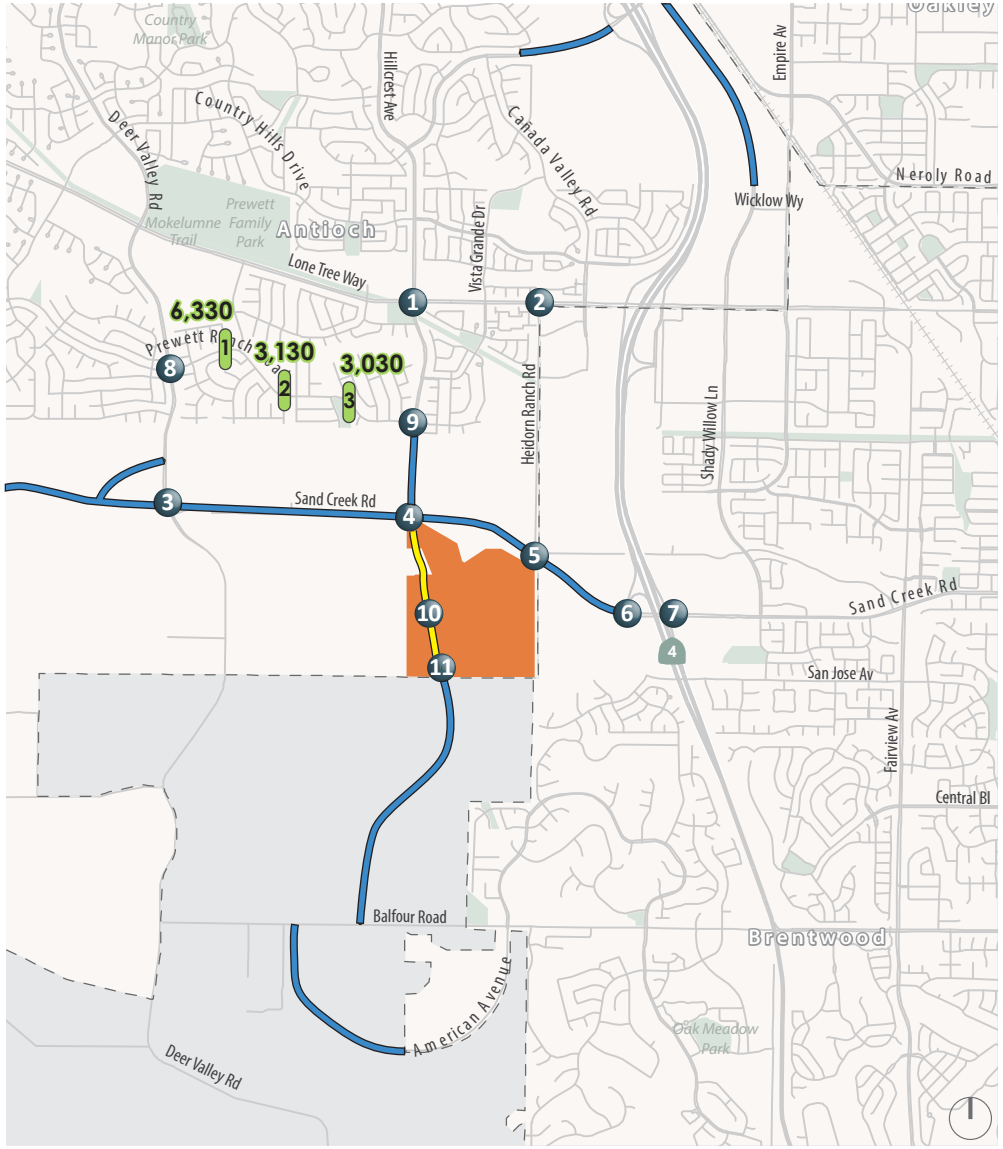
Hillcrest Road south of the southern project boundary, inclusion of this project and associated roadway improvements presents a conservative worst-case assessment of future conditions. Excluding the Vineyards at Deer Creek project and associated roadway improvements would not change the overall conclusions of this study, or change the project mitigation requirements in the Cumulative condition.

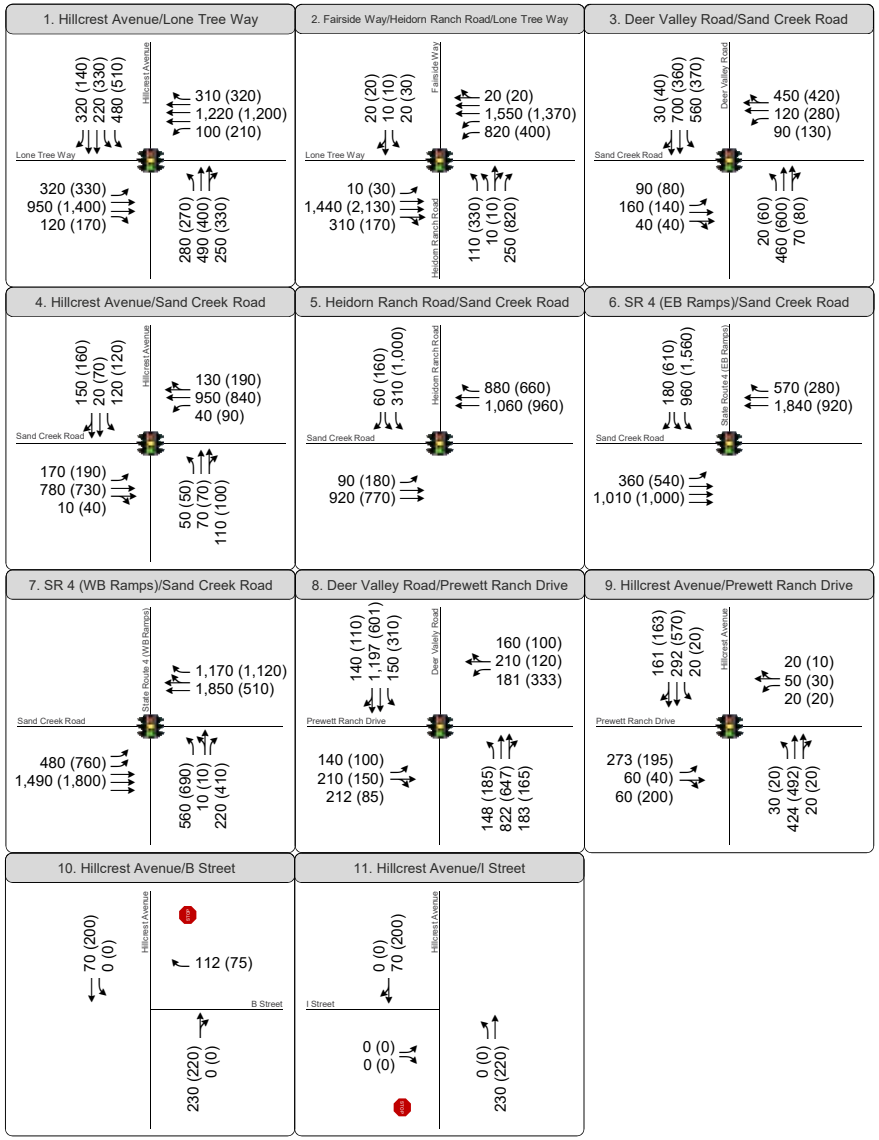
The resulting Cumulative without Project forecasts are presented on **Figure 13**, which are representative of conditions over the next 20 to 25 years. The project volumes from Figure 7 were added to the Cumulative without Project traffic volumes to represent Cumulative with Project conditions, as presented on **Figure 14.** Volumes for some movements on Lone Tree Way decrease as compared to the near-term condition due to the completion of the Sand Creek Road extension as well as planned development in Priority Area One that is expected to change travel patterns along the Lone Tree Way corridor.

Cumulative Roadway Assumptions

For the analysis of the cumulative condition, a number of roadway improvements were assumed. Some improvements would be completed in the near-term with the following roadway network improvements are assumed to be completed by the cumulative condition:

- Extension of Hillcrest Avenue from its current terminus to an extension of Sand Creek Road (near-term)
- Extension of Hillcrest Avenue from the southern project terminus to Balfour Road as a gated private roadway (cumulative) [note: no project traffic was assumed to use this roadway connection]
- Widening of Heidorn Ranch Road to four lanes from south of Lone Tree Plaza Drive to Sand Creek Road (partially in near-term, completed in cumulative)
- Extension of Sand Creek Road from State Route 4 in the east to Deer Valley Road (extension from SR 4 to Dozier-Libbey in the near-term and from Dozier-Libbey to Deer Valley in cumulative)
- Extension of Dallas Ranch Road from current terminus to Deer Valley Road (near-term)
- Laurel Road extension from State Route 4 to its current terminus east of Canada Valley Road (near-term)
- Widening of State Route 4 to provide two travel lanes in each direction from south of Balfour Road to Marsh Creek Road (cumulative)
- Improvements to the Lone Tree Way at Heidorn Ranch Road intersection conditioned on development in Brentwood as part of Priority Area One (cumulative)
- Extension of Slatten Ranch Road to Laurel Road (cumulative)





XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Project Site

Study Intersection

Study Roadway Segment

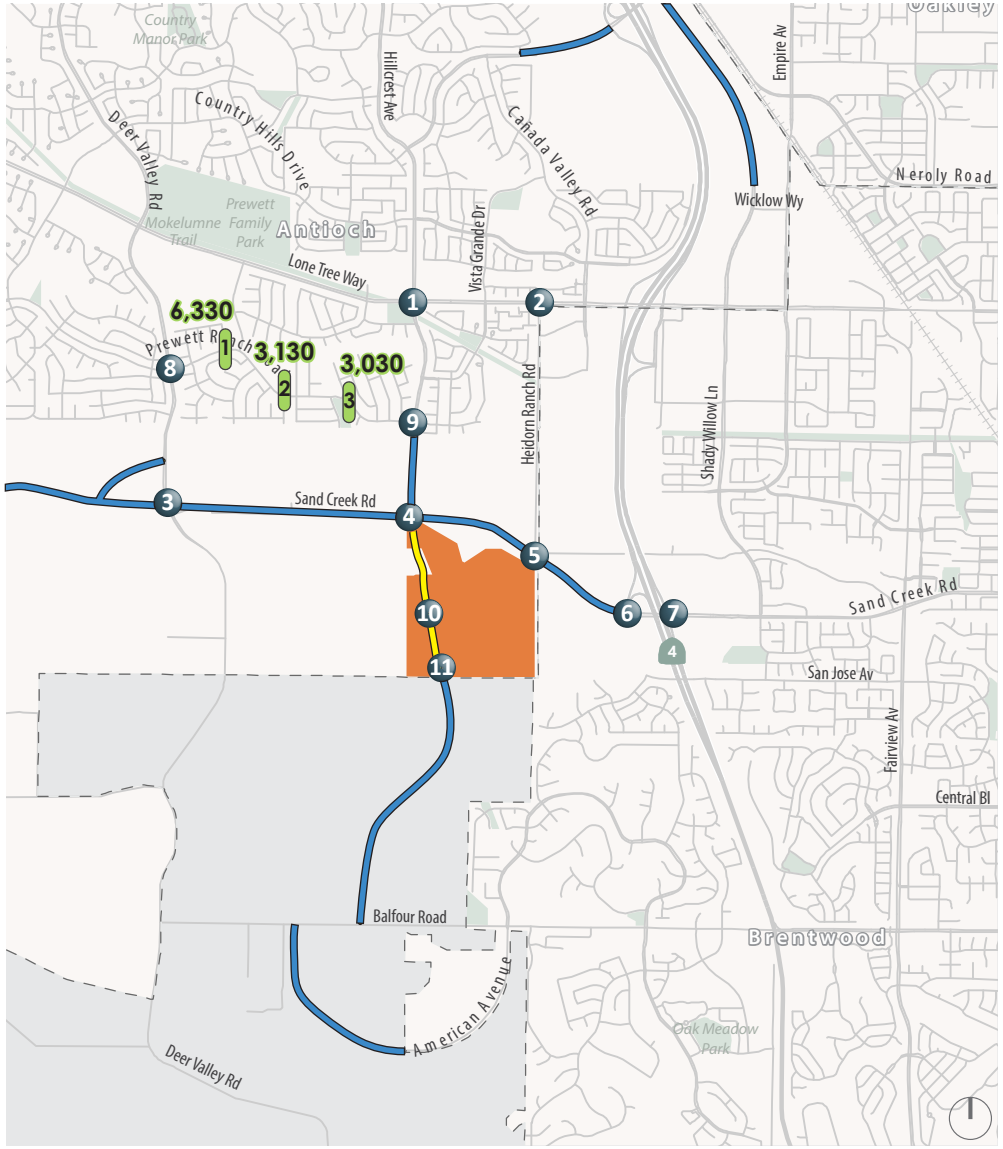
Roadway Constructed as Part of Project

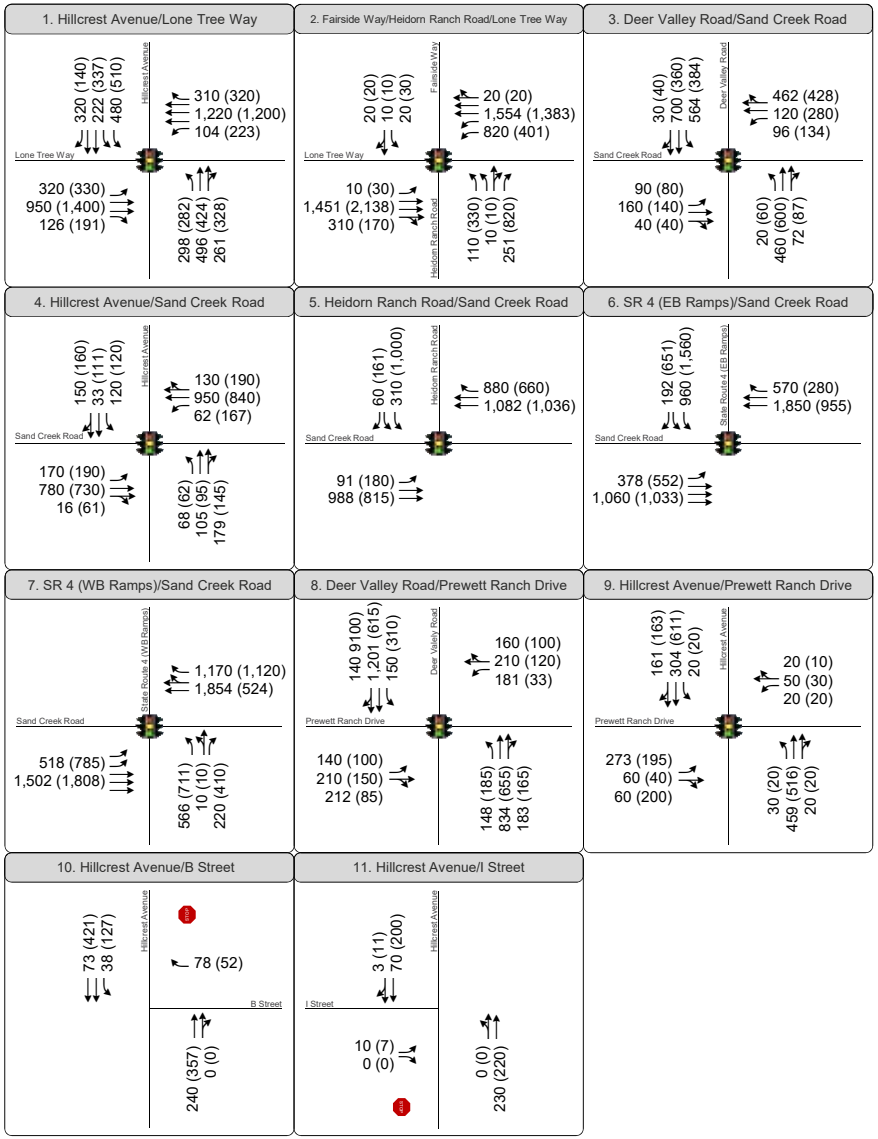
Roadway to be Constructed by Others by Cumulative Condition

Figure 13

Cumulative without Project Peak Hour Intersection Volumes, Lane Configurations and Traffic Controls

WC19-3593_X_Volumes





XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Project Site

Study Intersection

Study Roadway Segment

Roadway Constructed as Part of Project

Roadway to be Constructed by Others by Cumulative Condition

Figure 14

Cumulative with Project Peak Hour Intersection Volumes, Lane Configurations and Traffic Controls

WC19-3593_X_Volumes

As part of the project, roadway improvements would be constructed to extend Hillcrest Avenue from Sand Creek Road to the southern property line. No project traffic or through traffic was assigned to Hillcrest Avenue between the southern property line and Balfour Road as that portion of roadway is proposed to be a private gated roadway. An assessment of on-site intersections is provided in the site plan review chapter. For the analysis of cumulative conditions, it was assume that Hillcrest Avenue would provide two through lanes in each direction at the Sand Creek Road intersection. The assumed lane configurations in each cumulative scenario are shown on Figure 13 (without project) and Figure 14 (with project).

Further upgrades to the Sand Creek Road/State Route 4 interchange, as well as to the SR 4 mainline are planned but not fully funded; therefore additional improvements are not assumed in the analysis of cumulative conditions as the timing of those improvements is uncertain.

Vehicle traffic generated by the proposed project would contribute to the need for local and regional roadway improvements. The project would contribute to the construction of regional roadway improvements through the payment of regional transportation impact fees to the East Contra Costa Regional Fee and Financing Authority (ECCRFFA).

Analysis of Cumulative Conditions

Intersection Operations

Cumulative without and with Project conditions were evaluated using the same methods described in Chapter 1; signal timings were optimized from the existing condition with the same timings used for the evaluation of without and with project conditions. The analysis results are presented in **Table 11,** based on the traffic volumes presented on Figure 13 and Figure 14. Four intersections are projected to operate at deficient levels in the cumulative condition prior to the addition of project traffic:

- Lone Tree Way at Hillcrest Avenue – LOS E AM and PM Peak Hour
- Sand Creek Road at State Route 4 Eastbound Ramps – LOS F AM and PM Peak Hour
- Sand Creek Road at State Route 4 Westbound Ramps – LOS E AM Peak Hour
- Prewett Ranch Drive/Hillcrest Avenue – LOS E AM Peak Hour

The project would add vehicle traffic to these intersections, resulting in potentially significant impacts. At the Sand Creek Road at State Route 4 Eastbound Ramps there is a planned improvement to construct a

diagonal on-ramp for eastbound Sand Creek Road to southbound State Route 4; this improvement is included in the East Contra Costa Regional Fee and Financing Authority (ECCRFFA) regional fee program.

Poor operations at the Sand Creek Road at State Route 4 Westbound Ramps ramp are primarily caused by potential levels of development as approved in the Priority Area One Specific Plan. Construction of an additional westbound right-turn only lane from westbound Sand Creek Road to northbound State Route 4 would result in acceptable operations at this intersection. That improvement is not identified in the regional fee program. Should that improvement, or one of similar effectiveness, be added to the ECCRFFA program, the proposed project and other projects in Eastern Contra Costa County would pay their fair share towards its construction.

The project applicant will be required to participate in all applicable local and regional transportation impact fees, such as the ECCRFFA program, that would fund construction of roadway improvements in the study area, including further improvements to the Sand Creek Road interchange.

Table 11: Cumulative Conditions Peak Hour Intersection LOS Summary

Intersection	Control[1]	Peak Hour	Cumulative without Project		Cumulative with Project	
			Delay[2]	LOS	Delay[2]	LOS
1. Lone Tree Way at Hillcrest Avenue	Signal	AM PM	**69** **57**	**E** **E**	***79*** ***64***	***E*** ***E***
2. Lone Tree Way at Heidorn Ranch Road	Signal	AM PM	24 36	C D	24 36	C D
3. Sand Creek Road at Deer Valley Road	Signal	AM PM	20 20	B B	20 21	B C
4. Sand Creek Road at Hillcrest Avenue	Signal	AM PM	47 51	D D	47 52	D D
5. Sand Creek Road at Heidorn Ranch Road	Signal	AM PM	15 31	B C	15 37	B D
6. Sand Creek Road at State Route 4 Eastbound Ramps	Signal	AM PM	**95** **102**	**F** **F**	***97*** ***102***	***F*** ***F***
7. Sand Creek Road at State Route 4 Westbound Ramps	Signal	AM PM	**69** 28	**E** C	***74*** 29	***E*** C
8. Prewett Ranch Drive/Deer Valley Road	Signal	AM PM	**66** 24	**E** **C**	***66*** 25	***E*** C
9. Prewett Ranch Drive/Hillcrest Avenue	Signal	AM PM	32 16	C B	32 16	C B

Notes: **Bold** indicates potentially deficient operations. ***Bold Italics*** indicates potentially significant impact.
1. Signal = signalized intersection
2. Average intersection delay is calculated for all signalized intersections using the 2010 HCM method for vehicles.
Source: Fehr & Peers, 2020

Vehicle queues are expected to increase at study intersections as traffic volumes increase, which would further increase with the addition of Project traffic. Monitoring and adjusting traffic signal timings in response to actual traffic volumes to minimize the potential for vehicle queue spillback is recommended.

Daily Roadway Segment Operations

Cumulative traffic forecasts were developed for Prewett Ranch Drive based on the same procedures and assumptions described previously for intersections, with the resulting volumes shown in **Table 12**. Project trips were then estimated considering the changes to the roadway network in the cumulative condition with the project, and then added to the Cumulative without Project volumes. With the construction of the project roadway system, some existing trips that originate in the Dallas Ranch neighborhoods are expected to shift from traveling on Prewett Ranch Drive to Sand Creek Road. The percent increase in project trips was also calculated, with the results presented in **Table 12**.

Table 12: Cumulative Conditions Average Daily Roadway Segment Volumes

Segment	Cumulative Without Project Daily Traffic	Project Traffic	Cumulative With Project	Existing Daily Fluctuation[1]	Project Increase
1. Prewett Ranch Drive, east of Deer Valley Road	6,330	0	6,330	± 1.2%	0%
2. Prewett Ranch Drive at Diablo Vista Elementary School	3,130	0	3,130	± 1.8%	0%
3. Prewett Ranch Drive, west of Hillcrest Avenue	3,030	0	3,030	± 2.9%	0%

Notes: 1. Percent difference between the three days of data collection.
Source: Fehr & Peers, 2020

With completion of the Sand Creek Road corridor, and the resulting traffic shifts away from Prewett Ranch Drive, the segments of Prewett Ranch Drive between Deer Valley Road and Hillcrest Avenue are expected to experience levels of daily traffic appropriate for the roadway type. Additionally, the project is not expected to increase through traffic on Prewett Ranch Drive in the cumulative condition.

Cumulative Conditions Impacts and Mitigation

Four potential intersection impacts were identified in the cumulative condition.

Impact Statement 2: Intersection 1 – Lone Tree Way at Hillcrest Avenue

The Lone Tree Way at Hillcrest Avenue intersection operates at a deficient LOS E during the AM and PM peak hours prior to the addition of project traffic in the cumulative condition. The addition of project traffic would worsen operations and increase delay with full project buildout. Based on the significance criteria, this is considered a ***significant*** impact.

> ***Mitigation Measure 2:*** The Project Applicant shall implement improvements that would improve operations to LOS D within the existing right-of-way, which could include modifying the eastbound approach to provide two left-turn lanes, two through lanes and a through-right-shared lane through the reconstruction of the median, restriping, and signal modifications. The outside curbs may need to be modified to provide for appropriate lane-alignments. A reimbursement agreement could be established with the City of Antioch to collect proportionate shares from other developments that would benefit from this improvement. Implementation of this measure would reduce the project impact to a ***less-than-significant*** level, as shown in **Table 13.**

Impact Statement 3: Intersection 6 – Sand Creek Road at SR 4 EB Ramps

The Sand Creek Road at State Route 4 Eastbound Ramps intersection is projected to operate at a deficient LOS F in the AM and PM peak hour priors to the addition of project traffic in the cumulative condition. The addition of project-generated vehicle trips during the PM peak hour would increase average delay. Based on the significance criteria, this is considered a ***significant*** impact.

> ***Mitigation Measure 3:*** The project shall pay their proportionate share of the improvements that would improve operations through participation in the ECCRFFA regional fee program. Planned improvements include construction of a slip-ramp for the eastbound Sand Creek to southbound State Route 4 movement, eliminating the conflicting left-turn movement at the intersection.
>
> This improvement is included in the regional fee program and implementation of this improvement would result in overall acceptable service levels, reducing the projects impact to a ***less-than-significant*** level, as shown in Table 13. However, inclusion in the fee program does not assure that

the improvement would be constructed concurrent with the impact and the impact could remain ***significant and unavoidable*** until the improvement is constructed.

Impact Statement 4: Intersection 7 – Sand Creek Road at SR 4 WB Ramps

The Sand Creek Road at State Route 4 Westbound Ramps intersection is projected to operate at a deficient LOS E in the AM peak hour prior to the addition of project traffic in the cumulative condition. The addition of project-generated vehicle trips during the AM peak hour would increase average delay. Based on the significance criteria, this is considered a ***significant*** impact.

Mitigation Measure 4: The project shall pay 1.6 percent of improvements that would improve operations, or shall participate in the ECCRFFA regional fee program if improvements that would result in acceptable operations at this intersection are added to the fee program. Modifying the westbound approach to provide two through lanes and two right-turn only lanes would result in acceptable operations during the morning peak hour.

This improvement is not included in the regional fee program, such that payment of fees may not be sufficient to mitigate the impact. Additionally, ECCRFFA does not have a mechanism to collect fair-share payments for improvements not in the fee program. As the City of Antioch cannot assure that this project would be implemented, the impact would remain ***significant and unavoidable***.

Table 13: Cumulative with Project with Mitigation Conditions Peak Hour Intersection LOS Summary

Intersection	Control[1]	Peak Hour	Cumulative without Project		Cumulative with Project		Cumulative with Project with Mitigation	
			Delay[2]	LOS	Delay[2]	LOS	Delay[2]	LOS
1. Lone Tree Way at Hillcrest Avenue	Signal	AM PM	**69** **57**	**E** **E**	***74*** ***64***	***E*** ***E***	46 53	D D
6. Sand Creek Road at State Route 4 Eastbound Ramps	Signal	AM PM	**95** **102**	**F** **F**	***97*** ***102***	***F*** ***F***	21 30	C C
7. Sand Creek Road at State Route 4 Westbound Ramps	Signal	AM PM	**69** 28	**E** C	***74*** 29	***E*** C	36 23	D C

Notes: **Bold** indicates potentially deficient operations. ***Bold Italics*** indicates potentially significant impact.
1. Signal = signalized intersection
2. Average intersection delay is calculated for all signalized intersections using the HCM 2010 method for vehicles.
Source: Fehr & Peers, 2020

Impact Statement 5: Intersection 9 – Prewett Ranch Drive/Hillcrest Avenue

The Prewett Ranch Drive/Hillcrest Avenue intersection is projected to operate at a deficient LOS E in the AM peak hour prior to the addition of project traffic in the cumulative condition. The addition of project-generated vehicle trips during the AM peak hour would not increase average delay. Based on the significance criteria, this is considered a ***potentially significant*** impact.

> ***Mitigation Measure 5:*** This intersection has been built-out to its ultimate right-of-way, and the City of Antioch has not identified any improvement measures. Construction of both a westbound and eastbound right-turn lanes would result in LOS D operations, or construction of a southbound right-turn only lane. These improvements would require right-of-way acquisition, and would increase the pedestrian distance, and well as increase conflicts for bicyclists. As the project does not increase delay, and there are no feasible improvements, this impact is considered ***less-than-significant*** and no mitigation is required**.** Project traffic (16 trips) in the AM peak hour represents approximately 1.4 percent of growth, and 0.4% of total volume in the cumulative condition.

7. Freeway Analysis

The freeway analysis was conducted under existing, near-term and cumulative conditions based on the methodology outlined in Chapter 1 to determine travel volumes and associated speeds along the State Route 4 corridor from north of Lone Tree Way to south of Balfour Road.

Existing Conditions

Mainline traffic counts were conducted on State Route 4 south of Balfour Road in January 2019. Traffic volumes at the interchanges along the corridor were then used to estimate traffic volumes on the mainline segments from south of Balfour Road to north of Lone Tree Way. Project traffic volumes were then considered. The traffic volumes and number of travel lanes were used to calculate vehicle speeds using the HCM 2010 method, which were then used to calculate the delay index. The results were verified through travel time runs of the corridor during peak hours.

The results are presented in **Table 14** for the AM Peak Hour and **Table 15** for the PM peak hour. State Route 4 north of Sand Creek Road operates at free-flow speeds during both the morning and evening peak hours. With the recent widening of State Route 4 between Balfour Road and Sand Creek Road, and construction of an interchange, all mainline study freeway segments operate within the established service objective. With the addition of project traffic, these segments would continue to operate within the established service objective and the project's impact to freeway operations in the immediate project vicinity in the existing condition is considered less-than-significant.

However, there are greater levels of congestion on State Route 4 further west of the project site and the project would add vehicle traffic to these roadway segments. The project's percentage of overall traffic would be minimal, but it would contribute to worsening levels of congestion along the State Route 4 corridor.

Table 14: Existing Conditions Freeway Operations Summary – AM Peak Hour

Segment	Direction	Existing		Existing with Project	
		Volume	Delay Index	Volume	Delay Index
1. State Route 4, north of Lone Tree Way	SB	2,787	1.01	2,817	1.01
	NB	2,887	1.01	2,982	1.02
2. State Route 4, north of Sand Creek Road	SB	2,448	1.00	2,511	1.00
	NB	2,815	1.01	2,836	1.01
3. State Route 4, north of Balfour Road[3]	SB	2,009	1.00	2,042	1.00
	NB	2,014	1.00	2,025	1.00
4. State Route 4, south of Balfour Road	SB	1,201	1.20	1,231	1.25
	NB	940	1.03	950	1.03

Source: Fehr & Peers, 2020.

Table 15: Existing Conditions Freeway Operations Summary – PM Peak Hour

Segment	Direction	Existing		Existing with Project	
		Volume	Delay Index	Volume	Delay Index
1. State Route 4, north of Lone Tree Way	SB	3,711	1.11	3,814	1.14
	NB	2,975	1.02	3,038	1.02
2. State Route 4, north of Sand Creek Road	SB	3,185	1.03	3,227	1.04
	NB	2,932	1.02	3,005	1.02
3. State Route 4, north of Balfour Road[3]	SB	2,038	1.00	2,060	1.00
	NB	2,220	1.00	2,258	1.00
4. State Route 4, south of Balfour Road	SB	1,015	1.05	1,035	1.06
	NB	1,431	1.82	1,466	1.99

Source: Fehr & Peers, 2020.

Near-Term

Near-term freeway forecasts were developed based on the same method used to develop the near-term intersection forecasts, both without and with the project. Operations were evaluated using the same methods described previously. No freeway improvements were included in the evaluation of near-term freeway operations. The Near-term without and with Project analysis results are presented in **Table 16** and **Table 17** for the AM and PM peak hours, respectively, based on the estimates of near-term traffic volumes, plus estimates of project traffic. In the near-term condition, operations of State Route 4 between Marsh Creek Road and Balfour Road are expected to degrade beyond the standard set by CCTA; the addition of any traffic is considered a significant impact. All other freeway segments would continue to operate within acceptable standards.

Table 16: Near-term Conditions Freeway Operations Summary – AM Peak Hour

Segment	Direction	Near-Term		Near-Term with Project	
		Volume	Delay Index	Volume	Delay Index
1. State Route 4, north of Lone Tree Way	SB	3,316	1.04	3,328	1.05
	NB	3,594	1.08	3,632	1.09
2. State Route 4, north of Sand Creek Road	SB	2,970	1.02	2,982	1.02
	NB	3,414	1.06	3,452	1.06
3. State Route 4, north of Balfour Road	SB	2,731	1.01	2,749	1.01
	NB	2,387	1.00	2,393	1.00
4. State Route 4, south of Balfour Road	SB	**1,781**	**5.71**	**1,793**	**5.97**
	NB	1,254	1.28	1,258	1.29

Source: Fehr & Peers, 2020.

Table 17: Near-Term Conditions Freeway Operations Summary – PM Peak Hour

Segment	Direction	Near-Term		Near-Term with Project	
		Volume	Delay Index	Volume	Delay Index
1. State Route 4, north of Lone Tree Way	SB	4,636	1.65	4,677	1.70
	NB	3,562	1.08	3,580	1.08
2. State Route 4, north of Sand Creek Road	SB	3,870	1.15	3,911	1.17
	NB	3,465	1.06	3,483	1.07
3. State Route 4, north of Balfour Road	SB	2,698	1.01	2,710	1.01
	NB	2,804	1.01	2,819	1.01
4. State Route 4, south of Balfour Road	SB	1,494	2.15	1,502	2.20
	NB	**1,918**	**9.52**	**1,932**	**10.03**

Source: Fehr & Peers, 2020.

Cumulative

Cumulative freeway forecasts were developed based on the same method used to develop the cumulative intersection forecasts, both without and with the project. Operations were evaluated using the same methods described previously. The Cumulative without and with Project analysis results are presented in **Table 18** and **Table 19** for the AM and PM peak hours, respectively, based on the estimates of cumulative traffic volumes, plus estimates of project traffic. In the cumulative condition, all study segment are projected to operate within the desired standard, considering the widening of State Route 4 between Balfour Road to Marsh Creek Road to provide two lanes in each direction. Although the project impact to freeway facilities in the immediate project area are considered less than significant in the cumulative condition, the project would add to recurring congestion on the State Route 4 corridor through Antioch and Pittsburg.

Table 18: Cumulative Conditions Freeway Operations Summary – AM Peak Hour

Segment	Direction	Cumulative		Cumulative with Project	
		Volume	Delay Index	Volume	Delay Index
1. State Route 4, north of Lone Tree Way	SB	3,640	1.09	3,652	1.10
	NB	3,960	1.18	3,998	1.20
2. State Route 4, north of Sand Creek Road	SB	2,590	1.01	2,602	1.01
	NB	3,440	1.06	3,478	1.07
3. State Route 4, north of Balfour Road	SB	2,380	1.00	2,398	1.00
	NB	2,570	1.01	2,576	1.01
4. State Route 4, south of Balfour Road	SB	1,420	1.00	1,432	1.00
	NB	1,250	1.00	1,254	1.00

Source: Fehr & Peers, 2020.

Table 19: Cumulative Conditions Freeway Operations Summary – PM Peak Hour

Segment	Direction	Cumulative		Cumulative with Project	
		Volume	Delay Index	Volume	Delay Index
1. State Route 4, north of Lone Tree Way	SB	4,990	2.17	5,031	2.25
	NB	4,570	1.58	4,595	1.61
2. State Route 4, north of Sand Creek Road	SB	4,200	1.30	4,241	1.32
	NB	4,060	1.23	4,085	1.24
3. State Route 4, north of Balfour Road	SB	2,850	1.01	2,862	1.01
	NB	3,280	1.04	3,301	1.04
4. State Route 4, south of Balfour Road	SB	1,760	1.00	1,768	1.00
	NB	2,400	1.00	2,414	1.00

Source: Fehr & Peers, 2020.

Impact Statement 6: Regional Freeway Facilities

The project is expected to worsen the delay index along the State Route 4 corridor where deficient operations are projected to occur in the near-term condition; this is considered a ***significant*** impact. Additionally, the project would contribute to worsening congestion on other segments of State Route 4 not explicitly evaluated.

Mitigation Measure 6: The project applicant shall pay their fair share towards freeway improvement projects in the area, including the widening of State Route 4 between Balfour Road and Marsh Creek Road through the payment of the regional transportation impact fees to the East Contra Costa Regional Fee and Financing Authority (ECCRFFA). However, as the timing of construction of this improvement is uncertain, this impact would remain ***significant and unavoidable*** until the improvement is constructed.

8. Site Plan Review

This chapter analyzes site access and internal circulation for vehicles, pedestrians, bicycles, and emergency vehicles based on the site plan presented previously on Figure 2.

Vehicular Site Access and Circulation

Access to the project site would be provided by an extension of Hillcrest Avenue from south of Sand Creek Road to the southern property line. Two roadway connections to the Hillcrest Avenue extension would be constructed to provide access to individual neighborhoods. Ultimately Hillcrest Avenue would be a four lane roadway, consistent with the direction provided in the City of Antioch General Plan, with the remaining roadways within the project site developed as two-lane roadways.

Hillcrest Avenue through the site is proposed to provide a 112-foot right-of-way, which would include 6-foot sidewalk and 9.5-foot landscape buffer on the east side of the street, a 15-foot landscape strip on the west side of the street, and 8-foot bicycle lane, and two 12-foot travel lanes in each direction plus a 16-foot median that would allow for turn pockets to be provided at intersections. Along some portions of the street section, an additional 20-feet of landscaping outside the public right-of-way is also proposed on the east side of the street.

B Street at the main entry way would also provide a 112-foot right-of-way with a 19.5-landscape/sidewalk area, a 14-foot median, and a 28-foot inbound travel and a 30-foot outbound travel lane. At the entry gate area, the travel lanes would decrease to 20-feet in each direction.

Neighborhood Streets are proposed with a typical right-of-way of 42-feet with 4-foot sidewalk on one-side of the streets, and an 8-foot parking lane and one 10-foot travel lane in each direction.

Initially, Hillcrest Avenue is proposed to be constructed as a two lane facility between Sand Creek Road and the southern property line. Analysis results in the near-term condition indicate that the intersection of Sand Creek Road at Hillcrest Avenue would operate acceptably in the near-term condition with a single northbound/southbound through lane (Table 9). Based on the traffic forecasts presented in Chapter 6, operations of the project access intersections was evaluated considering a four lane and a two lane Hillcrest Avenue, with the results presented in **Table 20**. The project access intersections would operate within acceptable level of service ranges with side-street stop-control with Hillcrest Avenue aa two lane facility through the cumulative condition.

Table 20: Cumulative With Project Conditions Site Access Intersection LOS Summary

Intersection	Peak Hour	Two Lane Hillcrest Side-Street Stop-Control		Four Lane Hillcrest Side-Street Stop-Control	
		Delay[2]	LOS	Delay[2]	LOS
10. Hillcrest Avenue at B Street	AM PM	3 (11) 3 (11)	A (B) A (B)	3 (10) 3 (9)	A (A) A (A)
11. Hillcrest Avenue at I Street	AM PM	0 (11) 0 (11)	A (B) A (B)	0 (10) 0 (11)	A (A) A (B)

Notes:
1. Signal = signalized intersection
2. Delay is based on 2010 HCM method for vehicles.
Source: Fehr & Peers, 2020.

Since the preparation of the initial project site plan and this transportation impact analysis for the Vineyards at Sand Creek, voters in the City of Brentwood defeated Measure L that would have permitted the construction of the Vineyards at Deer Creek project. That project would have extended Hillcrest Avenue from the southern property line to Balfour Road as a private roadway, in conjunction with other development. As Measure L was defeated, development of that parcel and extension of Hillcrest Avenue to the south of the project site is not expected to occur until there is a successful referendum.

As construction of Hillcrest Avenue to the south of the project site connecting to Balfour Road is not reasonably feasible, Hillcrest Avenue through the site would only need to accommodate traffic generated by the proposed project, and the near-term roadway network would operate acceptably through the longer-term condition. However, right-of-way to provide a four-lane Hillcrest Avenue cross-section through the project site should be reserved such that the roadway could be widened if Hillcrest Avenue is ever extended to Balfour Road.

Gated Access Assessment

Access to residential neighborhoods is proposed to be gated, with residents able to enter the neighborhood using an access code. Visitors would be able to call the resident they are visiting to gain access to the neighborhood. Should the resident they are visiting not be available to permit access, a vehicle turnaround area is provided such that vehicles would not have to back out of the entry roadway. Routine delivery drivers, such as USPS and emergency services would be provided an access code.

Based on the projected trip generation, three to four vehicles per minute are expected to seek entry into the project in the peak 15-minute period of the weekday peak hour. As each entry transaction from a resident is not expected to take more than a few seconds, the potential for vehicle queues to form from the

access gate to Hillcrest Avenue is statistically low as there is space for four to five vehicles to queue from the access podium to Hillcrest Avenue.

Alternative Albers Access

Projected peak hour turning movement forecasts at the roadway connections were presented on Figure 14, which are based on access to the Albers Property (located immediately west of the project site) occurring from a connection to the future Sand Creek Road, as shown in the City of Antioch General Plan. Access to the Albers Property may be sought through the project site, connecting to "I Street". Although a General Plan Amendment would be required to change site access, a supplemental analysis was conducted as changes to the Albers Property access could result in potential impacts to the proposed project.

Traffic forecasts were developed for the cumulative condition for the intersections along the project frontage as well as Sand Creek Road at Hillcrest Avenue intersection considering access to the Albers Property through I Street, with the resulting forecasts for the without and with project condition presented on **Figure 15**. The volumes presented on Figure 15 also consider development of the Vineyards at Deer Creek project to the south for a worst case scenario assessment as that parcel may eventually be developed. For the purposes of this analysis, access to the Vineyards at Deer Creek site would be restricted to residents of that development only as Hillcrest Avenue was proposed to be a gated private roadway through the Vineyards at Deer Creek site.

Analysis was conducted for the three intersections of internal streets with Hillcrest avenue assuming side-street stop-control with both a two lane and four lane Hillcrest Avenue, as presented in **Table 21**. As shown, site access intersections are projected to operate at acceptable service levels under either a two-lane or four-lane Hillcrest Avenue scenario with side-street stop-control, based on the traffic forecasts presented on **Figure 15.** Operations of the Hillcrest Avenue at Sand Creek Road intersection would worsen slightly if access to Albers Ranch is provided through the project site, however, the intersection would continue to operate within the level of service standard.

The analysis results show that with all access to the Albers Property through I Street, the intersections along Hillcrest Avenue through the project site would continue operate within the City's established level of service criteria on a peak hour basis with Hillcrest Avenue as a two-lane or four-lane facility. However, there could be secondary impacts to houses along Street I with additional through traffic and front on-housing.

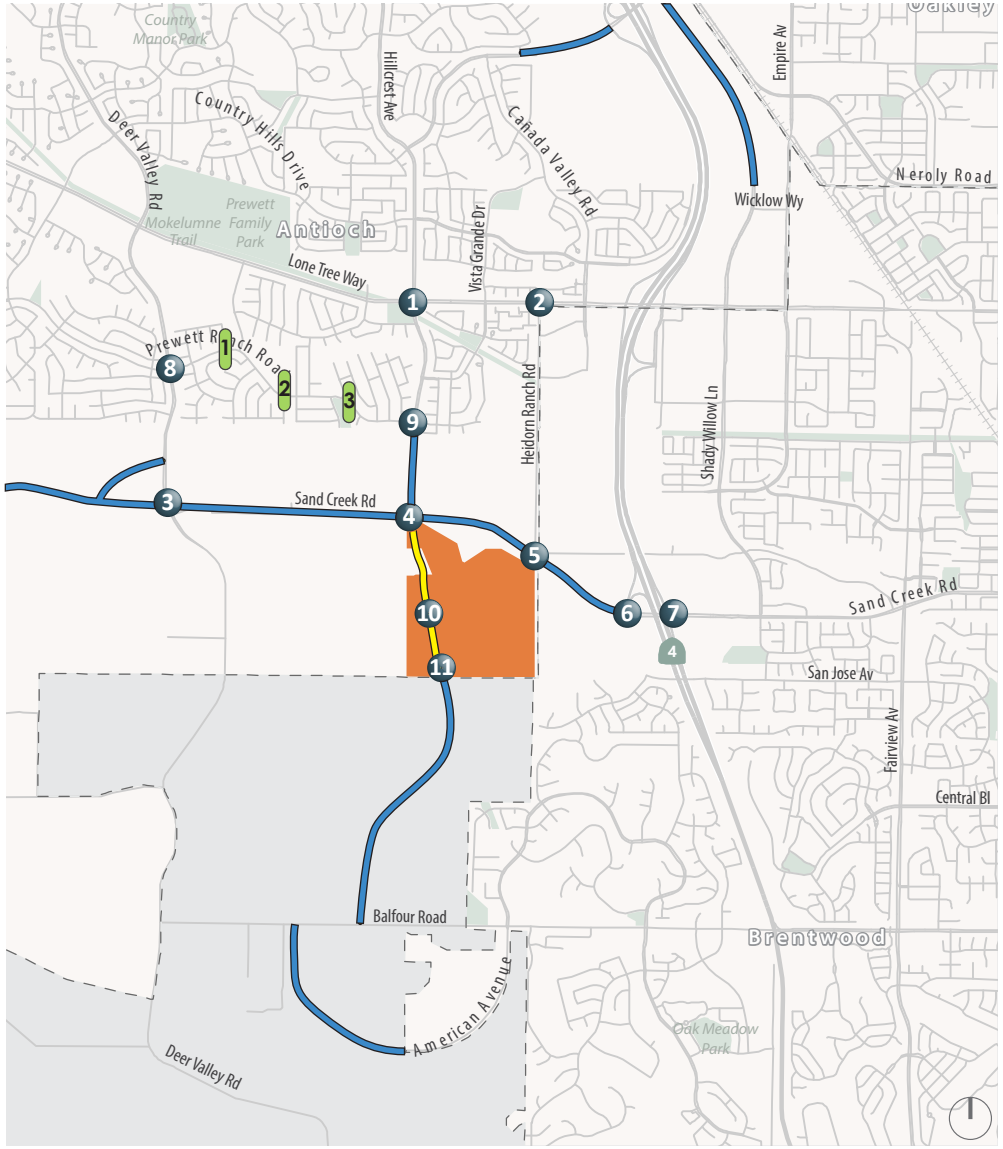
Table 21: Cumulative Alternatives Albers Access With Project Conditions Site Access Intersection LOS Summary

Intersection	Peak Hour	Two Lane Hillcrest Side-Street Stop-Control		Four Lane Hillcrest Side-Street Stop-Control	
		Delay[2]	LOS	Delay[2]	LOS
4. Hillcrest Avenue at Sand Creek Road (signalized)	AM PM	N/A	N/A	45 50	D D
12. Hillcrest Avenue at B Street	AM PM	2 (12) 2 (11)	A (B) A (B)	2 (11) 2 (10)	A (B) A (A)
13. Hillcrest Avenue at I Street	AM PM	5 (13) 3 (16)	A (B) A (C)	4 (12) 3 (14)	A (B) A (B)

Notes:
1. Signal = signalized intersection
2. Delay is based on 2010 HCM method for vehicles.
Source: Fehr & Peers, 2020.

Site Recommendation 1: Construct one lane in each direction along Hillcrest Avenue, but reserve sufficient right-of-way to provide a four-lane cross-section should Hillcrest Avenue to the south of the project site ever be extended to Balfour Road as a non-gated Public Roadway. Conduct a detailed sight-distance review for each of the proposed access intersections as the project plans are finalized. Although the intersections would operate within acceptable service level standards, there could be sight-distance constraints that would require signalization.

Should access to the Albers Property be provided through Street I, traffic volumes on I Street could exceed the desired levels for a neighborhood street (over 3,000 vehicles per day). Should the Albers Property sole access be provided through I Street, modifications to that project to reduce the overall levels of traffic added to I Street may be required. Additional improvements may also be required along Hillcrest Avenue.



XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Project Site

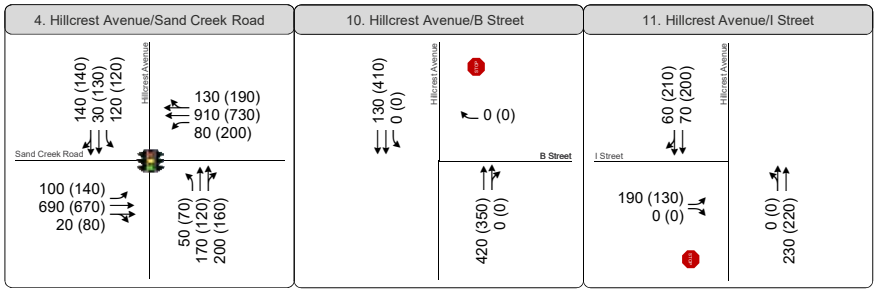
Study Intersection

Study Roadway Segment

Roadway Constructed as Part of Project

Roadway to be Constructed by Others by Cumulative Condition

Cumulative without Project with Albers Alt Access



Cumulative with Project with Albers Alt Access

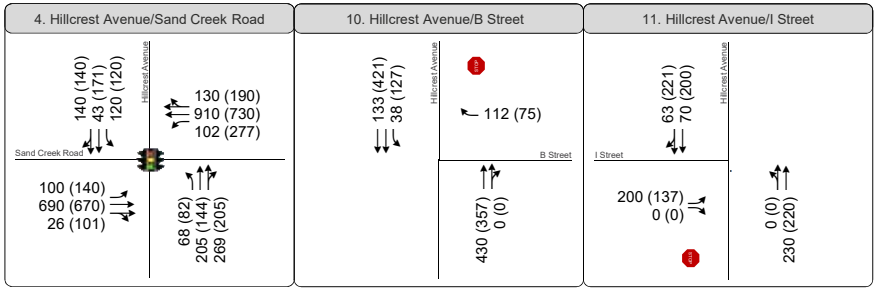


Figure 15

Cumulative with Alternate Albers Property Access Peak Hour Internal Intersection Traffic Volumes

Emergency Vehicle Access

Several factors determine whether a project has sufficient access for emergency vehicles, including:

1. Number of access points (both public and emergency access only)
2. Width of access points
3. Width of internal roadways

Each of these factors is discussed in further detail below.

Based on the *2016 California Fire Code* as amended by Contra Costa County Ordinance 2016-23, the minimum number of access roads serving residential development(s) shall be based upon the number of dwelling units served as follows:

- Multiple Family Residential Projects having more than 100 dwelling units should be provided with two separated and approved fire apparatus access roads (D106.1). ***Exception***: Projects having up to 200 dwelling units may have a single approved fire apparatus access road when all buildings, including nonresidential occupancies, are equipped throughout with approved automatic sprinkler systems installed in accordance with Section 903.3.1.1 or 903.3.1.2.
- Multiple Family Residential Projects having more than 200 dwelling units shall be provided with two separate and approved fire apparatus access roads regardless of whether they are equipped with an approved automatic sprinkler system.
- Development of one or two-family dwellings where the number of dwelling units exceed 30 shall be provided with two separate and approved fire apparatus access roads; where there are more than 30-dwelling units on a single public or private fire apparatus access road and all dwelling units are equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3 of the *California Fire Code*, access from two directions shall not be required (D107.1).
- Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses.

Primary access to the project site would be from Hillcrest Avenue to the north via a single 44-foot bridge in the existing and near-term condition. Emergency vehicle access would also be provided via a new 20-foot pedestrian bridge over Sand Creek. Emergency vehicle access could also be provided through the Albers Property. Most neighborhoods have two means of accessing the neighborhood, considering the roadway connection on Hillcrest Avenue and the emergency vehicle access provided from a new pedestrian bridge over Sand Creek. All homes would also provide automatic sprinkler systems.

Site Recommendation 2: The project applicant shall consult with the Contra Costa County Fire Protection District to determine if the proposed emergency access meets their requirements.

Cross-sections for the proposed streets within the project site were reviewed. All street sections provide a minimum of 20-feet of clearway (meaning no obstructions in terms of parked vehicles, landscaping, etc), such that sufficient width is provided for emergency vehicle access and circulation.

Pedestrian Access and Circulation

Several roadway types are proposed within the development, including arterial, collector, and local. Arterial (Hillcrest Avenue) roadways would provide a six-foot sidewalk on one side of the street. Collector (B Street Entry Way) would provide a five-foot sidewalk on both sides of the street. On local streets, a four-foot sidewalk is proposed for one side of the street. A network of trails is also proposed through the site, with a minimum trail width of 10-feet.

Site Recommendation 3: As site plans for individual neighborhoods are developed, pedestrian paths should be identified and marked-crosswalks installed at key uncontrolled pedestrian crossing locations, such as at trail crossings and park connections. A high-visibility crosswalk across Hillcrest Avenue at I Street should be provided to connect the residents of the I Street neighborhood to the remainder of the pedestrian system.

Bicycle Access and Circulation

Class II bicycle lanes would be constructed on Hillcrest Avenue A number of off-street trails would also be constructed. The on-street Class II bicycle facilities are proposed to provide a 8-foot bicycle lanes adjacent to 12-foot travel lanes.

Site Recommendation 4: As vehicle speeds could exceed 25-miles per hour on four lane roadways, consider reallocating the pavement cross-section to provide a painted buffer between the bicycle lanes and the vehicular travel way. Reducing the travel lane width to 10.5-feet each would allow for a 3-foot buffer between the bicycle lanes and the vehicular travel-way on the proposed arterial streets.

Transit Access Adjacent to Site

Although there is currently not transit service in the vicinity of the project site, residents aged 65 and older are able to access Senior Paratransit services through Tri Delta Transit and paratransit service would be provided to disabled residents who are not able to independently use fixed-route service. However, it is expected that residents who do not qualify for senior or paratransit services, employees or visitors to the site may desire to use transit at some point. Consultation should occur with Tri Delta Transit to identify potential transit amenities within and adjacent to the development. Additionally, some residents may rely on ride hailing services. As the project has restricted access, guidelines should be established that would permit authorized ride hailing services to access passengers.

> ***Site Recommendation 5:*** As the final site plan is developed, consult with TriDelta Transit to determine if transit facilities should be provided along Hillcrest Avenue through the site. Consider providing pedestrian passages through cul-de-sacs and other potential barriers to minimize pedestrian walking distances to future transit stops along Hillcrest Avenue.

CEQA Checklist Review

This section provides a summary of the potential project impacts related to bicycles, pedestrians, and transit based on the discussions in previous chapters as compared to the significance criteria outlined in Chapter 1, and summarized for each topic area, as presented in **Table 22**.

Table 22: CEQA Checklist Review

Significance Criteria	Discussion	Mitigation
A pedestrian impact is considered significant if the project would:		
Disrupt existing pedestrian facilities	Pedestrian access is not currently provided in the area, such that pedestrian access in the area is not expected to be disrupted during the project construction phase.	None required.
Interfere with planned pedestrian facilities	The project would construct pedestrian facilities along all roadways within the project site, with sidewalks and pedestrian crossings	None required.

Table 22: CEQA Checklist Review

Significance Criteria	Discussion	Mitigation
	constructed to meet City standards, completing the sidewalk network in this area.	
Create inconsistencies with adopted pedestrian system plans, guidelines, policies, or standards	Sidewalks along the project boundary and through the project site would be constructed to current City standards.	None Required. Although the project would not conflict with planned facilities, recommendations to enhance pedestrian facilities within the site were identified.
A bicycle impact is considered significant if the project would:		
Disrupt existing bicycle facilities	The project does not propose to eliminate existing bicycle facilities in the vicinity of project.	None required.
Interfere with planned bicycle facilities	Class II bicycle facilities would be provided along all arterial roadways within the project site. Class I facilities will also be provided throughout the project site, which would be constructed to City standards.	None required.
Create inconsistencies with adopted bicycle system plans, guidelines, policies, or standards	Should signalized intersections be installed as part of the project, they would incorporate bicycle detection and other bicycle friendly elements as required by City Code.	None Required. Although the project would not conflict with planned facilities, recommendations to enhance bicycle facilities within the site were identified.
A transit impact is considered significant if the project would:		
The project interferes with existing transit facilities or precludes the construction of planned transit facilities	Construction of the proposed project would not interfere with existing transit routes, nor would it preclude the provision of future transit routes in the study area.	None required.
Other Transportation Effects not addressed in other Chapters		
An impact could occur if the project conflicts or is inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	This section of the CEQA guidelines relates to the assessment of vehicle miles of travel generated by the project. An assessment of this metric is detailed in Chapter 9. Based on the OPR guidelines, the project impact to vehicle miles of travel would be significant. **(Impact 7)**	**Mitigation Measure 7:** No feasible VMT mitigation was identified. Therefore, this impact would remain ***significant and unavoidable***.

Table 22: CEQA Checklist Review

Significance Criteria	Discussion	Mitigation
An impact could occur if the project substantially increases traffic hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses.	An increase in hazardous road conditions could occur if the site circulation design does not meet City of Antioch standards or the project adds traffic to a roadway that does not meet current design standards. Roadways within the project site would be designed to meet City of Antioch standards. The project would add traffic to Deer Valley Road which is currently an unimproved rural roadway south of Sand Creek Road. **(Impact 8)**	**Mitigation Measure 8.** The project applicant shall pay their fair share towards improvements on Deer Valley Road between Sand Creek Road and Balfour Road. Implementation of this measure would reduce the impact to a ***less-than-significant*** level.
An impact could occur if the project results in inadequate emergency access	Access to the site would be provided from Hillcrest Avenue to the north in the near-term condition, in addition to a pedestrian bridge over Sand Creek that would also serve as an Emergency Vehicle Access roadway. The Contra Costa Fire Protection Districted is required to review the project site plans for conformance with the Fire Code.	None required.

Source: Fehr & Peers, 2020.

9. Vehicle Miles of Travel

In response to Senate Bill 743 (SB 743), the Office of Planning and Research (OPR) has updated California Environmental Quality Act (CEQA) guidelines to include new transportation-related evaluation metrics. Draft guidelines were developed in August 2014, with updated draft guidelines prepared January 2016, which incorporated public comments from the August 2014 guidelines. OPR released final proposed Guidelines on November 27, 2017, with an associated Technical Advisory Document on Evaluating Transportation Impacts in CEQA dated December 2018. The updated guidelines were finalized in January 2019 by the Natural Resources Agency, which includes a new Section 15064.3 on VMT analysis and thresholds for land use developments. New Guidelines Section 15064.3 states that they do not take effect until July 1, 2020 unless the lead agency adopts them earlier.

Although neither the City of Antioch nor the Contra Costa Transportation Authority (CCTA) has established any standards or thresholds on VMT, OPR suggests that residential projects that generate vehicle miles of travel per capita at 15 percent less than the existing City or regional average could be considered less than significant. As no other standards have been established, the OPR guidelines is used as the criteria for this assessment until the City of Antioch or CCTA establish local standards.

CEQA Guidelines

Changes to Appendix G of the CEQA guidelines were finalized in January 2019, with methods for evaluating transportation impacts detailed in the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018)[8] The following provides the information relevant to this project:

Text of Amendments to Appendix G

b) For a land use project, would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(1)?

(b) Criteria for Analyzing Transportation Impacts.

(1) Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop

[8] Full document can be found here:
http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

or a stop along an existing high quality transit[9] corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be considered to have a less than significant transportation impact.

OPR has established a draft threshold for the evaluation of residential, office and retail trips. For those uses, developments that have an estimated vehicle miles of travel 15 percent below **existing regional** (office and residential if the number of residential units exceeds allotted amount in the Sustainable Communities Strategy (SCS)) **and/or city** (residential if the number of residential units is within allotted amount in the (SCS) **VMT/capita** (work-based) would be considered less than significant. For retail uses, a net-increase in VMT would be considered significant.

Analysis Methods

To conduct the VMT assessment, Fehr & Peers used the CCTA travel demand model as well as information from the Metropolitan Transportation Commission (MTC). The CCTA model was used to estimate average daily vehicle miles of travel for proposed project residents, while MTC data[10] was used to establish average trip lengths for existing residential uses in Antioch. The existing average daily VMT per resident for the City of Antioch, Contra Costa County and the Bay Area based on the MTC data are presented in **Table 23.** Home based trips in Antioch and Contra Costa County are slightly higher than the Bay Area average.

Table 23: Existing Average Daily VMT Per Resident

Land Use Type	Antioch	Contra Costa County	Bay Area
Home Based VMT	17.9	18.0	15.3

Source: MTC, Fehr & Peers, 2019.

Analysis Results

A select zone analysis was conducted using the CCTA model whereby all the trips generated by the residential portion of the project were tracked through the transportation system. Based on this analysis, each resident of the non-restricted single-family project is estimated to generate approximately **24.5**

[9] A high-quality transit corridor is a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours. A project shall be considered to be within one-half mile of a major transit stop or high-quality transit corridor if all parcels within the project have no more than 25 percent of their area farther than one-half mile from the stop or corridor and if not more than 10 percent of the residential units or 100 units, whichever is less, in the project are farther than one-half mile from the stop or corridor.

[10] http://analytics.mtc.ca.gov/foswiki/Main/PlanBayAreaVmtPerCapita

vehicle miles of travel per day. This includes all trips that either start or end at home. This level of vehicle travel is higher than the City of Antioch average as well as the Bay Area Average. This increase in vehicle miles of travel as compared to the Citywide average is due to the projects distance from major employment centers as well as the relative distance to other destinations as compared to other parts of the City and region.

Should the project ultimately contain age-restricted single-family homes, the absolute level of vehicle miles of travel would be less than an unrestricted single-family home development as there tend to be fewer persons per household in age-restricted homes. Additionally, the VMT on a per resident basis could be less from an age-restricted home as residents would tend to have fewer work-related trips over time than in an unrestricted community. Additionally, depending on the final mixture of land uses ultimately constructed within the City of Brentwood Priority Area 1, additional employment and commercial opportunities would be placed within close proximity to the proposed project site.

VMT Conclusions

Results of the VMT analysis indicate that the project would increase VMT as compared to the City and regional averages, which may be a significant impact.

Impact 7: Results of the VMT analysis indicate that the project would contribute to an increase in vehicle miles of travel on a per-capita basis as the project adds a housing development that would require residents to travel longer-than-average distances to meet their daily needs. Future project residents are expected to generate approximately 24.5 vehicle miles of travel per resident per day, which is higher than the existing Citywide or regional averages. Based on the OPR guidance this would be considered a ***significant impact***.

> ***Mitigation Measure 7:*** No feasible mitigation measures have been identified that would reduce the projects vehicle miles of travel to a level less than 15 percent below baseline condition. While provision of transit service to the site could slightly reduce VMT per resident, the land use context of the project makes meaningful reductions in VMT difficult to achieve. Therefore, the VMT impact would remain ***significant and unavoidable***.

Appendix

Appendix A: Traffic Counts

National Data & Surveying Services

Intersection Turning Movement Count

Location: Hillcrest Ave & Lone Tree Way
City: Antioch
Control: Signalized

Project ID: 19-08022-001
Date: 1/29/2019

Total

NS/EW Streets:	Hillcrest Ave				Hillcrest Ave				Lone Tree Way				Lone Tree Way				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	2	2	1	0	1	2	1	0	1	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	4	9	3	0	20	3	9	1	8	37	1	0	2	45	3	0	145
6:15 AM	3	11	2	0	28	2	8	3	5	37	2	2	1	61	2	0	167
6:30 AM	8	4	1	0	41	5	8	6	5	50	2	2	0	76	11	0	219
6:45 AM	4	6	2	0	42	4	13	7	6	48	0	2	1	105	11	0	251
7:00 AM	2	5	6	0	36	9	9	8	6	57	0	0	6	85	13	0	242
7:15 AM	5	10	4	0	40	12	23	9	14	70	1	0	0	117	18	0	323
7:30 AM	9	13	4	0	45	11	79	4	26	114	6	1	12	176	29	0	529
7:45 AM	16	18	3	0	74	24	41	12	51	159	1	5	5	223	33	0	665
8:00 AM	4	14	4	0	59	11	39	17	38	124	5	5	5	173	37	0	535
8:15 AM	6	10	9	0	58	19	38	20	24	121	1	3	7	203	41	0	560
8:30 AM	9	12	5	0	48	21	72	16	24	109	0	1	12	211	32	0	572
8:45 AM	7	12	16	0	57	9	63	18	49	133	2	2	5	186	24	0	583
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	77	124	59	0	548	130	402	121	256	1059	21	23	56	1661	254	0	4791
APPROACH %'s :	29.62%	47.69%	22.69%	0.00%	45.63%	10.82%	33.47%	10.07%	18.84%	77.92%	1.55%	1.69%	2.84%	84.27%	12.89%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	35	54	21	0	239	75	190	65	137	513	7	14	29	810	143	0	2332
PEAK HR FACTOR :	0.547	0.750	0.583	0.000	0.807	0.781	0.660	0.813	0.672	0.807	0.350	0.700	0.604	0.908	0.872	0.000	0.877
	0.743				0.906				0.777				0.941				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	2	2	1	0	1	2	1	0	1	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:00 PM	8	13	13	1	105	24	39	24	106	242	11	1	12	220	48	0	867
3:15 PM	6	13	11	0	90	19	17	30	61	217	4	2	15	211	46	1	743
3:30 PM	9	18	9	0	73	17	29	23	37	221	9	4	15	216	49	0	729
3:45 PM	6	10	12	0	77	23	12	40	36	197	4	5	15	238	60	0	735
4:00 PM	5	12	13	0	74	18	20	25	32	190	4	3	14	203	51	0	664
4:15 PM	8	14	7	0	70	19	15	31	26	173	10	1	12	179	52	1	618
4:30 PM	8	15	8	0	96	17	24	43	35	203	1	1	16	227	54	1	749
4:45 PM	10	10	15	0	94	18	19	37	41	196	2	5	22	220	50	0	739
5:00 PM	8	9	9	0	86	28	23	31	35	212	3	1	15	207	59	0	726
5:15 PM	4	13	4	0	87	22	30	39	47	208	9	3	15	197	60	0	738
5:30 PM	9	7	4	0	84	16	29	38	52	231	5	2	10	191	63	2	743
5:45 PM	7	13	8	0	69	23	38	40	39	181	9	3	18	186	60	0	694
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	88	147	113	1	1005	244	295	401	547	2471	71	31	179	2495	652	5	8745
APPROACH %'s :	25.21%	42.12%	32.38%	0.29%	51.67%	12.54%	15.17%	20.62%	17.53%	79.20%	2.28%	0.99%	5.37%	74.90%	19.57%	0.15%	
PEAK HR :	03:00 PM - 04:00 PM																TOTAL
PEAK HR VOL :	29	54	45	1	345	83	97	117	240	877	28	12	57	885	203	1	3074
PEAK HR FACTOR :	0.806	0.750	0.865	0.250	0.821	0.865	0.622	0.731	0.566	0.906	0.636	0.600	0.950	0.930	0.846	0.250	0.886
	0.896				0.836				0.803				0.915				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Heidorn Ranch Rd & Lone Tree Way
City: Antioch
Control: Signalized

Project ID: 19-08022-002
Date: 1/29/2019

Total

NS/EW Streets:	Heidorn Ranch Rd				Heidorn Ranch Rd				Lone Tree Way				Lone Tree Way				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	1	1	0	1	1	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	1	2	0	0	0	0	0	0	98	4	0	5	55	0	0	165
6:15 AM	3	0	0	0	3	0	0	0	0	108	3	0	2	66	0	1	186
6:30 AM	4	0	1	0	3	1	1	0	0	124	4	0	18	92	0	0	248
6:45 AM	2	1	2	0	3	0	1	0	0	145	6	0	16	126	1	0	303
7:00 AM	2	0	1	0	5	2	1	0	1	132	3	0	12	110	0	0	269
7:15 AM	4	1	3	0	4	0	2	0	0	156	7	0	9	146	1	0	333
7:30 AM	3	1	5	0	5	0	1	0	1	212	6	0	11	206	6	0	457
7:45 AM	3	0	4	0	7	0	1	0	0	303	6	0	12	283	3	0	622
8:00 AM	4	0	9	0	5	0	0	0	1	240	9	0	12	249	5	1	535
8:15 AM	17	0	28	0	2	0	0	0	0	185	31	0	23	282	3	0	571
8:30 AM	13	0	17	0	3	0	0	0	1	186	15	0	10	284	2	0	531
8:45 AM	12	2	7	0	2	0	1	0	1	218	17	0	14	217	2	1	494
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	67	6	79	0	42	3	8	0	5	2107	111	0	144	2116	23	3	4714
APPROACH %'s :	44.08%	3.95%	51.97%	0.00%	79.25%	5.66%	15.09%	0.00%	0.22%	94.78%	4.99%	0.00%	6.30%	92.56%	1.01%	0.13%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	37	0	58	0	17	0	1	0	2	914	61	0	57	1098	13	1	2259
PEAK HR FACTOR :	0.544	0.000	0.518	0.000	0.607	0.000	0.250	0.000	0.500	0.754	0.492	0.000	0.620	0.967	0.650	0.250	0.908
	0.528				0.563				0.790				0.949				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	1	1	0	1	1	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:00 PM	33	2	20	0	2	0	1	0	3	359	33	0	18	266	11	3	751
3:15 PM	28	0	36	0	3	0	3	0	0	351	32	0	25	293	9	4	784
3:30 PM	46	2	47	0	1	1	1	0	3	298	26	0	20	316	5	1	767
3:45 PM	41	0	26	0	7	1	2	0	4	323	32	0	18	319	12	1	786
4:00 PM	30	1	23	0	7	1	2	0	2	304	23	1	20	265	8	6	693
4:15 PM	36	1	22	0	8	2	2	0	0	312	17	0	15	303	7	3	728
4:30 PM	30	1	22	0	5	1	2	0	1	335	16	0	22	290	9	1	735
4:45 PM	29	0	24	0	8	0	1	0	1	346	23	0	16	301	3	0	752
5:00 PM	44	2	15	0	4	2	1	0	2	364	23	1	12	287	5	4	766
5:15 PM	36	1	22	0	12	1	4	0	2	324	27	0	10	287	6	3	735
5:30 PM	40	2	20	0	4	3	1	0	2	312	20	0	12	266	5	6	693
5:45 PM	25	3	22	0	7	2	1	0	3	284	27	0	10	293	9	4	690
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	418	15	299	0	68	14	21	0	23	3912	299	2	198	3486	89	36	8880
APPROACH %'s :	57.10%	2.05%	40.85%	0.00%	66.02%	13.59%	20.39%	0.00%	0.54%	92.35%	7.06%	0.05%	5.20%	91.52%	2.34%	0.95%	
PEAK HR :	03:00 PM - 04:00 PM																TOTAL
PEAK HR VOL :	148	4	129	0	13	2	7	0	10	1331	123	0	81	1194	37	9	3088
PEAK HR FACTOR :	0.804	0.500	0.686	0.000	0.464	0.500	0.583	0.000	0.625	0.927	0.932	0.000	0.810	0.936	0.771	0.563	0.982
	0.739				0.550				0.927				0.944				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Deer Valley Rd & Sand Creek Rd
City: Antioch
Control: Signalized

Project ID: 19-08022-003
Date: 1/29/2019

Total

NS/EW Streets:	Deer Valley Rd				Deer Valley Rd				Sand Creek Rd				Sand Creek Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0.5	0.5	0	1	0.5	0.5	0	0	1	0	0	0.5	0.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	10	1	0	5	27	1	0	0	0	0	0	0	0	1	0	45
6:15 AM	0	7	6	0	1	32	0	0	0	0	0	0	1	0	0	0	47
6:30 AM	0	13	7	0	13	54	0	0	0	0	0	0	2	0	1	0	90
6:45 AM	0	24	30	0	13	53	0	0	0	0	0	0	1	0	4	0	125
7:00 AM	0	27	2	0	18	60	0	0	0	0	0	0	2	0	11	0	120
7:15 AM	0	52	5	0	44	109	0	0	0	0	0	0	4	0	19	0	233
7:30 AM	0	59	14	0	128	102	0	2	0	0	0	0	15	0	84	0	404
7:45 AM	0	89	7	0	71	112	0	0	1	0	0	0	3	0	108	0	391
8:00 AM	0	93	7	0	34	59	1	0	0	1	0	0	5	1	76	0	277
8:15 AM	0	123	22	0	45	37	0	1	0	0	0	0	2	0	30	0	260
8:30 AM	0	50	14	0	109	43	0	0	0	0	0	0	5	0	63	0	284
8:45 AM	0	59	9	0	33	39	0	0	0	0	0	0	4	0	50	0	194
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	606	124	0	514	727	2	3	1	1	0	0	44	1	447	0	2470
APPROACH %'s :	0.00%	83.01%	16.99%	0.00%	41.25%	58.35%	0.16%	0.24%	50.00%	50.00%	0.00%	0.00%	8.94%	0.20%	90.85%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	364	50	0	278	310	1	3	1	1	0	0	25	1	298	0	1332
PEAK HR FACTOR :	0.000	0.740	0.568	0.000	0.543	0.692	0.250	0.375	0.250	0.250	0.000	0.000	0.417	0.250	0.690	0.000	0.824
		0.714				0.638				0.500				0.730			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0.5	0.5	0	1	0.5	0.5	0	0	1	0	0	0.5	0.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:00 PM	0	94	13	0	38	90	0	6	0	0	0	0	16	0	74	0	331
3:15 PM	0	132	14	0	23	86	0	1	0	0	0	0	13	0	35	0	304
3:30 PM	0	97	10	0	16	68	0	1	0	0	0	0	27	0	30	0	249
3:45 PM	0	89	12	0	13	58	0	0	0	0	0	0	13	0	31	0	216
4:00 PM	0	57	10	0	10	67	0	1	1	0	0	0	21	0	29	0	196
4:15 PM	0	67	8	0	4	54	0	0	1	0	0	0	15	0	12	0	161
4:30 PM	0	65	7	0	6	76	0	0	2	0	0	0	24	0	7	0	187
4:45 PM	0	65	11	0	3	68	0	0	0	0	0	0	13	0	8	0	168
5:00 PM	0	74	3	0	4	67	0	0	0	0	0	0	23	0	13	0	184
5:15 PM	0	60	4	0	6	70	0	0	1	0	0	0	18	0	7	0	166
5:30 PM	0	58	4	0	4	68	0	0	0	0	0	0	11	0	8	0	153
5:45 PM	0	52	2	0	2	45	1	0	1	0	0	0	4	0	1	0	108
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	910	98	0	129	817	1	9	6	0	0	0	198	0	255	0	2423
APPROACH %'s :	0.00%	90.28%	9.72%	0.00%	13.49%	85.46%	0.10%	0.94%	100.00%	0.00%	0.00%	0.00%	43.71%	0.00%	56.29%	0.00%	
PEAK HR :	03:00 PM - 04:00 PM																TOTAL
PEAK HR VOL :	0	412	49	0	90	302	0	8	0	0	0	0	69	0	170	0	1100
PEAK HR FACTOR :	0.000	0.780	0.875	0.000	0.592	0.839	0.000	0.333	0.000	0.000	0.000	0.000	0.639	0.000	0.574	0.000	0.831
		0.789				0.746								0.664			

National Data & Surveying Services Intersection Turning Movement Count

Location: SR 4 EB Ramps & Sand Creek Rd
City: Brentwood
Control: Signalized

Project ID: 19-08008-014
Date: 1/24/2019

Total

NS/EW Streets:	SR 4 EB Ramps				SR 4 EB Ramps				Sand Creek Rd				Sand Creek Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	2	0	0	0	0	1	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	25	0	0	0	0	0	0	0	0	0	25	0	50
6:15 AM	0	0	0	0	35	0	1	0	0	0	0	0	0	0	22	0	58
6:30 AM	0	0	0	0	61	0	0	0	0	0	0	0	0	0	36	0	97
6:45 AM	0	0	0	0	89	0	0	0	0	0	0	0	0	0	34	1	124
7:00 AM	0	0	0	0	101	0	0	0	1	0	0	0	0	0	61	0	163
7:15 AM	0	0	0	0	136	0	1	0	0	1	0	0	0	0	99	0	237
7:30 AM	0	0	0	0	170	0	0	0	0	0	0	0	0	0	78	1	249
7:45 AM	0	0	0	0	258	0	0	0	0	0	0	0	0	0	84	0	342
8:00 AM	0	0	0	0	188	0	0	0	0	0	0	0	0	0	52	0	240
8:15 AM	0	0	0	0	174	0	0	0	0	0	0	0	0	0	47	0	221
8:30 AM	0	0	0	0	168	0	0	0	0	0	0	0	0	0	44	0	212
8:45 AM	0	0	0	0	165	0	0	0	0	0	0	0	0	0	43	0	208
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	1570	0	2	0	1	1	0	0	0	0	625	2	2201
APPROACH %'s :					99.87%	0.00%	0.13%	0.00%	50.00%	50.00%	0.00%	0.00%	0.00%	0.00%	99.68%	0.32%	
PEAK HR :	**07:15 AM - 08:15 AM**																TOTAL
PEAK HR VOL :	0	0	0	0	752	0	1	0	0	1	0	0	0	0	313	1	1068
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.729	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.790	0.250	0.781
						0.730				0.250				0.793			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	2	0	0	0	0	1	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:00 PM	0	0	0	0	272	0	0	0	0	0	0	0	0	0	53	1	326
3:15 PM	0	0	0	0	273	0	0	0	0	0	0	0	0	0	35	0	308
3:30 PM	0	0	0	0	306	0	0	0	0	0	0	0	0	0	29	0	335
3:45 PM	0	0	0	0	262	0	0	0	0	0	0	0	0	0	39	0	301
4:00 PM	0	0	0	0	300	0	0	0	0	0	0	0	0	0	39	1	340
4:15 PM	0	0	0	0	279	0	0	0	0	0	0	0	0	0	27	0	306
4:30 PM	0	0	0	0	310	0	0	0	0	0	0	0	0	0	28	2	340
4:45 PM	0	0	0	0	301	0	0	0	0	0	0	0	0	0	25	2	328
5:00 PM	0	0	0	0	322	0	0	0	0	0	0	0	0	0	42	0	364
5:15 PM	0	0	0	0	335	0	0	0	0	0	0	0	0	0	30	0	365
5:30 PM	0	0	0	0	329	0	0	0	0	0	0	0	0	0	33	0	362
5:45 PM	0	0	0	0	301	0	0	0	0	0	0	0	0	0	42	0	343
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	3590	0	0	0	0	0	0	0	0	0	422	6	4018
APPROACH %'s :					100.00%	0.00%	0.00%	0.00%					0.00%	0.00%	98.60%	1.40%	
PEAK HR :	**05:00 PM - 06:00 PM**																TOTAL
PEAK HR VOL :	0	0	0	0	1287	0	0	0	0	0	0	0	0	0	147	0	1434
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.960	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.875	0.000	0.982
						0.960								0.875			

National Data & Surveying Services Intersection Turning Movement Count

Location: SR 4 WB Ramps & Sand Creek Rd
City: Brentwood
Control: Signalized

Project ID: 19-08008-015
Date: 1/24/2019

Total

NS/EW Streets:	SR 4 WB Ramps				SR 4 WB Ramps				Sand Creek Rd				Sand Creek Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	0.5	1	0	0	0	0	0	2	3	0	0	0	1.5	1.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	1	6	0	0	0	0	0	1	22	0	0	0	24	122	0	176
6:15 AM	1	0	3	0	0	0	0	0	1	36	0	0	0	23	139	0	203
6:30 AM	0	2	9	0	0	0	0	0	0	60	0	0	0	34	163	0	268
6:45 AM	2	0	21	0	0	0	0	0	2	86	0	0	0	34	135	0	280
7:00 AM	2	0	17	0	0	0	0	0	0	106	0	0	0	59	170	0	354
7:15 AM	3	0	22	0	0	0	0	0	0	133	0	0	0	95	208	0	461
7:30 AM	6	0	38	0	0	0	0	0	1	171	0	0	0	78	210	0	504
7:45 AM	3	1	42	0	0	0	0	0	1	255	0	0	0	76	220	0	598
8:00 AM	4	0	30	0	0	0	0	0	1	189	0	0	0	51	233	0	508
8:15 AM	3	2	26	0	0	0	0	0	3	168	0	0	0	42	284	0	528
8:30 AM	7	1	22	0	0	0	0	0	1	161	0	1	0	36	187	0	416
8:45 AM	4	1	31	0	0	0	0	0	1	170	0	1	0	37	178	0	423
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	35	8	267	0	0	0	0	0	12	1557	0	2	0	589	2249	0	4719
APPROACH %'s :	11.29%	2.58%	86.13%	0.00%					0.76%	99.11%	0.00%	0.13%	0.00%	20.75%	79.25%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	16	3	136	0	0	0	0	0	6	783	0	0	0	247	947	0	2138
PEAK HR FACTOR :	0.667	0.375	0.810	0.000	0.000	0.000	0.000	0.000	0.500	0.768	0.000	0.000	0.000	0.792	0.834	0.000	0.894
	0.842								0.771				0.916				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	0.5	1	0	0	0	0	0	2	3	0	0	0	1.5	1.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:00 PM	6	0	69	0	0	0	0	0	0	274	0	0	0	49	226	0	624
3:15 PM	3	4	60	0	0	0	0	0	3	273	0	0	0	29	249	0	621
3:30 PM	0	0	42	0	0	0	0	0	4	300	0	0	0	31	257	0	634
3:45 PM	1	3	44	0	0	0	0	0	4	262	0	0	0	37	218	0	569
4:00 PM	2	0	32	0	0	0	0	0	3	292	0	1	0	36	223	0	589
4:15 PM	1	0	47	0	0	0	0	0	0	282	0	0	0	30	200	0	560
4:30 PM	1	1	43	0	0	0	0	0	4	299	0	0	0	31	213	0	592
4:45 PM	1	0	54	0	0	0	0	0	3	297	0	0	0	29	194	0	578
5:00 PM	1	0	56	0	0	0	0	0	3	326	0	0	0	36	245	0	667
5:15 PM	1	2	50	0	0	0	0	0	3	328	0	0	0	29	209	0	622
5:30 PM	1	1	46	0	0	0	0	0	1	329	0	0	0	33	222	0	633
5:45 PM	1	2	44	0	0	0	0	0	3	301	0	0	0	40	226	0	617
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	19	13	587	0	0	0	0	0	31	3563	0	1	0	410	2682	0	7306
APPROACH %'s :	3.07%	2.10%	94.83%	0.00%					0.86%	99.11%	0.00%	0.03%	0.00%	13.26%	86.74%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	4	5	196	0	0	0	0	0	10	1284	0	0	0	138	902	0	2539
PEAK HR FACTOR :	1.000	0.625	0.875	0.000	0.000	0.000	0.000	0.000	0.833	0.976	0.000	0.000	0.000	0.863	0.920	0.000	0.952
	0.899								0.977				0.925				

Appendix B: HCM 2010 LOS Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	513	7	29	810	143	35	54	21	304	75	190
Future Volume (veh/h)	151	513	7	29	810	143	35	54	21	304	75	190
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	170	576	-3	33	910	43	39	61	-1	342	84	14
Adj No. of Lanes	1	3	0	1	3	1	1	2	0	2	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	1	1	1
Cap, veh/h	223	1984	0	69	1542	478	77	387	0	491	739	324
Arrive On Green	0.13	0.39	0.00	0.04	0.30	0.30	0.04	0.11	0.00	0.14	0.21	0.21
Sat Flow, veh/h	1774	5253	0	1774	5085	1576	1792	3668	0	3476	3574	1568
Grp Volume(v), veh/h	170	573	0	33	910	43	39	60	0	342	84	14
Grp Sat Flow(s),veh/h/ln	1774	1695	0	1774	1695	1576	1792	1787	0	1738	1787	1568
Q Serve(g_s), s	4.8	4.0	0.0	0.9	7.8	1.0	1.1	0.8	0.0	4.8	1.0	0.4
Cycle Q Clear(g_c), s	4.8	4.0	0.0	0.9	7.8	1.0	1.1	0.8	0.0	4.8	1.0	0.4
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	223	1984	0	69	1542	478	77	387	0	491	739	324
V/C Ratio(X)	0.76	0.29	0.00	0.48	0.59	0.09	0.51	0.15	0.00	0.70	0.11	0.04
Avail Cap(c_a), veh/h	223	4478	0	223	4478	1387	225	3037	0	505	3106	1362
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	10.8	0.0	24.3	15.3	12.9	24.2	20.9	0.0	21.1	16.6	16.4
Incr Delay (d2), s/veh	12.9	0.0	0.0	1.9	0.1	0.0	1.9	0.1	0.0	3.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	1.9	0.0	0.5	3.6	0.4	0.6	0.4	0.0	2.6	0.5	0.2
LnGrp Delay(d),s/veh	34.8	10.9	0.0	26.2	15.4	12.9	26.1	21.0	0.0	24.5	16.7	16.4
LnGrp LOS	C	B		C	B	B	C	C		C	B	B
Approach Vol, veh/h		743			986			99			440	
Approach Delay, s/veh		16.3			15.7			23.0			22.7	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	10.4	5.5	25.0	5.7	15.5	10.0	20.5
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	7.0	43.4	6.0	45.0	6.0	44.4	6.0	45.0
Max Q Clear Time (g_c+I1), s	6.8	2.8	2.9	6.0	3.1	3.0	6.8	9.8
Green Ext Time (p_c), s	0.0	0.2	0.0	2.4	0.0	0.3	0.0	4.2

Intersection Summary	
HCM 2010 Ctrl Delay	17.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	914	61	58	1098	13	37	0	58	17	0	1
Future Volume (veh/h)	2	914	61	58	1098	13	37	0	58	17	0	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	2	993	66	63	1193	14	40	0	63	18	0	1
Adj No. of Lanes	1	3	0	1	3	0	2	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	5	2176	144	114	2634	31	761	253	215	377	0	215
Arrive On Green	0.00	0.45	0.45	0.06	0.51	0.51	0.14	0.00	0.14	0.14	0.00	0.14
Sat Flow, veh/h	1774	4873	323	1774	5181	61	2736	1863	1583	1334	0	1583
Grp Volume(v), veh/h	2	690	369	63	781	426	40	0	63	18	0	1
Grp Sat Flow(s),veh/h/ln	1774	1695	1806	1774	1695	1852	1368	1863	1583	1334	0	1583
Q Serve(g_s), s	0.0	5.2	5.2	1.3	5.4	5.4	0.5	0.0	1.3	0.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.2	5.2	1.3	5.4	5.4	0.5	0.0	1.3	0.4	0.0	0.0
Prop In Lane	1.00		0.18	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	5	1514	806	114	1723	941	761	253	215	377	0	215
V/C Ratio(X)	0.41	0.46	0.46	0.55	0.45	0.45	0.05	0.00	0.29	0.05	0.00	0.00
Avail Cap(c_a), veh/h	458	5296	2821	940	6217	3396	2620	1518	1290	1282	0	1290
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.3	7.1	7.1	16.7	5.8	5.8	14.0	0.0	14.3	13.9	0.0	13.8
Incr Delay (d2), s/veh	47.1	0.2	0.4	4.1	0.2	0.3	0.0	0.0	0.7	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.4	2.7	0.7	2.5	2.8	0.2	0.0	0.6	0.2	0.0	0.0
LnGrp Delay(d),s/veh	65.4	7.3	7.5	20.8	6.0	6.1	14.0	0.0	15.1	14.0	0.0	13.8
LnGrp LOS	E	A	A	C	A	A	B		B	B		B
Approach Vol, veh/h		1061			1270			103			19	
Approach Delay, s/veh		7.5			6.8			14.6			14.0	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		9.0	6.9	20.9		9.0	4.6	23.2
Change Period (Y+Rc), s		4.0	4.5	4.5		4.0	4.5	4.5
Max Green Setting (Gmax), s		30.0	19.5	57.5		30.0	9.5	67.5
Max Q Clear Time (g_c+I1), s		3.3	3.3	7.2		2.4	2.0	7.4
Green Ext Time (p_c), s		0.3	0.1	9.2		0.0	0.0	11.3

Intersection Summary	
HCM 2010 Ctrl Delay	7.5
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1	0	25	1	298	0	364	50	281	310	1
Future Volume (veh/h)	1	1	0	25	1	298	0	364	50	281	310	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	0.99		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1900	1900	1900	1900	1881	1881	1900
Adj Flow Rate, veh/h	1	1	0	31	1	33	0	449	62	347	383	1
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	1	1	1
Cap, veh/h	185	42	0	300	3	110	5	589	81	451	1326	3
Arrive On Green	0.07	0.07	0.00	0.07	0.07	0.07	0.00	0.36	0.35	0.25	0.71	0.69
Sat Flow, veh/h	574	598	0	1416	47	1555	1810	1630	225	1792	1875	5
Grp Volume(v), veh/h	2	0	0	31	0	34	0	0	511	347	0	384
Grp Sat Flow(s),veh/h/ln	1172	0	0	1416	0	1602	1810	0	1855	1792	0	1880
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	9.1	6.7	0.0	2.8
Cycle Q Clear(g_c), s	0.8	0.0	0.0	0.6	0.0	0.8	0.0	0.0	9.1	6.7	0.0	2.8
Prop In Lane	0.50		0.00	1.00		0.97	1.00		0.12	1.00		0.00
Lane Grp Cap(c), veh/h	228	0	0	300	0	113	5	0	670	451	0	1329
V/C Ratio(X)	0.01	0.00	0.00	0.10	0.00	0.30	0.00	0.00	0.76	0.77	0.00	0.29
Avail Cap(c_a), veh/h	1643	0	0	1548	0	1524	558	0	3539	1033	0	4093
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.2	0.0	0.0	16.4	0.0	16.5	0.0	0.0	10.5	13.0	0.0	2.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.5	0.0	0.0	0.7	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.3	0.0	0.3	0.0	0.0	4.7	3.4	0.0	1.4
LnGrp Delay(d),s/veh	16.2	0.0	0.0	16.5	0.0	17.0	0.0	0.0	11.2	14.0	0.0	2.1
LnGrp LOS	B			B		B			B	B		A
Approach Vol, veh/h		2			65			511			731	
Approach Delay, s/veh		16.2			16.7			11.2			7.7	
Approach LOS		B			B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.9	18.3		6.1	0.0	31.2		6.1
Change Period (Y+Rc), s	4.0	5.3		4.0	4.0	5.3		4.0
Max Green Setting (Gmax), s	21.0	70.7		35.0	11.0	80.7		35.0
Max Q Clear Time (g_c+I1), s	8.7	11.1		2.8	0.0	4.8		2.8
Green Ext Time (p_c), s	0.4	1.9		0.0	0.0	1.6		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	9.6
HCM 2010 LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1	0	313	752	1
Future Volume (veh/h)	0	1	0	313	752	1
Number	5	2	6	16	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1881	1881
Adj Flow Rate, veh/h	0	1	0	368	885	1
Adj No. of Lanes	0	1	1	0	2	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	1	1
Cap, veh/h	0	616	0	523	1381	610
Arrive On Green	0.00	0.33	0.00	0.35	0.40	0.38
Sat Flow, veh/h	0	1863	0	1583	3476	1599
Grp Volume(v), veh/h	0	1	0	368	885	1
Grp Sat Flow(s),veh/h/ln	0	1863	0	1583	1738	1599
Q Serve(g_s), s	0.0	0.0	0.0	6.3	6.4	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	6.3	6.4	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	616	0	523	1381	610
V/C Ratio(X)	0.00	0.00	0.00	0.70	0.64	0.00
Avail Cap(c_a), veh/h	0	3130	0	2661	4372	1986
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	7.0	0.0	8.9	7.6	6.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.7	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	2.9	3.2	0.0
LnGrp Delay(d),s/veh	0.0	7.0	0.0	10.6	8.1	6.0
LnGrp LOS		A		B	A	A
Approach Vol, veh/h		1	368		886	
Approach Delay, s/veh		7.0	10.6		8.1	
Approach LOS		A	B		A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		14.8				14.8		16.4
Change Period (Y+Rc), s		4.5				4.5		4.5
Max Green Setting (Gmax), s		52.5				52.5		38.8
Max Q Clear Time (g_c+I1), s		2.0				8.3		8.4
Green Ext Time (p_c), s		0.0				2.5		3.5

Intersection Summary	
HCM 2010 Ctrl Delay	8.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	783	0	0	247	947	16	3	136	0	0	0
Future Volume (veh/h)	6	783	0	0	247	947	16	3	136	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1881	1881	0	0	1881	1881	1845	1845	1845			
Adj Flow Rate, veh/h	6	807	0	0	255	523	18	0	25			
Adj No. of Lanes	2	3	0	0	1	2	2	0	1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	1	1	0	0	1	1	3	3	3			
Cap, veh/h	99	2633	0	0	620	1054	225	0	100			
Arrive On Green	0.03	0.51	0.00	0.00	0.33	0.33	0.06	0.00	0.06			
Sat Flow, veh/h	3476	5305	0	0	1881	3198	3514	0	1568			
Grp Volume(v), veh/h	6	807	0	0	255	523	18	0	25			
Grp Sat Flow(s),veh/h/ln	1738	1712	0	0	1881	1599	1757	0	1568			
Q Serve(g_s), s	0.0	2.1	0.0	0.0	2.4	3.0	0.1	0.0	0.3			
Cycle Q Clear(g_c), s	0.0	2.1	0.0	0.0	2.4	3.0	0.1	0.0	0.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	99	2633	0	0	620	1054	225	0	100			
V/C Ratio(X)	0.06	0.31	0.00	0.00	0.41	0.50	0.08	0.00	0.25			
Avail Cap(c_a), veh/h	2530	16808	0	0	4497	7646	7160	0	3195			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	10.7	3.2	0.0	0.0	5.9	6.1	10.0	0.0	10.1			
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.0	0.2	0.1	0.1	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.9	0.0	0.0	1.2	1.3	0.1	0.0	0.3			
LnGrp Delay(d),s/veh	10.8	3.2	0.0	0.0	6.1	6.2	10.0	0.0	10.6			
LnGrp LOS	B	A			A	A	B		B			
Approach Vol, veh/h		813			778			43				
Approach Delay, s/veh		3.3			6.2			10.3				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		16.4		6.2	4.1	12.3		
Change Period (Y+Rc), s		5.3		5.3	4.0	5.3		
Max Green Setting (Gmax), s		73.7		45.7	16.0	53.7		
Max Q Clear Time (g_c+I1), s		4.1		2.3	2.0	5.0		
Green Ext Time (p_c), s		3.6		0.1	0.0	2.0		

Intersection Summary	
HCM 2010 Ctrl Delay	4.8
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	173	172	218	162	125	92	468	118	84	814	59
Future Volume (veh/h)	118	173	172	218	162	125	92	468	118	84	814	59
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1863	1863	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	130	190	167	240	178	119	101	514	117	92	895	62
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	164	220	194	281	317	212	129	963	218	119	1106	77
Arrive On Green	0.09	0.24	0.24	0.16	0.31	0.31	0.07	0.33	0.32	0.07	0.33	0.31
Sat Flow, veh/h	1792	918	807	1774	1033	691	1792	2894	655	1792	3385	234
Grp Volume(v), veh/h	130	0	357	240	0	297	101	317	314	92	473	484
Grp Sat Flow(s),veh/h/ln	1792	0	1724	1774	0	1724	1792	1787	1762	1792	1787	1832
Q Serve(g_s), s	5.6	0.0	15.7	10.4	0.0	11.4	4.4	11.4	11.5	4.0	19.1	19.2
Cycle Q Clear(g_c), s	5.6	0.0	15.7	10.4	0.0	11.4	4.4	11.4	11.5	4.0	19.1	19.2
Prop In Lane	1.00		0.47	1.00		0.40	1.00		0.37	1.00		0.13
Lane Grp Cap(c), veh/h	164	0	414	281	0	529	129	595	586	119	584	599
V/C Ratio(X)	0.79	0.00	0.86	0.85	0.00	0.56	0.78	0.53	0.54	0.78	0.81	0.81
Avail Cap(c_a), veh/h	340	0	741	448	0	850	204	858	846	272	926	950
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.2	0.0	28.8	32.4	0.0	22.9	36.1	21.4	21.7	36.4	24.4	24.5
Incr Delay (d2), s/veh	3.2	0.0	2.1	5.0	0.0	0.3	3.8	0.3	0.3	4.0	1.3	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	7.7	5.5	0.0	5.5	2.3	5.6	5.7	2.1	9.7	9.9
LnGrp Delay(d),s/veh	38.4	0.0	30.9	37.4	0.0	23.3	39.9	21.7	21.9	40.4	25.7	25.7
LnGrp LOS	D		C	D		C	D	C	C	D	C	C
Approach Vol, veh/h		487			537			732			1049	
Approach Delay, s/veh		32.9			29.6			24.3			27.0	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	30.3	16.5	23.0	9.7	29.8	11.3	28.3
Change Period (Y+Rc), s	4.0	5.3	4.0	4.0	4.0	5.3	4.0	4.0
Max Green Setting (Gmax), s	12.0	36.7	20.0	34.0	9.0	39.7	15.0	39.0
Max Q Clear Time (g_c+I1), s	6.0	13.5	12.4	17.7	6.4	21.2	7.6	13.4
Green Ext Time (p_c), s	0.0	2.1	0.2	1.1	0.0	3.4	0.1	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	27.8
HCM 2010 LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	190	38	40	5	5	140
Future Volume (veh/h)	190	38	40	5	5	140
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	221	44	47	6	6	163
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	288	609	136	17	909	811
Arrive On Green	0.16	0.33	0.08	0.07	0.51	0.51
Sat Flow, veh/h	1774	1863	1620	207	1774	1583
Grp Volume(v), veh/h	221	44	0	53	6	163
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1826	1774	1583
Q Serve(g_s), s	5.9	0.8	0.0	1.4	0.1	2.8
Cycle Q Clear(g_c), s	5.9	0.8	0.0	1.4	0.1	2.8
Prop In Lane	1.00			0.11	1.00	1.00
Lane Grp Cap(c), veh/h	288	609	0	154	909	811
V/C Ratio(X)	0.77	0.07	0.00	0.34	0.01	0.20
Avail Cap(c_a), veh/h	321	1178	0	679	909	811
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.9	11.5	0.0	21.5	5.9	6.6
Incr Delay (d2), s/veh	9.6	0.0	0.0	1.3	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.4	0.0	0.7	0.0	1.3
LnGrp Delay(d),s/veh	29.5	11.6	0.0	22.9	6.0	7.2
LnGrp LOS	C	B		C	A	A
Approach Vol, veh/h		265	53		169	
Approach Delay, s/veh		26.6	22.9		7.1	
Approach LOS		C	C		A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				20.3		29.5	12.1	8.2
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				31.0		25.0	8.5	18.0
Max Q Clear Time (g_c+I1), s				2.8		4.8	7.9	3.4
Green Ext Time (p_c), s				0.2		0.5	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	19.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	819	168	69	851	223	30	47	36	513	85	96
Future Volume (veh/h)	158	819	168	69	851	223	30	47	36	513	85	96
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	178	920	178	78	956	133	34	53	15	576	96	-91
Adj No. of Lanes	1	3	0	1	3	1	1	2	0	2	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	1	1	1
Cap, veh/h	236	1601	309	113	1556	482	65	257	70	715	936	419
Arrive On Green	0.13	0.38	0.38	0.06	0.31	0.31	0.04	0.09	0.08	0.21	0.26	0.00
Sat Flow, veh/h	1774	4270	823	1774	5085	1576	1792	2778	754	3476	3574	1599
Grp Volume(v), veh/h	178	730	368	78	956	133	34	33	35	576	96	-91
Grp Sat Flow(s),veh/h/ln	1774	1695	1703	1774	1695	1576	1792	1787	1745	1738	1787	1599
Q Serve(g_s), s	6.1	10.8	10.9	2.7	10.1	4.0	1.2	1.1	1.2	10.0	1.3	0.0
Cycle Q Clear(g_c), s	6.1	10.8	10.9	2.7	10.1	4.0	1.2	1.1	1.2	10.0	1.3	0.0
Prop In Lane	1.00		0.48	1.00		1.00	1.00		0.43	1.00		1.00
Lane Grp Cap(c), veh/h	236	1271	639	113	1556	482	65	165	161	715	936	419
V/C Ratio(X)	0.76	0.57	0.58	0.69	0.61	0.28	0.52	0.20	0.22	0.81	0.10	-0.22
Avail Cap(c_a), veh/h	492	3035	1524	183	3666	1136	185	1243	1214	909	3052	1366
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.4	15.7	15.7	28.9	18.7	16.6	29.9	26.5	26.6	23.9	17.7	0.0
Incr Delay (d2), s/veh	1.9	0.2	0.3	2.8	0.1	0.1	2.4	0.2	0.2	3.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	5.1	5.2	1.4	4.7	1.7	0.6	0.5	0.6	5.0	0.6	0.0
LnGrp Delay(d),s/veh	28.2	15.9	16.0	31.7	18.9	16.7	32.3	26.7	26.9	27.1	17.7	0.0
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	B	
Approach Vol, veh/h		1276			1167			102			581	
Approach Delay, s/veh		17.6			19.5			28.6			29.8	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	10.6	7.5	28.5	5.8	21.3	11.9	24.1
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	16.0	43.4	6.0	56.0	6.0	53.4	17.0	45.0
Max Q Clear Time (g_c+I1), s	12.0	3.2	4.7	12.9	3.2	3.3	8.1	12.1
Green Ext Time (p_c), s	0.5	0.2	0.0	4.9	0.0	0.3	0.1	5.5

Intersection Summary	
HCM 2010 Ctrl Delay	21.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1369	89	68	1165	23	139	4	83	29	4	8
Future Volume (veh/h)	7	1369	89	68	1165	23	139	4	83	29	4	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	7	1397	91	69	1189	23	142	4	85	30	4	8
Adj No. of Lanes	1	3	0	1	3	0	2	1	1	1	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	17	2632	171	113	3051	59	603	211	179	302	63	126
Arrive On Green	0.01	0.54	0.54	0.06	0.59	0.59	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1774	4879	318	1774	5136	99	2709	1863	1583	1303	556	1111
Grp Volume(v), veh/h	7	971	517	69	785	427	142	4	85	30	0	12
Grp Sat Flow(s),veh/h/ln	1774	1695	1807	1774	1695	1845	1355	1863	1583	1303	0	1667
Q Serve(g_s), s	0.2	8.5	8.5	1.7	5.6	5.6	2.3	0.1	2.3	1.0	0.0	0.3
Cycle Q Clear(g_c), s	0.2	8.5	8.5	1.7	5.6	5.6	2.6	0.1	2.3	1.0	0.0	0.3
Prop In Lane	1.00		0.18	1.00		0.05	1.00		1.00	1.00		0.67
Lane Grp Cap(c), veh/h	17	1829	975	113	2014	1096	603	211	179	302	0	189
V/C Ratio(X)	0.42	0.53	0.53	0.61	0.39	0.39	0.24	0.02	0.47	0.10	0.00	0.06
Avail Cap(c_a), veh/h	290	3512	1871	290	3512	1911	2305	1381	1174	1120	0	1236
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.6	6.8	6.8	20.9	4.9	4.9	19.3	18.1	19.1	18.5	0.0	18.2
Incr Delay (d2), s/veh	16.3	0.2	0.5	5.2	0.1	0.2	0.2	0.0	1.9	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.0	4.3	1.0	2.7	2.9	0.9	0.0	1.1	0.4	0.0	0.1
LnGrp Delay(d),s/veh	38.9	7.1	7.3	26.1	5.0	5.1	19.5	18.1	21.0	18.7	0.0	18.3
LnGrp LOS	D	A	A	C	A	A	B	B	C	B		B
Approach Vol, veh/h		1495			1281			231			42	
Approach Delay, s/veh		7.3			6.2			20.0			18.6	
Approach LOS		A			A			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		9.2	7.4	29.2		9.2	4.9	31.7
Change Period (Y+Rc), s		4.0	4.5	4.5		4.0	4.5	4.5
Max Green Setting (Gmax), s		34.0	7.5	47.5		34.0	7.5	47.5
Max Q Clear Time (g_c+I1), s		4.6	3.7	10.5		3.0	2.2	7.6
Green Ext Time (p_c), s		0.8	0.0	14.3		0.1	0.0	10.7

Intersection Summary	
HCM 2010 Ctrl Delay	7.9
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	0	73	0	56	0	254	36	24	265	0
Future Volume (veh/h)	4	0	0	73	0	56	0	254	36	24	265	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		1.00	0.98		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1900	1900	1900	1900	1881	1881	1900
Adj Flow Rate, veh/h	4	0	0	82	0	-241	0	285	40	27	298	0
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	1	1	1
Cap, veh/h	403	0	0	404	0	405	9	529	74	95	1042	0
Arrive On Green	0.03	0.00	0.00	0.03	0.00	0.00	0.00	0.33	0.30	0.05	0.55	0.00
Sat Flow, veh/h	1414	0	0	1397	1881	0	1810	1626	228	1792	1881	0
Grp Volume(v), veh/h	4	0	0	82	-241	-241	0	0	325	27	298	0
Grp Sat Flow(s),veh/h/ln	1414	0	0	1397	1881	1599	1810	0	1854	1792	1881	0
Q Serve(g_s), s	0.1	0.0	0.0	0.5	0.0	0.0	0.0	0.0	2.9	0.3	1.7	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	0.6	0.0	0.0	0.0	0.0	2.9	0.3	1.7	0.0
Prop In Lane	1.00		0.00	1.00		0.00	1.00		0.12	1.00		0.00
Lane Grp Cap(c), veh/h	403	0	0	404	0	0	9	0	603	95	1042	0
V/C Ratio(X)	0.01	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.54	0.28	0.29	0.00
Avail Cap(c_a), veh/h	2880	0	0	2851	0	0	1044	0	6625	1933	7666	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.4	0.0	0.0	9.8	0.0	0.0	0.0	0.0	5.5	9.1	2.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.3	0.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	1.5	0.2	0.8	0.0
LnGrp Delay(d),s/veh	9.4	0.0	0.0	9.9	0.0	0.0	0.0	0.0	5.8	9.7	2.4	0.0
LnGrp LOS	A			A					A	A	A	
Approach Vol, veh/h		4			-400			325			325	
Approach Delay, s/veh		9.4			-2.0			5.8			3.0	
Approach LOS		A			A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.6	11.3		4.1	0.0	15.8		4.1
Change Period (Y+Rc), s	4.0	5.3		4.0	4.0	5.3		4.0
Max Green Setting (Gmax), s	21.6	70.7		35.0	11.0	80.7		35.0
Max Q Clear Time (g_c+I1), s	2.3	4.9		2.1	0.0	3.7		2.6
Green Ext Time (p_c), s	0.0	1.1		0.0	0.0	1.2		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	14.6
HCM 2010 LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	147	1294	0
Future Volume (veh/h)	0	0	0	147	1294	0
Number	5	2	6	16	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1881	1881
Adj Flow Rate, veh/h	0	0	0	150	1320	0
Adj No. of Lanes	0	1	1	0	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	1	1
Cap, veh/h	0	248	0	211	1901	849
Arrive On Green	0.00	0.00	0.00	0.15	0.55	0.00
Sat Flow, veh/h	0	1863	0	1583	3476	1599
Grp Volume(v), veh/h	0	0	0	150	1320	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1583	1738	1599
Q Serve(g_s), s	0.0	0.0	0.0	2.8	8.8	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	2.8	8.8	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	248	0	211	1901	849
V/C Ratio(X)	0.00	0.00	0.00	0.71	0.69	0.00
Avail Cap(c_a), veh/h	0	2873	0	2442	4535	2061
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	12.9	5.2	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	4.4	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.5	4.2	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	17.3	5.7	0.0
LnGrp LOS				B	A	
Approach Vol, veh/h		0	150		1320	
Approach Delay, s/veh		0.0	17.3		5.7	
Approach LOS			B		A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		9.5				9.5		22.1
Change Period (Y+Rc), s		5.3				5.3		5.3
Max Green Setting (Gmax), s		48.7				48.7		40.7
Max Q Clear Time (g_c+I1), s		0.0				4.8		10.8
Green Ext Time (p_c), s		0.0				0.9		6.0

Intersection Summary	
HCM 2010 Ctrl Delay	6.9
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1284	0	0	143	902	4	5	196	0	0	0
Future Volume (veh/h)	10	1284	0	0	143	902	4	5	196	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1881	1881	0	0	1881	1881	1845	1845	1845			
Adj Flow Rate, veh/h	11	1352	0	0	147	477	4	5	87			
Adj No. of Lanes	2	3	0	0	1	2	1	1	1			
Peak Hour Factor	0.95	0.95	0.95	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	1	1	0	0	1	1	3	3	3			
Cap, veh/h	91	3263	0	0	956	1624	152	160	136			
Arrive On Green	0.03	0.64	0.00	0.00	0.51	0.51	0.09	0.09	0.09			
Sat Flow, veh/h	3476	5305	0	0	1881	3198	1757	1845	1568			
Grp Volume(v), veh/h	11	1352	0	0	147	477	4	5	87			
Grp Sat Flow(s),veh/h/ln	1738	1712	0	0	1881	1599	1757	1845	1568			
Q Serve(g_s), s	0.1	4.5	0.0	0.0	1.4	3.0	0.1	0.1	1.9			
Cycle Q Clear(g_c), s	0.1	4.5	0.0	0.0	1.4	3.0	0.1	0.1	1.9			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	91	3263	0	0	956	1624	152	160	136			
V/C Ratio(X)	0.12	0.41	0.00	0.00	0.15	0.29	0.03	0.03	0.64			
Avail Cap(c_a), veh/h	1660	11032	0	0	2952	5018	2350	2467	2097			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	16.4	3.1	0.0	0.0	4.5	4.9	14.4	14.4	15.3			
Incr Delay (d2), s/veh	0.6	0.1	0.0	0.0	0.1	0.1	0.1	0.1	4.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.1	2.0	0.0	0.0	0.8	1.3	0.0	0.0	1.8			
LnGrp Delay(d),s/veh	17.0	3.2	0.0	0.0	4.6	5.0	14.5	14.5	20.2			
LnGrp LOS	B	A			A	A	B	B	C			
Approach Vol, veh/h		1363			624			96				
Approach Delay, s/veh		3.3			4.9			19.7				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		26.7		7.8	4.4	22.3		
Change Period (Y+Rc), s		5.3		5.3	4.0	5.3		
Max Green Setting (Gmax), s		73.7		45.7	16.0	53.7		
Max Q Clear Time (g_c+I1), s		6.5		3.9	2.1	5.0		
Green Ext Time (p_c), s		14.9		0.3	0.0	2.8		

Intersection Summary	
HCM 2010 Ctrl Delay	4.5
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	105	56	44	90	72	123	448	138	107	384	88
Future Volume (veh/h)	65	105	56	44	90	72	123	448	138	107	384	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	70	113	48	47	97	59	132	482	129	115	413	82
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	101	172	73	75	134	82	173	840	223	149	856	169
Arrive On Green	0.06	0.14	0.14	0.04	0.12	0.12	0.10	0.30	0.26	0.08	0.28	0.25
Sat Flow, veh/h	1810	1267	538	1810	1107	674	1810	2822	751	1810	3008	592
Grp Volume(v), veh/h	70	0	161	47	0	156	132	307	304	115	247	248
Grp Sat Flow(s),veh/h/ln	1810	0	1805	1810	0	1781	1810	1805	1768	1810	1805	1795
Q Serve(g_s), s	1.4	0.0	3.1	0.9	0.0	3.0	2.6	5.2	5.3	2.3	4.1	4.2
Cycle Q Clear(g_c), s	1.4	0.0	3.1	0.9	0.0	3.0	2.6	5.2	5.3	2.3	4.1	4.2
Prop In Lane	1.00		0.30	1.00		0.38	1.00		0.42	1.00		0.33
Lane Grp Cap(c), veh/h	101	0	245	75	0	216	173	537	526	149	514	511
V/C Ratio(X)	0.69	0.00	0.66	0.62	0.00	0.72	0.76	0.57	0.58	0.77	0.48	0.49
Avail Cap(c_a), veh/h	551	0	1848	501	0	1774	951	1998	1957	851	1898	1888
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.8	0.0	14.8	17.0	0.0	15.3	15.9	10.7	11.0	16.2	10.7	10.9
Incr Delay (d2), s/veh	3.1	0.0	1.1	3.1	0.0	1.7	2.7	0.4	0.4	3.2	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	1.6	0.5	0.0	1.6	1.4	2.6	2.6	1.2	2.0	2.1
LnGrp Delay(d),s/veh	19.9	0.0	16.0	20.2	0.0	17.0	18.6	11.1	11.4	19.4	11.0	11.2
LnGrp LOS	B		B	C		B	B	B	B	B	B	B
Approach Vol, veh/h		231			203			743			610	
Approach Delay, s/veh		17.1			17.7			12.5			12.7	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	14.8	5.5	8.9	7.4	14.3	6.0	8.4
Change Period (Y+Rc), s	4.0	5.3	4.0	4.0	4.0	5.3	4.0	4.0
Max Green Setting (Gmax), s	17.0	38.7	10.0	37.0	19.0	36.7	11.0	36.0
Max Q Clear Time (g_c+I1), s	4.3	7.3	2.9	5.1	4.6	6.2	3.4	5.0
Green Ext Time (p_c), s	0.1	2.1	0.0	0.5	0.1	1.7	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	13.8
HCM 2010 LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	169	29	21	4	7	145
Future Volume (veh/h)	169	29	21	4	7	145
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	180	31	22	4	7	154
Adj No. of Lanes	1	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	246	540	102	19	959	856
Arrive On Green	0.14	0.29	0.07	0.06	0.54	0.54
Sat Flow, veh/h	1774	1863	1535	279	1774	1583
Grp Volume(v), veh/h	180	31	0	26	7	154
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1814	1774	1583
Q Serve(g_s), s	4.6	0.6	0.0	0.6	0.1	2.3
Cycle Q Clear(g_c), s	4.6	0.6	0.0	0.6	0.1	2.3
Prop In Lane	1.00			0.15	1.00	1.00
Lane Grp Cap(c), veh/h	246	540	0	120	959	856
V/C Ratio(X)	0.73	0.06	0.00	0.22	0.01	0.18
Avail Cap(c_a), veh/h	338	1244	0	711	959	856
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.5	12.1	0.0	20.9	5.0	5.5
Incr Delay (d2), s/veh	5.1	0.0	0.0	0.9	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.3	0.0	0.3	0.0	3.0
LnGrp Delay(d),s/veh	24.6	12.1	0.0	21.8	5.0	6.0
LnGrp LOS	C	B		C	A	A
Approach Vol, veh/h		211	26		161	
Approach Delay, s/veh		22.7	21.8		5.9	
Approach LOS		C	C		A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				17.7		29.5	10.5	7.1
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				31.0		25.0	8.5	18.0
Max Q Clear Time (g_c+I1), s				2.6		4.3	6.6	2.6
Green Ext Time (p_c), s				0.1		0.4	0.1	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	15.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	524	7	42	828	143	53	63	52	308	75	190
Future Volume (veh/h)	151	524	7	42	828	143	53	63	52	308	75	190
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	170	589	-3	47	930	43	60	71	33	346	84	14
Adj No. of Lanes	1	3	0	1	3	1	1	2	0	2	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	1	1	1
Cap, veh/h	205	2022	0	67	1628	505	80	298	130	464	758	332
Arrive On Green	0.12	0.40	0.00	0.04	0.32	0.32	0.04	0.12	0.10	0.13	0.21	0.21
Sat Flow, veh/h	1774	5253	0	1774	5085	1576	1792	2420	1058	3476	3574	1568
Grp Volume(v), veh/h	170	586	0	47	930	43	60	51	53	346	84	14
Grp Sat Flow(s),veh/h/ln	1774	1695	0	1774	1695	1576	1792	1787	1691	1738	1787	1568
Q Serve(g_s), s	4.9	4.1	0.0	1.4	7.9	1.0	1.7	1.3	1.5	5.0	1.0	0.4
Cycle Q Clear(g_c), s	4.9	4.1	0.0	1.4	7.9	1.0	1.7	1.3	1.5	5.0	1.0	0.4
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.63	1.00		1.00
Lane Grp Cap(c), veh/h	205	2022	0	67	1628	505	80	220	208	464	758	332
V/C Ratio(X)	0.83	0.29	0.00	0.70	0.57	0.09	0.75	0.23	0.25	0.75	0.11	0.04
Avail Cap(c_a), veh/h	205	4530	0	205	4530	1404	207	1537	1454	468	3142	1379
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.5	10.7	0.0	24.7	14.7	12.3	24.5	20.6	21.0	21.7	16.5	16.3
Incr Delay (d2), s/veh	22.8	0.0	0.0	4.8	0.1	0.0	5.2	0.2	0.2	5.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	1.9	0.0	0.8	3.7	0.4	1.0	0.7	0.7	2.7	0.5	0.2
LnGrp Delay(d),s/veh	45.3	10.7	0.0	29.5	14.8	12.4	29.8	20.8	21.2	27.3	16.6	16.3
LnGrp LOS	D	B		C	B	B	C	C	C	C	B	B
Approach Vol, veh/h		756			1020			164			444	
Approach Delay, s/veh		18.5			15.4			24.2			24.9	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	10.4	6.0	24.7	6.3	15.0	10.0	20.6
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	7.0	43.4	6.0	45.0	6.0	44.4	6.0	45.0
Max Q Clear Time (g_c+I1), s	7.0	3.5	3.4	6.1	3.7	3.0	6.9	9.9
Green Ext Time (p_c), s	0.0	0.3	0.0	2.5	0.0	0.3	0.0	4.3

Intersection Summary	
HCM 2010 Ctrl Delay	18.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	945	76	93	1111	13	55	0	143	17	0	1
Future Volume (veh/h)	2	945	76	93	1111	13	55	0	143	17	0	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	2	1027	83	101	1208	14	60	0	155	18	0	1
Adj No. of Lanes	1	3	0	1	3	0	2	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	27	2191	177	171	2789	32	761	275	234	361	0	234
Arrive On Green	0.02	0.46	0.44	0.10	0.54	0.53	0.15	0.00	0.15	0.15	0.00	0.15
Sat Flow, veh/h	1774	4797	387	1774	5182	60	2736	1863	1583	1227	0	1583
Grp Volume(v), veh/h	2	725	385	101	790	432	60	0	155	18	0	1
Grp Sat Flow(s),veh/h/ln	1774	1695	1794	1774	1695	1852	1368	1863	1583	1227	0	1583
Q Serve(g_s), s	0.0	5.9	6.0	2.2	5.6	5.6	0.8	0.0	3.7	0.5	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.9	6.0	2.2	5.6	5.6	0.8	0.0	3.7	0.5	0.0	0.0
Prop In Lane	1.00		0.22	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	27	1549	820	171	1825	997	761	275	234	361	0	234
V/C Ratio(X)	0.07	0.47	0.47	0.59	0.43	0.43	0.08	0.00	0.66	0.05	0.00	0.00
Avail Cap(c_a), veh/h	442	4898	2593	884	5743	3137	2402	1392	1183	1096	0	1183
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.5	7.5	7.6	17.4	5.6	5.6	14.9	0.0	16.2	14.8	0.0	14.6
Incr Delay (d2), s/veh	1.2	0.2	0.4	3.2	0.2	0.3	0.0	0.0	3.2	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.8	3.0	1.2	2.6	2.8	0.3	0.0	1.8	0.2	0.0	0.0
LnGrp Delay(d),s/veh	20.6	7.8	8.0	20.6	5.7	5.9	15.0	0.0	19.4	14.9	0.0	14.6
LnGrp LOS	C	A	A	C	A	A	B		B	B		B
Approach Vol, veh/h		1112			1323			215			19	
Approach Delay, s/veh		7.9			6.9			18.1			14.8	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		9.9	7.9	22.3		9.9	4.6	25.6
Change Period (Y+Rc), s		4.0	4.5	4.5		4.0	4.5	4.5
Max Green Setting (Gmax), s		30.0	19.5	57.5		30.0	9.5	67.5
Max Q Clear Time (g_c+I1), s		5.7	4.2	8.0		2.5	2.0	7.6
Green Ext Time (p_c), s		0.7	0.2	9.9		0.0	0.0	11.5

Intersection Summary	
HCM 2010 Ctrl Delay	8.3
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1	0	25	1	298	0	368	50	281	319	1
Future Volume (veh/h)	1	1	0	25	1	298	0	368	50	281	319	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	0.99		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1900	1900	1900	1900	1881	1881	1900
Adj Flow Rate, veh/h	1	1	0	31	1	33	0	454	62	347	394	1
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	1	1	1
Cap, veh/h	174	31	0	282	3	89	5	620	85	432	1366	3
Arrive On Green	0.06	0.06	0.00	0.06	0.06	0.06	0.00	0.38	0.35	0.24	0.73	0.69
Sat Flow, veh/h	516	545	0	1414	47	1555	1810	1632	223	1792	1876	5
Grp Volume(v), veh/h	2	0	0	31	0	34	0	0	516	347	0	395
Grp Sat Flow(s),veh/h/ln	1061	0	0	1414	0	1602	1810	0	1855	1792	0	1880
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	8.9	6.8	0.0	2.7
Cycle Q Clear(g_c), s	0.8	0.0	0.0	0.6	0.0	0.8	0.0	0.0	8.9	6.8	0.0	2.7
Prop In Lane	0.50		0.00	1.00		0.97	1.00		0.12	1.00		0.00
Lane Grp Cap(c), veh/h	206	0	0	282	0	92	5	0	705	432	0	1369
V/C Ratio(X)	0.01	0.00	0.00	0.11	0.00	0.37	0.00	0.00	0.73	0.80	0.00	0.29
Avail Cap(c_a), veh/h	1622	0	0	1529	0	1504	534	0	3583	1009	0	4136
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	0.0	16.9	0.0	16.9	0.0	0.0	10.0	13.3	0.0	1.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.9	0.0	0.0	0.6	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.3	0.0	0.4	0.0	0.0	4.6	3.4	0.0	1.3
LnGrp Delay(d),s/veh	16.7	0.0	0.0	16.9	0.0	17.9	0.0	0.0	10.6	14.7	0.0	1.8
LnGrp LOS	B			B		B			B	B		A
Approach Vol, veh/h		2			65			516			742	
Approach Delay, s/veh		16.7			17.4			10.6			7.8	
Approach LOS		B			B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.0	18.2		6.1	0.0	31.1		6.1
Change Period (Y+Rc), s	4.0	5.3		4.0	4.0	5.3		4.0
Max Green Setting (Gmax), s	21.0	70.7		35.0	11.0	80.7		35.0
Max Q Clear Time (g_c+I1), s	8.8	10.9		2.8	0.0	4.7		2.8
Green Ext Time (p_c), s	0.4	1.9		0.0	0.0	1.7		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	9.4
HCM 2010 LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1	0	313	770	1
Future Volume (veh/h)	0	1	0	313	770	1
Number	5	2	6	16	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1881	1881
Adj Flow Rate, veh/h	0	1	0	368	906	1
Adj No. of Lanes	0	1	1	0	2	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	1	1
Cap, veh/h	0	577	0	491	1448	666
Arrive On Green	0.00	0.31	0.00	0.29	0.42	0.42
Sat Flow, veh/h	0	1863	0	1583	3476	1599
Grp Volume(v), veh/h	0	1	0	368	906	1
Grp Sat Flow(s),veh/h/ln	0	1863	0	1583	1738	1599
Q Serve(g_s), s	0.0	0.0	0.0	6.2	6.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	6.2	6.0	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	577	0	491	1448	666
V/C Ratio(X)	0.00	0.00	0.00	0.75	0.63	0.00
Avail Cap(c_a), veh/h	0	828	0	704	9427	4337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	7.0	0.0	9.3	6.7	5.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.7	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	3.0	2.9	0.0
LnGrp Delay(d),s/veh	0.0	7.0	0.0	12.0	7.2	5.0
LnGrp LOS		A		B	A	A
Approach Vol, veh/h		1	368		907	
Approach Delay, s/veh		7.0	12.0		7.2	
Approach LOS		A	B		A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		13.1				13.1		16.2
Change Period (Y+Rc), s		4.5				4.5		4.5
Max Green Setting (Gmax), s		12.5				12.5		78.8
Max Q Clear Time (g_c+I1), s		2.0				8.2		8.0
Green Ext Time (p_c), s		0.0				0.9		3.7

Intersection Summary	
HCM 2010 Ctrl Delay	8.6
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	801	0	0	247	954	16	3	136	0	0	0
Future Volume (veh/h)	6	801	0	0	247	954	16	3	136	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1881	1881	0	0	1881	1881	1845	1845	1845			
Adj Flow Rate, veh/h	6	826	0	0	255	531	18	0	25			
Adj No. of Lanes	2	3	0	0	1	2	2	0	1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	1	1	0	0	1	1	3	3	3			
Cap, veh/h	23	2806	0	0	682	1160	349	0	156			
Arrive On Green	0.01	0.55	0.00	0.00	0.36	0.36	0.10	0.00	0.10			
Sat Flow, veh/h	3476	5305	0	0	1881	3198	3514	0	1568			
Grp Volume(v), veh/h	6	826	0	0	255	531	18	0	25			
Grp Sat Flow(s),veh/h/ln	1738	1712	0	0	1881	1599	1757	0	1568			
Q Serve(g_s), s	0.0	2.0	0.0	0.0	2.3	2.9	0.1	0.0	0.3			
Cycle Q Clear(g_c), s	0.0	2.0	0.0	0.0	2.3	2.9	0.1	0.0	0.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	23	2806	0	0	682	1160	349	0	156			
V/C Ratio(X)	0.26	0.29	0.00	0.00	0.37	0.46	0.05	0.00	0.16			
Avail Cap(c_a), veh/h	2463	17056	0	0	4582	7789	7313	0	3263			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	11.2	2.8	0.0	0.0	5.3	5.5	9.2	0.0	9.3			
Incr Delay (d2), s/veh	2.3	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.9	0.0	0.0	1.2	1.3	0.1	0.0	0.3			
LnGrp Delay(d),s/veh	13.4	2.8	0.0	0.0	5.4	5.6	9.2	0.0	9.5			
LnGrp LOS	B	A			A	A	A		A			
Approach Vol, veh/h		832			786			43				
Approach Delay, s/veh		2.9			5.5			9.4				
Approach LOS		A			A			A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		16.3		6.2	4.1	12.2		
Change Period (Y+Rc), s		5.3		5.3	4.0	5.3		
Max Green Setting (Gmax), s		73.7		45.7	16.0	53.7		
Max Q Clear Time (g_c+I1), s		4.0		2.3	2.0	4.9		
Green Ext Time (p_c), s		3.7		0.1	0.0	2.0		

Intersection Summary	
HCM 2010 Ctrl Delay	4.3
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	173	172	227	162	134	92	468	122	84	814	59
Future Volume (veh/h)	118	173	172	227	162	134	92	468	122	84	814	59
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1863	1863	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	130	190	167	249	178	129	101	514	121	92	895	62
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	164	220	193	290	310	225	129	952	223	119	1102	76
Arrive On Green	0.09	0.24	0.24	0.16	0.31	0.31	0.07	0.33	0.32	0.07	0.33	0.31
Sat Flow, veh/h	1792	918	807	1774	996	722	1792	2873	673	1792	3385	234
Grp Volume(v), veh/h	130	0	357	249	0	307	101	319	316	92	473	484
Grp Sat Flow(s),veh/h/ln	1792	0	1724	1774	0	1718	1792	1787	1759	1792	1787	1832
Q Serve(g_s), s	5.7	0.0	15.9	11.0	0.0	12.0	4.5	11.7	11.8	4.1	19.5	19.5
Cycle Q Clear(g_c), s	5.7	0.0	15.9	11.0	0.0	12.0	4.5	11.7	11.8	4.1	19.5	19.5
Prop In Lane	1.00		0.47	1.00		0.42	1.00		0.38	1.00		0.13
Lane Grp Cap(c), veh/h	164	0	413	290	0	535	129	592	583	119	582	596
V/C Ratio(X)	0.79	0.00	0.86	0.86	0.00	0.57	0.78	0.54	0.54	0.78	0.81	0.81
Avail Cap(c_a), veh/h	335	0	730	442	0	835	201	846	832	268	913	936
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	0.0	29.3	32.7	0.0	23.2	36.6	21.8	22.1	36.9	24.8	24.9
Incr Delay (d2), s/veh	3.2	0.0	2.1	6.7	0.0	0.4	4.1	0.3	0.3	4.0	1.5	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	7.8	5.9	0.0	5.8	2.3	5.8	5.8	2.2	9.8	10.1
LnGrp Delay(d),s/veh	38.9	0.0	31.4	39.4	0.0	23.5	40.7	22.1	22.4	40.9	26.3	26.4
LnGrp LOS	D		C	D		C	D	C	C	D	C	C
Approach Vol, veh/h		487			556			736			1049	
Approach Delay, s/veh		33.4			30.7			24.8			27.6	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	30.6	17.1	23.2	9.8	30.1	11.4	29.0
Change Period (Y+Rc), s	4.0	5.3	4.0	4.0	4.0	5.3	4.0	4.0
Max Green Setting (Gmax), s	12.0	36.7	20.0	34.0	9.0	39.7	15.0	39.0
Max Q Clear Time (g_c+I1), s	6.1	13.8	13.0	17.9	6.5	21.5	7.7	14.0
Green Ext Time (p_c), s	0.0	2.2	0.2	1.1	0.0	3.3	0.1	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	28.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	38	4	0	40	5	18	57	0	5	28	140
Future Volume (veh/h)	190	38	4	0	40	5	18	57	0	5	28	140
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	221	44	4	0	47	6	20	62	0	6	30	163
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.86	0.86	0.92	0.92	0.86	0.86	0.92	0.92	0.92	0.86	0.92	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	270	460	42	2	108	14	41	384	0	620	133	720
Arrive On Green	0.15	0.27	0.27	0.00	0.07	0.06	0.02	0.21	0.00	0.35	0.53	0.53
Sat Flow, veh/h	1774	1683	153	1774	1620	207	1774	1863	0	1774	252	1369
Grp Volume(v), veh/h	221	0	48	0	0	53	20	62	0	6	0	193
Grp Sat Flow(s),veh/h/ln	1774	0	1836	1774	0	1826	1774	1863	0	1774	0	1621
Q Serve(g_s), s	8.8	0.0	1.4	0.0	0.0	2.0	0.8	2.0	0.0	0.2	0.0	4.6
Cycle Q Clear(g_c), s	8.8	0.0	1.4	0.0	0.0	2.0	0.8	2.0	0.0	0.2	0.0	4.6
Prop In Lane	1.00		0.08	1.00		0.11	1.00		0.00	1.00		0.84
Lane Grp Cap(c), veh/h	270	0	502	2	0	121	41	384	0	620	0	852
V/C Ratio(X)	0.82	0.00	0.10	0.00	0.00	0.44	0.49	0.16	0.00	0.01	0.00	0.23
Avail Cap(c_a), veh/h	270	0	606	121	0	463	121	469	0	620	0	852
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.0	0.0	19.8	0.0	0.0	32.8	35.3	23.8	0.0	15.5	0.0	9.2
Incr Delay (d2), s/veh	17.8	0.0	0.1	0.0	0.0	2.5	9.0	0.2	0.0	0.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	0.0	0.7	0.0	0.0	1.1	0.5	1.0	0.0	0.1	0.0	2.2
LnGrp Delay(d),s/veh	47.8	0.0	19.9	0.0	0.0	35.3	44.3	24.0	0.0	15.5	0.0	9.8
LnGrp LOS	D		B			D	D	C		B		A
Approach Vol, veh/h		269			53			82			199	
Approach Delay, s/veh		42.8			35.3			28.9			10.0	
Approach LOS		D			D			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.5	19.6	0.0	24.0	6.2	42.9	15.1	8.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	25.0	18.4	5.0	23.6	5.0	38.4	10.6	18.0
Max Q Clear Time (g_c+I1), s	2.2	4.0	0.0	3.4	2.8	6.6	10.8	4.0
Green Ext Time (p_c), s	0.0	0.2	0.0	0.2	0.0	1.1	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	29.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	849	168	104	863	223	42	53	58	523	85	96
Future Volume (veh/h)	158	849	168	104	863	223	42	53	58	523	85	96
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	178	954	178	117	970	133	47	60	40	588	96	-91
Adj No. of Lanes	1	3	0	1	3	1	1	2	0	2	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	1	1	1
Cap, veh/h	197	1517	282	151	1663	515	67	254	155	513	820	367
Arrive On Green	0.11	0.35	0.33	0.08	0.33	0.33	0.04	0.12	0.10	0.15	0.23	0.00
Sat Flow, veh/h	1774	4298	799	1774	5085	1576	1792	2132	1302	3476	3574	1599
Grp Volume(v), veh/h	178	752	380	117	970	133	47	49	51	588	96	-91
Grp Sat Flow(s),veh/h/ln	1774	1695	1707	1774	1695	1576	1792	1787	1647	1738	1787	1599
Q Serve(g_s), s	5.4	10.0	10.1	3.5	8.6	3.4	1.4	1.4	1.5	8.0	1.2	0.0
Cycle Q Clear(g_c), s	5.4	10.0	10.1	3.5	8.6	3.4	1.4	1.4	1.5	8.0	1.2	0.0
Prop In Lane	1.00		0.47	1.00		1.00	1.00		0.79	1.00		1.00
Lane Grp Cap(c), veh/h	197	1196	602	151	1663	515	67	213	196	513	820	367
V/C Ratio(X)	0.91	0.63	0.63	0.78	0.58	0.26	0.70	0.23	0.26	1.15	0.12	-0.25
Avail Cap(c_a), veh/h	197	2585	1302	360	4347	1347	198	1442	1329	513	3016	1349
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	23.8	14.6	14.9	24.3	15.2	13.4	25.8	21.6	22.2	23.1	16.5	0.0
Incr Delay (d2), s/veh	38.2	0.2	0.4	3.2	0.1	0.1	4.9	0.2	0.3	86.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	4.6	4.7	1.9	4.0	1.5	0.8	0.7	0.7	9.9	0.6	0.0
LnGrp Delay(d),s/veh	62.0	14.8	15.3	27.5	15.3	13.5	30.6	21.8	22.4	109.4	16.6	0.0
LnGrp LOS	E	B	B	C	B	B	C	C	C	F	B	
Approach Vol, veh/h		1310			1220			147			593	
Approach Delay, s/veh		21.3			16.3			24.8			111.2	
Approach LOS		C			B			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	10.4	8.6	23.1	6.0	16.4	10.0	21.7
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	8.0	42.4	11.0	40.0	6.0	44.4	6.0	45.0
Max Q Clear Time (g_c+I1), s	10.0	3.5	5.5	12.1	3.4	3.2	7.4	10.6
Green Ext Time (p_c), s	0.0	0.3	0.1	4.9	0.0	0.3	0.0	4.7

Intersection Summary	
HCM 2010 Ctrl Delay	35.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1391	129	163	1200	23	151	4	141	29	4	8
Future Volume (veh/h)	7	1391	129	163	1200	23	151	4	141	29	4	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	8	1512	140	177	1304	25	164	4	153	32	4	9
Adj No. of Lanes	1	3	0	1	3	0	2	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	32	2534	234	239	3347	64	589	262	222	284	72	161
Arrive On Green	0.02	0.53	0.53	0.13	0.65	0.64	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1774	4737	438	1774	5137	98	2707	1863	1583	1225	511	1149
Grp Volume(v), veh/h	8	1082	570	177	861	468	164	4	153	32	0	13
Grp Sat Flow(s),veh/h/ln	1774	1695	1785	1774	1695	1845	1353	1863	1583	1225	0	1660
Q Serve(g_s), s	0.3	13.8	13.8	6.1	7.5	7.5	3.5	0.1	5.8	1.5	0.0	0.4
Cycle Q Clear(g_c), s	0.3	13.8	13.8	6.1	7.5	7.5	4.0	0.1	5.8	1.6	0.0	0.4
Prop In Lane	1.00		0.25	1.00		0.05	1.00		1.00	1.00		0.69
Lane Grp Cap(c), veh/h	32	1813	955	239	2209	1202	589	262	222	284	0	233
V/C Ratio(X)	0.25	0.60	0.60	0.74	0.39	0.39	0.28	0.02	0.69	0.11	0.00	0.06
Avail Cap(c_a), veh/h	281	3110	1638	561	3646	1984	1494	884	751	693	0	788
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.6	10.0	10.1	26.3	5.1	5.2	25.3	23.4	25.9	24.1	0.0	23.5
Incr Delay (d2), s/veh	3.9	0.3	0.6	4.4	0.1	0.2	0.3	0.0	3.8	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	6.4	6.8	3.2	3.5	3.8	1.3	0.1	2.8	0.5	0.0	0.2
LnGrp Delay(d),s/veh	34.5	10.4	10.7	30.7	5.3	5.4	25.5	23.4	29.6	24.3	0.0	23.6
LnGrp LOS	C	B	B	C	A	A	C	C	C	C		C
Approach Vol, veh/h		1660			1506			321			45	
Approach Delay, s/veh		10.6			8.3			27.4			24.1	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		12.9	12.5	37.8		12.9	5.2	45.2
Change Period (Y+Rc), s		4.0	4.5	4.5		4.0	4.5	4.5
Max Green Setting (Gmax), s		30.0	19.5	57.5		30.0	9.5	67.5
Max Q Clear Time (g_c+I1), s		7.8	8.1	15.8		3.6	2.3	9.5
Green Ext Time (p_c), s		1.1	0.3	17.5		0.1	0.0	13.2

Intersection Summary	
HCM 2010 Ctrl Delay	11.3
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	0	73	0	56	0	264	36	24	271	0
Future Volume (veh/h)	4	0	0	73	0	56	0	264	36	24	271	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.92		1.00	0.94		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1900	1900	1900	1900	1881	1881	1900
Adj Flow Rate, veh/h	5	0	0	90	0	-266	0	326	44	30	335	0
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	1	1	1
Cap, veh/h	358	0	0	359	0	400	9	620	84	55	1138	0
Arrive On Green	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.38	0.32	0.03	0.60	0.00
Sat Flow, veh/h	1326	0	0	1340	1881	0	1810	1635	221	1792	1881	0
Grp Volume(v), veh/h	5	0	0	90	-266	-266	0	0	370	30	335	0
Grp Sat Flow(s),veh/h/ln	1326	0	0	1340	1881	1599	1810	0	1855	1792	1881	0
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.3	1.8	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	3.2	0.3	1.8	0.0
Prop In Lane	1.00		0.00	1.00		0.00	1.00		0.12	1.00		0.00
Lane Grp Cap(c), veh/h	358	0	0	359	0	0	9	0	704	55	1138	0
V/C Ratio(X)	0.01	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.53	0.55	0.29	0.00
Avail Cap(c_a), veh/h	2611	0	0	2637	0	0	969	0	6506	1832	7513	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.2	0.0	0.0	10.3	0.0	0.0	0.0	0.0	5.0	9.8	1.9	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	3.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	1.6	0.2	0.9	0.0
LnGrp Delay(d),s/veh	10.2	0.0	0.0	10.4	0.0	0.0	0.0	0.0	5.2	12.9	2.0	0.0
LnGrp LOS	B			B					A	B	A	
Approach Vol, veh/h		5			-442			370			365	
Approach Delay, s/veh		10.2			-2.1			5.2			2.9	
Approach LOS		B			A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.6	11.8		4.1	0.0	16.4		4.1
Change Period (Y+Rc), s	4.0	5.3		4.0	4.0	5.3		4.0
Max Green Setting (Gmax), s	21.0	70.7		35.0	11.0	80.7		35.0
Max Q Clear Time (g_c+I1), s	2.3	5.2		2.1	0.0	3.8		2.1
Green Ext Time (p_c), s	0.0	1.3		0.0	0.0	1.4		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	147	1299	0
Future Volume (veh/h)	0	0	0	147	1299	0
Number	5	2	6	16	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1881	1881
Adj Flow Rate, veh/h	0	0	0	173	1528	0
Adj No. of Lanes	0	1	1	0	2	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	1	1
Cap, veh/h	0	291	0	247	2125	978
Arrive On Green	0.00	0.00	0.00	0.14	0.61	0.00
Sat Flow, veh/h	0	1863	0	1583	3476	1599
Grp Volume(v), veh/h	0	0	0	173	1528	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1583	1738	1599
Q Serve(g_s), s	0.0	0.0	0.0	3.6	10.5	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	3.6	10.5	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	291	0	247	2125	978
V/C Ratio(X)	0.00	0.00	0.00	0.70	0.72	0.00
Avail Cap(c_a), veh/h	0	703	0	598	8006	3683
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	14.0	4.6	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	3.6	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.8	5.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	17.6	5.1	0.0
LnGrp LOS				B	A	
Approach Vol, veh/h		0	173		1528	
Approach Delay, s/veh		0.0	17.6		5.1	
Approach LOS			B		A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		9.4				9.4		25.0
Change Period (Y+Rc), s		4.5				4.5		4.5
Max Green Setting (Gmax), s		12.5				12.5		78.8
Max Q Clear Time (g_c+I1), s		0.0				5.6		12.5
Green Ext Time (p_c), s		0.0				0.4		8.1

Intersection Summary	
HCM 2010 Ctrl Delay	6.4
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1296	0	0	138	922	4	5	196	0	0	0
Future Volume (veh/h)	10	1296	0	0	138	922	4	5	196	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1881	1881	0	0	1881	1881	1845	1845	1845			
Adj Flow Rate, veh/h	10	1336	0	0	142	498	4	5	87			
Adj No. of Lanes	2	3	0	0	1	2	1	1	1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	1	1	0	0	1	1	3	3	3			
Cap, veh/h	37	3241	0	0	927	1576	200	210	178			
Arrive On Green	0.01	0.63	0.00	0.00	0.49	0.49	0.11	0.11	0.11			
Sat Flow, veh/h	3476	5305	0	0	1881	3198	1757	1845	1568			
Grp Volume(v), veh/h	10	1336	0	0	142	498	4	5	87			
Grp Sat Flow(s),veh/h/ln	1738	1712	0	0	1881	1599	1757	1845	1568			
Q Serve(g_s), s	0.1	4.1	0.0	0.0	1.3	2.9	0.1	0.1	1.6			
Cycle Q Clear(g_c), s	0.1	4.1	0.0	0.0	1.3	2.9	0.1	0.1	1.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	37	3241	0	0	927	1576	200	210	178			
V/C Ratio(X)	0.27	0.41	0.00	0.00	0.15	0.32	0.02	0.02	0.49			
Avail Cap(c_a), veh/h	1773	12283	0	0	3299	5609	2633	2765	2350			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	15.4	2.9	0.0	0.0	4.4	4.8	12.3	12.3	13.0			
Incr Delay (d2), s/veh	3.9	0.1	0.0	0.0	0.1	0.1	0.0	0.0	2.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.1	1.9	0.0	0.0	0.7	1.3	0.0	0.0	1.5			
LnGrp Delay(d),s/veh	19.2	3.0	0.0	0.0	4.4	4.9	12.4	12.4	15.1			
LnGrp LOS	B	A			A	A	B	B	B			
Approach Vol, veh/h		1346			640			96				
Approach Delay, s/veh		3.1			4.8			14.8				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		23.8		7.6	4.3	19.5		
Change Period (Y+Rc), s		5.3		5.3	4.0	5.3		
Max Green Setting (Gmax), s		73.7		45.7	16.0	53.7		
Max Q Clear Time (g_c+I1), s		6.1		3.6	2.1	4.9		
Green Ext Time (p_c), s		12.4		0.3	0.0	2.9		

Intersection Summary	
HCM 2010 Ctrl Delay	4.2
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	105	56	50	90	78	123	448	148	107	384	88
Future Volume (veh/h)	65	105	56	50	90	78	123	448	148	107	384	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	70	113	48	54	97	66	132	482	140	115	413	82
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	101	173	74	83	134	91	173	829	239	149	862	170
Arrive On Green	0.06	0.14	0.14	0.05	0.13	0.13	0.10	0.30	0.26	0.08	0.29	0.25
Sat Flow, veh/h	1810	1267	538	1810	1055	718	1810	2766	798	1810	3008	592
Grp Volume(v), veh/h	70	0	161	54	0	163	132	313	309	115	247	248
Grp Sat Flow(s),veh/h/ln	1810	0	1805	1810	0	1773	1810	1805	1759	1810	1805	1795
Q Serve(g_s), s	1.4	0.0	3.1	1.1	0.0	3.2	2.6	5.4	5.5	2.3	4.1	4.3
Cycle Q Clear(g_c), s	1.4	0.0	3.1	1.1	0.0	3.2	2.6	5.4	5.5	2.3	4.1	4.3
Prop In Lane	1.00		0.30	1.00		0.40	1.00		0.45	1.00		0.33
Lane Grp Cap(c), veh/h	101	0	247	83	0	226	173	541	527	149	518	515
V/C Ratio(X)	0.70	0.00	0.65	0.65	0.00	0.72	0.76	0.58	0.59	0.77	0.48	0.48
Avail Cap(c_a), veh/h	541	0	1816	492	0	1736	935	1963	1913	836	1865	1855
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	0.0	15.0	17.2	0.0	15.4	16.2	10.9	11.2	16.5	10.8	11.0
Incr Delay (d2), s/veh	3.2	0.0	1.1	3.1	0.0	1.6	2.6	0.4	0.4	3.2	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	1.6	0.6	0.0	1.7	1.4	2.8	2.7	1.2	2.1	2.1
LnGrp Delay(d),s/veh	20.3	0.0	16.1	20.4	0.0	17.1	18.9	11.3	11.6	19.7	11.1	11.3
LnGrp LOS	C		B	C		B	B	B	B	B	B	B
Approach Vol, veh/h		231			217			754			610	
Approach Delay, s/veh		17.4			17.9			12.7			12.8	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	15.0	5.7	9.0	7.5	14.5	6.0	8.7
Change Period (Y+Rc), s	4.0	5.3	4.0	4.0	4.0	5.3	4.0	4.0
Max Green Setting (Gmax), s	17.0	38.7	10.0	37.0	19.0	36.7	11.0	36.0
Max Q Clear Time (g_c+I1), s	4.3	7.5	3.1	5.1	4.6	6.3	3.4	5.2
Green Ext Time (p_c), s	0.1	2.2	0.0	0.5	0.1	1.7	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	29	10	0	21	4	12	40	0	7	58	145
Future Volume (veh/h)	169	29	10	0	21	4	12	40	0	7	58	145
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	180	31	11	0	22	4	13	43	0	7	63	154
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.94	0.94	0.92	0.92	0.94	0.94	0.92	0.92	0.92	0.94	0.92	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	233	326	116	3	91	17	28	389	0	647	265	647
Arrive On Green	0.13	0.25	0.24	0.00	0.06	0.05	0.02	0.21	0.00	0.36	0.55	0.56
Sat Flow, veh/h	1774	1314	466	1774	1535	279	1774	1863	0	1774	481	1175
Grp Volume(v), veh/h	180	0	42	0	0	26	13	43	0	7	0	217
Grp Sat Flow(s),veh/h/ln	1774	0	1780	1774	0	1814	1774	1863	0	1774	0	1655
Q Serve(g_s), s	6.9	0.0	1.3	0.0	0.0	1.0	0.5	1.3	0.0	0.2	0.0	4.7
Cycle Q Clear(g_c), s	6.9	0.0	1.3	0.0	0.0	1.0	0.5	1.3	0.0	0.2	0.0	4.7
Prop In Lane	1.00		0.26	1.00		0.15	1.00		0.00	1.00		0.71
Lane Grp Cap(c), veh/h	233	0	441	3	0	108	28	389	0	647	0	911
V/C Ratio(X)	0.77	0.00	0.10	0.00	0.00	0.24	0.46	0.11	0.00	0.01	0.00	0.24
Avail Cap(c_a), veh/h	279	0	611	127	0	480	127	493	0	647	0	911
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.4	0.0	20.3	0.0	0.0	31.4	34.1	22.4	0.0	14.2	0.0	8.0
Incr Delay (d2), s/veh	10.6	0.0	0.1	0.0	0.0	1.1	11.2	0.1	0.0	0.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	0.6	0.0	0.0	0.5	0.3	0.7	0.0	0.1	0.0	2.3
LnGrp Delay(d),s/veh	40.0	0.0	20.4	0.0	0.0	32.6	45.3	22.5	0.0	14.2	0.0	8.7
LnGrp LOS	D		C			C	D	C		B		A
Approach Vol, veh/h		222			26			56			224	
Approach Delay, s/veh		36.3			32.6			27.8			8.8	
Approach LOS		D			C			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.5	19.1	0.0	21.3	5.6	43.0	13.2	8.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	25.0	18.5	5.0	23.5	5.0	38.5	10.5	18.0
Max Q Clear Time (g_c+I1), s	2.2	3.3	0.0	3.3	2.5	6.7	8.9	3.0
Green Ext Time (p_c), s	0.0	0.1	0.0	0.1	0.0	1.2	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	23.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	524	13	64	828	143	71	69	120	308	77	190
Future Volume (veh/h)	151	524	13	64	828	143	71	69	120	308	77	190
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	170	589	4	72	930	43	80	78	110	346	87	14
Adj No. of Lanes	1	3	0	1	3	1	1	2	0	2	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	1	1	1
Cap, veh/h	195	1941	13	91	1596	495	102	278	248	445	811	356
Arrive On Green	0.11	0.37	0.35	0.05	0.31	0.31	0.06	0.16	0.13	0.13	0.23	0.23
Sat Flow, veh/h	1774	5211	35	1774	5085	1576	1792	1787	1595	3476	3574	1569
Grp Volume(v), veh/h	170	383	210	72	930	43	80	78	110	346	87	14
Grp Sat Flow(s),veh/h/ln	1774	1695	1856	1774	1695	1576	1792	1787	1595	1738	1787	1569
Q Serve(g_s), s	5.2	4.4	4.4	2.2	8.4	1.1	2.4	2.1	3.5	5.3	1.1	0.4
Cycle Q Clear(g_c), s	5.2	4.4	4.4	2.2	8.4	1.1	2.4	2.1	3.5	5.3	1.1	0.4
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	195	1263	691	91	1596	495	102	278	248	445	811	356
V/C Ratio(X)	0.87	0.30	0.30	0.79	0.58	0.09	0.79	0.28	0.44	0.78	0.11	0.04
Avail Cap(c_a), veh/h	195	2871	1572	195	4307	1335	197	1461	1304	445	2988	1311
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	12.1	12.1	25.7	15.7	13.2	25.5	20.4	21.5	23.1	16.7	16.5
Incr Delay (d2), s/veh	31.5	0.0	0.1	5.8	0.1	0.0	4.9	0.2	0.5	7.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	2.0	2.2	1.2	3.9	0.5	1.3	1.1	1.6	3.0	0.5	0.2
LnGrp Delay(d),s/veh	55.4	12.2	12.2	31.4	15.9	13.3	30.4	20.6	22.0	30.8	16.8	16.5
LnGrp LOS	E	B	B	C	B	B	C	C	C	C	B	B
Approach Vol, veh/h		763			1045			268			447	
Approach Delay, s/veh		21.8			16.8			24.1			27.6	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	12.5	6.8	24.4	7.1	16.4	10.0	21.2
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	7.0	43.4	6.0	45.0	6.0	44.4	6.0	45.0
Max Q Clear Time (g_c+I1), s	7.3	5.5	4.2	6.4	4.4	3.1	7.2	10.4
Green Ext Time (p_c), s	0.0	0.6	0.0	2.2	0.0	0.3	0.0	4.3

Intersection Summary	
HCM 2010 Ctrl Delay	21.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	1013	76	93	1133	13	55	0	143	17	0	1
Future Volume (veh/h)	2	1013	76	93	1133	13	55	0	143	17	0	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	2	1101	83	101	1232	14	60	0	155	18	0	1
Adj No. of Lanes	1	3	0	1	3	0	2	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	26	2286	172	167	2868	33	742	273	232	351	0	232
Arrive On Green	0.01	0.47	0.46	0.09	0.55	0.54	0.15	0.00	0.15	0.15	0.00	0.15
Sat Flow, veh/h	1774	4825	363	1774	5184	59	2736	1863	1583	1227	0	1583
Grp Volume(v), veh/h	2	773	411	101	806	440	60	0	155	18	0	1
Grp Sat Flow(s),veh/h/ln	1774	1695	1799	1774	1695	1852	1368	1863	1583	1227	0	1583
Q Serve(g_s), s	0.0	6.5	6.6	2.3	5.8	5.9	0.8	0.0	3.9	0.5	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.5	6.6	2.3	5.8	5.9	0.8	0.0	3.9	0.5	0.0	0.0
Prop In Lane	1.00		0.20	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	26	1606	852	167	1876	1025	742	273	232	351	0	232
V/C Ratio(X)	0.08	0.48	0.48	0.60	0.43	0.43	0.08	0.00	0.67	0.05	0.00	0.00
Avail Cap(c_a), veh/h	422	4682	2484	845	5489	2999	2296	1330	1131	1048	0	1131
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.4	7.5	7.6	18.3	5.5	5.5	15.7	0.0	17.0	15.5	0.0	15.3
Incr Delay (d2), s/veh	1.2	0.2	0.4	3.5	0.2	0.3	0.0	0.0	3.3	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.1	3.3	1.3	2.7	3.0	0.3	0.0	1.9	0.2	0.0	0.0
LnGrp Delay(d),s/veh	21.7	7.8	8.0	21.7	5.7	5.8	15.7	0.0	20.3	15.6	0.0	15.3
LnGrp LOS	C	A	A	C	A	A	B		C	B		B
Approach Vol, veh/h		1186			1347			215			19	
Approach Delay, s/veh		7.9			6.9			19.0			15.6	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		10.1	8.0	23.9		10.1	4.6	27.2
Change Period (Y+Rc), s		4.0	4.5	4.5		4.0	4.5	4.5
Max Green Setting (Gmax), s		30.0	19.5	57.5		30.0	9.5	67.5
Max Q Clear Time (g_c+I1), s		5.9	4.3	8.6		2.5	2.0	7.9
Green Ext Time (p_c), s		0.7	0.2	10.8		0.0	0.0	11.9

Intersection Summary	
HCM 2010 Ctrl Delay	8.3
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1	0	25	1	298	0	374	50	281	337	1
Future Volume (veh/h)	1	1	0	25	1	298	0	374	50	281	337	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	0.99		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1900	1900	1900	1900	1881	1881	1900
Adj Flow Rate, veh/h	1	1	0	31	1	33	0	462	62	347	416	1
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	1	1	1
Cap, veh/h	173	32	0	280	3	89	5	627	84	431	1370	3
Arrive On Green	0.06	0.06	0.00	0.06	0.06	0.06	0.00	0.38	0.35	0.24	0.73	0.70
Sat Flow, veh/h	515	555	0	1414	47	1555	1810	1636	220	1792	1876	5
Grp Volume(v), veh/h	2	0	0	31	0	34	0	0	524	347	0	417
Grp Sat Flow(s),veh/h/ln	1071	0	0	1414	0	1602	1810	0	1856	1792	0	1880
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	9.1	6.9	0.0	2.9
Cycle Q Clear(g_c), s	0.8	0.0	0.0	0.6	0.0	0.8	0.0	0.0	9.1	6.9	0.0	2.9
Prop In Lane	0.50		0.00	1.00		0.97	1.00		0.12	1.00		0.00
Lane Grp Cap(c), veh/h	205	0	0	280	0	91	5	0	711	431	0	1373
V/C Ratio(X)	0.01	0.00	0.00	0.11	0.00	0.37	0.00	0.00	0.74	0.81	0.00	0.30
Avail Cap(c_a), veh/h	1607	0	0	1515	0	1490	529	0	3552	1000	0	4099
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	0.0	17.0	0.0	17.1	0.0	0.0	10.0	13.5	0.0	1.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.9	0.0	0.0	0.6	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.3	0.0	0.4	0.0	0.0	4.6	3.5	0.0	1.4
LnGrp Delay(d),s/veh	16.8	0.0	0.0	17.1	0.0	18.0	0.0	0.0	10.6	14.8	0.0	1.8
LnGrp LOS	B			B		B			B	B		A
Approach Vol, veh/h		2			65			524			764	
Approach Delay, s/veh		16.8			17.6			10.6			7.7	
Approach LOS		B			B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.0	18.4		6.1	0.0	31.5		6.1
Change Period (Y+Rc), s	4.0	5.3		4.0	4.0	5.3		4.0
Max Green Setting (Gmax), s	21.0	70.7		35.0	11.0	80.7		35.0
Max Q Clear Time (g_c+I1), s	8.9	11.1		2.8	0.0	4.9		2.8
Green Ext Time (p_c), s	0.4	2.0		0.0	0.0	1.8		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	9.3
HCM 2010 LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1	0	313	782	1
Future Volume (veh/h)	0	1	0	313	782	1
Number	5	2	6	16	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1881	1881
Adj Flow Rate, veh/h	0	1	0	368	920	1
Adj No. of Lanes	0	1	1	0	2	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	1	1
Cap, veh/h	0	576	0	489	1460	672
Arrive On Green	0.00	0.31	0.00	0.29	0.42	0.42
Sat Flow, veh/h	0	1863	0	1583	3476	1599
Grp Volume(v), veh/h	0	1	0	368	920	1
Grp Sat Flow(s),veh/h/ln	0	1863	0	1583	1738	1599
Q Serve(g_s), s	0.0	0.0	0.0	6.2	6.2	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	6.2	6.2	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	576	0	489	1460	672
V/C Ratio(X)	0.00	0.00	0.00	0.75	0.63	0.00
Avail Cap(c_a), veh/h	0	820	0	697	9333	4293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	7.1	0.0	9.4	6.8	5.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.8	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	3.1	3.0	0.0
LnGrp Delay(d),s/veh	0.0	7.1	0.0	12.3	7.2	5.0
LnGrp LOS		A		B	A	A
Approach Vol, veh/h		1	368		921	
Approach Delay, s/veh		7.1	12.3		7.2	
Approach LOS		A	B		A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		13.1				13.1		16.4
Change Period (Y+Rc), s		4.5				4.5		4.5
Max Green Setting (Gmax), s		12.5				12.5		78.8
Max Q Clear Time (g_c+I1), s		2.0				8.2		8.2
Green Ext Time (p_c), s		0.0				0.8		3.7

Intersection Summary	
HCM 2010 Ctrl Delay	8.6
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	813	0	0	247	958	16	3	136	0	0	0
Future Volume (veh/h)	6	813	0	0	247	958	16	3	136	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1881	1881	0	0	1881	1881	1845	1845	1845			
Adj Flow Rate, veh/h	6	838	0	0	255	535	18	0	25			
Adj No. of Lanes	2	3	0	0	1	2	2	0	1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	1	1	0	0	1	1	3	3	3			
Cap, veh/h	23	2809	0	0	684	1163	349	0	156			
Arrive On Green	0.01	0.55	0.00	0.00	0.36	0.36	0.10	0.00	0.10			
Sat Flow, veh/h	3476	5305	0	0	1881	3198	3514	0	1568			
Grp Volume(v), veh/h	6	838	0	0	255	535	18	0	25			
Grp Sat Flow(s),veh/h/ln	1738	1712	0	0	1881	1599	1757	0	1568			
Q Serve(g_s), s	0.0	2.0	0.0	0.0	2.3	2.9	0.1	0.0	0.3			
Cycle Q Clear(g_c), s	0.0	2.0	0.0	0.0	2.3	2.9	0.1	0.0	0.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	23	2809	0	0	684	1163	349	0	156			
V/C Ratio(X)	0.26	0.30	0.00	0.00	0.37	0.46	0.05	0.00	0.16			
Avail Cap(c_a), veh/h	2458	17028	0	0	4574	7776	7300	0	3258			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	11.2	2.8	0.0	0.0	5.3	5.5	9.2	0.0	9.3			
Incr Delay (d2), s/veh	2.3	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.9	0.0	0.0	1.2	1.3	0.1	0.0	0.3			
LnGrp Delay(d),s/veh	13.4	2.8	0.0	0.0	5.4	5.6	9.2	0.0	9.5			
LnGrp LOS	B	A			A	A	A		A			
Approach Vol, veh/h		844			790			43				
Approach Delay, s/veh		2.9			5.5			9.4				
Approach LOS		A			A			A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		16.4		6.2	4.1	12.2		
Change Period (Y+Rc), s		5.3		5.3	4.0	5.3		
Max Green Setting (Gmax), s		73.7		45.7	16.0	53.7		
Max Q Clear Time (g_c+I1), s		4.0		2.3	2.0	4.9		
Green Ext Time (p_c), s		3.8		0.1	0.0	2.0		

Intersection Summary	
HCM 2010 Ctrl Delay	4.3
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	173	172	245	162	146	92	468	128	84	814	59
Future Volume (veh/h)	118	173	172	245	162	146	92	468	128	84	814	59
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1863	1863	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	130	190	167	269	178	142	101	514	128	92	895	62
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	164	219	192	308	305	244	129	933	231	118	1094	76
Arrive On Green	0.09	0.24	0.24	0.17	0.32	0.32	0.07	0.33	0.31	0.07	0.32	0.31
Sat Flow, veh/h	1792	918	807	1774	952	759	1792	2837	703	1792	3385	234
Grp Volume(v), veh/h	130	0	357	269	0	320	101	323	319	92	473	484
Grp Sat Flow(s),veh/h/ln	1792	0	1724	1774	0	1711	1792	1787	1753	1792	1787	1832
Q Serve(g_s), s	5.9	0.0	16.5	12.3	0.0	13.0	4.6	12.3	12.5	4.2	20.2	20.2
Cycle Q Clear(g_c), s	5.9	0.0	16.5	12.3	0.0	13.0	4.6	12.3	12.5	4.2	20.2	20.2
Prop In Lane	1.00		0.47	1.00		0.44	1.00		0.40	1.00		0.13
Lane Grp Cap(c), veh/h	164	0	411	308	0	549	129	588	577	118	577	592
V/C Ratio(X)	0.79	0.00	0.87	0.87	0.00	0.58	0.78	0.55	0.55	0.78	0.82	0.82
Avail Cap(c_a), veh/h	324	0	706	427	0	803	194	818	802	259	882	905
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	0.0	30.4	33.4	0.0	23.6	37.9	22.8	23.1	38.2	25.9	26.0
Incr Delay (d2), s/veh	3.3	0.0	2.5	10.7	0.0	0.4	5.6	0.3	0.3	4.1	2.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	8.1	6.9	0.0	6.2	2.5	6.1	6.1	2.2	10.3	10.6
LnGrp Delay(d),s/veh	40.3	0.0	32.9	44.1	0.0	23.9	43.5	23.1	23.4	42.2	27.9	27.9
LnGrp LOS	D		C	D		C	D	C	C	D	C	C
Approach Vol, veh/h		487			589			743			1049	
Approach Delay, s/veh		34.8			33.2			26.0			29.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	31.3	18.4	23.8	10.0	30.8	11.6	30.6
Change Period (Y+Rc), s	4.0	5.3	4.0	4.0	4.0	5.3	4.0	4.0
Max Green Setting (Gmax), s	12.0	36.7	20.0	34.0	9.0	39.7	15.0	39.0
Max Q Clear Time (g_c+I1), s	6.2	14.5	14.3	18.5	6.6	22.2	7.9	15.0
Green Ext Time (p_c), s	0.0	2.2	0.2	1.1	0.0	3.3	0.1	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	30.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	38	14	0	40	5	48	149	0	5	58	140
Future Volume (veh/h)	190	38	14	0	40	5	48	149	0	5	58	140
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	221	44	15	0	47	6	52	162	0	6	63	163
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.86	0.86	0.92	0.92	0.86	0.86	0.92	0.92	0.92	0.86	0.92	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	263	357	122	2	109	14	78	416	0	605	236	612
Arrive On Green	0.15	0.27	0.26	0.00	0.07	0.06	0.04	0.22	0.00	0.34	0.51	0.52
Sat Flow, veh/h	1774	1330	453	1774	1620	207	1774	1863	0	1774	461	1192
Grp Volume(v), veh/h	221	0	59	0	0	53	52	162	0	6	0	226
Grp Sat Flow(s),veh/h/ln	1774	0	1783	1774	0	1826	1774	1863	0	1774	0	1652
Q Serve(g_s), s	9.1	0.0	1.9	0.0	0.0	2.1	2.2	5.5	0.0	0.2	0.0	5.7
Cycle Q Clear(g_c), s	9.1	0.0	1.9	0.0	0.0	2.1	2.2	5.5	0.0	0.2	0.0	5.7
Prop In Lane	1.00		0.25	1.00		0.11	1.00		0.00	1.00		0.72
Lane Grp Cap(c), veh/h	263	0	479	2	0	122	78	416	0	605	0	848
V/C Ratio(X)	0.84	0.00	0.12	0.00	0.00	0.43	0.66	0.39	0.00	0.01	0.00	0.27
Avail Cap(c_a), veh/h	263	0	574	119	0	452	119	458	0	605	0	848
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.0	0.0	20.7	0.0	0.0	33.6	35.2	24.7	0.0	16.3	0.0	10.2
Incr Delay (d2), s/veh	20.8	0.0	0.1	0.0	0.0	2.4	9.2	0.6	0.0	0.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.0	0.9	0.0	0.0	1.1	1.3	2.9	0.0	0.1	0.0	2.8
LnGrp Delay(d),s/veh	51.8	0.0	20.8	0.0	0.0	36.0	44.5	25.3	0.0	16.3	0.0	10.9
LnGrp LOS	D		C			D	D	C		B		B
Approach Vol, veh/h		280			53			214			232	
Approach Delay, s/veh		45.3			36.0			30.0			11.1	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.5	21.2	0.0	24.1	7.8	42.9	15.1	9.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	25.0	18.4	5.0	23.6	5.0	38.4	10.6	18.0
Max Q Clear Time (g_c+I1), s	2.2	7.5	0.0	3.9	4.2	7.7	11.1	4.1
Green Ext Time (p_c), s	0.0	0.6	0.0	0.2	0.0	1.3	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	30.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	849	189	180	863	223	54	57	103	523	92	96
Future Volume (veh/h)	158	849	189	180	863	223	54	57	103	523	92	96
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	178	954	201	202	970	133	61	64	91	588	103	-91
Adj No. of Lanes	1	3	0	1	3	1	1	2	0	2	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	1	1	1
Cap, veh/h	144	1413	297	248	2011	624	77	241	215	450	792	354
Arrive On Green	0.08	0.34	0.32	0.14	0.40	0.40	0.04	0.14	0.11	0.13	0.22	0.00
Sat Flow, veh/h	1774	4199	882	1774	5085	1577	1792	1787	1595	3476	3574	1599
Grp Volume(v), veh/h	178	770	385	202	970	133	61	64	91	588	103	-91
Grp Sat Flow(s),veh/h/ln	1774	1695	1691	1774	1695	1577	1792	1787	1595	1738	1787	1599
Q Serve(g_s), s	5.0	12.0	12.2	6.8	8.8	3.4	2.1	2.0	3.3	8.0	1.4	0.0
Cycle Q Clear(g_c), s	5.0	12.0	12.2	6.8	8.8	3.4	2.1	2.0	3.3	8.0	1.4	0.0
Prop In Lane	1.00		0.52	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	144	1140	569	248	2011	624	77	241	215	450	792	354
V/C Ratio(X)	1.24	0.67	0.68	0.81	0.48	0.21	0.79	0.27	0.42	1.31	0.13	-0.26
Avail Cap(c_a), veh/h	144	2102	1048	373	3811	1182	232	1293	1154	450	2586	1157
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.4	17.6	17.9	25.8	13.9	12.3	29.3	24.0	25.1	26.9	19.3	0.0
Incr Delay (d2), s/veh	153.4	0.3	0.5	4.7	0.1	0.1	6.6	0.2	0.5	153.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	5.6	5.7	3.6	4.1	1.5	1.2	1.0	1.5	13.3	0.7	0.0
LnGrp Delay(d),s/veh	181.8	17.9	18.5	30.4	14.0	12.4	35.9	24.2	25.6	180.1	19.3	0.0
LnGrp LOS	F	B	B	C	B	B	D	C	C	F	B	
Approach Vol, veh/h		1333			1305			216			600	
Approach Delay, s/veh		39.9			16.4			28.1			179.8	
Approach LOS		D			B			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	12.3	12.7	24.8	6.7	17.7	9.0	28.4
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	8.0	43.4	13.0	37.0	8.0	43.4	5.0	45.0
Max Q Clear Time (g_c+I1), s	10.0	5.3	8.8	14.2	4.1	3.4	7.0	10.8
Green Ext Time (p_c), s	0.0	0.5	0.1	4.9	0.0	0.4	0.0	4.7

Intersection Summary	
HCM 2010 Ctrl Delay	54.6
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1436	129	163	1276	23	151	4	141	29	4	8
Future Volume (veh/h)	7	1436	129	163	1276	23	151	4	141	29	4	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	8	1561	140	177	1387	25	164	4	153	32	4	9
Adj No. of Lanes	1	3	0	1	3	0	2	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	32	2576	231	238	3386	61	580	259	220	279	71	160
Arrive On Green	0.02	0.54	0.53	0.13	0.66	0.65	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1774	4752	426	1774	5144	93	2707	1863	1583	1225	511	1149
Grp Volume(v), veh/h	8	1113	588	177	914	498	164	4	153	32	0	13
Grp Sat Flow(s),veh/h/ln	1774	1695	1788	1774	1695	1846	1353	1863	1583	1225	0	1660
Q Serve(g_s), s	0.3	14.6	14.6	6.2	8.2	8.2	3.6	0.1	6.0	1.5	0.0	0.4
Cycle Q Clear(g_c), s	0.3	14.6	14.6	6.2	8.2	8.2	4.1	0.1	6.0	1.6	0.0	0.4
Prop In Lane	1.00		0.24	1.00		0.05	1.00		1.00	1.00		0.69
Lane Grp Cap(c), veh/h	32	1838	969	238	2232	1216	580	259	220	279	0	231
V/C Ratio(X)	0.25	0.61	0.61	0.74	0.41	0.41	0.28	0.02	0.69	0.11	0.00	0.06
Avail Cap(c_a), veh/h	273	3022	1594	545	3543	1930	1451	859	730	673	0	765
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.5	10.2	10.2	27.1	5.2	5.2	26.1	24.2	26.7	24.9	0.0	24.3
Incr Delay (d2), s/veh	4.0	0.3	0.6	4.5	0.1	0.2	0.3	0.0	3.9	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	6.7	7.2	3.3	3.8	4.2	1.4	0.1	2.8	0.5	0.0	0.2
LnGrp Delay(d),s/veh	35.5	10.5	10.8	31.6	5.3	5.4	26.3	24.2	30.6	25.0	0.0	24.4
LnGrp LOS	D	B	B	C	A	A	C	C	C	C		C
Approach Vol, veh/h		1709			1589			321			45	
Approach Delay, s/veh		10.7			8.3			28.3			24.9	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		13.1	12.7	39.3		13.1	5.2	46.8
Change Period (Y+Rc), s		4.0	4.5	4.5		4.0	4.5	4.5
Max Green Setting (Gmax), s		30.0	19.5	57.5		30.0	9.5	67.5
Max Q Clear Time (g_c+I1), s		8.0	8.2	16.6		3.6	2.3	10.2
Green Ext Time (p_c), s		1.1	0.3	18.1		0.1	0.0	14.5

Intersection Summary	
HCM 2010 Ctrl Delay	11.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	0	73	0	56	0	285	36	24	283	0
Future Volume (veh/h)	4	0	0	73	0	56	0	285	36	24	283	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.92		1.00	0.94		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1900	1900	1900	1900	1881	1881	1900
Adj Flow Rate, veh/h	5	0	0	90	0	-266	0	352	44	30	349	0
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	1	1	1
Cap, veh/h	351	0	0	353	0	400	9	645	81	55	1152	0
Arrive On Green	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.39	0.33	0.03	0.61	0.00
Sat Flow, veh/h	1326	0	0	1340	1881	0	1810	1652	206	1792	1881	0
Grp Volume(v), veh/h	5	0	0	90	-266	-266	0	0	396	30	349	0
Grp Sat Flow(s),veh/h/ln	1326	0	0	1340	1881	1599	1810	0	1858	1792	1881	0
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.3	1.8	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	3.5	0.3	1.8	0.0
Prop In Lane	1.00		0.00	1.00		0.00	1.00		0.11	1.00		0.00
Lane Grp Cap(c), veh/h	351	0	0	353	0	0	9	0	726	55	1152	0
V/C Ratio(X)	0.01	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.55	0.55	0.30	0.00
Avail Cap(c_a), veh/h	2561	0	0	2586	0	0	951	0	6392	1798	7370	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.4	0.0	0.0	10.5	0.0	0.0	0.0	0.0	5.0	10.0	1.9	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	3.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	1.8	0.2	0.9	0.0
LnGrp Delay(d),s/veh	10.4	0.0	0.0	10.6	0.0	0.0	0.0	0.0	5.2	13.1	2.0	0.0
LnGrp LOS	B			B					A	B	A	
Approach Vol, veh/h		5			-442			396			379	
Approach Delay, s/veh		10.4			-2.2			5.2			2.9	
Approach LOS		B			A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.6	12.2		4.1	0.0	16.8		4.1
Change Period (Y+Rc), s	4.0	5.3		4.0	4.0	5.3		4.0
Max Green Setting (Gmax), s	21.0	70.7		35.0	11.0	80.7		35.0
Max Q Clear Time (g_c+I1), s	2.3	5.5		2.1	0.0	3.8		2.1
Green Ext Time (p_c), s	0.0	1.4		0.0	0.0	1.4		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.3
HCM 2010 LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	147	1307	0
Future Volume (veh/h)	0	0	0	147	1307	0
Number	5	2	6	16	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1881	1881
Adj Flow Rate, veh/h	0	0	0	173	1538	0
Adj No. of Lanes	0	1	1	0	2	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	1	1
Cap, veh/h	0	291	0	247	2132	981
Arrive On Green	0.00	0.00	0.00	0.14	0.61	0.00
Sat Flow, veh/h	0	1863	0	1583	3476	1599
Grp Volume(v), veh/h	0	0	0	173	1538	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1583	1738	1599
Q Serve(g_s), s	0.0	0.0	0.0	3.6	10.6	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	3.6	10.6	0.0
Prop In Lane	0.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	291	0	247	2132	981
V/C Ratio(X)	0.00	0.00	0.00	0.70	0.72	0.00
Avail Cap(c_a), veh/h	0	698	0	593	7940	3653
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	14.1	4.7	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	3.6	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.8	5.1	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	17.7	5.1	0.0
LnGrp LOS				B	A	
Approach Vol, veh/h		0	173		1538	
Approach Delay, s/veh		0.0	17.7		5.1	
Approach LOS			B		A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		9.4				9.4		25.3
Change Period (Y+Rc), s		4.5				4.5		4.5
Max Green Setting (Gmax), s		12.5				12.5		78.8
Max Q Clear Time (g_c+I1), s		0.0				5.6		12.6
Green Ext Time (p_c), s		0.0				0.4		8.1

Intersection Summary	
HCM 2010 Ctrl Delay	6.4
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1304	0	0	138	936	4	5	196	0	0	0
Future Volume (veh/h)	10	1304	0	0	138	936	4	5	196	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1881	1881	0	0	1881	1881	1845	1845	1845			
Adj Flow Rate, veh/h	10	1344	0	0	142	512	4	5	87			
Adj No. of Lanes	2	3	0	0	1	2	1	1	1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	1	1	0	0	1	1	3	3	3			
Cap, veh/h	37	3250	0	0	932	1584	199	209	178			
Arrive On Green	0.01	0.63	0.00	0.00	0.50	0.50	0.11	0.11	0.11			
Sat Flow, veh/h	3476	5305	0	0	1881	3198	1757	1845	1568			
Grp Volume(v), veh/h	10	1344	0	0	142	512	4	5	87			
Grp Sat Flow(s),veh/h/ln	1738	1712	0	0	1881	1599	1757	1845	1568			
Q Serve(g_s), s	0.1	4.1	0.0	0.0	1.3	3.0	0.1	0.1	1.6			
Cycle Q Clear(g_c), s	0.1	4.1	0.0	0.0	1.3	3.0	0.1	0.1	1.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	37	3250	0	0	932	1584	199	209	178			
V/C Ratio(X)	0.27	0.41	0.00	0.00	0.15	0.32	0.02	0.02	0.49			
Avail Cap(c_a), veh/h	1764	12217	0	0	3282	5579	2619	2750	2338			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	15.5	2.9	0.0	0.0	4.3	4.8	12.4	12.4	13.1			
Incr Delay (d2), s/veh	3.9	0.1	0.0	0.0	0.1	0.1	0.0	0.0	2.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.1	1.9	0.0	0.0	0.7	1.3	0.0	0.0	1.5			
LnGrp Delay(d),s/veh	19.3	3.0	0.0	0.0	4.4	4.9	12.5	12.5	15.2			
LnGrp LOS	B	A			A	A	B	B	B			
Approach Vol, veh/h		1354			654			96				
Approach Delay, s/veh		3.1			4.8			14.9				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		24.0		7.6	4.3	19.6		
Change Period (Y+Rc), s		5.3		5.3	4.0	5.3		
Max Green Setting (Gmax), s		73.7		45.7	16.0	53.7		
Max Q Clear Time (g_c+I1), s		6.1		3.6	2.1	5.0		
Green Ext Time (p_c), s		12.5		0.3	0.0	2.9		

Intersection Summary	
HCM 2010 Ctrl Delay	4.2
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	105	56	62	90	86	123	448	169	121	384	88
Future Volume (veh/h)	65	105	56	62	90	86	123	448	169	121	384	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	70	113	48	67	97	74	132	482	163	130	413	82
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	99	171	73	96	134	102	173	804	270	170	906	178
Arrive On Green	0.05	0.14	0.14	0.05	0.13	0.13	0.10	0.30	0.27	0.09	0.30	0.27
Sat Flow, veh/h	1810	1267	538	1810	1001	764	1810	2655	892	1810	3008	592
Grp Volume(v), veh/h	70	0	161	67	0	171	132	327	318	130	247	248
Grp Sat Flow(s),veh/h/ln	1810	0	1805	1810	0	1765	1810	1805	1743	1810	1805	1795
Q Serve(g_s), s	1.5	0.0	3.3	1.4	0.0	3.6	2.7	5.9	6.1	2.7	4.3	4.4
Cycle Q Clear(g_c), s	1.5	0.0	3.3	1.4	0.0	3.6	2.7	5.9	6.1	2.7	4.3	4.4
Prop In Lane	1.00		0.30	1.00		0.43	1.00		0.51	1.00		0.33
Lane Grp Cap(c), veh/h	99	0	244	96	0	236	173	546	527	170	543	541
V/C Ratio(X)	0.71	0.00	0.66	0.70	0.00	0.73	0.76	0.60	0.60	0.77	0.45	0.46
Avail Cap(c_a), veh/h	516	0	1733	469	0	1649	892	1873	1808	798	1779	1770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.9	0.0	15.8	17.9	0.0	16.0	17.0	11.4	11.8	17.0	10.9	11.1
Incr Delay (d2), s/veh	3.4	0.0	1.1	3.4	0.0	1.6	2.6	0.4	0.4	2.7	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	1.7	0.8	0.0	1.8	1.5	3.0	2.9	1.5	2.2	2.2
LnGrp Delay(d),s/veh	21.3	0.0	17.0	21.3	0.0	17.6	19.6	11.8	12.2	19.8	11.1	11.3
LnGrp LOS	C		B	C		B	B	B	B	B	B	B
Approach Vol, veh/h		231			238			777			625	
Approach Delay, s/veh		18.3			18.7			13.3			13.0	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	15.7	6.0	9.2	7.7	15.6	6.1	9.2
Change Period (Y+Rc), s	4.0	5.3	4.0	4.0	4.0	5.3	4.0	4.0
Max Green Setting (Gmax), s	17.0	38.7	10.0	37.0	19.0	36.7	11.0	36.0
Max Q Clear Time (g_c+I1), s	4.7	8.1	3.4	5.3	4.7	6.4	3.5	5.6
Green Ext Time (p_c), s	0.1	2.3	0.0	0.5	0.1	1.7	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	14.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	29	45	0	21	4	32	101	0	7	162	145
Future Volume (veh/h)	169	29	45	0	21	4	32	101	0	7	162	145
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	180	31	49	0	22	4	35	110	0	7	176	154
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.94	0.94	0.92	0.92	0.94	0.94	0.92	0.92	0.92	0.94	0.92	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	231	165	261	2	104	19	62	413	0	625	488	427
Arrive On Green	0.13	0.25	0.25	0.00	0.07	0.06	0.03	0.22	0.00	0.35	0.53	0.54
Sat Flow, veh/h	1774	651	1030	1774	1535	279	1774	1863	0	1774	918	803
Grp Volume(v), veh/h	180	0	80	0	0	26	35	110	0	7	0	330
Grp Sat Flow(s),veh/h/ln	1774	0	1681	1774	0	1814	1774	1863	0	1774	0	1721
Q Serve(g_s), s	7.1	0.0	2.7	0.0	0.0	1.0	1.4	3.5	0.0	0.2	0.0	8.0
Cycle Q Clear(g_c), s	7.1	0.0	2.7	0.0	0.0	1.0	1.4	3.5	0.0	0.2	0.0	8.0
Prop In Lane	1.00		0.61	1.00		0.15	1.00		0.00	1.00		0.47
Lane Grp Cap(c), veh/h	231	0	426	2	0	123	62	413	0	625	0	916
V/C Ratio(X)	0.78	0.00	0.19	0.00	0.00	0.21	0.57	0.27	0.00	0.01	0.00	0.36
Avail Cap(c_a), veh/h	270	0	558	123	0	464	123	476	0	625	0	916
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.5	0.0	21.3	0.0	0.0	31.9	34.4	23.3	0.0	15.2	0.0	9.7
Incr Delay (d2), s/veh	11.7	0.0	0.2	0.0	0.0	0.8	7.8	0.3	0.0	0.0	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	1.3	0.0	0.0	0.5	0.8	1.8	0.0	0.1	0.0	4.0
LnGrp Delay(d),s/veh	42.2	0.0	21.5	0.0	0.0	32.8	42.2	23.6	0.0	15.3	0.0	10.8
LnGrp LOS	D		C			C	D	C		B		B
Approach Vol, veh/h		260			26			145			337	
Approach Delay, s/veh		35.8			32.8			28.1			10.9	
Approach LOS		D			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.5	20.5	0.0	22.3	7.0	43.0	13.4	8.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	25.0	18.5	5.0	23.5	5.0	38.5	10.5	18.0
Max Q Clear Time (g_c+I1), s	2.2	5.5	0.0	4.7	3.4	10.0	9.1	3.0
Green Ext Time (p_c), s	0.0	0.4	0.0	0.3	0.0	1.9	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	23.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	727	42	55	1012	161	119	106	94	325	97	204
Future Volume (veh/h)	169	727	42	55	1012	161	119	106	94	325	97	204
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	190	817	36	62	1137	63	134	119	81	365	109	30
Adj No. of Lanes	1	3	0	1	3	1	1	2	0	2	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	1	1	1
Cap, veh/h	171	1597	70	86	1385	429	165	872	554	307	1472	648
Arrive On Green	0.10	0.32	0.32	0.05	0.27	0.27	0.09	0.42	0.41	0.09	0.41	0.41
Sat Flow, veh/h	1774	4991	219	1774	5085	1575	1792	2099	1333	3476	3574	1574
Grp Volume(v), veh/h	190	554	299	62	1137	63	134	100	100	365	109	30
Grp Sat Flow(s),veh/h/ln	1774	1695	1820	1774	1695	1575	1792	1787	1645	1738	1787	1574
Q Serve(g_s), s	12.5	17.3	17.4	4.5	27.2	3.9	9.5	4.5	4.9	11.5	2.4	1.5
Cycle Q Clear(g_c), s	12.5	17.3	17.4	4.5	27.2	3.9	9.5	4.5	4.9	11.5	2.4	1.5
Prop In Lane	1.00		0.12	1.00		1.00	1.00		0.81	1.00		1.00
Lane Grp Cap(c), veh/h	171	1085	582	86	1385	429	165	742	683	307	1472	648
V/C Ratio(X)	1.11	0.51	0.51	0.72	0.82	0.15	0.81	0.13	0.15	1.19	0.07	0.05
Avail Cap(c_a), veh/h	171	1265	679	130	1780	551	172	742	683	307	1472	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.8	35.9	36.0	61.0	44.3	35.9	57.9	23.5	23.8	59.3	23.2	22.9
Incr Delay (d2), s/veh	102.7	0.1	0.3	4.2	2.0	0.1	22.2	0.4	0.5	112.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.0	8.1	8.8	2.3	13.0	1.7	5.7	2.3	2.3	10.3	1.2	0.7
LnGrp Delay(d),s/veh	161.5	36.1	36.2	65.2	46.3	35.9	80.1	23.9	24.2	171.4	23.3	23.1
LnGrp LOS	F	D	D	E	D	D	F	C	C	F	C	C
Approach Vol, veh/h		1043			1262			334			504	
Approach Delay, s/veh		59.0			46.7			46.6			130.5	
Approach LOS		E			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	58.8	9.8	46.4	15.5	58.3	16.0	40.2
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	11.0	43.4	9.0	48.0	12.0	42.4	12.0	45.0
Max Q Clear Time (g_c+I1), s	13.5	6.9	6.5	19.4	11.5	4.4	14.5	29.2
Green Ext Time (p_c), s	0.0	0.7	0.0	3.4	0.0	0.4	0.0	4.7

Intersection Summary	
HCM 2010 Ctrl Delay	64.2
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	1194	92	155	1273	17	115	11	193	19	6	2
Future Volume (veh/h)	6	1194	92	155	1273	17	115	11	193	19	6	2
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	7	1298	100	168	1384	18	125	12	210	21	7	2
Adj No. of Lanes	1	3	0	1	3	0	2	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	15	1642	126	197	2293	30	1321	835	710	569	625	179
Arrive On Green	0.01	0.34	0.34	0.11	0.44	0.44	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	1774	4816	371	1774	5174	67	2717	1863	1583	1154	1394	398
Grp Volume(v), veh/h	7	914	484	168	907	495	125	12	210	21	0	9
Grp Sat Flow(s),veh/h/ln	1774	1695	1797	1774	1695	1851	1358	1863	1583	1154	0	1792
Q Serve(g_s), s	0.5	31.6	31.6	12.1	26.4	26.4	3.5	0.5	11.0	1.3	0.0	0.4
Cycle Q Clear(g_c), s	0.5	31.6	31.6	12.1	26.4	26.4	3.8	0.5	11.0	1.8	0.0	0.4
Prop In Lane	1.00		0.21	1.00		0.04	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	15	1156	613	197	1502	820	1321	835	710	569	0	804
V/C Ratio(X)	0.46	0.79	0.79	0.85	0.60	0.60	0.09	0.01	0.30	0.04	0.00	0.01
Avail Cap(c_a), veh/h	89	1473	781	375	2021	1103	1321	835	710	569	0	804
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	64.1	38.7	38.7	56.8	27.5	27.5	20.9	19.9	22.8	20.4	0.0	19.9
Incr Delay (d2), s/veh	20.0	2.3	4.3	10.0	0.4	0.7	0.1	0.0	1.1	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	15.1	16.3	6.5	12.4	13.6	1.3	0.2	5.0	0.4	0.0	0.2
LnGrp Delay(d),s/veh	84.2	41.0	43.0	66.8	27.9	28.2	21.1	19.9	23.9	20.5	0.0	19.9
LnGrp LOS	F	D	D	E	C	C	C	B	C	C		B
Approach Vol, veh/h		1405			1570			347			30	
Approach Delay, s/veh		41.9			32.2			22.7			20.3	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		62.3	18.9	48.8		62.3	5.6	62.1
Change Period (Y+Rc), s		4.0	4.5	4.5		4.0	4.5	4.5
Max Green Setting (Gmax), s		33.0	27.5	56.5		33.0	6.5	77.5
Max Q Clear Time (g_c+I1), s		13.0	14.1	33.6		3.8	2.5	28.4
Green Ext Time (p_c), s		1.2	0.4	10.7		0.1	0.0	14.0

Intersection Summary	
HCM 2010 Ctrl Delay	35.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1	0	26	1	313	0	414	53	295	412	1
Future Volume (veh/h)	1	1	0	26	1	313	0	414	53	295	412	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1900	1900	1900	1900	1881	1881	1900
Adj Flow Rate, veh/h	1	1	0	32	1	51	0	511	65	364	509	1
Adj No. of Lanes	1	1	1	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	1	1	1
Cap, veh/h	24	47	20	88	2	95	4	796	101	463	2164	4
Arrive On Green	0.01	0.02	0.00	0.05	0.06	0.06	0.00	0.25	0.24	0.26	0.59	0.58
Sat Flow, veh/h	1810	1900	1615	1792	31	1568	1810	3215	407	1792	3660	7
Grp Volume(v), veh/h	1	1	0	32	0	52	0	286	290	364	249	261
Grp Sat Flow(s),veh/h/ln	1810	1900	1615	1792	0	1599	1810	1805	1818	1792	1787	1880
Q Serve(g_s), s	0.0	0.0	0.0	0.7	0.0	1.3	0.0	5.8	5.9	7.8	2.7	2.7
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.7	0.0	1.3	0.0	5.8	5.9	7.8	2.7	2.7
Prop In Lane	1.00		1.00	1.00		0.98	1.00		0.22	1.00		0.00
Lane Grp Cap(c), veh/h	24	47	20	88	0	97	4	447	450	463	1056	1111
V/C Ratio(X)	0.04	0.02	0.00	0.36	0.00	0.54	0.00	0.64	0.64	0.79	0.24	0.24
Avail Cap(c_a), veh/h	417	1637	1372	413	0	1378	242	1148	1156	1370	2264	2382
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.1	19.6	0.0	19.0	0.0	18.8	0.0	13.9	13.9	14.2	4.0	4.0
Incr Delay (d2), s/veh	0.7	0.1	0.0	2.5	0.0	1.7	0.0	0.6	0.6	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.4	0.0	0.6	0.0	2.9	3.0	4.0	1.3	1.4
LnGrp Delay(d),s/veh	20.7	19.7	0.0	21.4	0.0	20.5	0.0	14.4	14.5	15.3	4.0	4.0
LnGrp LOS	C	B		C		C		B	B	B	A	A
Approach Vol, veh/h		2			84			576			874	
Approach Delay, s/veh		20.2			20.9			14.5			8.7	
Approach LOS		C			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	15.0	7.5	4.5	0.0	29.2	6.1	6.0
Change Period (Y+Rc), s	4.0	5.3	6.0	4.0	4.0	5.3	6.0	4.0
Max Green Setting (Gmax), s	31.0	25.7	9.0	35.0	5.0	51.7	9.0	35.0
Max Q Clear Time (g_c+I1), s	9.8	7.9	2.7	2.0	0.0	4.7	2.0	3.3
Green Ext Time (p_c), s	0.5	1.8	0.0	0.0	0.0	2.1	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	11.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	109	0	0	37	75	0	0	0	100	0	58
Future Volume (veh/h)	142	109	0	0	37	75	0	0	0	100	0	58
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	1863	1863	1863				1863	0	1863
Adj Flow Rate, veh/h	154	118	0	0	40	82				109	0	63
Adj No. of Lanes	1	1	0	1	1	1				1	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	2	2	2				2	0	2
Cap, veh/h	273	943	0	7	347	262				288	0	224
Arrive On Green	0.15	0.51	0.00	0.00	0.19	0.17				0.16	0.00	0.14
Sat Flow, veh/h	1774	1863	0	1774	1863	1583				1774	0	1583
Grp Volume(v), veh/h	154	118	0	0	40	82				109	0	63
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1774	1863	1583				1774	0	1583
Q Serve(g_s), s	1.9	0.8	0.0	0.0	0.4	1.1				1.3	0.0	0.9
Cycle Q Clear(g_c), s	1.9	0.8	0.0	0.0	0.4	1.1				1.3	0.0	0.9
Prop In Lane	1.00		0.00	1.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	273	943	0	7	347	262				288	0	224
V/C Ratio(X)	0.56	0.13	0.00	0.00	0.12	0.31				0.38	0.00	0.28
Avail Cap(c_a), veh/h	661	2932	0	404	2662	2230				2535	0	2230
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	9.5	3.1	0.0	0.0	8.2	8.9				9.0	0.0	9.3
Incr Delay (d2), s/veh	1.8	0.1	0.0	0.0	0.1	0.7				0.8	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.4	0.0	0.0	0.2	0.5				0.7	0.0	0.4
LnGrp Delay(d),s/veh	11.3	3.2	0.0	0.0	8.3	9.5				9.8	0.0	9.9
LnGrp LOS	B	A			A	A				A		A
Approach Vol, veh/h		272			122						172	
Approach Delay, s/veh		7.8			9.1						9.9	
Approach LOS		A			A						A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6	7	8
Phs Duration (G+Y+Rc), s			0.0	16.2		7.9	7.7	8.5
Change Period (Y+Rc), s			4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s			5.0	37.5		34.0	8.5	34.0
Max Q Clear Time (g_c+I1), s			0.0	2.8		3.3	3.9	3.1
Green Ext Time (p_c), s			0.0	0.6		0.5	0.1	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	8.7
HCM 2010 LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	202	108	95	188	4
Future Volume (veh/h)	8	202	108	95	188	4
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	9	220	117	103	204	4
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	31	626	205	166	1286	1148
Arrive On Green	0.02	0.18	0.11	0.10	0.72	0.72
Sat Flow, veh/h	1774	3632	1954	1505	1774	1583
Grp Volume(v), veh/h	9	220	111	109	204	4
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1597	1774	1583
Q Serve(g_s), s	0.4	4.4	4.8	5.3	2.9	0.1
Cycle Q Clear(g_c), s	0.4	4.4	4.8	5.3	2.9	0.1
Prop In Lane	1.00			0.94	1.00	1.00
Lane Grp Cap(c), veh/h	31	626	195	176	1286	1148
V/C Ratio(X)	0.29	0.35	0.57	0.62	0.16	0.00
Avail Cap(c_a), veh/h	283	2304	783	706	1286	1148
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.5	29.4	34.4	34.8	3.5	3.1
Incr Delay (d2), s/veh	5.1	0.3	2.6	3.5	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.2	2.5	2.5	1.5	0.1
LnGrp Delay(d),s/veh	44.6	29.7	36.9	38.3	3.7	3.1
LnGrp LOS	D	C	D	D	A	A
Approach Vol, veh/h		229	220		208	
Approach Delay, s/veh		30.3	37.6		3.7	
Approach LOS		C	D		A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				18.4		63.0	5.4	13.0
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				52.5		58.5	12.5	35.5
Max Q Clear Time (g_c+I1), s				6.4		4.9	2.4	7.3
Green Ext Time (p_c), s				1.3		0.6	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	24.4
HCM 2010 LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	282	342	198	446	836	122
Future Volume (veh/h)	282	342	198	446	836	122
Number	5	2	6	16	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1881	1881
Adj Flow Rate, veh/h	332	402	233	525	984	144
Adj No. of Lanes	1	3	2	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	1	1
Cap, veh/h	373	3038	1243	563	1085	492
Arrive On Green	0.21	0.60	0.35	0.36	0.31	0.31
Sat Flow, veh/h	1774	5253	3632	1583	3476	1599
Grp Volume(v), veh/h	332	402	233	525	984	144
Grp Sat Flow(s),veh/h/ln	1774	1695	1770	1583	1738	1599
Q Serve(g_s), s	20.3	3.9	5.1	35.7	30.3	7.6
Cycle Q Clear(g_c), s	20.3	3.9	5.1	35.7	30.3	7.6
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	373	3038	1243	563	1085	492
V/C Ratio(X)	0.89	0.13	0.19	0.93	0.91	0.29
Avail Cap(c_a), veh/h	509	3861	1545	698	1408	641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	9.8	25.1	34.6	36.8	29.4
Incr Delay (d2), s/veh	13.9	0.0	0.0	15.7	6.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.4	1.8	2.5	18.1	15.4	3.4
LnGrp Delay(d),s/veh	56.7	9.8	25.2	50.4	43.1	29.5
LnGrp LOS	E	A	C	D	D	C
Approach Vol, veh/h		734	758		1128	
Approach Delay, s/veh		31.0	42.6		41.4	
Approach LOS		C	D		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		71.9			27.5	44.5		39.6
Change Period (Y+Rc), s		5.3			4.5	5.3		5.3
Max Green Setting (Gmax), s		84.7			31.5	48.7		44.7
Max Q Clear Time (g_c+I1), s		5.9			22.3	37.7		32.3
Green Ext Time (p_c), s		1.7			0.7	1.5		2.0

Intersection Summary	
HCM 2010 Ctrl Delay	38.8
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	273	942	0	0	425	1091	156	3	181	0	0	0
Future Volume (veh/h)	273	942	0	0	425	1091	156	3	181	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1881	1881	0	0	1881	1881	1845	1845	1845			
Adj Flow Rate, veh/h	281	971	0	0	438	672	163	0	72			
Adj No. of Lanes	2	3	0	0	1	2	2	0	1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	1	1	0	0	1	1	3	3	3			
Cap, veh/h	507	3110	0	0	675	1147	414	0	185			
Arrive On Green	0.15	0.61	0.00	0.00	0.36	0.36	0.12	0.00	0.12			
Sat Flow, veh/h	3476	5305	0	0	1881	3198	3514	0	1568			
Grp Volume(v), veh/h	281	971	0	0	438	672	163	0	72			
Grp Sat Flow(s),veh/h/ln	1738	1712	0	0	1881	1599	1757	0	1568			
Q Serve(g_s), s	2.6	3.2	0.0	0.0	6.8	5.9	1.5	0.0	1.5			
Cycle Q Clear(g_c), s	2.6	3.2	0.0	0.0	6.8	5.9	1.5	0.0	1.5			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	507	3110	0	0	675	1147	414	0	185			
V/C Ratio(X)	0.55	0.31	0.00	0.00	0.65	0.59	0.39	0.00	0.39			
Avail Cap(c_a), veh/h	1152	12570	0	0	3791	6444	4609	0	2057			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	13.8	3.3	0.0	0.0	9.3	9.0	14.2	0.0	14.1			
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.0	0.4	0.2	0.2	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.3	1.4	0.0	0.0	3.5	2.5	0.7	0.0	1.3			
LnGrp Delay(d),s/veh	14.1	3.3	0.0	0.0	9.7	9.2	14.4	0.0	14.6			
LnGrp LOS	B	A			A	A	B		B			
Approach Vol, veh/h		1252			1110			235				
Approach Delay, s/veh		5.8			9.4			14.5				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		25.8		8.9	8.6	17.2		
Change Period (Y+Rc), s		5.3		5.3	4.0	5.3		
Max Green Setting (Gmax), s		84.4		45.0	11.0	69.4		
Max Q Clear Time (g_c+I1), s		5.2		3.5	4.6	8.8		
Green Ext Time (p_c), s		4.6		0.4	0.3	3.2		

Intersection Summary	
HCM 2010 Ctrl Delay	8.1
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	180	182	262	170	150	108	670	215	140	942	60
Future Volume (veh/h)	120	180	182	262	170	150	108	670	215	140	942	60
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1863	1863	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	132	198	178	288	187	147	119	736	223	154	1035	63
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	162	219	197	318	317	249	147	872	264	184	1175	71
Arrive On Green	0.09	0.24	0.24	0.18	0.33	0.33	0.08	0.32	0.31	0.10	0.34	0.33
Sat Flow, veh/h	1792	907	815	1774	959	754	1792	2701	818	1792	3417	208
Grp Volume(v), veh/h	132	0	376	288	0	334	119	487	472	154	541	557
Grp Sat Flow(s),veh/h/ln	1792	0	1723	1774	0	1712	1792	1787	1732	1792	1787	1838
Q Serve(g_s), s	7.5	0.0	22.0	16.6	0.0	16.9	6.8	26.4	26.5	8.8	29.7	29.7
Cycle Q Clear(g_c), s	7.5	0.0	22.0	16.6	0.0	16.9	6.8	26.4	26.5	8.8	29.7	29.7
Prop In Lane	1.00		0.47	1.00		0.44	1.00		0.47	1.00		0.11
Lane Grp Cap(c), veh/h	162	0	416	318	0	566	147	577	559	184	614	632
V/C Ratio(X)	0.82	0.00	0.90	0.91	0.00	0.59	0.81	0.84	0.84	0.84	0.88	0.88
Avail Cap(c_a), veh/h	258	0	563	341	0	641	155	652	632	206	704	724
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.5	0.0	38.3	41.9	0.0	29.0	47.0	32.8	33.1	45.9	32.2	32.2
Incr Delay (d2), s/veh	4.8	0.0	12.2	24.8	0.0	0.5	23.7	8.1	8.3	20.9	10.4	10.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	11.9	10.3	0.0	8.1	4.3	14.3	13.9	5.4	16.4	16.8
LnGrp Delay(d),s/veh	51.3	0.0	50.5	66.7	0.0	29.5	70.7	40.9	41.4	66.8	42.6	42.5
LnGrp LOS	D		D	E		C	E	D	D	E	D	D
Approach Vol, veh/h		508			622			1078			1252	
Approach Delay, s/veh		50.7			46.7			44.4			45.5	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.7	37.6	22.6	29.2	12.5	39.8	13.4	38.4
Change Period (Y+Rc), s	4.0	5.3	4.0	4.0	4.0	5.3	4.0	4.0
Max Green Setting (Gmax), s	12.0	36.7	20.0	34.0	9.0	39.7	15.0	39.0
Max Q Clear Time (g_c+I1), s	10.8	28.5	18.6	24.0	8.8	31.7	9.5	18.9
Green Ext Time (p_c), s	0.0	2.5	0.1	1.0	0.0	2.8	0.1	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	46.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	40	130	0	40	10	39	240	0	10	110	156
Future Volume (veh/h)	215	40	130	0	40	10	39	240	0	10	110	156
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	250	47	151	0	47	12	45	279	0	12	128	181
Adj No. of Lanes	1	1	1	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	270	752	640	5	203	52	114	832	372	52	710	318
Arrive On Green	0.15	0.40	0.40	0.00	0.14	0.13	0.06	0.24	0.00	0.03	0.20	0.20
Sat Flow, veh/h	1774	1863	1583	1774	1432	366	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	250	47	151	0	0	59	45	279	0	12	128	181
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1798	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.0	0.6	2.3	0.0	0.0	1.1	0.9	2.4	0.0	0.2	1.1	3.7
Cycle Q Clear(g_c), s	5.0	0.6	2.3	0.0	0.0	1.1	0.9	2.4	0.0	0.2	1.1	3.7
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	270	752	640	5	0	254	114	832	372	52	710	318
V/C Ratio(X)	0.93	0.06	0.24	0.00	0.00	0.23	0.40	0.34	0.00	0.23	0.18	0.57
Avail Cap(c_a), veh/h	270	952	809	270	0	919	270	1906	853	270	1906	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.2	6.6	7.1	0.0	0.0	13.8	16.3	11.5	0.0	17.2	12.0	13.1
Incr Delay (d2), s/veh	36.0	0.0	0.2	0.0	0.0	0.5	2.2	0.2	0.0	2.2	0.1	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.3	1.0	0.0	0.0	0.6	0.5	1.2	0.0	0.1	0.5	1.7
LnGrp Delay(d),s/veh	51.2	6.6	7.3	0.0	0.0	14.3	18.5	11.7	0.0	19.4	12.1	14.7
LnGrp LOS	D	A	A			B	B	B		B	B	B
Approach Vol, veh/h		448			59			324			321	
Approach Delay, s/veh		31.7			14.3			12.7			13.8	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.1	12.5	0.0	18.6	6.3	11.3	9.5	9.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.0	19.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.2	4.4	0.0	4.3	2.9	5.7	7.0	3.1
Green Ext Time (p_c), s	0.0	1.3	0.0	0.6	0.0	1.0	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	20.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	1108	94	156	1095	240	92	81	87	548	141	114
Future Volume (veh/h)	185	1108	94	156	1095	240	92	81	87	548	141	114
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	208	1245	95	175	1230	152	103	91	73	616	158	-71
Adj No. of Lanes	1	3	0	1	3	1	1	2	0	2	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	1	1	1
Cap, veh/h	256	1698	130	222	1695	525	143	207	152	734	846	378
Arrive On Green	0.14	0.35	0.35	0.13	0.33	0.33	0.08	0.11	0.10	0.21	0.24	0.00
Sat Flow, veh/h	1774	4814	367	1774	5085	1576	1792	1967	1441	3476	3574	1599
Grp Volume(v), veh/h	208	877	463	175	1230	152	103	82	82	616	158	-71
Grp Sat Flow(s),veh/h/ln	1774	1695	1791	1774	1695	1576	1792	1787	1622	1738	1787	1599
Q Serve(g_s), s	9.2	18.2	18.2	7.7	17.2	5.7	4.5	3.5	3.9	13.7	2.8	0.0
Cycle Q Clear(g_c), s	9.2	18.2	18.2	7.7	17.2	5.7	4.5	3.5	3.9	13.7	2.8	0.0
Prop In Lane	1.00		0.21	1.00		1.00	1.00		0.89	1.00		1.00
Lane Grp Cap(c), veh/h	256	1196	632	222	1695	525	143	188	171	734	846	378
V/C Ratio(X)	0.81	0.73	0.73	0.79	0.73	0.29	0.72	0.44	0.48	0.84	0.19	-0.19
Avail Cap(c_a), veh/h	341	1996	1055	297	2868	889	344	973	882	1013	2300	1029
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.4	22.8	22.8	34.2	23.6	19.8	36.2	33.8	34.2	30.5	24.6	0.0
Incr Delay (d2), s/veh	7.8	0.3	0.6	6.9	0.2	0.1	2.6	0.6	0.8	3.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	8.6	9.1	4.2	8.0	2.5	2.3	1.7	1.8	6.9	1.4	0.0
LnGrp Delay(d),s/veh	41.3	23.1	23.4	41.1	23.9	20.0	38.8	34.4	35.0	33.9	24.6	0.0
LnGrp LOS	D	C	C	D	C	B	D	C	D	C	C	
Approach Vol, veh/h		1548			1557			267			703	
Approach Delay, s/veh		25.7			25.4			36.3			35.3	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.5	13.3	13.6	33.3	9.9	23.9	15.2	31.7
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	23.0	43.4	13.0	47.0	15.0	51.4	15.0	45.0
Max Q Clear Time (g_c+I1), s	15.7	5.9	9.7	20.2	6.5	4.8	11.2	19.2
Green Ext Time (p_c), s	0.8	0.5	0.1	6.0	0.1	0.6	0.1	6.1

Intersection Summary	
HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1657	176	240	1460	26	196	10	170	34	14	12
Future Volume (veh/h)	10	1657	176	240	1460	26	196	10	170	34	14	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	11	1801	191	261	1587	28	213	11	185	37	15	13
Adj No. of Lanes	1	3	0	1	3	0	2	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	24	2549	269	304	3620	64	506	274	233	243	136	118
Arrive On Green	0.01	0.55	0.55	0.17	0.70	0.70	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1774	4673	493	1774	5146	91	2670	1863	1583	1182	922	799
Grp Volume(v), veh/h	11	1304	688	261	1045	570	213	11	185	37	0	28
Grp Sat Flow(s),veh/h/ln	1774	1695	1776	1774	1695	1847	1335	1863	1583	1182	0	1722
Q Serve(g_s), s	0.6	27.2	27.5	13.7	12.6	12.6	7.2	0.5	10.8	2.7	0.0	1.3
Cycle Q Clear(g_c), s	0.6	27.2	27.5	13.7	12.6	12.6	8.5	0.5	10.8	3.1	0.0	1.3
Prop In Lane	1.00		0.28	1.00		0.05	1.00		1.00	1.00		0.46
Lane Grp Cap(c), veh/h	24	1850	969	304	2385	1299	506	274	233	243	0	254
V/C Ratio(X)	0.47	0.71	0.71	0.86	0.44	0.44	0.42	0.04	0.79	0.15	0.00	0.11
Avail Cap(c_a), veh/h	95	2464	1290	640	3506	1910	895	545	464	415	0	504
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.8	16.0	16.1	38.5	6.1	6.1	39.0	35.0	39.4	36.3	0.0	35.3
Incr Delay (d2), s/veh	13.8	0.6	1.2	7.1	0.1	0.2	0.6	0.1	6.0	0.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	12.8	13.7	7.3	5.9	6.4	2.7	0.3	5.1	0.9	0.0	0.7
LnGrp Delay(d),s/veh	60.6	16.7	17.3	45.6	6.2	6.3	39.6	35.0	45.4	36.6	0.0	35.5
LnGrp LOS	E	B	B	D	A	A	D	D	D	D		D
Approach Vol, veh/h		2003			1876			409			65	
Approach Delay, s/veh		17.1			11.7			42.1			36.1	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		18.1	20.9	56.7		18.1	5.8	71.8
Change Period (Y+Rc), s		4.0	4.5	4.5		4.0	4.5	4.5
Max Green Setting (Gmax), s		28.0	34.5	69.5		28.0	5.1	98.9
Max Q Clear Time (g_c+I1), s		12.8	15.7	29.5		5.1	2.6	14.6
Green Ext Time (p_c), s		1.3	0.7	22.7		0.2	0.0	19.5

Intersection Summary	
HCM 2010 Ctrl Delay	17.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	0	77	0	59	0	367	38	25	349	0
Future Volume (veh/h)	4	0	0	77	0	59	0	367	38	25	349	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1900	1900	1900	1900	1881	1881	1900
Adj Flow Rate, veh/h	5	0	0	95	0	-262	0	453	47	31	431	0
Adj No. of Lanes	1	1	1	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	1	1	1
Cap, veh/h	51	8	7	214	0	500	8	951	98	94	1744	0
Arrive On Green	0.03	0.00	0.00	0.12	0.00	0.00	0.00	0.29	0.27	0.05	0.49	0.00
Sat Flow, veh/h	1810	1900	1615	1792	1881	0	1810	3303	341	1792	3668	0
Grp Volume(v), veh/h	5	0	0	95	-262	-262	0	247	253	31	431	0
Grp Sat Flow(s),veh/h/ln	1810	1900	1615	1792	1881	1599	1810	1805	1840	1792	1787	0
Q Serve(g_s), s	0.1	0.0	0.0	1.2	0.0	0.0	0.0	2.7	2.7	0.4	1.7	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	1.2	0.0	0.0	0.0	2.7	2.7	0.4	1.7	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.19	1.00		0.00
Lane Grp Cap(c), veh/h	51	8	7	214	0	0	8	520	530	94	1744	0
V/C Ratio(X)	0.10	0.00	0.00	0.44	0.00	0.00	0.00	0.47	0.48	0.33	0.25	0.00
Avail Cap(c_a), veh/h	803	2929	2456	870	0	0	726	2226	2269	2005	6975	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.2	0.0	0.0	9.7	0.0	0.0	0.0	7.0	7.0	10.8	3.5	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	1.4	0.0	0.0	0.0	0.3	0.2	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.7	0.0	0.0	0.0	1.3	1.4	0.2	0.8	0.0
LnGrp Delay(d),s/veh	12.1	0.0	0.0	11.1	0.0	0.0	0.0	7.2	7.3	11.6	3.6	0.0
LnGrp LOS	B			B				A	A	B	A	
Approach Vol, veh/h		5			-429			500			462	
Approach Delay, s/veh		12.1			-2.5			7.2			4.1	
Approach LOS		B			A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.7	11.6	7.3	0.0	0.0	16.4	5.2	2.2
Change Period (Y+Rc), s	4.0	5.3	5.0	4.0	4.0	5.3	5.0	4.0
Max Green Setting (Gmax), s	26.0	28.7	11.0	36.0	9.0	45.7	10.0	37.0
Max Q Clear Time (g_c+I1), s	2.4	4.7	3.2	0.0	0.0	3.7	2.1	0.0
Green Ext Time (p_c), s	0.0	1.6	0.1	0.0	0.0	2.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.3
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	73	0	0	120	143	0	0	0	84	0	193
Future Volume (veh/h)	93	73	0	0	120	143	0	0	0	84	0	193
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	1863	1863	1863				1863	0	1863
Adj Flow Rate, veh/h	101	79	0	0	130	155				91	0	210
Adj No. of Lanes	1	1	0	1	1	1				1	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	2	2	2				2	0	2
Cap, veh/h	208	888	0	7	391	303				398	0	326
Arrive On Green	0.12	0.48	0.00	0.00	0.21	0.19				0.22	0.00	0.21
Sat Flow, veh/h	1774	1863	0	1774	1863	1583				1774	0	1583
Grp Volume(v), veh/h	101	79	0	0	130	155				91	0	210
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1774	1863	1583				1774	0	1583
Q Serve(g_s), s	1.4	0.6	0.0	0.0	1.6	2.3				1.1	0.0	3.3
Cycle Q Clear(g_c), s	1.4	0.6	0.0	0.0	1.6	2.3				1.1	0.0	3.3
Prop In Lane	1.00		0.00	1.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	208	888	0	7	391	303				398	0	326
V/C Ratio(X)	0.49	0.09	0.00	0.00	0.33	0.51				0.23	0.00	0.64
Avail Cap(c_a), veh/h	597	2645	0	365	2402	2012				2287	0	2012
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	11.1	3.8	0.0	0.0	9.0	9.7				8.5	0.0	9.7
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.0	0.5	1.3				0.3	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.3	0.0	0.0	0.8	1.1				0.6	0.0	1.6
LnGrp Delay(d),s/veh	12.8	3.9	0.0	0.0	9.5	11.0				8.8	0.0	11.9
LnGrp LOS	B	A			A	B				A		B
Approach Vol, veh/h		180			285						301	
Approach Delay, s/veh		8.9			10.3						10.9	
Approach LOS		A			B						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6	7	8
Phs Duration (G+Y+Rc), s			0.0	16.8		10.0	7.1	9.6
Change Period (Y+Rc), s			4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s			5.0	37.5		34.0	8.5	34.0
Max Q Clear Time (g_c+I1), s			0.0	2.6		5.3	3.4	4.3
Green Ext Time (p_c), s			0.0	0.3		0.9	0.1	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	10.2
HCM 2010 LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	151	254	155	154	9
Future Volume (veh/h)	5	151	254	155	154	9
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	5	164	276	168	167	10
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	27	1010	437	258	1032	921
Arrive On Green	0.01	0.29	0.20	0.20	0.58	0.58
Sat Flow, veh/h	1774	3632	2236	1266	1774	1583
Grp Volume(v), veh/h	5	164	226	218	167	10
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1639	1774	1583
Q Serve(g_s), s	0.2	2.1	7.0	7.4	2.6	0.2
Cycle Q Clear(g_c), s	0.2	2.1	7.0	7.4	2.6	0.2
Prop In Lane	1.00			0.77	1.00	1.00
Lane Grp Cap(c), veh/h	27	1010	361	334	1032	921
V/C Ratio(X)	0.19	0.16	0.63	0.65	0.16	0.01
Avail Cap(c_a), veh/h	295	2765	971	899	1032	921
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	16.1	21.9	22.2	5.8	5.3
Incr Delay (d2), s/veh	3.4	0.1	1.8	2.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.0	3.6	3.5	1.3	0.2
LnGrp Delay(d),s/veh	32.6	16.2	23.7	24.3	6.1	5.3
LnGrp LOS	C	B	C	C	A	A
Approach Vol, veh/h		169	444		177	
Approach Delay, s/veh		16.7	24.0		6.1	
Approach LOS		B	C		A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				21.2		39.0	4.9	16.3
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				46.5		34.5	9.5	32.5
Max Q Clear Time (g_c+I1), s				4.1		4.6	2.2	9.4
Green Ext Time (p_c), s				1.0		0.5	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	18.4
HCM 2010 LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	158	191	398	351	1491	149
Future Volume (veh/h)	158	191	398	351	1491	149
Number	5	2	6	16	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1881	1881
Adj Flow Rate, veh/h	186	225	468	413	1754	175
Adj No. of Lanes	1	3	2	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	1	1
Cap, veh/h	195	2165	1008	457	1721	786
Arrive On Green	0.11	0.43	0.28	0.29	0.50	0.49
Sat Flow, veh/h	1774	5253	3632	1583	3476	1599
Grp Volume(v), veh/h	186	225	468	413	1754	175
Grp Sat Flow(s),veh/h/ln	1774	1695	1770	1583	1738	1599
Q Serve(g_s), s	13.3	3.4	13.9	32.0	63.2	8.0
Cycle Q Clear(g_c), s	13.3	3.4	13.9	32.0	63.2	8.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	195	2165	1008	457	1721	786
V/C Ratio(X)	0.96	0.10	0.46	0.90	1.02	0.22
Avail Cap(c_a), veh/h	195	2658	1350	610	1721	786
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.5	22.0	37.6	43.7	32.2	18.5
Incr Delay (d2), s/veh	51.7	0.0	0.1	11.8	26.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	1.6	6.8	15.5	36.5	3.5
LnGrp Delay(d),s/veh	108.2	22.0	37.8	55.5	58.8	18.6
LnGrp LOS	F	C	D	E	F	B
Approach Vol, veh/h		411	881		1929	
Approach Delay, s/veh		61.0	46.1		55.2	
Approach LOS		E	D		E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		59.6			18.0	41.6		68.0
Change Period (Y+Rc), s		5.3			4.5	5.3		5.3
Max Green Setting (Gmax), s		66.7			13.5	48.7		62.7
Max Q Clear Time (g_c+I1), s		5.4			15.3	34.0		65.2
Green Ext Time (p_c), s		0.9			0.0	2.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	53.4
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	1533	0	0	432	1058	279	5	276	0	0	0
Future Volume (veh/h)	157	1533	0	0	432	1058	279	5	276	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1881	1881	0	0	1881	1881	1845	1845	1845			
Adj Flow Rate, veh/h	162	1580	0	0	445	638	292	0	170			
Adj No. of Lanes	2	3	0	0	1	2	2	0	1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	1	1	0	0	1	1	3	3	3			
Cap, veh/h	354	2830	0	0	665	1131	657	0	293			
Arrive On Green	0.10	0.55	0.00	0.00	0.35	0.35	0.19	0.00	0.19			
Sat Flow, veh/h	3476	5305	0	0	1881	3198	3514	0	1568			
Grp Volume(v), veh/h	162	1580	0	0	445	638	292	0	170			
Grp Sat Flow(s),veh/h/ln	1738	1712	0	0	1881	1599	1757	0	1568			
Q Serve(g_s), s	1.6	7.3	0.0	0.0	7.3	5.9	2.7	0.0	3.6			
Cycle Q Clear(g_c), s	1.6	7.3	0.0	0.0	7.3	5.9	2.7	0.0	3.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	354	2830	0	0	665	1131	657	0	293			
V/C Ratio(X)	0.46	0.56	0.00	0.00	0.67	0.56	0.44	0.00	0.58			
Avail Cap(c_a), veh/h	617	11902	0	0	3846	6538	4364	0	1947			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	15.5	5.3	0.0	0.0	10.0	9.6	13.2	0.0	13.6			
Incr Delay (d2), s/veh	0.3	0.1	0.0	0.0	0.4	0.2	0.2	0.0	0.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.8	3.4	0.0	0.0	3.8	2.6	1.3	0.0	3.2			
LnGrp Delay(d),s/veh	15.8	5.4	0.0	0.0	10.5	9.7	13.4	0.0	14.3			
LnGrp LOS	B	A			B	A	B		B			
Approach Vol, veh/h		1742			1083			462				
Approach Delay, s/veh		6.4			10.0			13.7				
Approach LOS		A			B			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		25.0		11.6	7.2	17.8		
Change Period (Y+Rc), s		5.3		5.3	4.0	5.3		
Max Green Setting (Gmax), s		84.4		45.0	6.0	74.4		
Max Q Clear Time (g_c+I1), s		9.3		5.6	3.6	9.3		
Green Ext Time (p_c), s		9.3		0.8	0.1	3.1		

Intersection Summary	
HCM 2010 Ctrl Delay	8.6
HCM 2010 LOS	A

Notes

HCM 2010 Signalized Intersection Summary
8: Deer Valley Road & Prewett Ranch Drive

06/10/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	110	75	149	90	90	145	642	213	290	639	90
Future Volume (veh/h)	70	110	75	149	90	90	145	642	213	290	639	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	75	118	69	160	97	79	156	690	210	312	687	84
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	97	152	89	200	186	152	198	886	270	358	1340	164
Arrive On Green	0.05	0.14	0.14	0.11	0.19	0.19	0.11	0.32	0.31	0.20	0.41	0.39
Sat Flow, veh/h	1810	1126	658	1810	970	790	1810	2728	830	1810	3239	396
Grp Volume(v), veh/h	75	0	187	160	0	176	156	456	444	312	383	388
Grp Sat Flow(s),veh/h/ln	1810	0	1784	1810	0	1761	1810	1805	1754	1810	1805	1830
Q Serve(g_s), s	2.8	0.0	7.0	6.0	0.0	6.2	5.8	15.8	15.8	11.5	10.9	11.0
Cycle Q Clear(g_c), s	2.8	0.0	7.0	6.0	0.0	6.2	5.8	15.8	15.8	11.5	10.9	11.0
Prop In Lane	1.00		0.37	1.00		0.45	1.00		0.47	1.00		0.22
Lane Grp Cap(c), veh/h	97	0	241	200	0	338	198	586	569	358	746	757
V/C Ratio(X)	0.77	0.00	0.78	0.80	0.00	0.52	0.79	0.78	0.78	0.87	0.51	0.51
Avail Cap(c_a), veh/h	288	0	956	262	0	918	498	1046	1016	446	994	1007
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.3	0.0	28.9	30.0	0.0	25.1	30.0	21.1	21.4	26.8	15.1	15.2
Incr Delay (d2), s/veh	4.8	0.0	2.0	9.3	0.0	0.5	2.7	0.9	0.9	12.5	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	3.6	3.5	0.0	3.0	3.0	8.0	7.8	7.0	5.5	5.6
LnGrp Delay(d),s/veh	37.1	0.0	30.9	39.2	0.0	25.5	32.6	21.9	22.3	39.3	15.3	15.4
LnGrp LOS	D		C	D		C	C	C	C	D	B	B
Approach Vol, veh/h		262			336			1056			1083	
Approach Delay, s/veh		32.7			32.1			23.6			22.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.7	26.4	11.6	13.3	11.5	32.6	7.7	17.2
Change Period (Y+Rc), s	4.0	5.3	4.0	4.0	4.0	5.3	4.0	4.0
Max Green Setting (Gmax), s	17.0	38.7	10.0	37.0	19.0	36.7	11.0	36.0
Max Q Clear Time (g_c+I1), s	13.5	17.8	8.0	9.0	7.8	13.0	4.8	8.2
Green Ext Time (p_c), s	0.2	3.3	0.0	0.6	0.1	2.7	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	25.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	30	243	0	20	0	67	160	0	10	260	168
Future Volume (veh/h)	190	30	243	0	20	0	67	160	0	10	260	168
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	202	32	259	0	21	0	71	170	0	11	277	179
Adj No. of Lanes	1	1	1	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	256	725	616	5	260	0	146	948	424	49	753	337
Arrive On Green	0.14	0.39	0.39	0.00	0.14	0.00	0.08	0.27	0.00	0.03	0.21	0.21
Sat Flow, veh/h	1774	1863	1583	1774	1863	0	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	202	32	259	0	21	0	71	170	0	11	277	179
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	0	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.2	0.4	4.5	0.0	0.4	0.0	1.5	1.4	0.0	0.2	2.5	3.8
Cycle Q Clear(g_c), s	4.2	0.4	4.5	0.0	0.4	0.0	1.5	1.4	0.0	0.2	2.5	3.8
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	256	725	616	5	260	0	146	948	424	49	753	337
V/C Ratio(X)	0.79	0.04	0.42	0.00	0.08	0.00	0.49	0.18	0.00	0.22	0.37	0.53
Avail Cap(c_a), veh/h	256	906	770	256	906	0	256	1814	811	256	1814	811
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.7	7.2	8.5	0.0	14.2	0.0	16.7	10.7	0.0	18.1	12.8	13.3
Incr Delay (d2), s/veh	15.0	0.0	0.5	0.0	0.1	0.0	2.5	0.1	0.0	2.3	0.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.2	2.0	0.0	0.2	0.0	0.8	0.7	0.0	0.1	1.3	1.8
LnGrp Delay(d),s/veh	30.7	7.2	8.9	0.0	14.4	0.0	19.2	10.8	0.0	20.4	13.1	14.6
LnGrp LOS	C	A	A		B		B	B		C	B	B
Approach Vol, veh/h		493			21			241			467	
Approach Delay, s/veh		17.8			14.4			13.3			13.8	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.0	14.2	0.0	18.8	7.1	12.1	9.5	9.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.0	19.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.2	3.4	0.0	6.5	3.5	5.8	6.2	2.4
Green Ext Time (p_c), s	0.0	0.7	0.0	0.8	0.0	1.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	15.3
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	727	52	59	1012	161	149	112	105	325	99	204
Future Volume (veh/h)	169	727	52	59	1012	161	149	112	105	325	99	204
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	190	817	47	66	1137	63	167	126	93	365	111	30
Adj No. of Lanes	1	3	0	1	3	1	1	2	0	2	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	1	1	1
Cap, veh/h	171	1560	89	91	1385	429	172	842	579	307	1457	642
Arrive On Green	0.10	0.32	0.32	0.05	0.27	0.27	0.10	0.42	0.41	0.09	0.41	0.41
Sat Flow, veh/h	1774	4916	282	1774	5085	1575	1792	2028	1393	3476	3574	1574
Grp Volume(v), veh/h	190	563	301	66	1137	63	167	110	109	365	111	30
Grp Sat Flow(s),veh/h/ln	1774	1695	1808	1774	1695	1575	1792	1787	1634	1738	1787	1574
Q Serve(g_s), s	12.5	17.7	17.8	4.8	27.2	3.9	12.1	5.0	5.5	11.5	2.5	1.5
Cycle Q Clear(g_c), s	12.5	17.7	17.8	4.8	27.2	3.9	12.1	5.0	5.5	11.5	2.5	1.5
Prop In Lane	1.00		0.16	1.00		1.00	1.00		0.85	1.00		1.00
Lane Grp Cap(c), veh/h	171	1076	574	91	1385	429	172	742	679	307	1457	642
V/C Ratio(X)	1.11	0.52	0.53	0.73	0.82	0.15	0.97	0.15	0.16	1.19	0.08	0.05
Avail Cap(c_a), veh/h	171	1265	674	130	1780	551	172	742	679	307	1457	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.8	36.3	36.4	60.8	44.3	35.9	58.6	23.7	23.9	59.3	23.5	23.2
Incr Delay (d2), s/veh	102.7	0.1	0.3	4.9	2.0	0.1	59.1	0.4	0.5	112.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.0	8.3	8.9	2.5	13.0	1.7	8.8	2.6	2.6	10.3	1.2	0.7
LnGrp Delay(d),s/veh	161.5	36.5	36.6	65.7	46.3	35.9	117.6	24.1	24.5	171.4	23.6	23.4
LnGrp LOS	F	D	D	E	D	D	F	C	C	F	C	C
Approach Vol, veh/h		1054			1266			386			506	
Approach Delay, s/veh		59.1			46.8			64.7			130.2	
Approach LOS		E			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	58.8	10.2	46.0	16.0	57.8	16.0	40.2
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	11.0	43.4	9.0	48.0	12.0	42.4	12.0	45.0
Max Q Clear Time (g_c+I1), s	13.5	7.5	6.8	19.8	14.1	4.5	14.5	29.2
Green Ext Time (p_c), s	0.0	0.7	0.0	3.4	0.0	0.4	0.0	4.7

Intersection Summary	
HCM 2010 Ctrl Delay	66.1
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	1205	92	155	1277	17	115	11	194	19	6	2
Future Volume (veh/h)	6	1205	92	155	1277	17	115	11	194	19	6	2
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	7	1310	100	168	1388	18	125	12	211	21	7	2
Adj No. of Lanes	1	3	0	1	3	0	2	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	15	1654	126	197	2305	30	1315	831	706	566	622	178
Arrive On Green	0.01	0.34	0.34	0.11	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	1774	4820	368	1774	5174	67	2717	1863	1583	1153	1394	398
Grp Volume(v), veh/h	7	921	489	168	909	497	125	12	211	21	0	9
Grp Sat Flow(s),veh/h/ln	1774	1695	1798	1774	1695	1851	1358	1863	1583	1153	0	1792
Q Serve(g_s), s	0.5	31.9	31.9	12.1	26.4	26.4	3.5	0.5	11.1	1.3	0.0	0.4
Cycle Q Clear(g_c), s	0.5	31.9	31.9	12.1	26.4	26.4	3.9	0.5	11.1	1.8	0.0	0.4
Prop In Lane	1.00		0.20	1.00		0.04	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	15	1163	617	197	1510	824	1315	831	706	566	0	799
V/C Ratio(X)	0.46	0.79	0.79	0.85	0.60	0.60	0.10	0.01	0.30	0.04	0.00	0.01
Avail Cap(c_a), veh/h	89	1473	781	375	2021	1103	1315	831	706	566	0	799
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	64.1	38.5	38.5	56.8	27.3	27.3	21.1	20.1	23.0	20.6	0.0	20.1
Incr Delay (d2), s/veh	20.0	2.4	4.4	10.0	0.4	0.7	0.1	0.0	1.1	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	15.2	16.5	6.5	12.5	13.7	1.3	0.2	5.0	0.4	0.0	0.2
LnGrp Delay(d),s/veh	84.2	40.9	42.9	66.8	27.7	28.0	21.3	20.1	24.1	20.7	0.0	20.1
LnGrp LOS	F	D	D	E	C	C	C	C	C	C		C
Approach Vol, veh/h		1417			1574			348			30	
Approach Delay, s/veh		41.8			32.0			22.9			20.5	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		62.0	18.9	49.1		62.0	5.6	62.4
Change Period (Y+Rc), s		4.0	4.5	4.5		4.0	4.5	4.5
Max Green Setting (Gmax), s		33.0	27.5	56.5		33.0	6.5	77.5
Max Q Clear Time (g_c+I1), s		13.1	14.1	33.9		3.8	2.5	28.4
Green Ext Time (p_c), s		1.2	0.4	10.7		0.1	0.0	14.0

Intersection Summary	
HCM 2010 Ctrl Delay	35.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1	0	26	1	313	0	416	53	295	418	1
Future Volume (veh/h)	1	1	0	26	1	313	0	416	53	295	418	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1900	1900	1900	1900	1881	1881	1900
Adj Flow Rate, veh/h	1	1	0	32	1	51	0	514	65	364	516	1
Adj No. of Lanes	1	1	1	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	1	1	1
Cap, veh/h	299	163	113	345	3	135	6	894	113	484	2403	5
Arrive On Green	0.09	0.09	0.00	0.09	0.09	0.09	0.00	0.28	0.26	0.27	0.66	0.64
Sat Flow, veh/h	1370	1900	1615	1419	31	1569	1810	3218	405	1792	3660	7
Grp Volume(v), veh/h	1	1	0	32	0	52	0	287	292	364	252	265
Grp Sat Flow(s),veh/h/ln	1370	1900	1615	1419	0	1600	1810	1805	1818	1792	1787	1880
Q Serve(g_s), s	0.0	0.0	0.0	0.7	0.0	1.0	0.0	4.4	4.5	6.0	1.8	1.8
Cycle Q Clear(g_c), s	1.0	0.0	0.0	0.7	0.0	1.0	0.0	4.4	4.5	6.0	1.8	1.8
Prop In Lane	1.00		1.00	1.00		0.98	1.00		0.22	1.00		0.00
Lane Grp Cap(c), veh/h	299	163	113	345	0	137	6	502	505	484	1173	1234
V/C Ratio(X)	0.00	0.01	0.00	0.09	0.00	0.38	0.00	0.57	0.58	0.75	0.21	0.21
Avail Cap(c_a), veh/h	1691	2094	1755	1787	0	1763	253	3093	3115	2086	4893	5147
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.4	13.5	0.0	13.8	0.0	13.9	0.0	10.0	10.1	10.8	2.2	2.2
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.4	0.4	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.3	0.0	0.5	0.0	2.2	2.2	3.1	0.9	0.9
LnGrp Delay(d),s/veh	14.4	13.5	0.0	13.8	0.0	14.6	0.0	10.4	10.4	11.7	2.2	2.2
LnGrp LOS	B	B		B		B		B	B	B	A	A
Approach Vol, veh/h		2			84			579			881	
Approach Delay, s/veh		13.9			14.3			10.4			6.1	
Approach LOS		B			B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.2	13.8		6.3	0.0	26.0		6.3
Change Period (Y+Rc), s	4.0	5.3		4.0	4.0	5.3		4.0
Max Green Setting (Gmax), s	37.6	54.7		35.0	4.0	87.7		35.0
Max Q Clear Time (g_c+I1), s	3.0	6.5		3.0	0.0	3.8		3.0
Green Ext Time (p_c), s	0.5	2.0		0.0	0.0	2.1		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	8.2
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	109	0	22	37	75	0	53	69	100	18	58
Future Volume (vph)	142	109	0	22	37	75	0	53	69	100	18	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.5		4.0			4.0	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.92			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.96	1.00
Satd. Flow (prot)	1770	1863		1770	1863	1583		1721			1787	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			0.67	1.00
Satd. Flow (perm)	1770	1863		1770	1863	1583		1721			1247	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	154	118	0	24	40	82	0	58	75	109	20	63
RTOR Reduction (vph)	0	0	0	0	0	71	0	47	0	0	0	49
Lane Group Flow (vph)	154	118	0	24	40	11	0	86	0	0	129	14
Turn Type	Prot	NA		Prot	NA	Perm		NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	3			4	
Permitted Phases						6				4		4
Actuated Green, G (s)	7.9	14.7		0.8	7.6	7.6		10.2			12.3	12.3
Effective Green, g (s)	8.4	15.2		1.3	8.1	7.6		10.7			12.8	12.3
Actuated g/C Ratio	0.15	0.27		0.02	0.14	0.14		0.19			0.23	0.22
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5		4.5			4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	265	505		41	269	214		328			285	347
v/s Ratio Prot	c0.09	c0.06		0.01	0.02			c0.05				
v/s Ratio Perm						0.01					c0.10	0.01
v/c Ratio	0.58	0.23		0.59	0.15	0.05		0.26			0.45	0.04
Uniform Delay, d1	22.2	15.9		27.1	20.9	21.1		19.3			18.6	17.2
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	3.2	0.2		19.5	0.3	0.1		1.9			5.1	0.2
Delay (s)	25.4	16.1		46.6	21.2	21.2		21.2			23.7	17.4
Level of Service	C	B		D	C	C		C			C	B
Approach Delay (s)		21.4			25.4			21.2			21.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	270	130	95	188	4
Future Volume (veh/h)	9	270	130	95	188	4
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	10	293	141	103	204	4
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	33	654	237	162	1274	1137
Arrive On Green	0.02	0.18	0.12	0.11	0.72	0.72
Sat Flow, veh/h	1774	3632	2106	1376	1774	1583
Grp Volume(v), veh/h	10	293	123	121	204	4
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1620	1774	1583
Q Serve(g_s), s	0.5	6.0	5.4	5.9	3.0	0.1
Cycle Q Clear(g_c), s	0.5	6.0	5.4	5.9	3.0	0.1
Prop In Lane	1.00			0.85	1.00	1.00
Lane Grp Cap(c), veh/h	33	654	208	190	1274	1137
V/C Ratio(X)	0.30	0.45	0.59	0.64	0.16	0.00
Avail Cap(c_a), veh/h	281	2282	775	710	1274	1137
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	29.8	34.4	34.8	3.7	3.3
Incr Delay (d2), s/veh	5.1	0.5	2.7	3.5	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.0	2.8	2.8	1.6	0.1
LnGrp Delay(d),s/veh	44.9	30.3	37.0	38.3	4.0	3.3
LnGrp LOS	D	C	D	D	A	A
Approach Vol, veh/h		303	244		208	
Approach Delay, s/veh		30.7	37.7		4.0	
Approach LOS		C	D		A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				19.2		63.0	5.5	13.7
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				52.5		58.5	12.5	35.5
Max Q Clear Time (g_c+I1), s				8.0		5.0	2.5	7.9
Green Ext Time (p_c), s				1.8		0.6	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	25.6
HCM 2010 LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	300	392	208	446	836	134
Future Volume (veh/h)	300	392	208	446	836	134
Number	5	2	6	16	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1881	1881
Adj Flow Rate, veh/h	353	461	245	525	984	158
Adj No. of Lanes	1	3	2	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	1	1
Cap, veh/h	391	3071	1238	560	1078	489
Arrive On Green	0.22	0.60	0.35	0.35	0.31	0.31
Sat Flow, veh/h	1774	5253	3632	1583	3476	1599
Grp Volume(v), veh/h	353	461	245	525	984	158
Grp Sat Flow(s),veh/h/ln	1774	1695	1770	1583	1738	1599
Q Serve(g_s), s	22.8	4.6	5.7	37.7	32.0	8.9
Cycle Q Clear(g_c), s	22.8	4.6	5.7	37.7	32.0	8.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	391	3071	1238	560	1078	489
V/C Ratio(X)	0.90	0.15	0.20	0.94	0.91	0.32
Avail Cap(c_a), veh/h	483	3662	1466	662	1336	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	10.1	26.7	36.7	39.0	31.4
Incr Delay (d2), s/veh	17.8	0.0	0.0	18.0	7.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.1	2.2	2.8	19.3	16.4	4.0
LnGrp Delay(d),s/veh	62.4	10.2	26.7	54.7	46.6	31.6
LnGrp LOS	E	B	C	D	D	C
Approach Vol, veh/h		814	770		1142	
Approach Delay, s/veh		32.8	45.8		44.5	
Approach LOS		C	D		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		76.3			29.9	46.4		41.3
Change Period (Y+Rc), s		5.3			4.5	5.3		5.3
Max Green Setting (Gmax), s		84.7			31.5	48.7		44.7
Max Q Clear Time (g_c+I1), s		6.6			24.8	39.7		34.0
Green Ext Time (p_c), s		1.9			0.6	1.4		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	41.4
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	311	954	0	0	429	1091	162	3	181	0	0	0
Future Volume (veh/h)	311	954	0	0	429	1091	162	3	181	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1881	1881	0	0	1881	1881	1845	1845	1845			
Adj Flow Rate, veh/h	321	984	0	0	442	672	169	0	72			
Adj No. of Lanes	2	3	0	0	1	2	2	0	1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	1	1	0	0	1	1	3	3	3			
Cap, veh/h	554	3158	0	0	672	1143	407	0	182			
Arrive On Green	0.16	0.61	0.00	0.00	0.36	0.36	0.12	0.00	0.12			
Sat Flow, veh/h	3476	5305	0	0	1881	3198	3514	0	1568			
Grp Volume(v), veh/h	321	984	0	0	442	672	169	0	72			
Grp Sat Flow(s),veh/h/ln	1738	1712	0	0	1881	1599	1757	0	1568			
Q Serve(g_s), s	3.1	3.3	0.0	0.0	7.0	6.1	1.6	0.0	1.5			
Cycle Q Clear(g_c), s	3.1	3.3	0.0	0.0	7.0	6.1	1.6	0.0	1.5			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	554	3158	0	0	672	1143	407	0	182			
V/C Ratio(X)	0.58	0.31	0.00	0.00	0.66	0.59	0.42	0.00	0.40			
Avail Cap(c_a), veh/h	1218	12228	0	0	3635	6180	4484	0	2001			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	13.9	3.3	0.0	0.0	9.6	9.3	14.6	0.0	14.6			
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.0	0.4	0.2	0.3	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.5	1.5	0.0	0.0	3.6	2.6	0.8	0.0	1.4			
LnGrp Delay(d),s/veh	14.2	3.3	0.0	0.0	10.0	9.5	14.9	0.0	15.1			
LnGrp LOS	B	A			B	A	B		B			
Approach Vol, veh/h		1305			1114			241				
Approach Delay, s/veh		6.0			9.7			15.0				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		26.7		8.9	9.2	17.5		
Change Period (Y+Rc), s		5.3		5.3	4.0	5.3		
Max Green Setting (Gmax), s		84.4		45.0	12.0	68.4		
Max Q Clear Time (g_c+I1), s		5.3		3.6	5.1	9.0		
Green Ext Time (p_c), s		4.6		0.4	0.4	3.2		

Intersection Summary	
HCM 2010 Ctrl Delay	8.4
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	180	182	268	170	150	108	670	217	146	942	60
Future Volume (veh/h)	120	180	182	268	170	150	108	670	217	146	942	60
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1863	1863	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	132	198	178	295	187	147	119	736	225	160	1035	63
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	161	219	197	324	320	251	146	858	262	190	1171	71
Arrive On Green	0.09	0.24	0.24	0.18	0.33	0.33	0.08	0.32	0.31	0.11	0.34	0.33
Sat Flow, veh/h	1792	907	815	1774	959	754	1792	2694	824	1792	3417	208
Grp Volume(v), veh/h	132	0	376	295	0	334	119	488	473	160	541	557
Grp Sat Flow(s),veh/h/ln	1792	0	1723	1774	0	1712	1792	1787	1731	1792	1787	1838
Q Serve(g_s), s	7.6	0.0	22.3	17.2	0.0	17.0	6.9	27.0	27.0	9.2	30.1	30.1
Cycle Q Clear(g_c), s	7.6	0.0	22.3	17.2	0.0	17.0	6.9	27.0	27.0	9.2	30.1	30.1
Prop In Lane	1.00		0.47	1.00		0.44	1.00		0.48	1.00		0.11
Lane Grp Cap(c), veh/h	161	0	416	324	0	571	146	569	551	190	612	630
V/C Ratio(X)	0.82	0.00	0.90	0.91	0.00	0.58	0.81	0.86	0.86	0.84	0.88	0.88
Avail Cap(c_a), veh/h	255	0	556	337	0	634	153	644	624	204	695	715
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	0.0	38.8	42.2	0.0	29.1	47.6	33.7	34.0	46.3	32.7	32.7
Incr Delay (d2), s/veh	5.3	0.0	12.8	26.5	0.0	0.6	24.4	9.2	9.5	23.3	10.9	10.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	12.1	10.8	0.0	8.2	4.4	14.7	14.3	5.8	16.6	17.0
LnGrp Delay(d),s/veh	52.4	0.0	51.6	68.8	0.0	29.6	72.0	42.9	43.4	69.5	43.6	43.5
LnGrp LOS	D		D	E		C	E	D	D	E	D	D
Approach Vol, veh/h		508			629			1080			1258	
Approach Delay, s/veh		51.8			48.0			46.3			46.8	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	37.6	23.2	29.4	12.6	40.1	13.5	39.2
Change Period (Y+Rc), s	4.0	5.3	4.0	4.0	4.0	5.3	4.0	4.0
Max Green Setting (Gmax), s	12.0	36.7	20.0	34.0	9.0	39.7	15.0	39.0
Max Q Clear Time (g_c+I1), s	11.2	29.0	19.2	24.3	8.9	32.1	9.6	19.0
Green Ext Time (p_c), s	0.0	2.4	0.0	1.0	0.0	2.7	0.1	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	47.6
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	40	132	0	40	10	45	287	0	10	126	156
Future Volume (veh/h)	215	40	132	0	40	10	45	287	0	10	126	156
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	250	47	153	0	47	12	52	334	0	12	147	181
Adj No. of Lanes	1	1	1	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	267	746	634	5	201	51	124	858	384	52	715	320
Arrive On Green	0.15	0.40	0.40	0.00	0.14	0.13	0.07	0.24	0.00	0.03	0.20	0.20
Sat Flow, veh/h	1774	1863	1583	1774	1432	366	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	250	47	153	0	0	59	52	334	0	12	147	181
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1798	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.1	0.6	2.3	0.0	0.0	1.1	1.0	2.9	0.0	0.2	1.3	3.8
Cycle Q Clear(g_c), s	5.1	0.6	2.3	0.0	0.0	1.1	1.0	2.9	0.0	0.2	1.3	3.8
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	267	746	634	5	0	253	124	858	384	52	715	320
V/C Ratio(X)	0.94	0.06	0.24	0.00	0.00	0.23	0.42	0.39	0.00	0.23	0.21	0.57
Avail Cap(c_a), veh/h	267	942	801	267	0	909	267	1887	844	267	1887	844
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.4	6.7	7.3	0.0	0.0	14.0	16.3	11.6	0.0	17.3	12.2	13.2
Incr Delay (d2), s/veh	38.5	0.0	0.2	0.0	0.0	0.5	2.3	0.3	0.0	2.2	0.1	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.3	1.1	0.0	0.0	0.6	0.6	1.4	0.0	0.1	0.6	1.8
LnGrp Delay(d),s/veh	53.8	6.8	7.5	0.0	0.0	14.5	18.6	11.9	0.0	19.6	12.3	14.7
LnGrp LOS	D	A	A			B	B	B		B	B	B
Approach Vol, veh/h		450			59			386			340	
Approach Delay, s/veh		33.2			14.5			12.8			13.8	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.1	12.9	0.0	18.6	6.6	11.4	9.5	9.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.0	19.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.2	4.9	0.0	4.3	3.0	5.8	7.1	3.1
Green Ext Time (p_c), s	0.0	1.6	0.0	0.6	0.0	1.1	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	20.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	1108	128	169	1095	240	112	85	95	548	148	114
Future Volume (veh/h)	185	1108	128	169	1095	240	112	85	95	548	148	114
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	208	1245	133	190	1230	152	126	96	82	616	166	-71
Adj No. of Lanes	1	3	0	1	3	1	1	2	0	2	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	1	1	1
Cap, veh/h	246	1650	176	227	1746	541	159	227	176	713	839	375
Arrive On Green	0.14	0.35	0.35	0.13	0.34	0.34	0.09	0.12	0.10	0.21	0.23	0.00
Sat Flow, veh/h	1774	4659	498	1774	5085	1576	1792	1912	1488	3476	3574	1599
Grp Volume(v), veh/h	208	906	472	190	1230	152	126	89	89	616	166	-71
Grp Sat Flow(s),veh/h/ln	1774	1695	1766	1774	1695	1576	1792	1787	1613	1738	1787	1599
Q Serve(g_s), s	9.4	19.4	19.4	8.6	17.3	5.8	5.7	3.8	4.3	14.1	3.1	0.0
Cycle Q Clear(g_c), s	9.4	19.4	19.4	8.6	17.3	5.8	5.7	3.8	4.3	14.1	3.1	0.0
Prop In Lane	1.00		0.28	1.00		1.00	1.00		0.92	1.00		1.00
Lane Grp Cap(c), veh/h	246	1200	625	227	1746	541	159	212	191	713	839	375
V/C Ratio(X)	0.85	0.75	0.75	0.84	0.70	0.28	0.79	0.42	0.46	0.86	0.20	-0.19
Avail Cap(c_a), veh/h	323	1988	1036	280	2859	886	326	970	876	971	2287	1023
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.6	23.4	23.4	35.1	23.4	19.7	36.8	33.7	34.4	31.6	25.3	0.0
Incr Delay (d2), s/veh	11.8	0.4	0.7	14.0	0.2	0.1	3.3	0.5	0.7	4.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	9.1	9.6	5.1	8.1	2.5	2.9	1.9	1.9	7.2	1.5	0.0
LnGrp Delay(d),s/veh	46.4	23.8	24.2	49.1	23.6	19.8	40.1	34.2	35.1	36.5	25.3	0.0
LnGrp LOS	D	C	C	D	C	B	D	C	D	D	C	
Approach Vol, veh/h		1586			1572			304			711	
Approach Delay, s/veh		26.9			26.3			36.9			37.5	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.9	13.8	14.5	33.2	11.3	23.3	15.4	32.3
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	23.0	43.4	13.0	47.0	15.0	51.4	15.0	45.0
Max Q Clear Time (g_c+I1), s	16.1	6.3	10.6	21.4	7.7	5.1	11.4	19.3
Green Ext Time (p_c), s	0.8	0.6	0.1	6.2	0.1	0.6	0.1	6.1

Intersection Summary	
HCM 2010 Ctrl Delay	29.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1665	176	241	1473	26	196	10	170	34	14	12
Future Volume (veh/h)	10	1665	176	241	1473	26	196	10	170	34	14	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	11	1810	191	262	1601	28	213	11	185	37	15	13
Adj No. of Lanes	1	3	0	1	3	0	2	1	1	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	33	2577	271	312	3649	64	506	274	233	243	136	118
Arrive On Green	0.02	0.55	0.55	0.18	0.71	0.70	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1774	4675	491	1774	5147	90	2670	1863	1583	1182	922	799
Grp Volume(v), veh/h	11	1310	691	262	1054	575	213	11	185	37	0	28
Grp Sat Flow(s),veh/h/ln	1774	1695	1776	1774	1695	1847	1335	1863	1583	1182	0	1722
Q Serve(g_s), s	0.6	27.1	27.4	13.7	12.6	12.6	7.2	0.5	10.8	2.7	0.0	1.3
Cycle Q Clear(g_c), s	0.6	27.1	27.4	13.7	12.6	12.6	8.5	0.5	10.8	3.1	0.0	1.3
Prop In Lane	1.00		0.28	1.00		0.05	1.00		1.00	1.00		0.46
Lane Grp Cap(c), veh/h	33	1869	979	312	2403	1309	506	274	233	243	0	254
V/C Ratio(X)	0.34	0.70	0.71	0.84	0.44	0.44	0.42	0.04	0.79	0.15	0.00	0.11
Avail Cap(c_a), veh/h	104	2479	1298	649	3520	1917	894	545	463	415	0	503
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.4	15.7	15.8	38.1	5.9	5.9	39.1	35.0	39.4	36.4	0.0	35.4
Incr Delay (d2), s/veh	5.9	0.6	1.2	6.0	0.1	0.2	0.6	0.1	6.0	0.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	12.7	13.6	7.2	5.9	6.5	2.7	0.3	5.1	0.9	0.0	0.7
LnGrp Delay(d),s/veh	52.3	16.3	17.0	44.1	6.0	6.1	39.6	35.1	45.4	36.6	0.0	35.6
LnGrp LOS	D	B	B	D	A	A	D	D	D	D		D
Approach Vol, veh/h		2012			1891			409			65	
Approach Delay, s/veh		16.7			11.3			42.1			36.2	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		18.1	20.9	56.8		18.1	5.8	71.9
Change Period (Y+Rc), s		4.0	4.5	4.5		4.0	4.5	4.5
Max Green Setting (Gmax), s		28.0	34.5	69.5		28.0	5.1	98.9
Max Q Clear Time (g_c+I1), s		12.8	15.7	29.4		5.1	2.6	14.6
Green Ext Time (p_c), s		1.3	0.7	22.9		0.2	0.0	19.9

Intersection Summary	
HCM 2010 Ctrl Delay	17.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	0	77	0	59	0	374	38	25	353	0
Future Volume (veh/h)	4	0	0	77	0	59	0	374	38	25	353	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1900	1900	1900	1900	1881	1881	1900
Adj Flow Rate, veh/h	5	0	0	95	0	-262	0	462	47	31	436	0
Adj No. of Lanes	1	1	1	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	1	1	1
Cap, veh/h	12	8	7	176	0	493	8	1062	108	56	1863	0
Arrive On Green	0.01	0.00	0.00	0.10	0.00	0.00	0.00	0.32	0.27	0.03	0.52	0.00
Sat Flow, veh/h	1810	1900	1615	1792	1881	0	1810	3310	335	1792	3668	0
Grp Volume(v), veh/h	5	0	0	95	-262	-262	0	251	258	31	436	0
Grp Sat Flow(s),veh/h/ln	1810	1900	1615	1792	1881	1599	1810	1805	1841	1792	1787	0
Q Serve(g_s), s	0.1	0.0	0.0	1.2	0.0	0.0	0.0	2.6	2.6	0.4	1.6	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	1.2	0.0	0.0	0.0	2.6	2.6	0.4	1.6	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.18	1.00		0.00
Lane Grp Cap(c), veh/h	12	8	7	176	0	0	8	579	591	56	1863	0
V/C Ratio(X)	0.40	0.00	0.00	0.54	0.00	0.00	0.00	0.43	0.44	0.56	0.23	0.00
Avail Cap(c_a), veh/h	765	2893	2459	833	0	0	689	2290	2335	1970	7104	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.7	0.0	0.0	10.2	0.0	0.0	0.0	6.3	6.4	11.3	3.1	0.0
Incr Delay (d2), s/veh	19.9	0.0	0.0	2.6	0.0	0.0	0.0	0.2	0.2	3.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.7	0.0	0.0	0.0	1.3	1.3	0.2	0.7	0.0
LnGrp Delay(d),s/veh	31.6	0.0	0.0	12.7	0.0	0.0	0.0	6.5	6.6	14.5	3.1	0.0
LnGrp LOS	C			B				A	A	B	A	
Approach Vol, veh/h		5			-429			509			467	
Approach Delay, s/veh		31.6			-2.8			6.6			3.9	
Approach LOS		C			A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.7	11.6	7.3	0.0	0.0	16.3	5.2	2.2
Change Period (Y+Rc), s	4.0	5.3	5.0	4.0	4.0	5.3	5.0	4.0
Max Green Setting (Gmax), s	26.0	28.7	11.0	36.0	9.0	45.7	10.0	37.0
Max Q Clear Time (g_c+I1), s	2.4	4.6	3.2	0.0	0.0	3.6	2.1	0.0
Green Ext Time (p_c), s	0.0	1.6	0.1	0.0	0.0	2.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	73	0	77	120	143	0	36	45	84	61	193
Future Volume (vph)	93	73	0	77	120	143	0	36	45	84	61	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.5		4.0			4.0	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.92			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.97	1.00
Satd. Flow (prot)	1770	1863		1770	1863	1583		1723			1810	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		1.00			0.80	1.00
Satd. Flow (perm)	1770	1863		1770	1863	1583		1723			1492	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	79	0	84	130	155	0	39	49	91	66	210
RTOR Reduction (vph)	0	0	0	0	0	133	0	44	0	0	0	139
Lane Group Flow (vph)	101	79	0	84	130	22	0	44	0	0	157	71
Turn Type	Prot	NA		Prot	NA	Perm		NA		Perm	NA	Perm
Protected Phases	5	2		1	6		3	3			4	
Permitted Phases						6				4		4
Actuated Green, G (s)	6.5	6.2		8.4	8.1	8.1		5.1			19.2	19.2
Effective Green, g (s)	7.0	6.7		8.9	8.6	8.1		5.6			19.7	19.2
Actuated g/C Ratio	0.12	0.12		0.16	0.15	0.14		0.10			0.35	0.34
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5		4.5			4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	217	219		276	281	225		169			516	534
v/s Ratio Prot	c0.06	0.04		0.05	c0.07			c0.03				
v/s Ratio Perm						0.01					c0.11	0.04
v/c Ratio	0.47	0.36		0.30	0.46	0.10		0.26			0.30	0.13
Uniform Delay, d1	23.2	23.1		21.3	22.0	21.2		23.7			13.6	13.1
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	1.6	1.0		0.6	1.2	0.2		0.8			1.5	0.5
Delay (s)	24.8	24.1		21.9	23.2	21.4		24.5			15.1	13.6
Level of Service	C	C		C	C	C		C			B	B
Approach Delay (s)		24.5			22.2			24.5			14.2	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	56.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	196	330	155	154	10
Future Volume (veh/h)	5	196	330	155	154	10
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	5	213	359	168	167	11
Adj No. of Lanes	1	2	2	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	26	1088	538	248	1000	893
Arrive On Green	0.01	0.31	0.23	0.22	0.56	0.56
Sat Flow, veh/h	1774	3632	2449	1085	1774	1583
Grp Volume(v), veh/h	5	213	268	259	167	11
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1671	1774	1583
Q Serve(g_s), s	0.2	2.8	8.6	8.8	2.8	0.2
Cycle Q Clear(g_c), s	0.2	2.8	8.6	8.8	2.8	0.2
Prop In Lane	1.00			0.65	1.00	1.00
Lane Grp Cap(c), veh/h	26	1088	404	382	1000	893
V/C Ratio(X)	0.19	0.20	0.66	0.68	0.17	0.01
Avail Cap(c_a), veh/h	286	2679	941	888	1000	893
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.2	15.8	21.8	22.0	6.5	6.0
Incr Delay (d2), s/veh	3.5	0.1	1.9	2.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.3	4.4	4.3	1.4	0.3
LnGrp Delay(d),s/veh	33.7	15.9	23.7	24.2	6.9	6.0
LnGrp LOS	C	B	C	C	A	A
Approach Vol, veh/h		218	527		178	
Approach Delay, s/veh		16.3	23.9		6.8	
Approach LOS		B	C		A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				23.1		39.0	4.9	18.2
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				46.5		34.5	9.5	32.5
Max Q Clear Time (g_c+I1), s				4.8		4.8	2.2	10.8
Green Ext Time (p_c), s				1.3		0.5	0.0	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	18.8
HCM 2010 LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	170	224	433	351	1491	190
Future Volume (veh/h)	170	224	433	351	1491	190
Number	5	2	6	16	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1881	1881
Adj Flow Rate, veh/h	200	264	509	413	1754	224
Adj No. of Lanes	1	3	2	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	1	1
Cap, veh/h	195	2214	1041	466	1744	802
Arrive On Green	0.11	0.44	0.29	0.29	0.50	0.50
Sat Flow, veh/h	1774	5253	3632	1583	3476	1599
Grp Volume(v), veh/h	200	264	509	413	1754	224
Grp Sat Flow(s),veh/h/ln	1774	1695	1770	1583	1738	1599
Q Serve(g_s), s	14.0	3.9	15.1	31.8	64.0	10.3
Cycle Q Clear(g_c), s	14.0	3.9	15.1	31.8	64.0	10.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	195	2214	1041	466	1744	802
V/C Ratio(X)	1.03	0.12	0.49	0.89	1.01	0.28
Avail Cap(c_a), veh/h	195	2712	1388	621	1744	802
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.8	21.4	37.1	43.0	31.8	18.4
Incr Delay (d2), s/veh	71.7	0.0	0.1	9.7	22.9	0.1
Initial Q Delay(d3),s/veh	0.2	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	1.8	7.4	15.1	36.1	4.6
LnGrp Delay(d),s/veh	128.7	21.4	37.2	52.7	54.7	18.5
LnGrp LOS	F	C	D	D	F	B
Approach Vol, veh/h		464	922		1978	
Approach Delay, s/veh		67.7	44.2		50.6	
Approach LOS		E	D		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		59.5			18.0	41.5		68.0
Change Period (Y+Rc), s		5.3			4.5	5.3		5.3
Max Green Setting (Gmax), s		66.7			13.5	48.7		62.7
Max Q Clear Time (g_c+I1), s		5.9			16.0	33.8		66.0
Green Ext Time (p_c), s		1.1			0.0	2.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	51.2
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	1541	0	0	446	1058	300	5	276	0	0	0
Future Volume (veh/h)	182	1541	0	0	446	1058	300	5	276	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1881	1881	0	0	1881	1881	1845	1845	1845			
Adj Flow Rate, veh/h	188	1589	0	0	460	638	313	0	170			
Adj No. of Lanes	2	3	0	0	1	2	2	0	1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	1	1	0	0	1	1	3	3	3			
Cap, veh/h	321	2965	0	0	709	1206	726	0	324			
Arrive On Green	0.09	0.58	0.00	0.00	0.38	0.38	0.21	0.00	0.21			
Sat Flow, veh/h	3476	5305	0	0	1881	3198	3514	0	1568			
Grp Volume(v), veh/h	188	1589	0	0	460	638	313	0	170			
Grp Sat Flow(s),veh/h/ln	1738	1712	0	0	1881	1599	1757	0	1568			
Q Serve(g_s), s	1.9	7.0	0.0	0.0	7.5	5.7	2.9	0.0	3.6			
Cycle Q Clear(g_c), s	1.9	7.0	0.0	0.0	7.5	5.7	2.9	0.0	3.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	321	2965	0	0	709	1206	726	0	324			
V/C Ratio(X)	0.59	0.54	0.00	0.00	0.65	0.53	0.43	0.00	0.52			
Avail Cap(c_a), veh/h	563	11885	0	0	3845	6537	4393	0	1960			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	16.1	4.8	0.0	0.0	9.5	9.0	12.8	0.0	13.1			
Incr Delay (d2), s/veh	0.6	0.1	0.0	0.0	0.4	0.1	0.2	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.9	3.3	0.0	0.0	3.9	2.5	1.4	0.0	3.2			
LnGrp Delay(d),s/veh	16.8	4.8	0.0	0.0	9.9	9.1	12.9	0.0	13.6			
LnGrp LOS	B	A			A	A	B		B			
Approach Vol, veh/h		1777			1098			483				
Approach Delay, s/veh		6.1			9.4			13.2				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		25.4		11.6	7.4	18.0		
Change Period (Y+Rc), s		5.3		5.3	4.0	5.3		
Max Green Setting (Gmax), s		84.4		45.0	6.0	74.4		
Max Q Clear Time (g_c+I1), s		9.0		5.6	3.9	9.5		
Green Ext Time (p_c), s		9.4		0.8	0.1	3.2		

Intersection Summary	
HCM 2010 Ctrl Delay	8.2
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	110	75	153	90	90	145	642	220	290	639	90
Future Volume (veh/h)	70	110	75	153	90	90	145	642	220	290	639	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	75	118	69	165	97	79	156	690	218	312	687	84
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	97	152	89	205	189	154	197	881	278	357	1344	164
Arrive On Green	0.05	0.13	0.13	0.11	0.19	0.19	0.11	0.33	0.31	0.20	0.41	0.40
Sat Flow, veh/h	1810	1126	658	1810	970	790	1810	2701	853	1810	3239	396
Grp Volume(v), veh/h	75	0	187	165	0	176	156	461	447	312	383	388
Grp Sat Flow(s),veh/h/ln	1810	0	1784	1810	0	1761	1810	1805	1749	1810	1805	1830
Q Serve(g_s), s	2.9	0.0	7.1	6.2	0.0	6.3	5.9	16.2	16.3	11.7	11.0	11.1
Cycle Q Clear(g_c), s	2.9	0.0	7.1	6.2	0.0	6.3	5.9	16.2	16.3	11.7	11.0	11.1
Prop In Lane	1.00		0.37	1.00		0.45	1.00		0.49	1.00		0.22
Lane Grp Cap(c), veh/h	97	0	240	205	0	342	197	589	571	357	749	759
V/C Ratio(X)	0.77	0.00	0.78	0.80	0.00	0.51	0.79	0.78	0.78	0.87	0.51	0.51
Avail Cap(c_a), veh/h	284	0	941	258	0	904	490	1030	998	439	978	992
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	0.0	29.3	30.3	0.0	25.3	30.5	21.4	21.7	27.3	15.2	15.4
Incr Delay (d2), s/veh	4.8	0.0	2.1	10.9	0.0	0.4	2.7	0.9	0.9	13.2	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	3.6	3.7	0.0	3.1	3.1	8.2	8.0	7.1	5.5	5.6
LnGrp Delay(d),s/veh	37.6	0.0	31.4	41.2	0.0	25.7	33.1	22.2	22.6	40.4	15.4	15.6
LnGrp LOS	D		C	D		C	C	C	C	D	B	B
Approach Vol, veh/h		262			341			1064			1083	
Approach Delay, s/veh		33.2			33.2			24.0			22.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.9	26.9	11.9	13.4	11.6	33.1	7.8	17.6
Change Period (Y+Rc), s	4.0	5.3	4.0	4.0	4.0	5.3	4.0	4.0
Max Green Setting (Gmax), s	17.0	38.7	10.0	37.0	19.0	36.7	11.0	36.0
Max Q Clear Time (g_c+I1), s	13.7	18.3	8.2	9.1	7.9	13.1	4.9	8.3
Green Ext Time (p_c), s	0.2	3.3	0.0	0.6	0.1	2.7	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	25.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	30	250	0	20	0	71	192	0	10	314	168
Future Volume (veh/h)	190	30	250	0	20	0	71	192	0	10	314	168
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	202	32	266	0	21	0	76	204	0	11	334	179
Adj No. of Lanes	1	1	1	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	253	717	609	5	258	0	151	978	438	49	773	346
Arrive On Green	0.14	0.38	0.38	0.00	0.14	0.00	0.09	0.28	0.00	0.03	0.22	0.22
Sat Flow, veh/h	1774	1863	1583	1774	1863	0	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	202	32	266	0	21	0	76	204	0	11	334	179
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	0	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.2	0.4	4.8	0.0	0.4	0.0	1.6	1.7	0.0	0.2	3.1	3.8
Cycle Q Clear(g_c), s	4.2	0.4	4.8	0.0	0.4	0.0	1.6	1.7	0.0	0.2	3.1	3.8
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	253	717	609	5	258	0	151	978	438	49	773	346
V/C Ratio(X)	0.80	0.04	0.44	0.00	0.08	0.00	0.50	0.21	0.00	0.23	0.43	0.52
Avail Cap(c_a), veh/h	253	894	760	253	894	0	253	1791	801	253	1791	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.0	7.4	8.8	0.0	14.5	0.0	16.8	10.7	0.0	18.3	13.0	13.3
Incr Delay (d2), s/veh	16.3	0.0	0.5	0.0	0.1	0.0	2.6	0.1	0.0	2.3	0.4	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.2	2.1	0.0	0.2	0.0	0.9	0.8	0.0	0.1	1.6	1.8
LnGrp Delay(d),s/veh	32.3	7.4	9.3	0.0	14.6	0.0	19.4	10.8	0.0	20.7	13.4	14.5
LnGrp LOS	C	A	A		B		B	B		C	B	B
Approach Vol, veh/h		500			21			280			524	
Approach Delay, s/veh		18.4			14.6			13.2			13.9	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.1	14.7	0.0	18.8	7.3	12.4	9.5	9.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.0	19.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.2	3.7	0.0	6.8	3.6	5.8	6.2	2.4
Green Ext Time (p_c), s	0.0	0.9	0.0	0.8	0.0	2.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	15.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	950	120	100	1220	310	280	490	250	480	220	320
Future Volume (veh/h)	320	950	120	100	1220	310	280	490	250	480	220	320
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	337	1000	90	105	1284	128	295	516	202	505	232	199
Adj No. of Lanes	1	3	0	1	3	1	1	2	0	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	1	1	1
Cap, veh/h	246	1834	165	141	1662	515	212	642	250	375	876	385
Arrive On Green	0.14	0.39	0.39	0.08	0.33	0.33	0.12	0.26	0.25	0.11	0.25	0.25
Sat Flow, veh/h	1774	4744	426	1774	5085	1576	1792	2514	980	3476	3574	1570
Grp Volume(v), veh/h	337	714	376	105	1284	128	295	366	352	505	232	199
Grp Sat Flow(s),veh/h/ln	1774	1695	1780	1774	1695	1576	1792	1787	1707	1738	1787	1570
Q Serve(g_s), s	13.5	15.9	16.0	5.6	22.1	5.8	11.5	18.6	18.8	10.5	5.1	10.7
Cycle Q Clear(g_c), s	13.5	15.9	16.0	5.6	22.1	5.8	11.5	18.6	18.8	10.5	5.1	10.7
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.57	1.00		1.00
Lane Grp Cap(c), veh/h	246	1310	688	141	1662	515	212	456	436	375	876	385
V/C Ratio(X)	1.37	0.54	0.55	0.75	0.77	0.25	1.39	0.80	0.81	1.35	0.26	0.52
Avail Cap(c_a), veh/h	246	1740	914	192	2454	760	212	781	746	375	1526	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.9	23.2	23.2	43.8	29.5	24.0	42.9	33.9	34.1	43.4	29.6	31.7
Incr Delay (d2), s/veh	189.3	0.1	0.3	6.0	0.5	0.1	202.6	1.3	1.4	172.2	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.5	7.5	7.9	3.0	10.4	2.5	17.6	9.3	9.0	14.0	2.5	4.7
LnGrp Delay(d),s/veh	231.1	23.3	23.4	49.8	29.9	24.1	245.4	35.2	35.5	215.5	29.7	32.1
LnGrp LOS	F	C	C	D	C	C	F	D	D	F	C	C
Approach Vol, veh/h		1427			1517			1013			936	
Approach Delay, s/veh		72.4			30.8			96.5			130.5	
Approach LOS		E			C			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	29.6	11.2	42.4	15.0	28.6	17.0	36.6
Change Period (Y+Rc), s	4.0	5.3	4.0	5.3	4.0	5.3	4.0	5.3
Max Green Setting (Gmax), s	10.0	42.0	10.0	49.4	11.0	41.0	13.0	46.4
Max Q Clear Time (g_c+I1), s	12.5	20.8	7.6	18.0	13.5	12.7	15.5	24.1
Green Ext Time (p_c), s	0.0	2.5	0.0	4.6	0.0	1.2	0.0	6.2

Intersection Summary	
HCM 2010 Ctrl Delay	75.6
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1440	310	820	1550	20	110	10	250	20	10	20
Future Volume (veh/h)	10	1440	310	820	1550	20	110	10	250	20	10	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	11	1516	295	863	1632	12	116	11	145	21	11	1
Adj No. of Lanes	1	3	0	1	3	0	2	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	23	1841	357	608	3961	29	417	212	180	195	191	17
Arrive On Green	0.01	0.43	0.43	0.34	0.76	0.76	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1774	4277	829	1774	5208	38	2709	1863	1583	1226	1683	153
Grp Volume(v), veh/h	11	1200	611	863	1062	582	116	11	145	21	0	12
Grp Sat Flow(s),veh/h/ln	1774	1695	1716	1774	1695	1856	1355	1863	1583	1226	0	1836
Q Serve(g_s), s	0.7	36.0	36.2	39.5	12.6	12.6	4.6	0.6	10.3	1.8	0.0	0.7
Cycle Q Clear(g_c), s	0.7	36.0	36.2	39.5	12.6	12.6	5.3	0.6	10.3	2.4	0.0	0.7
Prop In Lane	1.00		0.48	1.00		0.02	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	23	1459	739	608	2578	1412	417	212	180	195	0	209
V/C Ratio(X)	0.48	0.82	0.83	1.42	0.41	0.41	0.28	0.05	0.81	0.11	0.00	0.06
Avail Cap(c_a), veh/h	79	1604	812	608	2617	1433	754	443	377	343	0	430
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.5	28.9	29.0	37.8	4.8	4.8	47.9	45.5	49.8	46.6	0.0	45.5
Incr Delay (d2), s/veh	14.9	3.3	6.5	197.8	0.1	0.2	0.4	0.1	8.2	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	17.5	18.5	52.7	5.8	6.4	1.7	0.3	4.9	0.6	0.0	0.3
LnGrp Delay(d),s/veh	71.3	32.2	35.5	235.6	4.9	5.0	48.2	45.6	58.0	46.8	0.0	45.6
LnGrp LOS	E	C	D	F	A	A	D	D	E	D		D
Approach Vol, veh/h		1822			2507			272			33	
Approach Delay, s/veh		33.6			84.3			53.3			46.4	
Approach LOS		C			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		17.1	44.0	54.1		17.1	6.0	92.1
Change Period (Y+Rc), s		4.0	4.5	4.5		4.0	4.5	4.5
Max Green Setting (Gmax), s		27.4	39.5	54.5		27.0	5.1	88.9
Max Q Clear Time (g_c+I1), s		12.3	41.5	38.2		4.4	2.7	14.6
Green Ext Time (p_c), s		0.8	0.0	11.4		0.1	0.0	19.9

Intersection Summary	
HCM 2010 Ctrl Delay	62.3
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	160	40	90	120	450	20	460	70	560	700	30
Future Volume (veh/h)	90	160	40	90	120	450	20	460	70	560	700	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1900	1900	1900	1900	1881	1881	1900
Adj Flow Rate, veh/h	95	168	42	95	126	189	21	484	74	589	737	32
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	1	1	1
Cap, veh/h	140	505	123	140	315	281	52	687	104	776	1443	63
Arrive On Green	0.08	0.18	0.17	0.08	0.18	0.18	0.03	0.22	0.21	0.22	0.41	0.40
Sat Flow, veh/h	1810	2878	701	1792	1787	1596	1810	3136	477	3476	3490	151
Grp Volume(v), veh/h	95	104	106	95	126	189	21	278	280	589	377	392
Grp Sat Flow(s),veh/h/ln	1810	1805	1775	1792	1787	1596	1810	1805	1808	1738	1787	1854
Q Serve(g_s), s	2.9	2.9	3.0	2.9	3.6	6.3	0.6	8.1	8.2	9.0	8.9	8.9
Cycle Q Clear(g_c), s	2.9	2.9	3.0	2.9	3.6	6.3	0.6	8.1	8.2	9.0	8.9	8.9
Prop In Lane	1.00		0.40	1.00		1.00	1.00		0.26	1.00		0.08
Lane Grp Cap(c), veh/h	140	316	311	140	315	281	52	395	396	776	739	767
V/C Ratio(X)	0.68	0.33	0.34	0.68	0.40	0.67	0.40	0.70	0.71	0.76	0.51	0.51
Avail Cap(c_a), veh/h	175	810	797	489	1117	998	143	960	961	3824	2775	2879
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	20.5	20.6	25.5	20.7	21.9	27.1	20.5	20.6	20.6	12.4	12.4
Incr Delay (d2), s/veh	7.4	0.2	0.2	5.7	0.3	1.0	1.9	0.9	0.9	0.6	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.4	1.5	1.7	1.8	2.9	0.3	4.1	4.2	4.4	4.4	4.6
LnGrp Delay(d),s/veh	32.9	20.7	20.9	31.2	21.0	22.9	29.0	21.3	21.5	21.2	12.6	12.6
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	B	B
Approach Vol, veh/h		305			410			579			1358	
Approach Delay, s/veh		24.6			24.3			21.7			16.3	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	17.2	9.9	13.5	5.1	28.3	9.9	13.5
Change Period (Y+Rc), s	4.0	5.3	6.0	4.0	4.0	5.3	6.0	4.0
Max Green Setting (Gmax), s	12.0	29.7	15.0	25.0	4.0	87.7	5.0	35.0
Max Q Clear Time (g_c+I1), s	11.0	10.2	4.9	5.0	2.6	10.9	4.9	8.3
Green Ext Time (p_c), s	1.2	1.8	0.1	0.6	0.0	3.4	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	19.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	690	20	70	920	130	50	170	200	120	40	150
Future Volume (veh/h)	120	690	20	70	920	130	50	170	200	120	40	150
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	126	726	19	74	968	126	53	179	55	126	42	49
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	1325	35	102	1083	141	76	924	276	159	692	619
Arrive On Green	0.09	0.38	0.37	0.06	0.34	0.34	0.04	0.34	0.34	0.09	0.39	0.39
Sat Flow, veh/h	1774	3524	92	1774	3150	410	1774	2689	802	1774	1770	1583
Grp Volume(v), veh/h	126	364	381	74	544	550	53	116	118	126	42	49
Grp Sat Flow(s),veh/h/ln	1774	1770	1846	1774	1770	1790	1774	1770	1721	1774	1770	1583
Q Serve(g_s), s	8.4	19.4	19.4	4.9	34.9	35.0	3.5	5.5	5.8	8.4	1.8	2.3
Cycle Q Clear(g_c), s	8.4	19.4	19.4	4.9	34.9	35.0	3.5	5.5	5.8	8.4	1.8	2.3
Prop In Lane	1.00		0.05	1.00		0.23	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	159	665	694	102	608	615	76	608	591	159	692	619
V/C Ratio(X)	0.79	0.55	0.55	0.73	0.89	0.89	0.70	0.19	0.20	0.79	0.06	0.08
Avail Cap(c_a), veh/h	192	696	726	160	664	671	136	608	591	207	692	619
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.5	29.4	29.4	55.6	37.3	37.4	56.7	27.7	27.8	53.5	22.8	23.1
Incr Delay (d2), s/veh	16.9	0.8	0.8	9.5	13.9	13.8	11.2	0.7	0.8	14.4	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	9.7	10.1	2.7	19.4	19.6	2.0	2.8	2.9	4.7	0.9	1.1
LnGrp Delay(d),s/veh	70.4	30.2	30.2	65.2	51.2	51.2	67.9	28.4	28.6	67.9	23.0	23.4
LnGrp LOS	E	C	C	E	D	D	E	C	C	E	C	C
Approach Vol, veh/h		871			1168			287			217	
Approach Delay, s/veh		36.0			52.0			35.8			49.1	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	45.2	10.9	49.1	9.1	50.9	14.8	45.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	31.5	10.3	46.7	8.7	36.3	12.5	44.5
Max Q Clear Time (g_c+I1), s	10.4	7.8	6.9	21.4	5.5	4.3	10.4	37.0
Green Ext Time (p_c), s	0.1	1.1	0.0	4.3	0.0	0.4	0.1	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	44.5
HCM 2010 LOS	D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	90	920	1060	880	310	60
Future Volume (veh/h)	90	920	1060	880	310	60
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	95	968	1116	461	326	15
Adj No. of Lanes	1	2	2	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	135	2055	1582	696	1045	481
Arrive On Green	0.08	0.58	0.45	0.44	0.30	0.30
Sat Flow, veh/h	1774	3632	3632	1583	3442	1583
Grp Volume(v), veh/h	95	968	1116	461	326	15
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1583	1721	1583
Q Serve(g_s), s	3.6	10.9	17.6	15.9	5.0	0.5
Cycle Q Clear(g_c), s	3.6	10.9	17.6	15.9	5.0	0.5
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	135	2055	1582	696	1045	481
V/C Ratio(X)	0.71	0.47	0.71	0.66	0.31	0.03
Avail Cap(c_a), veh/h	231	3122	2457	1088	1045	481
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.2	8.4	15.4	15.3	18.5	16.9
Incr Delay (d2), s/veh	6.6	0.2	0.6	1.1	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	5.3	8.7	7.1	2.5	0.5
LnGrp Delay(d),s/veh	37.8	8.5	16.0	16.4	19.3	17.0
LnGrp LOS	D	A	B	B	B	B
Approach Vol, veh/h		1063	1577		341	
Approach Delay, s/veh		11.2	16.1		19.2	
Approach LOS		B	B		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				44.2		25.0	9.2	34.9
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				60.5		20.5	8.5	47.5
Max Q Clear Time (g_c+I1), s				12.9		7.0	5.6	19.6
Green Ext Time (p_c), s				7.7		0.9	0.0	10.8

Intersection Summary	
HCM 2010 Ctrl Delay	14.7
HCM 2010 LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	360	1010	1840	570	960	180
Future Volume (veh/h)	360	1010	1840	570	960	180
Number	5	2	6	16	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1881	1881
Adj Flow Rate, veh/h	379	1063	1937	436	1011	88
Adj No. of Lanes	1	3	2	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	1	1
Cap, veh/h	296	3505	1731	781	788	356
Arrive On Green	0.17	0.69	0.49	0.49	0.23	0.22
Sat Flow, veh/h	1774	5253	3632	1583	3476	1599
Grp Volume(v), veh/h	379	1063	1937	436	1011	88
Grp Sat Flow(s),veh/h/ln	1774	1695	1770	1583	1738	1599
Q Serve(g_s), s	20.0	9.9	58.7	23.1	27.2	5.4
Cycle Q Clear(g_c), s	20.0	9.9	58.7	23.1	27.2	5.4
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	296	3505	1731	781	788	356
V/C Ratio(X)	1.28	0.30	1.12	0.56	1.28	0.25
Avail Cap(c_a), veh/h	296	3505	1731	781	788	356
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.0	7.3	30.6	21.3	46.4	38.4
Incr Delay (d2), s/veh	150.2	0.0	61.9	0.5	137.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.1	4.6	43.5	10.2	28.0	2.4
LnGrp Delay(d),s/veh	200.2	7.3	92.6	21.8	183.5	38.5
LnGrp LOS	F	A	F	C	F	D
Approach Vol, veh/h		1442	2373		1099	
Approach Delay, s/veh		58.0	79.6		171.9	
Approach LOS		E	E		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		88.0			24.0	64.0		32.0
Change Period (Y+Rc), s		5.3			4.5	5.3		5.3
Max Green Setting (Gmax), s		82.7			19.5	58.7		26.7
Max Q Clear Time (g_c+I1), s		11.9			22.0	60.7		29.2
Green Ext Time (p_c), s		5.1			0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	93.9
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	480	1490	0	0	1850	1170	560	10	220	0	0	0
Future Volume (veh/h)	480	1490	0	0	1850	1170	560	10	220	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1881	1881	0	0	1881	1881	1845	1845	1845			
Adj Flow Rate, veh/h	505	1568	0	0	1947	770	597	0	114			
Adj No. of Lanes	2	3	0	0	2	1	2	0	1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	1	1	0	0	1	1	3	3	3			
Cap, veh/h	642	3334	0	0	1560	663	754	0	336			
Arrive On Green	0.18	0.65	0.00	0.00	0.41	0.41	0.21	0.00	0.21			
Sat Flow, veh/h	3476	5305	0	0	3762	1599	3514	0	1568			
Grp Volume(v), veh/h	505	1568	0	0	1947	770	597	0	114			
Grp Sat Flow(s),veh/h/ln	1738	1712	0	0	1881	1599	1757	0	1568			
Q Serve(g_s), s	9.8	10.9	0.0	0.0	29.2	29.2	11.3	0.0	4.3			
Cycle Q Clear(g_c), s	9.8	10.9	0.0	0.0	29.2	29.2	11.3	0.0	4.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	642	3334	0	0	1560	663	754	0	336			
V/C Ratio(X)	0.79	0.47	0.00	0.00	1.25	1.16	0.79	0.00	0.34			
Avail Cap(c_a), veh/h	1111	4026	0	0	1560	663	2754	0	1229			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	27.4	6.2	0.0	0.0	20.6	20.6	26.2	0.0	23.4			
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.0	117.1	88.6	0.7	0.0	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.8	5.1	0.0	0.0	40.3	29.0	5.5	0.0	4.0			
LnGrp Delay(d),s/veh	28.2	6.3	0.0	0.0	137.7	109.2	26.9	0.0	23.6			
LnGrp LOS	C	A			F	F	C		C			
Approach Vol, veh/h		2073			2717			711				
Approach Delay, s/veh		11.6			129.6			26.4				
Approach LOS		B			F			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		50.5		19.9	16.5	34.0		
Change Period (Y+Rc), s		5.3		5.3	4.0	5.3		
Max Green Setting (Gmax), s		54.7		54.7	22.0	28.7		
Max Q Clear Time (g_c+I1), s		12.9		13.3	11.8	31.2		
Green Ext Time (p_c), s		8.9		1.3	0.7	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	71.8
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	210	212	181	210	160	148	822	183	150	1197	140
Future Volume (veh/h)	140	210	212	181	210	160	148	822	183	150	1197	140
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1863	1863	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	152	228	208	197	228	157	161	893	186	163	1301	149
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	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
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	171	247	226	169	280	193	137	1124	234	171	1293	147
Arrive On Green	0.10	0.27	0.27	0.10	0.27	0.27	0.08	0.38	0.37	0.10	0.40	0.39
Sat Flow, veh/h	1792	900	821	1774	1019	702	1792	2944	613	1792	3225	367
Grp Volume(v), veh/h	152	0	436	197	0	385	161	542	537	163	718	732
Grp Sat Flow(s),veh/h/ln	1792	0	1722	1774	0	1721	1792	1787	1770	1792	1787	1805
Q Serve(g_s), s	8.8	0.0	25.8	10.0	0.0	21.9	8.0	28.2	28.3	9.5	42.0	42.0
Cycle Q Clear(g_c), s	8.8	0.0	25.8	10.0	0.0	21.9	8.0	28.2	28.3	9.5	42.0	42.0
Prop In Lane	1.00		0.48	1.00		0.41	1.00		0.35	1.00		0.20
Lane Grp Cap(c), veh/h	171	0	473	169	0	473	137	682	676	171	716	724
V/C Ratio(X)	0.89	0.00	0.92	1.16	0.00	0.81	1.18	0.79	0.79	0.95	1.00	1.01
Avail Cap(c_a), veh/h	171	0	559	169	0	559	137	682	676	171	716	724
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.8	0.0	36.9	47.4	0.0	35.5	48.4	28.7	29.0	47.1	31.4	31.5
Incr Delay (d2), s/veh	38.0	0.0	17.8	119.9	0.0	6.6	132.2	5.9	6.0	54.5	34.1	36.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	14.6	10.5	0.0	11.2	8.9	15.0	14.9	7.3	27.3	28.0
LnGrp Delay(d),s/veh	84.9	0.0	54.8	167.3	0.0	42.2	180.6	34.7	35.0	101.7	65.4	67.9
LnGrp LOS	F		D	F		D	F	C	C	F	F	F
Approach Vol, veh/h		588			582			1240			1613	
Approach Delay, s/veh		62.5			84.5			53.8			70.2	
Approach LOS		E			F			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	44.0	14.0	32.8	12.0	46.0	14.0	32.8
Change Period (Y+Rc), s	4.0	5.3	4.0	4.0	4.0	5.3	4.0	4.0
Max Green Setting (Gmax), s	10.0	38.7	10.0	34.0	8.0	40.7	10.0	34.0
Max Q Clear Time (g_c+I1), s	11.5	30.3	12.0	27.8	10.0	44.0	10.8	23.9
Green Ext Time (p_c), s	0.0	2.9	0.0	0.9	0.0	0.0	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	66.1
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	273	60	60	20	50	20	30	424	20	20	292	161
Future Volume (veh/h)	273	60	60	20	50	20	30	424	20	20	292	161
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	297	65	65	22	54	22	33	461	22	22	317	175
Adj No. of Lanes	1	1	1	1	1	0	1	2	1	1	2	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	264	454	386	72	171	70	93	857	384	72	817	365
Arrive On Green	0.15	0.24	0.24	0.04	0.14	0.12	0.05	0.24	0.24	0.04	0.23	0.23
Sat Flow, veh/h	1774	1863	1583	1774	1259	513	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	297	65	65	22	0	76	33	461	22	22	317	175
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1772	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.5	1.0	1.2	0.4	0.0	1.4	0.7	4.2	0.4	0.4	2.8	3.5
Cycle Q Clear(g_c), s	5.5	1.0	1.2	0.4	0.0	1.4	0.7	4.2	0.4	0.4	2.8	3.5
Prop In Lane	1.00		1.00	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	264	454	386	72	0	240	93	857	384	72	817	365
V/C Ratio(X)	1.13	0.14	0.17	0.30	0.00	0.32	0.36	0.54	0.06	0.30	0.39	0.48
Avail Cap(c_a), veh/h	264	932	792	264	0	886	264	1866	835	264	1866	835
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.7	11.0	11.0	17.2	0.0	14.5	16.9	12.2	10.8	17.2	12.0	12.3
Incr Delay (d2), s/veh	93.6	0.1	0.2	2.3	0.0	0.7	2.3	0.5	0.1	2.3	0.3	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	0.5	0.5	0.3	0.0	0.7	0.4	2.1	0.2	0.3	1.4	1.6
LnGrp Delay(d),s/veh	109.4	11.1	11.2	19.5	0.0	15.2	19.2	12.7	10.8	19.5	12.3	13.3
LnGrp LOS	F	B	B	B		B	B	B	B	B	B	B
Approach Vol, veh/h		427			98			516			514	
Approach Delay, s/veh		79.5			16.2			13.1			13.0	
Approach LOS		E			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.5	13.0	5.5	13.0	5.9	12.5	9.5	9.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.0	19.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.4	6.2	2.4	3.2	2.7	5.5	7.5	3.4
Green Ext Time (p_c), s	0.0	2.3	0.0	0.4	0.0	2.0	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	31.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	1400	170	210	1200	320	270	420	320	510	330	140
Future Volume (veh/h)	330	1400	170	210	1200	320	270	420	320	510	330	140
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	337	1429	119	214	1224	125	276	429	220	520	337	43
Adj No. of Lanes	1	3	0	1	3	1	1	2	0	2	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	1	1	1
Cap, veh/h	314	1647	137	247	1560	483	308	521	265	515	728	319
Arrive On Green	0.18	0.34	0.34	0.14	0.31	0.31	0.17	0.23	0.22	0.15	0.20	0.20
Sat Flow, veh/h	1774	4778	398	1774	5085	1576	1792	2295	1166	3476	3574	1568
Grp Volume(v), veh/h	337	1014	534	214	1224	125	276	333	316	520	337	43
Grp Sat Flow(s),veh/h/ln	1774	1695	1785	1774	1695	1576	1792	1787	1674	1738	1787	1568
Q Serve(g_s), s	21.5	34.0	34.0	14.3	26.7	7.3	18.3	21.5	21.9	18.0	10.1	2.7
Cycle Q Clear(g_c), s	21.5	34.0	34.0	14.3	26.7	7.3	18.3	21.5	21.9	18.0	10.1	2.7
Prop In Lane	1.00		0.22	1.00		1.00	1.00		0.70	1.00		1.00
Lane Grp Cap(c), veh/h	314	1169	616	247	1560	483	308	406	380	515	728	319
V/C Ratio(X)	1.07	0.87	0.87	0.87	0.78	0.26	0.90	0.82	0.83	1.01	0.46	0.13
Avail Cap(c_a), veh/h	314	1365	719	270	1922	595	313	625	586	515	1156	507
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.0	37.2	37.2	51.2	38.4	31.7	49.3	44.6	44.9	51.7	42.5	39.6
Incr Delay (d2), s/veh	71.6	4.9	8.8	21.7	1.4	0.1	26.5	2.8	3.4	42.1	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.7	16.7	18.3	8.5	12.7	3.2	11.3	11.0	10.5	11.6	5.0	1.2
LnGrp Delay(d),s/veh	121.6	42.1	46.0	72.9	39.8	31.8	75.8	47.3	48.3	93.8	42.7	39.7
LnGrp LOS	F	D	D	E	D	C	E	D	D	F	D	D
Approach Vol, veh/h		1885			1563			925			900	
Approach Delay, s/veh		57.4			43.7			56.1			72.1	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	32.4	20.4	46.7	24.9	29.5	25.0	42.1
Change Period (Y+Rc), s	4.5	5.3	4.0	5.3	4.5	5.3	4.0	5.3
Max Green Setting (Gmax), s	17.5	42.0	18.0	48.4	20.7	38.8	21.0	45.4
Max Q Clear Time (g_c+I1), s	20.0	23.9	16.3	36.0	20.3	12.1	23.5	28.7
Green Ext Time (p_c), s	0.0	2.2	0.1	5.4	0.0	1.3	0.0	5.3

Intersection Summary	
HCM 2010 Ctrl Delay	55.6
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	2130	170	400	1370	20	330	10	820	30	10	20
Future Volume (veh/h)	30	2130	170	400	1370	20	330	10	820	30	10	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	32	2242	173	421	1442	20	347	11	530	32	11	0
Adj No. of Lanes	1	3	0	1	3	0	2	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	44	2431	186	269	3262	45	776	473	402	265	473	0
Arrive On Green	0.03	0.50	0.50	0.15	0.63	0.63	0.25	0.25	0.25	0.25	0.25	0.00
Sat Flow, veh/h	1774	4820	368	1774	5169	72	2712	1863	1583	861	1863	0
Grp Volume(v), veh/h	32	1570	845	421	946	516	347	11	530	32	11	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1798	1774	1695	1850	1356	1863	1583	861	1863	0
Q Serve(g_s), s	2.6	61.7	63.4	21.9	20.6	20.6	15.9	0.6	36.6	4.2	0.6	0.0
Cycle Q Clear(g_c), s	2.6	61.7	63.4	21.9	20.6	20.6	16.5	0.6	36.6	4.8	0.6	0.0
Prop In Lane	1.00		0.20	1.00		0.04	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	44	1710	907	269	2140	1168	776	473	402	265	473	0
V/C Ratio(X)	0.72	0.92	0.93	1.56	0.44	0.44	0.45	0.02	1.32	0.12	0.02	0.00
Avail Cap(c_a), veh/h	87	1727	916	269	2140	1168	776	473	402	265	473	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	69.8	33.0	33.4	61.2	13.6	13.6	46.6	40.4	53.8	42.2	40.4	0.0
Incr Delay (d2), s/veh	19.5	8.3	15.8	270.9	0.1	0.3	0.4	0.0	160.4	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	30.7	35.4	31.0	9.6	10.6	6.0	0.3	33.9	1.0	0.3	0.0
LnGrp Delay(d),s/veh	89.3	41.3	49.2	332.1	13.8	13.9	47.0	40.4	214.2	42.4	40.4	0.0
LnGrp LOS	F	D	D	F	B	B	D	D	F	D	D	
Approach Vol, veh/h		2447			1883			888			43	
Approach Delay, s/veh		44.6			85.0			146.7			41.9	
Approach LOS		D			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		40.6	26.4	77.3		40.6	8.1	95.6
Change Period (Y+Rc), s		4.0	4.5	4.5		4.0	4.5	4.5
Max Green Setting (Gmax), s		36.6	21.9	73.5		36.6	7.1	88.3
Max Q Clear Time (g_c+I1), s		38.6	23.9	65.4		6.8	4.6	22.6
Green Ext Time (p_c), s		0.0	0.0	7.3		0.2	0.0	15.7

Intersection Summary	
HCM 2010 Ctrl Delay	76.3
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	140	40	130	280	420	60	600	80	370	360	40
Future Volume (veh/h)	80	140	40	130	280	420	60	600	80	370	360	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1900	1900	1900	1900	1881	1881	1900
Adj Flow Rate, veh/h	84	147	38	137	295	157	63	632	81	389	379	38
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	1	1	1
Cap, veh/h	136	474	119	197	456	237	98	871	112	570	1250	125
Arrive On Green	0.08	0.17	0.16	0.11	0.20	0.20	0.05	0.27	0.26	0.16	0.38	0.37
Sat Flow, veh/h	1810	2858	718	1792	2277	1181	1810	3215	411	3476	3283	327
Grp Volume(v), veh/h	84	91	94	137	230	222	63	354	359	389	205	212
Grp Sat Flow(s),veh/h/ln	1810	1805	1772	1792	1787	1671	1810	1805	1821	1738	1787	1823
Q Serve(g_s), s	2.5	2.4	2.6	4.0	6.4	6.7	1.9	9.7	9.8	5.8	4.4	4.4
Cycle Q Clear(g_c), s	2.5	2.4	2.6	4.0	6.4	6.7	1.9	9.7	9.8	5.8	4.4	4.4
Prop In Lane	1.00		0.41	1.00		0.71	1.00		0.23	1.00		0.18
Lane Grp Cap(c), veh/h	136	299	294	197	358	335	98	489	494	570	681	694
V/C Ratio(X)	0.62	0.30	0.32	0.70	0.64	0.66	0.64	0.72	0.73	0.68	0.30	0.30
Avail Cap(c_a), veh/h	232	1173	1152	656	1587	1484	149	1593	1607	1941	2428	2478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	20.0	20.2	23.4	20.0	20.1	25.3	18.0	18.1	21.5	11.8	11.9
Incr Delay (d2), s/veh	4.5	0.2	0.2	4.4	0.7	0.8	2.6	0.8	0.8	0.5	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.2	1.3	2.2	3.3	3.2	1.0	4.9	5.0	2.8	2.2	2.3
LnGrp Delay(d),s/veh	29.0	20.2	20.4	27.8	20.7	21.0	27.9	18.8	18.9	22.0	11.9	12.0
LnGrp LOS	C	C	C	C	C	C	C	B	B	C	B	B
Approach Vol, veh/h		269			589			776			806	
Approach Delay, s/veh		23.0			22.5			19.6			16.8	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	19.6	10.0	12.6	6.5	25.6	8.1	14.4
Change Period (Y+Rc), s	4.0	5.3	4.5	4.0	4.0	5.3	4.5	4.0
Max Green Setting (Gmax), s	30.0	47.7	19.5	35.0	4.0	73.7	6.5	48.0
Max Q Clear Time (g_c+I1), s	7.8	11.8	6.0	4.6	3.9	6.4	4.5	8.7
Green Ext Time (p_c), s	0.7	2.5	0.3	0.6	0.0	1.7	0.0	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	19.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	730	40	90	740	190	50	70	100	120	70	160
Future Volume (veh/h)	190	730	40	90	740	190	50	70	100	120	70	160
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	200	768	35	95	779	179	53	74	-15	126	74	73
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	192	1210	55	127	899	207	76	1254	0	159	716	631
Arrive On Green	0.11	0.35	0.35	0.07	0.31	0.31	0.04	0.35	0.00	0.09	0.40	0.40
Sat Flow, veh/h	1774	3448	157	1774	2859	657	1774	3632	0	1774	1783	1572
Grp Volume(v), veh/h	200	394	409	95	482	476	53	59	0	126	73	74
Grp Sat Flow(s),veh/h/ln	1774	1770	1835	1774	1770	1747	1774	1770	0	1774	1770	1585
Q Serve(g_s), s	13.0	22.3	22.3	6.3	30.8	30.8	3.5	1.3	0.0	8.4	3.1	3.5
Cycle Q Clear(g_c), s	13.0	22.3	22.3	6.3	30.8	30.8	3.5	1.3	0.0	8.4	3.1	3.5
Prop In Lane	1.00		0.09	1.00		0.38	1.00		0.00	1.00		0.99
Lane Grp Cap(c), veh/h	192	621	644	127	556	549	76	1254	0	159	710	636
V/C Ratio(X)	1.04	0.63	0.63	0.75	0.87	0.87	0.70	0.05	0.00	0.79	0.10	0.12
Avail Cap(c_a), veh/h	192	621	644	325	664	655	157	1254	0	207	710	636
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.5	32.5	32.5	54.6	38.8	38.9	56.7	25.4	0.0	53.5	22.4	22.7
Incr Delay (d2), s/veh	76.0	2.1	2.1	8.4	10.3	10.4	11.1	0.1	0.0	14.4	0.3	0.4
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	11.2	11.6	3.4	16.6	16.4	2.0	0.7	0.0	4.7	1.6	1.6
LnGrp Delay(d),s/veh	129.6	34.6	34.6	63.1	49.0	49.3	67.8	25.5	0.0	67.9	22.7	23.1
LnGrp LOS	F	C	C	E	D	D	E	C		E	C	C
Approach Vol, veh/h		1003			1053			112			273	
Approach Delay, s/veh		53.5			50.4			45.5			43.7	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	46.5	12.6	46.1	9.1	52.2	17.0	41.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	31.5	21.5	35.5	10.1	34.9	12.5	44.5
Max Q Clear Time (g_c+I1), s	10.4	3.3	8.3	24.3	5.5	5.5	15.0	32.8
Green Ext Time (p_c), s	0.1	0.3	0.2	3.5	0.0	0.7	0.0	4.4

Intersection Summary	
HCM 2010 Ctrl Delay	50.7
HCM 2010 LOS	D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	180	770	860	660	1000	160
Future Volume (veh/h)	180	770	860	660	1000	160
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	189	811	905	281	1053	119
Adj No. of Lanes	1	2	2	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	245	2019	1324	581	1078	496
Arrive On Green	0.14	0.57	0.37	0.37	0.31	0.31
Sat Flow, veh/h	1774	3632	3632	1583	3442	1583
Grp Volume(v), veh/h	189	811	905	281	1053	119
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1583	1721	1583
Q Serve(g_s), s	7.1	8.8	14.8	9.4	20.8	3.8
Cycle Q Clear(g_c), s	7.1	8.8	14.8	9.4	20.8	3.8
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	245	2019	1324	581	1078	496
V/C Ratio(X)	0.77	0.40	0.68	0.48	0.98	0.24
Avail Cap(c_a), veh/h	349	4665	3763	1672	1078	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.5	8.2	18.1	16.7	23.3	17.5
Incr Delay (d2), s/veh	6.6	0.1	0.6	0.6	22.4	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	4.2	7.3	4.2	13.2	4.0
LnGrp Delay(d),s/veh	35.1	8.4	18.7	17.4	45.8	18.7
LnGrp LOS	D	A	B	B	D	B
Approach Vol, veh/h		1000	1186		1172	
Approach Delay, s/veh		13.4	18.4		43.0	
Approach LOS		B	B		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				43.2		25.5	13.5	29.7
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				90.0		21.0	13.0	72.5
Max Q Clear Time (g_c+I1), s				10.8		22.8	9.1	16.8
Green Ext Time (p_c), s				6.1		0.0	0.2	8.4

Intersection Summary	
HCM 2010 Ctrl Delay	25.5
HCM 2010 LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	540	1000	920	280	1560	610
Future Volume (veh/h)	540	1000	920	280	1560	610
Number	5	2	6	16	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1881	1881
Adj Flow Rate, veh/h	551	1020	939	123	1592	423
Adj No. of Lanes	1	3	2	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	1	1
Cap, veh/h	438	2889	1038	470	1254	571
Arrive On Green	0.25	0.57	0.29	0.30	0.36	0.36
Sat Flow, veh/h	1774	5253	3632	1583	3476	1599
Grp Volume(v), veh/h	551	1020	939	123	1592	423
Grp Sat Flow(s),veh/h/ln	1774	1695	1770	1583	1738	1599
Q Serve(g_s), s	35.0	15.4	36.2	8.4	51.2	32.8
Cycle Q Clear(g_c), s	35.0	15.4	36.2	8.4	51.2	32.8
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	438	2889	1038	470	1254	571
V/C Ratio(X)	1.26	0.35	0.90	0.26	1.27	0.74
Avail Cap(c_a), veh/h	438	3178	1239	560	1254	571
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.5	16.6	48.2	38.0	45.4	39.9
Incr Delay (d2), s/veh	134.1	0.0	7.7	0.1	127.7	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	33.4	7.2	18.9	3.7	46.8	15.2
LnGrp Delay(d),s/veh	187.5	16.6	56.0	38.2	173.1	44.4
LnGrp LOS	F	B	E	D	F	D
Approach Vol, veh/h		1571	1062		2015	
Approach Delay, s/veh		76.5	53.9		146.1	
Approach LOS		E	D		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		85.9			39.0	46.9		56.0
Change Period (Y+Rc), s		5.3			4.5	5.3		5.3
Max Green Setting (Gmax), s		88.7			34.5	49.7		50.7
Max Q Clear Time (g_c+I1), s		17.4			37.0	38.2		53.2
Green Ext Time (p_c), s		4.9			0.0	3.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	101.5
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	760	1800	0	0	510	1120	690	10	410	0	0	0
Future Volume (veh/h)	760	1800	0	0	510	1120	690	10	410	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1881	1881	0	0	1881	1881	1845	1845	1845			
Adj Flow Rate, veh/h	800	1895	0	0	537	795	734	0	397			
Adj No. of Lanes	2	3	0	0	1	2	2	0	1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	1	1	0	0	1	1	3	3	3			
Cap, veh/h	879	3179	0	0	624	1060	1008	0	450			
Arrive On Green	0.25	0.62	0.00	0.00	0.33	0.33	0.29	0.00	0.29			
Sat Flow, veh/h	3476	5305	0	0	1881	3198	3514	0	1568			
Grp Volume(v), veh/h	800	1895	0	0	537	795	734	0	397			
Grp Sat Flow(s),veh/h/ln	1738	1712	0	0	1881	1599	1757	0	1568			
Q Serve(g_s), s	22.7	22.7	0.0	0.0	27.2	22.5	19.2	0.0	24.6			
Cycle Q Clear(g_c), s	22.7	22.7	0.0	0.0	27.2	22.5	19.2	0.0	24.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	879	3179	0	0	624	1060	1008	0	450			
V/C Ratio(X)	0.91	0.60	0.00	0.00	0.86	0.75	0.73	0.00	0.88			
Avail Cap(c_a), veh/h	939	4786	0	0	1181	2007	1570	0	701			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	36.9	11.7	0.0	0.0	31.8	30.3	32.7	0.0	34.7			
Incr Delay (d2), s/veh	11.7	0.1	0.0	0.0	1.4	0.4	0.4	0.0	5.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	12.3	10.5	0.0	0.0	14.3	10.0	9.3	0.0	19.8			
LnGrp Delay(d),s/veh	48.6	11.8	0.0	0.0	33.2	30.7	33.1	0.0	40.2			
LnGrp LOS	D	B			C	C	C		D			
Approach Vol, veh/h		2695			1332			1131				
Approach Delay, s/veh		22.7			31.7			35.6				
Approach LOS		C			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		67.8		34.0	29.3	38.6		
Change Period (Y+Rc), s		5.3		5.3	4.0	5.3		
Max Green Setting (Gmax), s		94.4		45.0	27.0	63.4		
Max Q Clear Time (g_c+I1), s		24.7		26.6	24.7	29.2		
Green Ext Time (p_c), s		13.0		2.1	0.5	4.1		

Intersection Summary	
HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	40	200	20	30	10	20	492	20	20	570	163
Future Volume (veh/h)	195	40	200	20	30	10	20	492	20	20	570	163
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	207	43	213	21	32	11	21	523	21	21	606	173
Adj No. of Lanes	1	1	1	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	244	433	368	68	177	61	68	1029	460	68	1029	460
Arrive On Green	0.14	0.23	0.23	0.04	0.13	0.12	0.04	0.29	0.29	0.04	0.29	0.29
Sat Flow, veh/h	1774	1863	1583	1774	1326	456	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	207	43	213	21	0	43	21	523	21	21	606	173
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1782	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.6	0.7	4.8	0.5	0.0	0.9	0.5	4.9	0.4	0.5	5.9	3.5
Cycle Q Clear(g_c), s	4.6	0.7	4.8	0.5	0.0	0.9	0.5	4.9	0.4	0.5	5.9	3.5
Prop In Lane	1.00		1.00	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	244	433	368	68	0	239	68	1029	460	68	1029	460
V/C Ratio(X)	0.85	0.10	0.58	0.31	0.00	0.18	0.31	0.51	0.05	0.31	0.59	0.38
Avail Cap(c_a), veh/h	244	861	732	244	0	824	244	1724	771	244	1724	771
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.9	12.1	13.6	18.7	0.0	15.4	18.7	11.8	10.2	18.7	12.2	11.3
Incr Delay (d2), s/veh	23.6	0.1	1.4	2.5	0.0	0.4	2.5	0.4	0.0	2.5	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.4	2.2	0.3	0.0	0.4	0.3	2.5	0.2	0.3	2.9	1.6
LnGrp Delay(d),s/veh	40.5	12.2	15.1	21.2	0.0	15.8	21.2	12.2	10.2	21.2	12.7	11.8
LnGrp LOS	D	B	B	C		B	C	B	B	C	B	B
Approach Vol, veh/h		463			64			565			800	
Approach Delay, s/veh		26.1			17.6			12.5			12.7	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.5	15.6	5.5	13.3	5.5	15.6	9.5	9.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.0	19.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.5	6.9	2.5	6.8	2.5	7.9	6.6	2.9
Green Ext Time (p_c), s	0.0	2.5	0.0	0.7	0.0	3.3	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	16.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	950	126	104	1220	310	298	496	261	480	222	320
Future Volume (veh/h)	320	950	126	104	1220	310	298	496	261	480	222	320
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	337	1000	119	109	1284	131	314	522	215	505	234	203
Adj No. of Lanes	1	3	0	1	3	1	1	2	0	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	1	1	1
Cap, veh/h	226	1710	203	145	1658	514	237	645	264	389	859	377
Arrive On Green	0.13	0.37	0.37	0.08	0.33	0.33	0.13	0.26	0.26	0.11	0.24	0.24
Sat Flow, veh/h	1774	4601	546	1774	5085	1576	1792	2473	1015	3476	3574	1570
Grp Volume(v), veh/h	337	736	383	109	1284	131	314	377	360	505	234	203
Grp Sat Flow(s),veh/h/ln	1774	1695	1757	1774	1695	1576	1792	1787	1701	1738	1787	1570
Q Serve(g_s), s	12.5	17.1	17.2	5.9	22.4	6.0	13.0	19.4	19.5	11.0	5.2	11.1
Cycle Q Clear(g_c), s	12.5	17.1	17.2	5.9	22.4	6.0	13.0	19.4	19.5	11.0	5.2	11.1
Prop In Lane	1.00		0.31	1.00		1.00	1.00		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	226	1260	653	145	1658	514	237	466	443	389	859	377
V/C Ratio(X)	1.49	0.58	0.59	0.75	0.77	0.25	1.32	0.81	0.81	1.30	0.27	0.54
Avail Cap(c_a), veh/h	226	1688	875	190	2428	753	237	773	736	389	1474	647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	24.8	24.8	44.1	29.8	24.3	42.6	34.0	34.2	43.6	30.3	32.6
Incr Delay (d2), s/veh	243.6	0.2	0.3	7.7	0.5	0.1	172.1	1.3	1.4	151.6	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.4	8.0	8.3	3.2	10.5	2.6	17.7	9.7	9.4	13.4	2.6	4.8
LnGrp Delay(d),s/veh	286.5	24.9	25.1	51.8	30.3	24.4	214.7	35.3	35.6	195.2	30.4	33.0
LnGrp LOS	F	C	C	D	C	C	F	D	D	F	C	C
Approach Vol, veh/h		1456			1524			1051			942	
Approach Delay, s/veh		85.5			31.4			89.0			119.3	
Approach LOS		F			C			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	30.4	11.5	41.3	17.0	28.4	16.0	36.8
Change Period (Y+Rc), s	4.5	5.3	4.0	5.3	4.5	5.3	4.0	5.3
Max Green Setting (Gmax), s	10.5	42.0	10.0	48.4	12.5	40.0	12.0	46.4
Max Q Clear Time (g_c+I1), s	13.0	21.5	7.9	19.2	15.0	13.1	14.5	24.4
Green Ext Time (p_c), s	0.0	2.6	0.0	4.8	0.0	1.2	0.0	6.2

Intersection Summary	
HCM 2010 Ctrl Delay	76.1
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1451	310	820	1554	20	110	10	251	20	10	20
Future Volume (veh/h)	10	1451	310	820	1554	20	110	10	251	20	10	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	11	1527	305	863	1636	20	116	11	133	21	11	1
Adj No. of Lanes	1	3	0	1	3	0	2	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	22	1845	367	639	4043	49	379	193	164	179	175	16
Arrive On Green	0.01	0.43	0.43	0.36	0.78	0.78	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1774	4257	847	1774	5178	63	2709	1863	1583	1239	1683	153
Grp Volume(v), veh/h	11	1215	617	863	1071	585	116	11	133	21	0	12
Grp Sat Flow(s),veh/h/ln	1774	1695	1713	1774	1695	1852	1355	1863	1583	1239	0	1836
Q Serve(g_s), s	0.8	40.0	40.3	45.5	12.8	12.8	5.1	0.7	10.4	2.0	0.0	0.7
Cycle Q Clear(g_c), s	0.8	40.0	40.3	45.5	12.8	12.8	5.8	0.7	10.4	2.6	0.0	0.7
Prop In Lane	1.00		0.49	1.00		0.03	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	22	1469	743	639	2647	1446	379	193	164	179	0	190
V/C Ratio(X)	0.49	0.83	0.83	1.35	0.40	0.40	0.31	0.06	0.81	0.12	0.00	0.06
Avail Cap(c_a), veh/h	72	1623	820	639	2706	1478	655	383	326	305	0	378
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	62.0	31.6	31.7	40.4	4.4	4.4	53.7	51.1	55.4	52.3	0.0	51.1
Incr Delay (d2), s/veh	15.5	3.4	6.7	168.3	0.1	0.2	0.5	0.1	9.1	0.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	19.4	20.4	52.0	6.0	6.6	1.9	0.4	5.0	0.7	0.0	0.4
LnGrp Delay(d),s/veh	77.5	35.0	38.4	208.7	4.5	4.6	54.2	51.2	64.5	52.5	0.0	51.2
LnGrp LOS	E	D	D	F	A	A	D	D	E	D		D
Approach Vol, veh/h		1843			2519			260			33	
Approach Delay, s/veh		36.4			74.5			59.3			52.1	
Approach LOS		D			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		17.1	50.0	59.3		17.1	6.1	103.2
Change Period (Y+Rc), s		4.0	4.5	4.5		4.0	4.5	4.5
Max Green Setting (Gmax), s		26.0	45.5	60.5		26.0	5.1	100.9
Max Q Clear Time (g_c+I1), s		12.4	47.5	42.3		4.6	2.8	14.8
Green Ext Time (p_c), s		0.7	0.0	12.5		0.1	0.0	20.6

Intersection Summary	
HCM 2010 Ctrl Delay	58.4
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	160	40	96	120	462	20	460	72	564	700	30
Future Volume (veh/h)	90	160	40	96	120	462	20	460	72	564	700	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1900	1900	1900	1900	1881	1881	1900
Adj Flow Rate, veh/h	95	168	42	101	126	201	21	484	76	594	737	32
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	1	1	1
Cap, veh/h	141	518	126	148	330	295	52	689	108	784	1457	63
Arrive On Green	0.08	0.18	0.17	0.08	0.18	0.18	0.03	0.22	0.21	0.23	0.42	0.41
Sat Flow, veh/h	1810	2878	701	1792	1787	1596	1810	3123	488	3476	3490	151
Grp Volume(v), veh/h	95	104	106	101	126	201	21	279	281	594	377	392
Grp Sat Flow(s),veh/h/ln	1810	1805	1775	1792	1787	1596	1810	1805	1806	1738	1787	1854
Q Serve(g_s), s	2.9	2.8	2.9	3.1	3.5	6.6	0.6	8.0	8.1	8.9	8.7	8.7
Cycle Q Clear(g_c), s	2.9	2.8	2.9	3.1	3.5	6.6	0.6	8.0	8.1	8.9	8.7	8.7
Prop In Lane	1.00		0.40	1.00		1.00	1.00		0.27	1.00		0.08
Lane Grp Cap(c), veh/h	141	325	319	148	330	295	52	398	399	784	746	774
V/C Ratio(X)	0.67	0.32	0.33	0.68	0.38	0.68	0.40	0.70	0.71	0.76	0.51	0.51
Avail Cap(c_a), veh/h	210	822	809	528	1133	1012	145	974	975	3881	2816	2922
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	20.0	20.1	25.0	20.0	21.3	26.7	20.1	20.2	20.2	12.0	12.1
Incr Delay (d2), s/veh	5.5	0.2	0.2	5.4	0.3	1.0	1.9	0.8	0.9	0.6	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.4	1.4	1.7	1.7	3.0	0.3	4.0	4.1	4.4	4.3	4.5
LnGrp Delay(d),s/veh	30.6	20.2	20.3	30.4	20.3	22.3	28.6	20.9	21.1	20.8	12.2	12.3
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	B	B
Approach Vol, veh/h		305			428			581			1363	
Approach Delay, s/veh		23.5			23.6			21.3			16.0	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.1	17.2	9.1	13.6	5.1	28.2	8.9	13.8
Change Period (Y+Rc), s	4.0	5.3	5.0	4.0	4.0	5.3	5.0	4.0
Max Green Setting (Gmax), s	12.0	29.7	16.0	25.0	4.0	87.7	6.0	35.0
Max Q Clear Time (g_c+I1), s	10.9	10.1	5.1	4.9	2.6	10.7	4.9	8.6
Green Ext Time (p_c), s	1.2	1.8	0.1	0.6	0.0	3.4	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	19.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	690	26	92	920	130	68	205	269	120	53	150
Future Volume (veh/h)	120	690	26	92	920	130	68	205	269	120	53	150
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	126	726	25	97	968	126	72	216	127	126	56	49
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	1261	43	128	1083	141	99	750	423	159	714	559
Arrive On Green	0.09	0.36	0.36	0.07	0.34	0.34	0.06	0.34	0.34	0.09	0.38	0.37
Sat Flow, veh/h	1774	3491	120	1774	3150	410	1774	2183	1232	1774	1890	1481
Grp Volume(v), veh/h	126	368	383	97	544	550	72	173	170	126	52	53
Grp Sat Flow(s),veh/h/ln	1774	1770	1842	1774	1770	1790	1774	1770	1645	1774	1770	1601
Q Serve(g_s), s	8.4	20.1	20.1	6.4	34.9	35.0	4.8	8.6	9.1	8.4	2.3	2.6
Cycle Q Clear(g_c), s	8.4	20.1	20.1	6.4	34.9	35.0	4.8	8.6	9.1	8.4	2.3	2.6
Prop In Lane	1.00		0.07	1.00		0.23	1.00		0.75	1.00		0.92
Lane Grp Cap(c), veh/h	159	639	665	128	608	615	99	608	565	159	668	605
V/C Ratio(X)	0.79	0.58	0.58	0.76	0.89	0.89	0.73	0.29	0.30	0.79	0.08	0.09
Avail Cap(c_a), veh/h	192	696	724	160	664	671	136	608	565	207	668	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.5	30.9	30.9	54.7	37.3	37.4	55.8	28.7	29.0	53.5	23.9	24.2
Incr Delay (d2), s/veh	16.9	1.0	1.0	15.0	13.9	13.8	11.6	1.2	1.4	14.4	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	10.0	10.4	3.7	19.4	19.6	2.7	4.4	4.3	4.7	1.1	1.2
LnGrp Delay(d),s/veh	70.4	31.9	31.9	69.7	51.2	51.2	67.4	29.8	30.3	67.9	24.2	24.5
LnGrp LOS	E	C	C	E	D	D	E	C	C	E	C	C
Approach Vol, veh/h		877			1191			415			231	
Approach Delay, s/veh		37.4			52.7			36.5			48.1	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	45.2	12.6	47.4	10.7	49.3	14.8	45.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	31.5	10.3	46.7	8.7	36.3	12.5	44.5
Max Q Clear Time (g_c+I1), s	10.4	11.1	8.4	22.1	6.8	4.6	10.4	37.0
Green Ext Time (p_c), s	0.1	1.7	0.0	4.3	0.0	0.5	0.1	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	44.9
HCM 2010 LOS	D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	91	988	1082	880	310	60
Future Volume (veh/h)	91	988	1082	880	310	60
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	96	1040	1139	461	326	15
Adj No. of Lanes	1	2	2	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	136	2073	1600	704	1032	475
Arrive On Green	0.08	0.59	0.45	0.44	0.30	0.30
Sat Flow, veh/h	1774	3632	3632	1583	3442	1583
Grp Volume(v), veh/h	96	1040	1139	461	326	15
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1583	1721	1583
Q Serve(g_s), s	3.7	12.1	18.2	16.0	5.1	0.5
Cycle Q Clear(g_c), s	3.7	12.1	18.2	16.0	5.1	0.5
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	136	2073	1600	704	1032	475
V/C Ratio(X)	0.71	0.50	0.71	0.65	0.32	0.03
Avail Cap(c_a), veh/h	228	3084	2427	1074	1032	475
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	8.5	15.5	15.2	18.9	17.3
Incr Delay (d2), s/veh	6.6	0.2	0.6	1.0	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	5.8	9.0	7.1	2.6	0.5
LnGrp Delay(d),s/veh	38.2	8.7	16.1	16.3	19.7	17.4
LnGrp LOS	D	A	B	B	B	B
Approach Vol, veh/h		1136	1600		341	
Approach Delay, s/veh		11.2	16.1		19.6	
Approach LOS		B	B		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				45.0		25.0	9.4	35.6
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				60.5		20.5	8.5	47.5
Max Q Clear Time (g_c+I1), s				14.1		7.1	5.7	20.2
Green Ext Time (p_c), s				8.5		0.9	0.0	10.9

Intersection Summary	
HCM 2010 Ctrl Delay	14.7
HCM 2010 LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	378	1060	1850	570	960	192
Future Volume (veh/h)	378	1060	1850	570	960	192
Number	5	2	6	16	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1881	1881
Adj Flow Rate, veh/h	398	1116	1947	436	1011	101
Adj No. of Lanes	1	3	2	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	1	1
Cap, veh/h	310	3547	1731	781	759	342
Arrive On Green	0.17	0.70	0.49	0.49	0.22	0.21
Sat Flow, veh/h	1774	5253	3632	1583	3476	1599
Grp Volume(v), veh/h	398	1116	1947	436	1011	101
Grp Sat Flow(s),veh/h/ln	1774	1695	1770	1583	1738	1599
Q Serve(g_s), s	21.0	10.2	58.7	23.1	26.2	6.4
Cycle Q Clear(g_c), s	21.0	10.2	58.7	23.1	26.2	6.4
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	310	3547	1731	781	759	342
V/C Ratio(X)	1.28	0.31	1.12	0.56	1.33	0.29
Avail Cap(c_a), veh/h	310	3547	1731	781	759	342
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.5	7.0	30.6	21.3	46.9	39.6
Incr Delay (d2), s/veh	149.3	0.0	64.3	0.5	158.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.1	4.8	44.1	10.2	29.2	2.8
LnGrp Delay(d),s/veh	198.8	7.1	94.9	21.8	205.4	39.7
LnGrp LOS	F	A	F	C	F	D
Approach Vol, veh/h		1514	2383		1112	
Approach Delay, s/veh		57.5	81.5		190.3	
Approach LOS		E	F		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		89.0			25.0	64.0		31.0
Change Period (Y+Rc), s		5.3			4.5	5.3		5.3
Max Green Setting (Gmax), s		83.7			20.5	58.7		25.7
Max Q Clear Time (g_c+I1), s		12.2			23.0	60.7		28.2
Green Ext Time (p_c), s		5.5			0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	98.4
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	518	1502	0	0	1854	1170	566	10	220	0	0	0
Future Volume (veh/h)	518	1502	0	0	1854	1170	566	10	220	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1881	1881	0	0	1881	1881	1845	1845	1845			
Adj Flow Rate, veh/h	545	1581	0	0	1952	770	604	0	114			
Adj No. of Lanes	2	3	0	0	2	1	2	0	1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	1	1	0	0	1	1	3	3	3			
Cap, veh/h	675	3359	0	0	1551	659	755	0	337			
Arrive On Green	0.19	0.65	0.00	0.00	0.41	0.41	0.21	0.00	0.21			
Sat Flow, veh/h	3476	5305	0	0	3762	1599	3514	0	1568			
Grp Volume(v), veh/h	545	1581	0	0	1952	770	604	0	114			
Grp Sat Flow(s),veh/h/ln	1738	1712	0	0	1881	1599	1757	0	1568			
Q Serve(g_s), s	11.0	11.3	0.0	0.0	30.2	30.2	11.9	0.0	4.5			
Cycle Q Clear(g_c), s	11.0	11.3	0.0	0.0	30.2	30.2	11.9	0.0	4.5			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	675	3359	0	0	1551	659	755	0	337			
V/C Ratio(X)	0.81	0.47	0.00	0.00	1.26	1.17	0.80	0.00	0.34			
Avail Cap(c_a), veh/h	1020	3870	0	0	1551	659	2647	0	1181			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	28.2	6.3	0.0	0.0	21.5	21.5	27.3	0.0	24.4			
Incr Delay (d2), s/veh	1.6	0.0	0.0	0.0	121.8	91.4	0.8	0.0	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.4	5.3	0.0	0.0	41.7	29.9	5.9	0.0	4.2			
LnGrp Delay(d),s/veh	29.8	6.4	0.0	0.0	143.3	112.9	28.0	0.0	24.6			
LnGrp LOS	C	A			F	F	C		C			
Approach Vol, veh/h		2126			2722			718				
Approach Delay, s/veh		12.4			134.7			27.5				
Approach LOS		B			F			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		52.7		20.5	17.7	35.0		
Change Period (Y+Rc), s		5.3		5.3	4.0	5.3		
Max Green Setting (Gmax), s		54.7		54.7	21.0	29.7		
Max Q Clear Time (g_c+I1), s		13.3		13.9	13.0	32.2		
Green Ext Time (p_c), s		9.0		1.3	0.7	0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	74.1
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	210	212	181	210	160	148	834	183	150	1201	140
Future Volume (veh/h)	140	210	212	181	210	160	148	834	183	150	1201	140
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1863	1863	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	152	228	208	197	228	157	161	907	186	163	1305	149
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	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
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	171	247	226	169	280	193	137	1128	231	171	1293	147
Arrive On Green	0.10	0.27	0.27	0.10	0.27	0.27	0.08	0.38	0.37	0.10	0.40	0.39
Sat Flow, veh/h	1792	900	821	1774	1019	702	1792	2953	605	1792	3226	366
Grp Volume(v), veh/h	152	0	436	197	0	385	161	549	544	163	720	734
Grp Sat Flow(s),veh/h/ln	1792	0	1722	1774	0	1721	1792	1787	1771	1792	1787	1806
Q Serve(g_s), s	8.8	0.0	25.8	10.0	0.0	21.9	8.0	28.7	28.8	9.5	42.0	42.0
Cycle Q Clear(g_c), s	8.8	0.0	25.8	10.0	0.0	21.9	8.0	28.7	28.8	9.5	42.0	42.0
Prop In Lane	1.00		0.48	1.00		0.41	1.00		0.34	1.00		0.20
Lane Grp Cap(c), veh/h	171	0	473	169	0	473	137	682	676	171	716	724
V/C Ratio(X)	0.89	0.00	0.92	1.16	0.00	0.81	1.18	0.80	0.80	0.95	1.00	1.01
Avail Cap(c_a), veh/h	171	0	559	169	0	559	137	682	676	171	716	724
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.8	0.0	36.9	47.4	0.0	35.5	48.4	28.9	29.1	47.1	31.4	31.5
Incr Delay (d2), s/veh	38.0	0.0	17.8	119.9	0.0	6.6	132.2	6.5	6.5	54.5	34.7	37.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	14.6	10.5	0.0	11.2	8.9	15.4	15.3	7.3	27.4	28.2
LnGrp Delay(d),s/veh	84.9	0.0	54.8	167.3	0.0	42.2	180.6	35.3	35.7	101.7	66.1	68.6
LnGrp LOS	F		D	F		D	F	D	D	F	F	F
Approach Vol, veh/h		588			582			1254			1617	
Approach Delay, s/veh		62.5			84.5			54.1			70.8	
Approach LOS		E			F			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	44.0	14.0	32.8	12.0	46.0	14.0	32.8
Change Period (Y+Rc), s	4.0	5.3	4.0	4.0	4.0	5.3	4.0	4.0
Max Green Setting (Gmax), s	10.0	38.7	10.0	34.0	8.0	40.7	10.0	34.0
Max Q Clear Time (g_c+I1), s	11.5	30.8	12.0	27.8	10.0	44.0	10.8	23.9
Green Ext Time (p_c), s	0.0	2.8	0.0	0.9	0.0	0.0	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	66.4
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	273	60	60	20	50	20	30	459	20	20	304	161
Future Volume (veh/h)	273	60	60	20	50	20	30	459	20	20	304	161
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	297	65	65	22	54	22	33	499	22	22	330	175
Adj No. of Lanes	1	1	1	1	1	0	1	2	1	1	2	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	259	446	379	72	169	69	92	898	402	72	857	383
Arrive On Green	0.15	0.24	0.24	0.04	0.13	0.12	0.05	0.25	0.25	0.04	0.24	0.24
Sat Flow, veh/h	1774	1863	1583	1774	1259	513	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	297	65	65	22	0	76	33	499	22	22	330	175
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1772	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.5	1.0	1.2	0.5	0.0	1.5	0.7	4.6	0.4	0.5	2.9	3.5
Cycle Q Clear(g_c), s	5.5	1.0	1.2	0.5	0.0	1.5	0.7	4.6	0.4	0.5	2.9	3.5
Prop In Lane	1.00		1.00	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	259	446	379	72	0	237	92	898	402	72	857	383
V/C Ratio(X)	1.14	0.15	0.17	0.31	0.00	0.32	0.36	0.56	0.05	0.31	0.38	0.46
Avail Cap(c_a), veh/h	259	916	779	259	0	872	259	1835	821	259	1835	821
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.1	11.3	11.3	17.5	0.0	14.8	17.2	12.2	10.6	17.5	11.9	12.1
Incr Delay (d2), s/veh	100.6	0.1	0.2	2.4	0.0	0.8	2.3	0.5	0.1	2.4	0.3	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	0.5	0.6	0.3	0.0	0.8	0.4	2.3	0.2	0.3	1.5	1.6
LnGrp Delay(d),s/veh	116.6	11.4	11.5	19.9	0.0	15.6	19.5	12.7	10.7	19.9	12.2	13.0
LnGrp LOS	F	B	B	B		B	B	B	B	B	B	B
Approach Vol, veh/h		427			98			554			527	
Approach Delay, s/veh		84.6			16.5			13.1			12.8	
Approach LOS		F			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.5	13.5	5.5	13.0	6.0	13.1	9.5	9.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.0	19.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.5	6.6	2.5	3.2	2.7	5.5	7.5	3.5
Green Ext Time (p_c), s	0.0	2.4	0.0	0.4	0.0	2.1	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	32.2
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	34	508	0	0	171
Future Vol, veh/h	0	34	508	0	0	171
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	36	535	0	0	180

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	625	268	0	-	-	-
Stage 1	535	-	-	-	-	-
Stage 2	90	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	-	-
Pot Cap-1 Maneuver	417	730	-	0	0	-
Stage 1	551	-	-	0	0	-
Stage 2	923	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	417	730	-	-	-	-
Mov Cap-2 Maneuver	417	-	-	-	-	-
Stage 1	551	-	-	-	-	-
Stage 2	923	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBT
Capacity (veh/h)	-	-	730	-
HCM Lane V/C Ratio	-	-	0.049	-
HCM Control Delay (s)	-	0	10.2	-
HCM Lane LOS	-	A	B	-
HCM 95th %tile Q(veh)	-	-	0.2	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	78	430	0	38	133
Future Volume (veh/h)	0	78	430	0	38	133
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1900	1863	1863
Adj Flow Rate, veh/h	0	82	453	0	40	140
Adj No. of Lanes	1	0	2	0	1	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	0	0	3303	0	969	3303
Arrive On Green	0.00	0.00	0.93	0.00	0.93	0.93
Sat Flow, veh/h	0	0	3725	0	934	3632
Grp Volume(v), veh/h	0	0	453	0	40	140
Grp Sat Flow(s),veh/h/ln	0	0	1770	0	934	1770
Q Serve(g_s), s	0.0	0.0	0.7	0.0	0.2	0.2
Cycle Q Clear(g_c), s	0.0	0.0	0.7	0.0	0.9	0.2
Prop In Lane	0.00	0.00		0.00	1.00	
Lane Grp Cap(c), veh/h	0	0	3303	0	969	3303
V/C Ratio(X)	0.00	0.00	0.14	0.00	0.04	0.04
Avail Cap(c_a), veh/h	0	0	3303	0	969	3303
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.2	0.0	0.2	0.2
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.4	0.0	0.1	0.1
LnGrp Delay(d),s/veh	0.0	0.0	0.3	0.0	0.3	0.2
LnGrp LOS			A		A	A
Approach Vol, veh/h	0		453			180
Approach Delay, s/veh	0.0		0.3			0.2
Approach LOS			A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		67.5				67.5		0.0
Change Period (Y+Rc), s		4.5				4.5		4.5
Max Green Setting (Gmax), s		63.0				63.0		18.0
Max Q Clear Time (g_c+I1), s		2.7				2.9		0.0
Green Ext Time (p_c), s		3.0				1.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	0.2
HCM 2010 LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	200	0	0	230	70	63
Future Volume (veh/h)	200	0	0	230	70	63
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	211	0	0	242	74	66
Adj No. of Lanes	1	1	0	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	277	247	0	2382	1257	1010
Arrive On Green	0.16	0.00	0.00	0.67	0.67	0.67
Sat Flow, veh/h	1774	1583	0	3725	1960	1501
Grp Volume(v), veh/h	211	0	0	242	70	70
Grp Sat Flow(s),veh/h/ln	1774	1583	0	1770	1770	1598
Q Serve(g_s), s	6.0	0.0	0.0	1.3	0.7	0.8
Cycle Q Clear(g_c), s	6.0	0.0	0.0	1.3	0.7	0.8
Prop In Lane	1.00	1.00	0.00			0.94
Lane Grp Cap(c), veh/h	277	247	0	2382	1191	1076
V/C Ratio(X)	0.76	0.00	0.00	0.10	0.06	0.07
Avail Cap(c_a), veh/h	1530	1366	0	2382	1191	1076
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.3	0.0	0.0	3.0	2.9	2.9
Incr Delay (d2), s/veh	4.3	0.0	0.0	0.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	0.0	0.6	0.4	0.4
LnGrp Delay(d),s/veh	25.6	0.0	0.0	3.1	3.0	3.1
LnGrp LOS	C			A	A	A
Approach Vol, veh/h	211			242	140	
Approach Delay, s/veh	25.6			3.1	3.0	
Approach LOS	C			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		40.0		12.7		40.0		
Change Period (Y+Rc), s		4.5		4.5		4.5		
Max Green Setting (Gmax), s		35.5		45.5		35.5		
Max Q Clear Time (g_c+I1), s		3.3		8.0		2.8		
Green Ext Time (p_c), s		1.4		0.6		0.8		

Intersection Summary	
HCM 2010 Ctrl Delay	11.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	1400	191	223	1200	320	282	424	328	510	337	140
Future Volume (veh/h)	330	1400	191	223	1200	320	282	424	328	510	337	140
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	337	1429	182	228	1224	132	288	433	242	520	344	51
Adj No. of Lanes	1	3	0	1	3	1	1	2	0	2	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	1	1	1
Cap, veh/h	214	1626	207	185	1731	537	209	532	295	579	1035	455
Arrive On Green	0.12	0.36	0.36	0.10	0.34	0.34	0.12	0.24	0.23	0.17	0.29	0.29
Sat Flow, veh/h	1774	4560	580	1774	5085	1576	1792	2220	1230	3476	3574	1571
Grp Volume(v), veh/h	337	1062	549	228	1224	132	288	348	327	520	344	51
Grp Sat Flow(s),veh/h/ln	1774	1695	1750	1774	1695	1576	1792	1787	1662	1738	1787	1571
Q Serve(g_s), s	15.0	36.5	36.6	13.0	26.0	7.5	14.5	22.9	23.2	18.2	9.4	3.0
Cycle Q Clear(g_c), s	15.0	36.5	36.6	13.0	26.0	7.5	14.5	22.9	23.2	18.2	9.4	3.0
Prop In Lane	1.00		0.33	1.00		1.00	1.00		0.74	1.00		1.00
Lane Grp Cap(c), veh/h	214	1209	624	185	1731	537	209	428	398	579	1035	455
V/C Ratio(X)	1.57	0.88	0.88	1.23	0.71	0.25	1.38	0.81	0.82	0.90	0.33	0.11
Avail Cap(c_a), veh/h	214	1317	680	185	1893	587	209	642	598	629	1515	666
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.7	37.5	37.5	55.7	35.6	29.5	54.9	44.6	45.2	50.8	34.7	32.4
Incr Delay (d2), s/veh	279.9	6.3	11.3	141.2	0.9	0.1	197.4	2.8	3.3	15.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.0	18.2	19.6	13.6	12.3	3.3	18.6	11.6	11.0	9.9	4.6	1.3
LnGrp Delay(d),s/veh	334.6	43.7	48.8	196.9	36.5	29.6	252.3	47.4	48.6	65.8	34.8	32.5
LnGrp LOS	F	D	D	F	D	C	F	D	D	E	C	C
Approach Vol, veh/h		1948			1584			963			915	
Approach Delay, s/veh		95.5			59.0			109.1			52.3	
Approach LOS		F			E			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.2	33.8	17.0	48.3	19.0	40.0	19.0	46.3
Change Period (Y+Rc), s	4.5	5.3	4.0	5.3	4.5	5.3	4.0	5.3
Max Green Setting (Gmax), s	22.5	43.4	13.0	47.0	14.5	51.4	15.0	45.0
Max Q Clear Time (g_c+I1), s	20.2	25.2	15.0	38.6	16.5	11.4	17.0	28.0
Green Ext Time (p_c), s	0.5	2.3	0.0	4.5	0.0	1.4	0.0	5.4

Intersection Summary	
HCM 2010 Ctrl Delay	79.9
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	2138	170	401	1383	20	330	10	820	30	10	20
Future Volume (veh/h)	30	2138	170	401	1383	20	330	10	820	30	10	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	32	2251	173	422	1456	20	347	11	530	32	11	0
Adj No. of Lanes	1	3	0	1	3	0	2	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	51	2449	186	272	3270	45	781	476	405	266	476	0
Arrive On Green	0.03	0.51	0.50	0.15	0.63	0.63	0.26	0.26	0.26	0.26	0.26	0.00
Sat Flow, veh/h	1774	4822	367	1774	5169	71	2712	1863	1583	861	1863	0
Grp Volume(v), veh/h	32	1576	848	422	955	521	347	11	530	32	11	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1798	1774	1695	1850	1356	1863	1583	861	1863	0
Q Serve(g_s), s	2.6	61.6	63.5	22.1	20.8	20.8	15.9	0.6	36.9	4.2	0.6	0.0
Cycle Q Clear(g_c), s	2.6	61.6	63.5	22.1	20.8	20.8	16.5	0.6	36.9	4.8	0.6	0.0
Prop In Lane	1.00		0.20	1.00		0.04	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	51	1722	913	272	2145	1170	781	476	405	266	476	0
V/C Ratio(X)	0.63	0.91	0.93	1.55	0.45	0.45	0.44	0.02	1.31	0.12	0.02	0.00
Avail Cap(c_a), veh/h	86	1739	922	272	2145	1170	781	476	405	266	476	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	69.3	32.6	33.1	61.1	13.6	13.6	46.4	40.2	53.7	42.0	40.2	0.0
Incr Delay (d2), s/veh	12.3	7.9	15.3	266.3	0.1	0.3	0.4	0.0	155.8	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	30.6	35.2	30.9	9.7	10.7	6.0	0.3	33.7	1.0	0.3	0.0
LnGrp Delay(d),s/veh	81.7	40.6	48.4	327.4	13.7	13.8	46.8	40.2	209.5	42.2	40.2	0.0
LnGrp LOS	F	D	D	F	B	B	D	D	F	D	D	
Approach Vol, veh/h		2456			1898			888			43	
Approach Delay, s/veh		43.8			83.5			143.8			41.7	
Approach LOS		D			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		40.9	26.1	77.3		40.9	8.1	95.3
Change Period (Y+Rc), s		4.0	4.5	4.5		4.0	4.5	4.5
Max Green Setting (Gmax), s		36.9	21.6	73.5		36.9	6.5	88.6
Max Q Clear Time (g_c+I1), s		38.9	24.1	65.5		6.8	4.6	22.8
Green Ext Time (p_c), s		0.0	0.0	7.3		0.2	0.0	16.0

Intersection Summary	
HCM 2010 Ctrl Delay	74.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	140	40	134	250	428	60	600	87	384	360	40
Future Volume (veh/h)	80	140	40	134	250	428	60	600	87	384	360	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1881	1900	1900	1900	1900	1881	1881	1900
Adj Flow Rate, veh/h	84	147	38	141	263	166	63	632	89	404	379	38
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	1	1	1
Cap, veh/h	118	419	105	186	395	241	81	903	127	555	1311	131
Arrive On Green	0.07	0.15	0.15	0.10	0.19	0.19	0.04	0.28	0.26	0.16	0.40	0.38
Sat Flow, veh/h	1810	2858	718	1792	2133	1303	1810	3173	446	3476	3283	327
Grp Volume(v), veh/h	84	91	94	141	219	210	63	359	362	404	205	212
Grp Sat Flow(s),veh/h/ln	1810	1805	1772	1792	1787	1649	1810	1805	1814	1738	1787	1823
Q Serve(g_s), s	2.5	2.5	2.7	4.3	6.3	6.6	1.9	9.9	10.0	6.2	4.3	4.4
Cycle Q Clear(g_c), s	2.5	2.5	2.7	4.3	6.3	6.6	1.9	9.9	10.0	6.2	4.3	4.4
Prop In Lane	1.00		0.41	1.00		0.79	1.00		0.25	1.00		0.18
Lane Grp Cap(c), veh/h	118	265	260	186	331	305	81	513	516	555	714	728
V/C Ratio(X)	0.71	0.34	0.36	0.76	0.66	0.69	0.78	0.70	0.70	0.73	0.29	0.29
Avail Cap(c_a), veh/h	195	1135	1114	612	1541	1422	130	1589	1598	1874	2408	2457
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	21.3	21.4	24.3	21.1	21.2	26.3	17.8	18.0	22.2	11.3	11.4
Incr Delay (d2), s/veh	7.6	0.3	0.3	6.2	0.8	1.0	5.9	0.7	0.7	0.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.3	1.3	2.4	3.2	3.1	1.1	5.0	5.0	3.0	2.1	2.2
LnGrp Delay(d),s/veh	33.1	21.6	21.7	30.4	21.9	22.2	32.2	18.4	18.6	22.9	11.4	11.5
LnGrp LOS	C	C	C	C	C	C	C	B	B	C	B	B
Approach Vol, veh/h		269			570			784			821	
Approach Delay, s/veh		25.2			24.1			19.6			17.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.9	19.8	10.8	12.2	6.5	26.2	8.6	14.3
Change Period (Y+Rc), s	4.0	5.3	5.0	4.0	4.0	5.3	5.0	4.0
Max Green Setting (Gmax), s	30.6	47.7	19.0	35.0	4.0	73.7	6.0	48.0
Max Q Clear Time (g_c+I1), s	8.3	12.0	6.3	4.7	3.9	6.4	4.5	8.6
Green Ext Time (p_c), s	0.8	2.6	0.3	0.6	0.0	1.7	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	20.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	730	61	167	740	190	62	94	145	120	111	160
Future Volume (veh/h)	190	730	61	167	740	190	62	94	145	120	111	160
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	200	768	57	176	779	179	65	99	33	126	117	73
Adj No. of Lanes	1	2	0	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	192	1012	75	212	899	207	91	935	299	159	846	494
Arrive On Green	0.11	0.30	0.30	0.12	0.31	0.31	0.05	0.35	0.35	0.09	0.39	0.39
Sat Flow, veh/h	1774	3341	248	1774	2859	657	1774	2639	844	1774	2153	1258
Grp Volume(v), veh/h	200	407	418	176	482	476	65	65	67	126	95	95
Grp Sat Flow(s),veh/h/ln	1774	1770	1819	1774	1770	1747	1774	1770	1714	1774	1770	1641
Q Serve(g_s), s	13.0	25.0	25.0	11.6	30.8	30.8	4.3	3.0	3.2	8.4	4.1	4.5
Cycle Q Clear(g_c), s	13.0	25.0	25.0	11.6	30.8	30.8	4.3	3.0	3.2	8.4	4.1	4.5
Prop In Lane	1.00		0.14	1.00		0.38	1.00		0.49	1.00		0.77
Lane Grp Cap(c), veh/h	192	536	551	212	556	549	91	627	607	159	695	645
V/C Ratio(X)	1.04	0.76	0.76	0.83	0.87	0.87	0.72	0.10	0.11	0.79	0.14	0.15
Avail Cap(c_a), veh/h	192	536	551	325	664	655	157	627	607	207	695	645
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.5	37.8	37.9	51.6	38.8	38.9	56.1	26.0	26.1	53.5	23.4	23.6
Incr Delay (d2), s/veh	76.0	6.2	6.1	10.2	10.3	10.4	10.1	0.3	0.4	14.4	0.4	0.5
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	13.1	13.5	6.3	16.6	16.4	2.4	1.5	1.6	4.7	2.1	2.1
LnGrp Delay(d),s/veh	129.6	44.0	43.9	61.8	49.0	49.3	66.1	26.3	26.5	67.9	23.8	24.1
LnGrp LOS	F	D	D	E	D	D	E	C	C	E	C	C
Approach Vol, veh/h		1025			1134			197			316	
Approach Delay, s/veh		60.7			51.1			39.5			41.5	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	46.5	18.4	40.4	10.1	51.1	17.0	41.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	31.5	21.5	35.5	10.1	34.9	12.5	44.5
Max Q Clear Time (g_c+I1), s	10.4	5.2	13.6	27.0	6.3	6.5	15.0	32.8
Green Ext Time (p_c), s	0.1	0.6	0.3	3.0	0.0	1.0	0.0	4.4

Intersection Summary	
HCM 2010 Ctrl Delay	52.8
HCM 2010 LOS	D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	180	815	936	660	1000	161
Future Volume (veh/h)	180	815	936	660	1000	161
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	189	858	985	281	1053	120
Adj No. of Lanes	1	2	2	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	243	2088	1407	630	1028	473
Arrive On Green	0.14	0.59	0.40	0.40	0.30	0.30
Sat Flow, veh/h	1774	3632	3632	1583	3442	1583
Grp Volume(v), veh/h	189	858	985	281	1053	120
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1583	1721	1583
Q Serve(g_s), s	7.4	9.4	16.7	9.4	21.5	4.1
Cycle Q Clear(g_c), s	7.4	9.4	16.7	9.4	21.5	4.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	243	2088	1407	630	1028	473
V/C Ratio(X)	0.78	0.41	0.70	0.45	1.02	0.25
Avail Cap(c_a), veh/h	333	4451	3590	1606	1028	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.0	8.0	18.1	15.9	25.2	19.1
Incr Delay (d2), s/veh	7.8	0.1	0.6	0.5	34.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	4.6	8.2	4.1	15.0	4.2
LnGrp Delay(d),s/veh	37.8	8.1	18.7	16.4	59.6	20.4
LnGrp LOS	D	A	B	B	F	C
Approach Vol, veh/h		1047	1266		1173	
Approach Delay, s/veh		13.5	18.2		55.6	
Approach LOS		B	B		E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				46.5		25.5	13.8	32.6
Change Period (Y+Rc), s				4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s				90.0		21.0	13.0	72.5
Max Q Clear Time (g_c+I1), s				11.4		23.5	9.4	18.7
Green Ext Time (p_c), s				6.6		0.0	0.2	9.4

Intersection Summary	
HCM 2010 Ctrl Delay	29.4
HCM 2010 LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	552	1033	955	280	1560	651
Future Volume (veh/h)	552	1033	955	280	1560	651
Number	5	2	6	16	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1881	1881
Adj Flow Rate, veh/h	563	1054	974	126	1592	451
Adj No. of Lanes	1	3	2	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	1	1
Cap, veh/h	434	2955	1093	489	1262	581
Arrive On Green	0.24	0.58	0.31	0.31	0.36	0.36
Sat Flow, veh/h	1774	5253	3632	1583	3476	1599
Grp Volume(v), veh/h	563	1054	974	126	1592	451
Grp Sat Flow(s),veh/h/ln	1774	1695	1770	1583	1738	1599
Q Serve(g_s), s	35.0	15.7	37.6	8.6	52.0	35.8
Cycle Q Clear(g_c), s	35.0	15.7	37.6	8.6	52.0	35.8
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	434	2955	1093	489	1262	581
V/C Ratio(X)	1.30	0.36	0.89	0.26	1.26	0.78
Avail Cap(c_a), veh/h	434	3196	1260	564	1262	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.1	15.9	47.2	37.2	45.6	40.5
Incr Delay (d2), s/veh	150.5	0.0	6.9	0.1	124.2	6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	35.2	7.3	19.4	3.8	46.7	16.8
LnGrp Delay(d),s/veh	204.6	15.9	54.1	37.3	169.8	46.5
LnGrp LOS	F	B	D	D	F	D
Approach Vol, veh/h		1617	1100		2043	
Approach Delay, s/veh		81.6	52.2		142.5	
Approach LOS		F	D		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		87.2			39.0	48.2		56.0
Change Period (Y+Rc), s		5.3			4.5	5.3		5.3
Max Green Setting (Gmax), s		88.7			34.5	49.7		50.7
Max Q Clear Time (g_c+I1), s		17.7			37.0	39.6		54.0
Green Ext Time (p_c), s		5.1			0.0	3.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	101.0
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	785	1808	0	0	524	1120	711	10	410	0	0	0
Future Volume (veh/h)	785	1808	0	0	524	1120	711	10	410	0	0	0
Number	5	2	12	1	6	16	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1881	1881	0	0	1881	1881	1845	1845	1845			
Adj Flow Rate, veh/h	826	1903	0	0	552	799	756	0	397			
Adj No. of Lanes	2	3	0	0	1	2	2	0	1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	1	1	0	0	1	1	3	3	3			
Cap, veh/h	878	3253	0	0	645	1097	1023	0	457			
Arrive On Green	0.25	0.63	0.00	0.00	0.34	0.34	0.29	0.00	0.29			
Sat Flow, veh/h	3476	5305	0	0	1881	3198	3514	0	1568			
Grp Volume(v), veh/h	826	1903	0	0	552	799	756	0	397			
Grp Sat Flow(s),veh/h/ln	1738	1712	0	0	1881	1599	1757	0	1568			
Q Serve(g_s), s	24.7	22.9	0.0	0.0	29.0	23.2	20.6	0.0	25.5			
Cycle Q Clear(g_c), s	24.7	22.9	0.0	0.0	29.0	23.2	20.6	0.0	25.5			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	878	3253	0	0	645	1097	1023	0	457			
V/C Ratio(X)	0.94	0.59	0.00	0.00	0.86	0.73	0.74	0.00	0.87			
Avail Cap(c_a), veh/h	884	4631	0	0	1147	1950	1533	0	684			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	38.9	11.3	0.0	0.0	32.4	30.5	34.0	0.0	35.7			
Incr Delay (d2), s/veh	17.4	0.1	0.0	0.0	1.3	0.4	0.4	0.0	5.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	13.9	10.8	0.0	0.0	15.3	10.3	10.0	0.0	20.7			
LnGrp Delay(d),s/veh	56.2	11.4	0.0	0.0	33.7	30.9	34.4	0.0	41.2			
LnGrp LOS	E	B			C	C	C		D			
Approach Vol, veh/h		2729			1351			1153				
Approach Delay, s/veh		25.0			32.0			36.7				
Approach LOS		C			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		71.2		34.9	30.8	40.4		
Change Period (Y+Rc), s		5.3		5.3	4.0	5.3		
Max Green Setting (Gmax), s		94.4		45.0	27.0	63.4		
Max Q Clear Time (g_c+I1), s		24.9		27.5	26.7	31.0		
Green Ext Time (p_c), s		13.1		2.1	0.1	4.2		

Intersection Summary	
HCM 2010 Ctrl Delay	29.4
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	150	85	33	120	100	185	655	165	310	615	110
Future Volume (veh/h)	100	150	85	33	120	100	185	655	165	310	615	110
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	109	163	80	36	130	91	201	712	159	337	668	107
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	141	249	122	53	164	115	248	926	207	384	1218	195
Arrive On Green	0.08	0.21	0.21	0.03	0.16	0.16	0.14	0.32	0.30	0.21	0.39	0.37
Sat Flow, veh/h	1810	1205	591	1810	1042	729	1810	2934	655	1810	3118	499
Grp Volume(v), veh/h	109	0	243	36	0	221	201	438	433	337	386	389
Grp Sat Flow(s),veh/h/ln	1810	0	1796	1810	0	1771	1810	1805	1784	1810	1805	1812
Q Serve(g_s), s	4.0	0.0	8.4	1.3	0.0	8.1	7.3	14.8	14.9	12.2	11.2	11.3
Cycle Q Clear(g_c), s	4.0	0.0	8.4	1.3	0.0	8.1	7.3	14.8	14.9	12.2	11.2	11.3
Prop In Lane	1.00		0.33	1.00		0.41	1.00		0.37	1.00		0.28
Lane Grp Cap(c), veh/h	141	0	371	53	0	279	248	569	563	384	705	708
V/C Ratio(X)	0.77	0.00	0.66	0.68	0.00	0.79	0.81	0.77	0.77	0.88	0.55	0.55
Avail Cap(c_a), veh/h	295	0	984	268	0	944	509	1069	1057	456	1016	1020
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	0.0	24.6	32.5	0.0	27.4	28.3	20.9	21.1	25.8	16.0	16.1
Incr Delay (d2), s/veh	3.4	0.0	0.7	5.7	0.0	1.9	2.4	0.8	0.8	14.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	4.2	0.7	0.0	4.1	3.8	7.4	7.4	7.6	5.6	5.7
LnGrp Delay(d),s/veh	33.9	0.0	25.3	38.2	0.0	29.3	30.7	21.7	22.0	39.8	16.2	16.4
LnGrp LOS	C		C	D		C	C	C	C	D	B	B
Approach Vol, veh/h		352			257			1072			1112	
Approach Delay, s/veh		28.0			30.5			23.5			23.4	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.3	25.3	6.0	17.9	13.2	30.4	9.3	14.7
Change Period (Y+Rc), s	4.0	5.3	4.0	4.0	4.0	5.3	4.0	4.0
Max Green Setting (Gmax), s	17.0	38.7	10.0	37.0	19.0	36.7	11.0	36.0
Max Q Clear Time (g_c+I1), s	14.2	16.9	3.3	10.4	9.3	13.3	6.0	10.1
Green Ext Time (p_c), s	0.2	3.1	0.0	0.8	0.2	2.7	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	24.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	40	200	20	30	10	20	516	20	20	611	163
Future Volume (veh/h)	195	40	200	20	30	10	20	516	20	20	611	163
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	207	43	213	21	32	11	21	549	21	21	650	173
Adj No. of Lanes	1	1	1	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	240	426	362	68	175	60	68	1069	478	68	1069	478
Arrive On Green	0.14	0.23	0.23	0.04	0.13	0.12	0.04	0.30	0.30	0.04	0.30	0.30
Sat Flow, veh/h	1774	1863	1583	1774	1326	456	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	207	43	213	21	0	43	21	549	21	21	650	173
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1782	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.7	0.7	4.9	0.5	0.0	0.9	0.5	5.2	0.4	0.5	6.4	3.5
Cycle Q Clear(g_c), s	4.7	0.7	4.9	0.5	0.0	0.9	0.5	5.2	0.4	0.5	6.4	3.5
Prop In Lane	1.00		1.00	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	240	426	362	68	0	235	68	1069	478	68	1069	478
V/C Ratio(X)	0.86	0.10	0.59	0.31	0.00	0.18	0.31	0.51	0.04	0.31	0.61	0.36
Avail Cap(c_a), veh/h	240	846	719	240	0	810	240	1695	758	240	1695	758
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	12.4	14.0	19.1	0.0	15.8	19.1	11.7	10.1	19.1	12.2	11.1
Incr Delay (d2), s/veh	26.2	0.1	1.5	2.5	0.0	0.4	2.5	0.4	0.0	2.5	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.4	2.2	0.3	0.0	0.5	0.3	2.6	0.2	0.3	3.2	1.6
LnGrp Delay(d),s/veh	43.5	12.5	15.5	21.6	0.0	16.2	21.6	12.1	10.1	21.6	12.7	11.6
LnGrp LOS	D	B	B	C		B	C	B	B	C	B	B
Approach Vol, veh/h		463			64			591			844	
Approach Delay, s/veh		27.7			17.9			12.4			12.7	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.6	16.3	5.6	13.3	5.6	16.3	9.5	9.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.0	19.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.5	7.2	2.5	6.9	2.5	8.4	6.7	2.9
Green Ext Time (p_c), s	0.0	2.6	0.0	0.7	0.0	3.4	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	16.3
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	23	409	0	0	548
Future Vol, veh/h	0	23	409	0	0	548
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	24	431	0	0	577

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	720	216	0	-	-	-
Stage 1	431	-	-	-	-	-
Stage 2	289	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	-	-
Pot Cap-1 Maneuver	363	789	-	0	0	-
Stage 1	623	-	-	0	0	-
Stage 2	735	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	363	789	-	-	-	-
Mov Cap-2 Maneuver	363	-	-	-	-	-
Stage 1	623	-	-	-	-	-
Stage 2	735	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	789	-
HCM Lane V/C Ratio	-	0.031	-
HCM Control Delay (s)	-	9.7	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	0.1	-

Intersection	
Int Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	52	357	0	127	421
Future Vol, veh/h	0	52	357	0	127	421
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	55	376	0	134	443

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	866	188	0	0	376	0
Stage 1	376	-	-	-	-	-
Stage 2	490	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	293	822	-	-	1179	-
Stage 1	664	-	-	-	-	-
Stage 2	581	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	260	822	-	-	1179	-
Mov Cap-2 Maneuver	260	-	-	-	-	-
Stage 1	664	-	-	-	-	-
Stage 2	515	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	822	1179	-
HCM Lane V/C Ratio	-	-	0.067	0.113	-
HCM Control Delay (s)	-	-	9.7	8.4	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.4	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	137	0	0	220	200	221
Future Vol, veh/h	137	0	0	220	200	221
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	144	0	0	232	211	233

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	444	222	444	0	-	0
Stage 1	328	-	-	-	-	-
Stage 2	116	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	542	782	1112	-	-	-
Stage 1	702	-	-	-	-	-
Stage 2	896	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	542	782	1112	-	-	-
Mov Cap-2 Maneuver	542	-	-	-	-	-
Stage 1	702	-	-	-	-	-
Stage 2	896	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1112	-	542	-	-
HCM Lane V/C Ratio	-	-	0.266	-	-
HCM Control Delay (s)	0	-	14	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	1.1	-	-

Appendix C: Vehicle Queue Summary

Queues
1: Hillcrest Avenue & Lone Tree Way

09/11/2019

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	170	584	33	910	161	39	85	342	84	213
v/c Ratio	0.85	0.27	0.19	0.59	0.27	0.21	0.15	0.76	0.08	0.35
Control Delay	69.0	14.6	38.2	20.6	5.0	38.2	17.9	42.9	19.5	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.0	14.6	38.2	20.6	5.0	38.2	17.9	42.9	19.5	6.8
Queue Length 50th (ft)	52	34	9	86	0	11	8	53	9	4
Queue Length 95th (ft)	#330	141	59	226	42	66	33	#282	39	59
Internal Link Dist (ft)		842		424			468		913	
Turn Bay Length (ft)	600		250			225		600		300
Base Capacity (vph)	200	4020	200	4028	1267	202	2613	452	2863	1298
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.15	0.17	0.23	0.13	0.19	0.03	0.76	0.03	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
2: Heidorn Ranch Road/Fairside Way & Lone Tree Way

09/11/2019

Lane Group	EBL	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	2	1059	63	1207	40	63	18	1
v/c Ratio	0.01	0.45	0.19	0.41	0.09	0.13	0.08	0.00
Control Delay	21.5	9.1	19.8	5.4	20.0	0.6	20.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.5	9.1	19.8	5.4	20.0	0.6	20.9	0.0
Queue Length 50th (ft)	1	68	15	35	4	0	4	0
Queue Length 95th (ft)	6	112	47	111	18	0	21	0
Internal Link Dist (ft)		737		514				539
Turn Bay Length (ft)	200		410		215	200	50	
Base Capacity (vph)	435	5040	892	5075	2069	1265	1066	1245
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.21	0.07	0.24	0.02	0.05	0.02	0.00

Intersection Summary

Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	2	31	369	511	347	384
v/c Ratio	0.01	0.15	0.68	0.80	0.59	0.28
Control Delay	27.5	28.1	10.1	31.5	30.1	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.5	28.1	10.1	31.5	30.1	5.5
Queue Length 50th (ft)	1	11	0	163	100	29
Queue Length 95th (ft)	6	35	39	366	#378	159
Internal Link Dist (ft)	617		1371	425		625
Turn Bay Length (ft)					500	
Base Capacity (vph)	563	774	1025	1725	588	1776
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.04	0.36	0.30	0.59	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group
Lane Group Flow (vph)
v/c Ratio
Control Delay
Queue Delay
Total Delay
Queue Length 50th (ft)
Queue Length 95th (ft)
Internal Link Dist (ft)
Turn Bay Length (ft)
Base Capacity (vph)
Starvation Cap Reductn
Spillback Cap Reductn
Storage Cap Reductn
Reduced v/c Ratio

Intersection Summary

Lane Group
Lane Group Flow (vph)
v/c Ratio
Control Delay
Queue Delay
Total Delay
Queue Length 50th (ft)
Queue Length 95th (ft)
Internal Link Dist (ft)
Turn Bay Length (ft)
Base Capacity (vph)
Starvation Cap Reductn
Spillback Cap Reductn
Storage Cap Reductn
Reduced v/c Ratio

Intersection Summary

Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1	368	885	1
v/c Ratio	0.00	0.31	0.54	0.00
Control Delay	10.0	0.7	6.2	3.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.0	0.7	6.2	3.0
Queue Length 50th (ft)	0	0	34	0
Queue Length 95th (ft)	2	0	50	1
Internal Link Dist (ft)	106	151	559	
Turn Bay Length (ft)				
Base Capacity (vph)	1863	1611	3467	1599
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.00	0.23	0.26	0.00

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	6	807	255	976	9	10	140
v/c Ratio	0.01	0.24	0.12	0.76	0.03	0.04	0.37
Control Delay	19.2	3.8	4.9	5.9	17.1	17.1	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.2	3.8	4.9	5.9	17.1	17.1	7.8
Queue Length 50th (ft)	0	21	9	0	1	1	0
Queue Length 95th (ft)	6	43	39	51	14	15	42
Internal Link Dist (ft)		483	918			649	
Turn Bay Length (ft)	400			160			
Base Capacity (vph)	1680	5136	3336	1443	1579	1606	1494
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.16	0.08	0.68	0.01	0.01	0.09

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	178	1109	78	956	251	34	93	576	96	108
v/c Ratio	0.60	0.58	0.55	0.64	0.39	0.26	0.20	0.81	0.09	0.19
Control Delay	47.1	22.0	59.5	29.2	5.7	52.0	22.5	45.7	25.2	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.1	22.0	59.5	29.2	5.7	52.0	22.5	45.7	25.2	6.1
Queue Length 50th (ft)	77	139	36	142	0	15	12	133	19	0
Queue Length 95th (ft)	#274	308	#175	304	59	68	39	#468	48	37
Internal Link Dist (ft)		842		424			468		913	
Turn Bay Length (ft)	600					225		600		300
Base Capacity (vph)	384	3479	143	2874	989	144	1830	710	2393	1089
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.32	0.55	0.33	0.25	0.24	0.05	0.81	0.04	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	7	1488	69	1212	142	4	85	30	12
v/c Ratio	0.04	0.56	0.31	0.37	0.33	0.01	0.26	0.13	0.04
Control Delay	30.1	10.3	32.1	5.3	27.7	25.5	9.6	27.0	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	10.3	32.1	5.3	27.7	25.5	9.6	27.0	18.4
Queue Length 50th (ft)	2	124	23	46	24	1	0	10	1
Queue Length 95th (ft)	15	177	70	131	56	10	36	36	16
Internal Link Dist (ft)		737		514		382			539
Turn Bay Length (ft)			410		215		200	50	
Base Capacity (vph)	249	4050	249	4072	1711	1176	1031	888	1061
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.37	0.28	0.30	0.08	0.00	0.08	0.03	0.01

Intersection Summary

Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	4	82	63	325	27	298
v/c Ratio	0.01	0.22	0.07	0.30	0.10	0.26
Control Delay	11.8	12.8	0.2	11.5	22.2	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	12.8	0.2	11.5	22.2	8.5
Queue Length 50th (ft)	1	12	0	26	4	24
Queue Length 95th (ft)	6	47	0	209	36	150
Internal Link Dist (ft)	617		1371	425		625
Turn Bay Length (ft)					500	
Base Capacity (vph)	1199	1252	1467	1828	1056	1881
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.07	0.04	0.18	0.03	0.16

Intersection Summary

Lane Group
Lane Group Flow (vph)
v/c Ratio
Control Delay
Queue Delay
Total Delay
Queue Length 50th (ft)
Queue Length 95th (ft)
Internal Link Dist (ft)
Turn Bay Length (ft)
Base Capacity (vph)
Starvation Cap Reductn
Spillback Cap Reductn
Storage Cap Reductn
Reduced v/c Ratio

Intersection Summary

Lane Group	EBL	EBT	WBT	SBL
Lane Group Flow (vph)	54	109	163	54
v/c Ratio	0.25	0.20	0.51	0.05
Control Delay	29.3	15.4	26.2	5.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	29.3	15.4	26.2	5.8
Queue Length 50th (ft)	19	29	50	5
Queue Length 95th (ft)	52	58	105	22
Internal Link Dist (ft)		265	449	366
Turn Bay Length (ft)	150			150
Base Capacity (vph)	858	1863	1557	998
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.06	0.06	0.10	0.05

Intersection Summary

Lane Group	WBT	SBL
Lane Group Flow (vph)	150	1320
v/c Ratio	0.13	0.65
Control Delay	0.2	7.0
Queue Delay	0.0	0.0
Total Delay	0.2	7.0
Queue Length 50th (ft)	0	73
Queue Length 95th (ft)	0	113
Internal Link Dist (ft)	151	559
Turn Bay Length (ft)		
Base Capacity (vph)	1611	3462
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.09	0.38

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	11	1352	147	930	4	5	202
v/c Ratio	0.03	0.44	0.08	0.76	0.01	0.01	0.52
Control Delay	27.8	6.9	7.1	5.7	19.2	19.2	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	6.9	7.1	5.7	19.2	19.2	19.8
Queue Length 50th (ft)	1	70	8	0	1	1	35
Queue Length 95th (ft)	10	142	36	63	9	10	127
Internal Link Dist (ft)		483	918			649	
Turn Bay Length (ft)				160			
Base Capacity (vph)	1073	5034	3190	1419	1443	1518	1366
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.27	0.05	0.66	0.00	0.00	0.15

Intersection Summary

Queues
1: Hillcrest Avenue & Lone Tree Way

09/11/2019

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	170	597	47	930	161	60	129	346	84	213
v/c Ratio	0.93	0.29	0.28	0.57	0.26	0.34	0.20	0.83	0.10	0.42
Control Delay	88.2	15.6	40.5	19.9	4.8	41.3	14.3	50.0	21.7	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.2	15.6	40.5	19.9	4.8	41.3	14.3	50.0	21.7	9.3
Queue Length 50th (ft)	53	51	14	86	0	18	10	54	12	12
Queue Length 95th (ft)	#336	142	#83	229	41	#113	39	#291	38	71
Internal Link Dist (ft)		842		424			468		913	
Turn Bay Length (ft)	600		250			225		600		300
Base Capacity (vph)	182	4031	182	4039	1270	184	2556	416	2802	1270
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.15	0.26	0.23	0.13	0.33	0.05	0.83	0.03	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	2	1110	101	1222	60	155	18	1
v/c Ratio	0.01	0.48	0.29	0.38	0.15	0.33	0.09	0.00
Control Delay	24.0	10.4	21.9	4.7	22.7	1.9	23.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	10.4	21.9	4.7	22.7	1.9	23.3	0.0
Queue Length 50th (ft)	1	77	26	35	8	0	5	0
Queue Length 95th (ft)	6	128	71	112	25	1	23	0
Internal Link Dist (ft)		737		514				539
Turn Bay Length (ft)	200		410		215	200	50	
Base Capacity (vph)	396	4948	792	5075	1805	1138	930	1112
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.22	0.13	0.24	0.03	0.14	0.02	0.00

Intersection Summary

Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	2	31	369	516	347	395
v/c Ratio	0.02	0.16	0.69	0.77	0.61	0.28
Control Delay	28.0	28.9	10.6	29.3	31.0	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.0	28.9	10.6	29.3	31.0	5.2
Queue Length 50th (ft)	1	11	0	161	102	28
Queue Length 95th (ft)	6	35	40	367	#387	160
Internal Link Dist (ft)	617		1371	425		625
Turn Bay Length (ft)					500	
Base Capacity (vph)	529	760	1014	1726	572	1777
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.04	0.36	0.30	0.61	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group
Lane Group Flow (vph)
v/c Ratio
Control Delay
Queue Delay
Total Delay
Queue Length 50th (ft)
Queue Length 95th (ft)
Internal Link Dist (ft)
Turn Bay Length (ft)
Base Capacity (vph)
Starvation Cap Reductn
Spillback Cap Reductn
Storage Cap Reductn
Reduced v/c Ratio

Intersection Summary

Lane Group
Lane Group Flow (vph)
v/c Ratio
Control Delay
Queue Delay
Total Delay
Queue Length 50th (ft)
Queue Length 95th (ft)
Internal Link Dist (ft)
Turn Bay Length (ft)
Base Capacity (vph)
Starvation Cap Reductn
Spillback Cap Reductn
Storage Cap Reductn
Reduced v/c Ratio

Intersection Summary

Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1	368	906	1
v/c Ratio	0.00	0.30	0.54	0.00
Control Delay	9.0	0.7	6.3	3.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.0	0.7	6.3	3.0
Queue Length 50th (ft)	0	0	35	0
Queue Length 95th (ft)	2	0	51	1
Internal Link Dist (ft)	106	151	559	
Turn Bay Length (ft)				
Base Capacity (vph)	898	1341	3467	1599
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.00	0.27	0.26	0.00

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	6	826	255	984	9	10	140
v/c Ratio	0.01	0.24	0.11	0.76	0.03	0.03	0.34
Control Delay	20.0	3.4	4.5	5.7	16.7	16.7	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.0	3.4	4.5	5.7	16.7	16.7	7.1
Queue Length 50th (ft)	0	20	8	0	1	1	0
Queue Length 95th (ft)	6	42	37	49	14	15	42
Internal Link Dist (ft)		483	918			649	
Turn Bay Length (ft)	400			160			
Base Capacity (vph)	1621	5136	3335	1443	1580	1606	1495
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.16	0.08	0.68	0.01	0.01	0.09

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	178	1143	117	970	251	47	125	588	96	108
v/c Ratio	1.11	0.68	0.49	0.50	0.34	0.31	0.21	1.39	0.10	0.21
Control Delay	138.9	22.9	42.3	18.6	4.1	44.6	14.8	219.9	23.2	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	138.9	22.9	42.3	18.6	4.1	44.6	14.8	219.9	23.2	4.2
Queue Length 50th (ft)	~71	126	40	94	0	17	11	~150	16	0
Queue Length 95th (ft)	#354	310	#176	243	50	#84	36	#498	43	25
Internal Link Dist (ft)		842		424			468		913	
Turn Bay Length (ft)	600		250			225		600		300
Base Capacity (vph)	161	3122	296	3583	1172	163	2198	422	2485	1133
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.11	0.37	0.40	0.27	0.21	0.29	0.06	1.39	0.04	0.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	8	1652	177	1329	164	4	153	32	13
v/c Ratio	0.05	0.62	0.56	0.36	0.44	0.02	0.44	0.17	0.05
Control Delay	43.4	14.7	40.8	4.6	39.6	36.5	11.1	38.1	24.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.4	14.7	40.8	4.6	39.6	36.5	11.1	38.1	24.7
Queue Length 50th (ft)	4	197	82	59	40	2	0	15	2
Queue Length 95th (ft)	21	306	181	161	85	12	57	48	20
Internal Link Dist (ft)		737		514		382			539
Turn Bay Length (ft)	200		410		215		200	50	
Base Capacity (vph)	229	3736	458	4318	1051	723	708	546	653
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.44	0.39	0.31	0.16	0.01	0.22	0.06	0.02

Intersection Summary

Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	5	90	69	370	30	335
v/c Ratio	0.02	0.25	0.08	0.33	0.12	0.29
Control Delay	13.2	14.2	0.2	11.1	23.7	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.2	14.2	0.2	11.1	23.7	8.1
Queue Length 50th (ft)	1	14	0	30	5	27
Queue Length 95th (ft)	7	50	0	209	36	145
Internal Link Dist (ft)	617		1371	425		625
Turn Bay Length (ft)					500	
Base Capacity (vph)	1190	1249	1462	1817	1016	1881
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.07	0.05	0.20	0.03	0.18

Intersection Summary

Lane Group
Lane Group Flow (vph)
v/c Ratio
Control Delay
Queue Delay
Total Delay
Queue Length 50th (ft)
Queue Length 95th (ft)
Internal Link Dist (ft)
Turn Bay Length (ft)
Base Capacity (vph)
Starvation Cap Reductn
Spillback Cap Reductn
Storage Cap Reductn
Reduced v/c Ratio

Intersection Summary

Lane Group
Lane Group Flow (vph)
v/c Ratio
Control Delay
Queue Delay
Total Delay
Queue Length 50th (ft)
Queue Length 95th (ft)
Internal Link Dist (ft)
Turn Bay Length (ft)
Base Capacity (vph)
Starvation Cap Reductn
Spillback Cap Reductn
Storage Cap Reductn
Reduced v/c Ratio

Intersection Summary

Lane Group	WBT	SBL
Lane Group Flow (vph)	173	1528
v/c Ratio	0.15	0.62
Control Delay	0.3	5.4
Queue Delay	0.0	0.0
Total Delay	0.3	5.4
Queue Length 50th (ft)	0	78
Queue Length 95th (ft)	0	107
Internal Link Dist (ft)	151	559
Turn Bay Length (ft)		
Base Capacity (vph)	1294	3467
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.13	0.44

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	10	1336	142	951	4	5	202
v/c Ratio	0.03	0.44	0.07	0.77	0.01	0.01	0.47
Control Delay	27.7	6.6	6.7	5.9	18.5	18.6	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.7	6.6	6.7	5.9	18.5	18.6	17.9
Queue Length 50th (ft)	1	63	7	0	1	1	30
Queue Length 95th (ft)	10	134	34	61	9	11	130
Internal Link Dist (ft)		483	918			649	
Turn Bay Length (ft)	400			160			
Base Capacity (vph)	1105	5016	3183	1419	1514	1593	1431
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.27	0.04	0.67	0.00	0.00	0.14

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	170	604	72	930	161	80	213	346	87	213
v/c Ratio	0.94	0.37	0.40	0.57	0.26	0.44	0.31	0.83	0.12	0.48
Control Delay	89.2	17.8	42.5	19.9	4.8	43.4	10.5	50.4	21.7	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.2	17.8	42.5	19.9	4.8	43.4	10.5	50.4	21.7	11.2
Queue Length 50th (ft)	54	52	21	87	0	24	11	55	12	15
Queue Length 95th (ft)	#336	144	#141	229	41	#156	46	#291	40	78
Internal Link Dist (ft)		842		424			468		913	
Turn Bay Length (ft)	600		250			225		600		300
Base Capacity (vph)	181	4010	181	4027	1267	183	2484	415	2793	1265
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.15	0.40	0.23	0.13	0.44	0.09	0.83	0.03	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	2	1184	101	1246	60	155	18	1
v/c Ratio	0.01	0.49	0.30	0.37	0.15	0.34	0.09	0.00
Control Delay	25.5	10.4	23.2	4.6	24.1	2.3	24.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.5	10.4	23.2	4.6	24.1	2.3	24.8	0.0
Queue Length 50th (ft)	1	86	27	37	8	0	5	0
Queue Length 95th (ft)	7	141	75	115	27	3	24	0
Internal Link Dist (ft)		737		514				539
Turn Bay Length (ft)	200		410		215	200	50	
Base Capacity (vph)	378	4893	757	5075	1756	1111	905	1086
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.24	0.13	0.25	0.03	0.14	0.02	0.00

Intersection Summary

Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	2	31	369	524	347	417
v/c Ratio	0.02	0.16	0.69	0.78	0.61	0.30
Control Delay	28.5	29.2	10.7	29.4	31.3	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.5	29.2	10.7	29.4	31.3	5.3
Queue Length 50th (ft)	1	11	0	165	103	30
Queue Length 95th (ft)	6	35	40	373	#390	171
Internal Link Dist (ft)	617		1371	425		625
Turn Bay Length (ft)					500	
Base Capacity (vph)	526	756	1010	1724	569	1775
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.04	0.37	0.30	0.61	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	NBT	SBT
Lane Group Flow (vph)	133	45
v/c Ratio	0.04	0.01
Control Delay	0.0	0.0
Queue Delay	0.0	0.0
Total Delay	0.0	0.0
Queue Length 50th (ft)	0	0
Queue Length 95th (ft)	0	0
Internal Link Dist (ft)	332	394
Turn Bay Length (ft)		
Base Capacity (vph)	3539	3539
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.04	0.01

Intersection Summary

Lane Group
Lane Group Flow (vph)
v/c Ratio
Control Delay
Queue Delay
Total Delay
Queue Length 50th (ft)
Queue Length 95th (ft)
Internal Link Dist (ft)
Turn Bay Length (ft)
Base Capacity (vph)
Starvation Cap Reductn
Spillback Cap Reductn
Storage Cap Reductn
Reduced v/c Ratio

Intersection Summary

Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1	368	920	1
v/c Ratio	0.00	0.31	0.55	0.00
Control Delay	9.0	0.7	6.3	3.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.0	0.7	6.3	3.0
Queue Length 50th (ft)	0	0	36	0
Queue Length 95th (ft)	2	0	52	1
Internal Link Dist (ft)	106	151	559	
Turn Bay Length (ft)				
Base Capacity (vph)	893	1340	3467	1599
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.00	0.27	0.27	0.00

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	6	838	255	988	9	10	140
v/c Ratio	0.01	0.24	0.11	0.77	0.03	0.03	0.34
Control Delay	20.2	3.4	4.5	5.7	16.9	16.8	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.2	3.4	4.5	5.7	16.9	16.8	7.2
Queue Length 50th (ft)	0	20	8	0	1	1	0
Queue Length 95th (ft)	6	42	37	49	14	15	42
Internal Link Dist (ft)		483	918			649	
Turn Bay Length (ft)	400			160			
Base Capacity (vph)	1614	5136	3331	1442	1578	1605	1493
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.16	0.08	0.69	0.01	0.01	0.09

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	178	1166	202	970	251	61	180	588	103	108
v/c Ratio	1.45	0.72	0.63	0.44	0.31	0.37	0.30	1.52	0.14	0.25
Control Delay	270.8	25.5	43.2	16.9	3.7	45.2	12.0	273.3	26.6	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	270.8	25.5	43.2	16.9	3.7	45.2	12.0	273.3	26.6	4.8
Queue Length 50th (ft)	~97	142	75	92	0	24	12	~170	20	0
Queue Length 95th (ft)	#364	326	#315	240	50	91	40	#494	46	25
Internal Link Dist (ft)		842		424			468		913	
Turn Bay Length (ft)	600		250			225		600		300
Base Capacity (vph)	123	2664	322	3295	1097	200	2046	388	2235	1032
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.45	0.44	0.63	0.29	0.23	0.30	0.09	1.52	0.05	0.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	8	1701	177	1412	164	4	153	32	13
v/c Ratio	0.06	0.63	0.57	0.38	0.45	0.02	0.44	0.17	0.06
Control Delay	44.1	14.8	41.9	4.7	40.6	37.2	11.3	39.0	25.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	14.8	41.9	4.7	40.6	37.2	11.3	39.0	25.1
Queue Length 50th (ft)	4	208	85	64	41	2	0	15	2
Queue Length 95th (ft)	21	319	181	174	85	12	57	48	20
Internal Link Dist (ft)		737		514		382			539
Turn Bay Length (ft)	200		410		215		200	50	
Base Capacity (vph)	223	3676	446	4273	1025	705	695	532	637
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.46	0.40	0.33	0.16	0.01	0.22	0.06	0.02

Intersection Summary

Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	5	90	69	396	30	349
v/c Ratio	0.02	0.25	0.08	0.35	0.12	0.29
Control Delay	14.0	14.8	0.2	11.1	24.3	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	14.8	0.2	11.1	24.3	8.0
Queue Length 50th (ft)	1	14	0	33	5	29
Queue Length 95th (ft)	7	52	0	224	36	150
Internal Link Dist (ft)	617		1371	425		625
Turn Bay Length (ft)					500	
Base Capacity (vph)	1183	1242	1453	1812	997	1874
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.07	0.05	0.22	0.03	0.19

Intersection Summary

Lane Group	NBT	SBT
Lane Group Flow (vph)	88	150
v/c Ratio	0.02	0.04
Control Delay	0.0	0.0
Queue Delay	0.0	0.0
Total Delay	0.0	0.0
Queue Length 50th (ft)	0	0
Queue Length 95th (ft)	0	0
Internal Link Dist (ft)	332	394
Turn Bay Length (ft)		
Base Capacity (vph)	3539	3539
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.02	0.04

Intersection Summary

Lane Group
Lane Group Flow (vph)
v/c Ratio
Control Delay
Queue Delay
Total Delay
Queue Length 50th (ft)
Queue Length 95th (ft)
Internal Link Dist (ft)
Turn Bay Length (ft)
Base Capacity (vph)
Starvation Cap Reductn
Spillback Cap Reductn
Storage Cap Reductn
Reduced v/c Ratio

Intersection Summary

Lane Group	WBT	SBL
Lane Group Flow (vph)	173	1538
v/c Ratio	0.15	0.62
Control Delay	0.3	5.4
Queue Delay	0.0	0.0
Total Delay	0.3	5.4
Queue Length 50th (ft)	0	79
Queue Length 95th (ft)	0	107
Internal Link Dist (ft)	151	559
Turn Bay Length (ft)		
Base Capacity (vph)	1293	3467
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.13	0.44

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	10	1344	142	965	4	5	202
v/c Ratio	0.03	0.44	0.07	0.78	0.01	0.01	0.48
Control Delay	28.6	6.5	6.6	6.0	19.2	19.2	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.6	6.5	6.6	6.0	19.2	19.2	18.4
Queue Length 50th (ft)	1	64	7	0	1	1	30
Queue Length 95th (ft)	10	134	33	59	10	11	135
Internal Link Dist (ft)		483	918			649	
Turn Bay Length (ft)	400			160			
Base Capacity (vph)	1099	4983	3167	1418	1507	1585	1424
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.27	0.04	0.68	0.00	0.00	0.14

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	190	864	62	1137	181	134	225	365	109	229
v/c Ratio	0.65	0.43	0.51	0.78	0.32	0.72	0.24	0.65	0.10	0.37
Control Delay	62.5	29.5	72.6	46.5	5.7	77.0	19.9	57.3	32.9	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.5	29.5	72.6	46.5	5.7	77.0	19.9	57.3	32.9	9.7
Queue Length 50th (ft)	150	194	51	325	0	109	41	148	35	24
Queue Length 95th (ft)	#316	235	98	338	48	#214	66	#287	56	84
Internal Link Dist (ft)		842		424			468		913	
Turn Bay Length (ft)	600		250			225		600		300
Base Capacity (vph)	292	2002	137	1779	662	195	1184	564	1215	659
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.43	0.45	0.64	0.27	0.69	0.19	0.65	0.09	0.35

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	7	1398	168	1402	125	12	210	21	9
v/c Ratio	0.09	0.74	0.70	0.52	0.12	0.02	0.28	0.04	0.01
Control Delay	61.5	36.8	68.8	20.3	29.2	30.8	5.5	30.7	27.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.5	36.8	68.8	20.3	29.2	30.8	5.5	30.7	27.5
Queue Length 50th (ft)	6	366	137	260	34	6	0	11	4
Queue Length 95th (ft)	22	376	204	279	68	24	60	35	19
Internal Link Dist (ft)		737		514		382			539
Turn Bay Length (ft)	200		410		215		200	50	
Base Capacity (vph)	88	2199	374	3026	1055	723	743	542	700
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.64	0.45	0.46	0.12	0.02	0.28	0.04	0.01

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	1	1	32	387	576	364	510
v/c Ratio	0.00	0.00	0.13	0.67	0.59	0.64	0.22
Control Delay	40.0	28.0	35.8	9.5	25.4	27.8	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	28.0	35.8	9.5	25.4	27.8	6.6
Queue Length 50th (ft)	0	0	8	0	70	83	15
Queue Length 95th (ft)	6	4	50	40	240	318	126
Internal Link Dist (ft)		617		1371	425		625
Turn Bay Length (ft)						500	
Base Capacity (vph)	325	1279	322	1188	1763	1067	3132
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.00	0.10	0.33	0.33	0.34	0.16

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	154	118	40	82	109	63
v/c Ratio	0.62	0.22	0.19	0.34	0.15	0.07
Control Delay	38.4	16.8	27.1	11.3	10.2	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.4	16.8	27.1	11.3	10.2	2.1
Queue Length 50th (ft)	56	32	14	0	18	0
Queue Length 95th (ft)	#128	65	39	34	41	13
Internal Link Dist (ft)		1428	1222			
Turn Bay Length (ft)					200	
Base Capacity (vph)	249	1109	1007	881	957	945
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.11	0.04	0.09	0.11	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	9	220	220	204	4
v/c Ratio	0.06	0.40	0.42	0.16	0.00
Control Delay	37.0	31.9	20.2	4.1	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	37.0	31.9	20.2	4.1	3.0
Queue Length 50th (ft)	4	52	26	20	0
Queue Length 95th (ft)	20	83	66	68	3
Internal Link Dist (ft)		265	449	366	
Turn Bay Length (ft)					
Base Capacity (vph)	289	2363	1549	1315	1178
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.03	0.09	0.14	0.16	0.00

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	332	402	233	525	984	144
v/c Ratio	0.65	0.16	0.43	0.76	0.76	0.22
Control Delay	33.9	11.9	36.2	11.4	27.6	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.9	11.9	36.2	11.4	27.6	7.0
Queue Length 50th (ft)	146	39	57	0	218	8
Queue Length 95th (ft)	286	66	106	64	350	46
Internal Link Dist (ft)		368	151		559	
Turn Bay Length (ft)						
Base Capacity (vph)	734	4786	2234	1199	2031	976
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.08	0.10	0.44	0.48	0.15

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	281	971	438	1125	82	82	187
v/c Ratio	0.65	0.24	0.20	0.91	0.46	0.46	0.66
Control Delay	50.9	2.8	7.8	16.1	52.3	52.2	27.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.9	2.8	7.8	16.1	52.3	52.2	27.1
Queue Length 50th (ft)	95	41	54	73	55	55	35
Queue Length 95th (ft)	#162	72	90	#830	106	106	107
Internal Link Dist (ft)		483	918			649	
Turn Bay Length (ft)	400			160			
Base Capacity (vph)	434	4501	2561	1307	826	830	844
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.22	0.17	0.86	0.10	0.10	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	208	1351	175	1230	270	103	189	616	158	128
v/c Ratio	0.75	0.81	0.72	0.78	0.42	0.54	0.39	0.74	0.17	0.26
Control Delay	60.8	36.1	62.4	36.5	7.9	57.8	21.9	44.3	30.9	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.8	36.1	62.4	36.5	7.9	57.8	21.9	44.3	30.9	6.9
Queue Length 50th (ft)	118	258	100	237	13	58	27	172	40	0
Queue Length 95th (ft)	#379	473	#329	431	88	155	62	#446	79	44
Internal Link Dist (ft)		842		424			468		913	
Turn Bay Length (ft)	600		250			225		600		300
Base Capacity (vph)	279	2436	243	2359	850	282	1519	831	1891	891
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.55	0.72	0.52	0.32	0.37	0.12	0.74	0.08	0.14

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	11	1992	261	1615	213	11	185	37	28
v/c Ratio	0.14	0.72	0.74	0.42	0.59	0.04	0.50	0.20	0.11
Control Delay	64.8	22.1	57.7	5.9	56.2	48.4	11.9	51.1	32.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.8	22.1	57.7	5.9	56.2	48.4	11.9	51.1	32.7
Queue Length 50th (ft)	8	373	194	105	81	8	0	26	10
Queue Length 95th (ft)	31	579	306	232	133	27	68	64	42
Internal Link Dist (ft)		737		514		382			539
Turn Bay Length (ft)	200		410		215		200	50	
Base Capacity (vph)	81	3164	553	4330	677	472	539	354	449
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.63	0.47	0.37	0.31	0.02	0.34	0.10	0.06

Intersection Summary

Lane Group	EBL	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	5	95	73	500	31	431
v/c Ratio	0.02	0.17	0.08	0.28	0.10	0.23
Control Delay	24.5	10.1	0.2	12.9	23.2	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.5	10.1	0.2	12.9	23.2	10.0
Queue Length 50th (ft)	1	12	0	24	4	21
Queue Length 95th (ft)	12	44	0	157	39	111
Internal Link Dist (ft)			1371	425		625
Turn Bay Length (ft)					500	
Base Capacity (vph)	550	736	1466	2953	1415	3234
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.13	0.05	0.17	0.02	0.13

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	101	79	130	155	91	210
v/c Ratio	0.44	0.14	0.44	0.42	0.14	0.22
Control Delay	33.7	14.8	29.8	8.7	11.4	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.7	14.8	29.8	8.7	11.4	2.3
Queue Length 50th (ft)	38	21	48	0	17	0
Queue Length 95th (ft)	84	46	94	44	41	30
Internal Link Dist (ft)		1428	1222			
Turn Bay Length (ft)					200	
Base Capacity (vph)	247	1099	998	908	948	970
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.07	0.13	0.17	0.10	0.22

Intersection Summary

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	5	164	444	167	10
v/c Ratio	0.03	0.21	0.57	0.15	0.01
Control Delay	26.0	17.3	16.2	6.3	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	17.3	16.2	6.3	4.3
Queue Length 50th (ft)	2	23	42	16	0
Queue Length 95th (ft)	11	41	94	70	7
Internal Link Dist (ft)		265	449	366	
Turn Bay Length (ft)					
Base Capacity (vph)	318	2997	2049	1116	1002
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.02	0.05	0.22	0.15	0.01

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	186	225	468	413	1754	175
v/c Ratio	0.83	0.13	0.74	0.66	0.89	0.19
Control Delay	78.6	25.2	50.8	9.3	28.8	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.6	25.2	50.8	9.3	28.8	6.3
Queue Length 50th (ft)	131	40	168	0	531	24
Queue Length 95th (ft)	#249	56	209	60	655	57
Internal Link Dist (ft)		368	151		559	
Turn Bay Length (ft)						
Base Capacity (vph)	223	3050	1550	930	1971	945
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.07	0.30	0.44	0.89	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	162	1580	445	1091	147	146	285
v/c Ratio	0.48	0.50	0.28	0.92	0.37	0.37	0.69
Control Delay	50.1	8.8	12.2	16.7	34.0	33.9	36.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.1	8.8	12.2	16.7	34.0	33.9	36.6
Queue Length 50th (ft)	36	121	60	38	57	57	96
Queue Length 95th (ft)	#142	254	124	443	170	169	275
Internal Link Dist (ft)		483	918			649	
Turn Bay Length (ft)	400			160			
Base Capacity (vph)	337	4551	2918	1380	1093	1097	1046
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.35	0.15	0.79	0.13	0.13	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	190	875	66	1137	181	167	244	365	111	229
v/c Ratio	0.65	0.44	0.53	0.78	0.32	0.70	0.26	0.65	0.11	0.40
Control Delay	62.5	29.7	73.4	46.5	5.7	69.7	19.6	57.3	35.0	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.5	29.7	73.4	46.5	5.7	69.7	19.6	57.3	35.0	11.8
Queue Length 50th (ft)	150	197	54	325	0	134	44	148	37	33
Queue Length 95th (ft)	#316	239	102	338	48	#284	70	#287	57	93
Internal Link Dist (ft)		842		424			468		913	
Turn Bay Length (ft)	600		250			225		600		300
Base Capacity (vph)	292	1992	138	1779	662	239	1190	564	1179	638
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.44	0.48	0.64	0.27	0.70	0.21	0.65	0.09	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	7	1410	168	1406	125	12	211	21	9
v/c Ratio	0.09	0.74	0.70	0.52	0.12	0.02	0.28	0.04	0.01
Control Delay	61.5	36.8	68.8	20.1	29.3	31.0	5.5	30.8	27.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.5	36.8	68.8	20.1	29.3	31.0	5.5	30.8	27.6
Queue Length 50th (ft)	6	368	137	260	34	6	0	11	4
Queue Length 95th (ft)	22	379	204	280	68	24	60	35	19
Internal Link Dist (ft)		737		514		382			539
Turn Bay Length (ft)	200		410		215		200	50	
Base Capacity (vph)	88	2200	374	3026	1050	719	741	539	697
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.64	0.45	0.46	0.12	0.02	0.28	0.04	0.01

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	1	1	32	387	579	364	517
v/c Ratio	0.01	0.00	0.13	0.66	0.56	0.65	0.22
Control Delay	25.0	25.0	24.7	9.0	22.8	26.5	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.0	25.0	24.7	9.0	22.8	26.5	5.1
Queue Length 50th (ft)	0	0	9	0	71	88	19
Queue Length 95th (ft)	4	4	35	39	217	283	97
Internal Link Dist (ft)		617		1371	425		625
Turn Bay Length (ft)						500	
Base Capacity (vph)	496	1279	959	1188	3143	1271	3430
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.00	0.03	0.33	0.18	0.29	0.15

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	154	118	24	40	82	133	129	63
v/c Ratio	0.42	0.19	0.12	0.15	0.22	0.33	0.29	0.12
Control Delay	24.0	14.3	26.2	23.9	1.4	16.3	22.0	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	14.3	26.2	23.9	1.4	16.3	22.0	0.5
Queue Length 50th (ft)	46	25	7	12	0	22	36	0
Queue Length 95th (ft)	94	68	28	37	0	68	85	0
Internal Link Dist (ft)		1428		1222		332	394	
Turn Bay Length (ft)								
Base Capacity (vph)	550	1590	201	1341	1180	402	444	515
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.07	0.12	0.03	0.07	0.33	0.29	0.12

Intersection Summary

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	10	293	244	204	4
v/c Ratio	0.07	0.48	0.43	0.16	0.00
Control Delay	37.7	32.7	20.9	4.5	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	37.7	32.7	20.9	4.5	3.2
Queue Length 50th (ft)	5	71	32	23	0
Queue Length 95th (ft)	22	106	75	71	4
Internal Link Dist (ft)		265	449	366	
Turn Bay Length (ft)					
Base Capacity (vph)	284	2320	1534	1291	1156
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.04	0.13	0.16	0.16	0.00

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	353	461	245	525	984	158
v/c Ratio	0.65	0.18	0.46	0.76	0.77	0.24
Control Delay	34.1	11.9	37.4	11.5	29.0	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.1	11.9	37.4	11.5	29.0	7.0
Queue Length 50th (ft)	159	45	63	0	232	10
Queue Length 95th (ft)	305	75	111	64	350	49
Internal Link Dist (ft)		368	151		559	
Turn Bay Length (ft)						
Base Capacity (vph)	706	4756	2148	1173	1953	948
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.10	0.11	0.45	0.50	0.17

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	321	984	442	1125	85	85	187
v/c Ratio	0.72	0.24	0.20	0.91	0.49	0.49	0.67
Control Delay	53.7	2.8	8.1	16.7	53.8	53.7	28.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	2.8	8.1	16.7	53.8	53.7	28.8
Queue Length 50th (ft)	109	42	57	103	57	57	38
Queue Length 95th (ft)	#186	74	94	#840	110	110	111
Internal Link Dist (ft)		483	918			649	
Turn Bay Length (ft)	400			160			
Base Capacity (vph)	448	4352	2443	1282	784	787	806
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.23	0.18	0.88	0.11	0.11	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	208	1389	190	1230	270	126	203	616	166	128
v/c Ratio	0.78	0.81	0.82	0.75	0.41	0.61	0.39	0.76	0.19	0.26
Control Delay	64.5	35.3	72.7	35.0	7.5	60.1	21.1	45.9	31.6	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.5	35.3	72.7	35.0	7.5	60.1	21.1	45.9	31.6	7.0
Queue Length 50th (ft)	120	265	111	235	12	72	28	175	43	0
Queue Length 95th (ft)	#385	486	#370	427	86	#195	64	#452	82	43
Internal Link Dist (ft)		842		424			468		913	
Turn Bay Length (ft)	600		250			225		600		300
Base Capacity (vph)	268	2448	232	2382	856	271	1536	806	1905	897
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.57	0.82	0.52	0.32	0.46	0.13	0.76	0.09	0.14

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	11	2001	262	1629	213	11	185	37	28
v/c Ratio	0.12	0.72	0.72	0.42	0.59	0.04	0.50	0.20	0.12
Control Delay	63.8	21.8	56.3	5.7	56.4	48.5	11.9	51.2	32.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.8	21.8	56.3	5.7	56.4	48.5	11.9	51.2	32.7
Queue Length 50th (ft)	8	373	194	103	82	8	0	26	10
Queue Length 95th (ft)	31	579	305	231	133	27	68	64	42
Internal Link Dist (ft)		737		514		382			539
Turn Bay Length (ft)	200		410		215		200	50	
Base Capacity (vph)	89	3178	560	4339	676	471	538	353	447
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.63	0.47	0.38	0.32	0.02	0.34	0.10	0.06

Intersection Summary

Lane Group	EBL	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	5	95	73	509	31	436
v/c Ratio	0.02	0.18	0.08	0.27	0.11	0.22
Control Delay	25.0	10.6	0.2	12.4	23.9	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.0	10.6	0.2	12.4	23.9	9.5
Queue Length 50th (ft)	1	12	0	23	4	20
Queue Length 95th (ft)	12	45	0	158	39	110
Internal Link Dist (ft)			1371	425		625
Turn Bay Length (ft)					500	
Base Capacity (vph)	520	706	1465	3000	1340	3239
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.13	0.05	0.17	0.02	0.13

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	101	79	84	130	155	88	157	210
v/c Ratio	0.30	0.21	0.21	0.34	0.36	0.28	0.21	0.27
Control Delay	25.9	22.5	24.5	25.3	7.6	16.3	20.0	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.9	22.5	24.5	25.3	7.6	16.3	20.0	4.9
Queue Length 50th (ft)	32	24	27	41	0	13	44	0
Queue Length 95th (ft)	76	58	69	91	43	51	102	47
Internal Link Dist (ft)		1428		1222		332	394	
Turn Bay Length (ft)								
Base Capacity (vph)	481	1331	469	1281	1128	398	746	766
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.06	0.18	0.10	0.14	0.22	0.21	0.27

Intersection Summary

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	5	213	527	167	11
v/c Ratio	0.03	0.23	0.61	0.16	0.01
Control Delay	27.8	16.8	20.0	7.5	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	16.8	20.0	7.5	5.0
Queue Length 50th (ft)	2	30	66	19	0
Queue Length 95th (ft)	12	51	133	78	8
Internal Link Dist (ft)		265	449	366	
Turn Bay Length (ft)					
Base Capacity (vph)	303	2855	1950	1063	955
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.02	0.07	0.27	0.16	0.01

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	200	264	509	413	1754	224
v/c Ratio	0.91	0.14	0.72	0.64	0.89	0.23
Control Delay	91.5	24.2	48.0	8.5	29.1	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.5	24.2	48.0	8.5	29.1	6.2
Queue Length 50th (ft)	145	46	182	0	540	30
Queue Length 95th (ft)	#280	63	224	58	668	67
Internal Link Dist (ft)		368	151		559	
Turn Bay Length (ft)						
Base Capacity (vph)	220	3069	1570	932	1969	964
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.09	0.32	0.44	0.89	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	188	1589	460	1091	158	156	285
v/c Ratio	0.60	0.49	0.28	0.92	0.38	0.37	0.66
Control Delay	53.8	8.5	11.9	16.2	33.3	33.2	34.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.8	8.5	11.9	16.2	33.3	33.2	34.4
Queue Length 50th (ft)	43	117	60	37	62	61	94
Queue Length 95th (ft)	#175	252	126	435	180	177	273
Internal Link Dist (ft)		483	918			649	
Turn Bay Length (ft)	400			160			
Base Capacity (vph)	311	4552	2920	1380	1105	1110	1057
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.35	0.16	0.79	0.14	0.14	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	337	1063	105	1284	326	295	705	505	232	337
v/c Ratio	1.40	0.56	0.62	0.75	0.45	1.43	0.77	1.38	0.26	0.65
Control Delay	239.4	26.9	64.6	33.7	6.8	253.2	37.2	222.5	31.9	23.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	239.4	26.9	64.6	33.7	6.8	253.2	37.2	222.5	31.9	23.1
Queue Length 50th (ft)	~283	190	64	257	13	~250	195	~217	62	92
Queue Length 95th (ft)	#620	298	#181	392	87	#562	301	#442	108	210
Internal Link Dist (ft)		842		424			468		913	
Turn Bay Length (ft)	600		250			225		600		300
Base Capacity (vph)	240	2536	187	2403	891	207	1490	366	1494	757
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.40	0.42	0.56	0.53	0.37	1.43	0.47	1.38	0.16	0.45

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	11	1842	863	1653	116	11	263	21	32
v/c Ratio	0.14	0.81	1.44	0.40	0.46	0.06	0.68	0.16	0.18
Control Delay	60.2	30.6	238.1	3.8	56.2	48.6	15.3	51.4	27.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.2	30.6	238.1	3.8	56.2	48.6	15.3	51.4	27.8
Queue Length 50th (ft)	8	414	~891	80	43	8	0	15	8
Queue Length 95th (ft)	29	524	#1206	202	74	26	80	41	38
Internal Link Dist (ft)		737		514		382			539
Turn Bay Length (ft)	200		410		215		200	50	
Base Capacity (vph)	77	2337	600	4144	625	438	573	328	411
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.79	1.44	0.40	0.19	0.03	0.46	0.06	0.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	84	326	84	515	21	558	463	432
v/c Ratio	0.62	0.43	0.35	0.51	0.19	0.66	0.60	0.26
Control Delay	61.9	30.5	39.8	8.7	47.1	32.2	32.5	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.9	30.5	39.8	8.7	47.1	32.2	32.5	14.5
Queue Length 50th (ft)	39	71	36	24	10	121	99	54
Queue Length 95th (ft)	#157	138	103	72	41	241	203	137
Internal Link Dist (ft)		617		1371		425		625
Turn Bay Length (ft)					70		500	
Base Capacity (vph)	136	1256	381	1733	112	1475	2833	3417
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.26	0.22	0.30	0.19	0.38	0.16	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	179	843	42	1137	32	210	126	200
v/c Ratio	0.94	0.57	0.33	0.90	0.28	0.20	0.68	0.16
Control Delay	104.1	29.3	59.4	45.9	58.9	17.2	69.7	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	104.1	29.3	59.4	45.9	58.9	17.2	69.7	6.3
Queue Length 50th (ft)	140	261	32	420	24	32	94	5
Queue Length 95th (ft)	#281	337	68	515	57	64	160	33
Internal Link Dist (ft)		1428		2197		332		394
Turn Bay Length (ft)							200	
Base Capacity (vph)	191	1468	159	1312	135	1025	206	1233
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.57	0.26	0.87	0.24	0.20	0.61	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	95	968	1116	926	326	63
v/c Ratio	0.50	0.44	0.63	0.76	0.35	0.13
Control Delay	47.3	7.9	16.4	6.3	27.6	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.3	7.9	16.4	6.3	27.6	8.4
Queue Length 50th (ft)	49	112	214	16	75	0
Queue Length 95th (ft)	102	145	276	99	120	31
Internal Link Dist (ft)		265	449		366	
Turn Bay Length (ft)						
Base Capacity (vph)	208	2721	2225	1311	944	481
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.36	0.50	0.71	0.35	0.13

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	379	1063	1937	600	1011	189
v/c Ratio	1.28	0.30	1.12	0.62	1.29	0.40
Control Delay	192.1	7.6	92.2	10.2	177.5	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	192.1	7.6	92.2	10.2	177.5	12.5
Queue Length 50th (ft)	~373	106	~908	107	~513	22
Queue Length 95th (ft)	#567	127	#1047	224	#643	86
Internal Link Dist (ft)		547	151		559	
Turn Bay Length (ft)						
Base Capacity (vph)	295	3504	1731	975	785	475
Starvation Cap Reductn	0	0	21	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.28	0.30	1.13	0.62	1.29	0.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	505	1568	1947	1232	300	300	232
v/c Ratio	0.71	0.49	1.53	1.64	0.71	0.71	0.53
Control Delay	35.9	9.5	265.7	311.0	37.1	36.9	23.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	9.5	265.7	311.0	37.1	36.9	23.7
Queue Length 50th (ft)	120	140	~759	~873	141	141	72
Queue Length 95th (ft)	193	231	#1128	#1361	248	247	149
Internal Link Dist (ft)		483	918			649	
Turn Bay Length (ft)	400			160			
Base Capacity (vph)	994	3613	1274	753	1171	1176	1120
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.43	1.53	1.64	0.26	0.26	0.21

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	337	1572	214	1224	327	82	316	520	337	143
v/c Ratio	0.83	0.78	0.78	0.74	0.46	0.26	0.26	0.83	0.28	0.23
Control Delay	64.2	34.7	72.5	40.3	6.3	34.8	16.1	51.0	31.4	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.2	34.7	72.5	40.3	6.3	34.8	16.1	51.0	31.4	6.0
Queue Length 50th (ft)	266	417	174	341	7	48	47	196	104	0
Queue Length 95th (ft)	#452	476	#344	406	76	103	94	#326	163	49
Internal Link Dist (ft)		842		424			468		913	
Turn Bay Length (ft)	600		250			225		600		300
Base Capacity (vph)	494	2857	296	2326	883	369	1400	745	1420	710
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.55	0.72	0.53	0.37	0.22	0.23	0.70	0.24	0.20

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2: Heidorn Ranch Road/Fairside Way & Lone Tree Way

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	32	2421	421	1463	347	11	863	32	32
v/c Ratio	0.39	0.95	1.58	0.45	0.52	0.02	1.55	0.09	0.07
Control Delay	81.0	43.1	315.5	14.2	49.9	41.1	283.8	42.5	21.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.0	43.1	315.5	14.2	49.9	41.1	283.8	42.5	21.5
Queue Length 50th (ft)	30	773	~563	264	146	8	~994	23	8
Queue Length 95th (ft)	67	852	#776	300	198	25	#1255	52	36
Internal Link Dist (ft)		737		514		382			539
Turn Bay Length (ft)	200		410		215		200	50	
Base Capacity (vph)	86	2555	267	3253	671	470	557	352	439
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.95	1.58	0.45	0.52	0.02	1.55	0.09	0.07

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	105	231	116	716	63	695	368	432
v/c Ratio	0.65	0.34	0.43	0.72	0.61	0.70	0.58	0.30
Control Delay	61.4	30.3	41.0	21.7	68.8	31.7	36.7	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.4	30.3	41.0	21.7	68.8	31.7	36.7	16.9
Queue Length 50th (ft)	51	48	52	102	31	158	85	70
Queue Length 95th (ft)	#188	105	134	204	#132	296	175	135
Internal Link Dist (ft)		617		1371		425		625
Turn Bay Length (ft)					70		500	
Base Capacity (vph)	162	1616	460	2116	104	2210	1362	3115
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.14	0.25	0.34	0.61	0.31	0.27	0.14

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	158	874	95	1084	53	179	126	285
v/c Ratio	0.84	0.69	0.53	0.87	0.40	0.17	0.68	0.23
Control Delay	87.4	36.0	61.0	43.9	61.5	14.8	69.7	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.4	36.0	61.0	43.9	61.5	14.8	69.7	9.5
Queue Length 50th (ft)	122	288	71	388	40	22	94	21
Queue Length 95th (ft)	#239	384	123	479	82	52	160	55
Internal Link Dist (ft)		1428		2197		332		394
Turn Bay Length (ft)							200	
Base Capacity (vph)	191	1268	324	1306	156	1037	206	1226
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.69	0.29	0.83	0.34	0.17	0.61	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	95	968	1116	926	326	63
v/c Ratio	0.46	0.42	0.60	0.76	0.38	0.14
Control Delay	50.2	7.2	16.2	6.8	34.1	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.2	7.2	16.2	6.8	34.1	10.9
Queue Length 50th (ft)	51	114	227	32	79	0
Queue Length 95th (ft)	127	141	298	135	167	39
Internal Link Dist (ft)		265	449		366	
Turn Bay Length (ft)						
Base Capacity (vph)	281	3296	2874	1435	868	447
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.29	0.39	0.65	0.38	0.14

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	551	1020	939	286	1592	622
v/c Ratio	1.28	0.35	0.89	0.45	1.28	0.82
Control Delay	184.0	16.7	58.8	10.8	172.5	31.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	184.0	16.7	58.8	10.8	172.5	31.5
Queue Length 50th (ft)	~660	179	441	38	~988	300
Queue Length 95th (ft)	#932	208	526	116	#1182	#508
Internal Link Dist (ft)		547	151		559	
Turn Bay Length (ft)						
Base Capacity (vph)	432	3150	1228	704	1239	761
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.28	0.32	0.76	0.41	1.28	0.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	800	1895	537	1179	370	367	432
v/c Ratio	1.22	0.56	0.36	1.17	0.80	0.79	0.92
Control Delay	159.9	15.2	28.5	106.3	61.8	61.0	70.2
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Total Delay	159.9	15.5	28.5	106.3	61.8	61.0	70.2
Queue Length 50th (ft)	~503	373	193	~1095	342	338	362
Queue Length 95th (ft)	#635	416	246	#1393	475	469	#546
Internal Link Dist (ft)		483	918			649	
Turn Bay Length (ft)	400			160			
Base Capacity (vph)	657	3359	1508	1005	522	524	523
Starvation Cap Reductn	0	756	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.22	0.73	0.36	1.17	0.71	0.70	0.83

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	337	1069	109	1284	326	314	723	505	234	337
v/c Ratio	1.53	0.59	0.63	0.75	0.45	1.36	0.77	1.33	0.27	0.66
Control Delay	292.6	28.3	65.7	34.0	6.5	223.0	37.3	202.1	32.7	23.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	292.6	28.3	65.7	34.0	6.5	223.0	37.3	202.1	32.7	23.9
Queue Length 50th (ft)	~305	200	68	264	12	~267	202	~218	64	95
Queue Length 95th (ft)	#632	304	#188	392	83	#579	308	#436	110	213
Internal Link Dist (ft)		842		424			468		913	
Turn Bay Length (ft)	600		250			225		600		300
Base Capacity (vph)	220	2459	185	2380	888	231	1476	380	1444	737
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.53	0.43	0.59	0.54	0.37	1.36	0.49	1.33	0.16	0.46

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	11	1853	863	1657	116	11	264	21	32
v/c Ratio	0.16	0.81	1.38	0.40	0.49	0.07	0.69	0.17	0.19
Control Delay	67.4	33.6	213.8	4.2	63.1	54.4	16.3	57.5	30.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.4	33.6	213.8	4.2	63.1	54.4	16.3	57.5	30.4
Queue Length 50th (ft)	9	467	~969	84	48	9	0	17	9
Queue Length 95th (ft)	31	577	#1292	205	80	28	85	44	41
Internal Link Dist (ft)		737		514		382			539
Turn Bay Length (ft)	200		410		215		200	50	
Base Capacity (vph)	70	2352	626	4138	538	376	530	282	356
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.79	1.38	0.40	0.22	0.03	0.50	0.07	0.09

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	84	326	91	528	21	560	467	432
v/c Ratio	0.52	0.43	0.36	0.53	0.19	0.66	0.59	0.25
Control Delay	53.0	30.2	39.4	8.7	47.0	32.1	32.2	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.0	30.2	39.4	8.7	47.0	32.1	32.2	14.3
Queue Length 50th (ft)	38	71	39	24	9	121	99	53
Queue Length 95th (ft)	#145	138	109	72	41	243	205	137
Internal Link Dist (ft)		617		1371		425		625
Turn Bay Length (ft)					70		500	
Base Capacity (vph)	162	1264	407	1744	112	1481	2883	3416
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.26	0.22	0.30	0.19	0.38	0.16	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	179	849	65	1137	51	362	126	214
v/c Ratio	0.94	0.59	0.47	0.90	0.42	0.33	0.68	0.18
Control Delay	104.1	30.0	63.7	45.9	63.8	14.2	69.7	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	104.1	30.0	63.7	45.9	63.8	14.2	69.7	7.3
Queue Length 50th (ft)	140	270	49	420	38	44	94	10
Queue Length 95th (ft)	#281	340	96	515	80	85	160	38
Internal Link Dist (ft)		1428		2197		332		394
Turn Bay Length (ft)							200	
Base Capacity (vph)	191	1446	159	1312	135	1090	206	1181
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.59	0.41	0.87	0.38	0.33	0.61	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	96	1040	1139	926	326	63
v/c Ratio	0.51	0.47	0.64	0.76	0.35	0.13
Control Delay	47.8	8.2	16.5	6.3	27.8	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.8	8.2	16.5	6.3	27.8	8.4
Queue Length 50th (ft)	51	124	221	17	77	0
Queue Length 95th (ft)	#104	160	284	100	120	31
Internal Link Dist (ft)		265	449		366	
Turn Bay Length (ft)						
Base Capacity (vph)	207	2708	2211	1308	938	478
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.38	0.52	0.71	0.35	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	398	1116	1947	600	1011	202
v/c Ratio	1.29	0.31	1.12	0.62	1.34	0.43
Control Delay	192.1	7.3	94.5	10.4	198.2	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	192.1	7.3	94.5	10.4	198.2	13.1
Queue Length 50th (ft)	~392	110	~917	109	~525	25
Queue Length 95th (ft)	#589	131	#1056	226	#655	93
Internal Link Dist (ft)		547	151		559	
Turn Bay Length (ft)						
Base Capacity (vph)	309	3546	1731	973	756	470
Starvation Cap Reductn	0	0	21	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.29	0.31	1.14	0.62	1.34	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	545	1581	1952	1232	304	303	232
v/c Ratio	0.72	0.49	1.54	1.64	0.73	0.72	0.53
Control Delay	36.8	9.4	271.8	311.8	39.2	38.9	24.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.8	9.4	271.8	311.8	39.2	38.9	24.6
Queue Length 50th (ft)	135	143	~801	~913	152	151	77
Queue Length 95th (ft)	213	236	#1123	#1356	250	249	149
Internal Link Dist (ft)		483	918			649	
Turn Bay Length (ft)	400			160			
Base Capacity (vph)	913	3474	1267	753	1126	1130	1079
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.46	1.54	1.64	0.27	0.27	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	82	453	40	140
v/c Ratio	0.15	0.15	0.05	0.05
Control Delay	0.6	1.3	1.4	1.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.6	1.3	1.4	1.2
Queue Length 50th (ft)	0	16	3	4
Queue Length 95th (ft)	0	23	7	7
Internal Link Dist (ft)	436	320		280
Turn Bay Length (ft)			150	
Base Capacity (vph)	709	3074	794	3074
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.12	0.15	0.05	0.05

Intersection Summary

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	211	242	140
v/c Ratio	0.58	0.11	0.07
Control Delay	27.6	4.7	2.9
Queue Delay	0.0	0.0	0.0
Total Delay	27.6	4.7	2.9
Queue Length 50th (ft)	64	14	4
Queue Length 95th (ft)	119	31	14
Internal Link Dist (ft)	309	353	320
Turn Bay Length (ft)			
Base Capacity (vph)	1342	2285	2147
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.16	0.11	0.07

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	337	1593	228	1224	327	94	328	520	344	143
v/c Ratio	0.86	0.79	0.83	0.72	0.45	0.31	0.27	0.87	0.28	0.23
Control Delay	69.3	35.7	78.1	40.0	6.4	36.8	15.9	56.3	31.5	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.3	35.7	78.1	40.0	6.4	36.8	15.9	56.3	31.5	6.0
Queue Length 50th (ft)	273	434	190	344	9	57	48	203	106	0
Queue Length 95th (ft)	#461	491	#379	410	80	121	97	#346	168	49
Internal Link Dist (ft)		842		424			468		913	
Turn Bay Length (ft)	600		250			225		600		300
Base Capacity (vph)	481	2690	292	2182	845	346	1399	691	1415	708
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.59	0.78	0.56	0.39	0.27	0.23	0.75	0.24	0.20

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	32	2430	422	1477	347	11	863	32	32
v/c Ratio	0.39	0.94	1.57	0.45	0.51	0.02	1.55	0.09	0.07
Control Delay	80.7	42.4	312.1	13.9	49.5	40.9	283.8	42.3	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.7	42.4	312.1	13.9	49.5	40.9	283.8	42.3	21.4
Queue Length 50th (ft)	30	773	~563	264	145	8	~996	23	8
Queue Length 95th (ft)	67	852	#776	299	197	25	#1257	52	36
Internal Link Dist (ft)		737		514		382			539
Turn Bay Length (ft)	200		410		215		200	50	
Base Capacity (vph)	85	2572	269	3273	676	474	557	355	443
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.94	1.57	0.45	0.51	0.02	1.55	0.09	0.07

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	105	231	120	724	63	703	383	432
v/c Ratio	0.77	0.37	0.47	0.74	0.69	0.68	0.61	0.29
Control Delay	78.0	32.3	42.7	22.8	82.1	30.8	38.1	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.0	32.3	42.7	22.8	82.1	30.8	38.1	16.2
Queue Length 50th (ft)	52	50	55	107	32	160	91	69
Queue Length 95th (ft)	#204	109	141	212	#139	299	185	133
Internal Link Dist (ft)		617		1371		425		625
Turn Bay Length (ft)					70		500	
Base Capacity (vph)	137	1569	431	2072	91	2211	1320	3106
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.15	0.28	0.35	0.69	0.32	0.29	0.14

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	158	896	176	1084	65	252	126	328
v/c Ratio	0.84	0.80	0.69	0.87	0.47	0.24	0.68	0.26
Control Delay	87.4	43.7	62.7	43.9	64.1	14.0	69.7	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.4	43.7	62.7	43.9	64.1	14.0	69.7	11.9
Queue Length 50th (ft)	122	321	131	388	49	30	94	34
Queue Length 95th (ft)	#239	424	200	479	96	64	160	71
Internal Link Dist (ft)		1428		2197		332		394
Turn Bay Length (ft)							200	
Base Capacity (vph)	191	1119	324	1306	156	1068	206	1238
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.80	0.54	0.83	0.42	0.24	0.61	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	95	1016	1196	926	326	64
v/c Ratio	0.47	0.43	0.62	0.75	0.39	0.15
Control Delay	52.2	7.1	16.3	6.4	36.0	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.2	7.1	16.3	6.4	36.0	11.0
Queue Length 50th (ft)	54	122	253	32	86	0
Queue Length 95th (ft)	127	151	330	132	167	39
Internal Link Dist (ft)		265	449		366	
Turn Bay Length (ft)						
Base Capacity (vph)	269	3231	2783	1418	832	432
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.31	0.43	0.65	0.39	0.15

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	563	1054	974	286	1592	664
v/c Ratio	1.31	0.35	0.88	0.44	1.28	0.85
Control Delay	199.2	16.0	56.7	11.2	168.7	32.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	199.2	16.0	56.7	11.2	168.7	32.8
Queue Length 50th (ft)	~698	182	456	42	~1000	332
Queue Length 95th (ft)	#958	212	544	121	#1173	#591
Internal Link Dist (ft)		547	151		559	
Turn Bay Length (ft)						
Base Capacity (vph)	429	3170	1250	703	1248	785
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.31	0.33	0.78	0.41	1.28	0.85

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	826	1903	552	1179	381	378	432
v/c Ratio	1.28	0.56	0.36	1.17	0.81	0.79	0.90
Control Delay	183.6	14.7	28.1	103.8	62.1	61.1	67.4
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Total Delay	183.6	15.0	28.1	103.8	62.1	61.1	67.4
Queue Length 50th (ft)	~535	368	198	~1093	352	348	359
Queue Length 95th (ft)	#669	412	250	#1392	487	484	#538
Internal Link Dist (ft)		483	918			649	
Turn Bay Length (ft)	400			160			
Base Capacity (vph)	646	3390	1528	1010	531	534	532
Starvation Cap Reductn	0	772	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.28	0.73	0.36	1.17	0.72	0.71	0.81

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Appendix D: Trip Generation Study

FEHR PEERS

FINAL MEMORANDUM

Date: September 7, 2018

To: Lisa Borba, Blackhawk Development

From: Kathrin Tellez and Delia Votsch

Subject: Active Adult Trip Generation Assessment

WC16-3328

Fehr & Peers conducted a trip generation study of active adult neighborhoods in Brentwood, California to serve as update to the *Active Adult Residential Developments Trip Generation Study,* August 2004 (2004 Study) as well as to establish local trip generation rates that could be used to estimate the level of daily and peak hour trip generation for a similar development in Eastern Contra Costa County.

For this study, Fehr & Peers collected 72-hours of intersection turning movement counts at the entrances to three active adult neighborhoods in Brentwood, California. This data was then compared to prior data collection efforts at these same neighborhoods as documented in the 2004 Study, as well as trip generation rates from the *ITE Trip Generation Manual*, 10th Edition. The following presents the overall conclusions, followed by the data collection effort and analysis results.

CONCLUSIONS

This updated study concludes the following:

- Daily trip generation rates for active adult communities in Brentwood is approximately 3.64 vehicle trips per unit in 2016, a 30 percent decrease from data collected in 2003. The current observed daily rate in Brentwood is also lower than other active adult communities, as documented in the 10th Edition of Trip Generation (conventional single-family homes generate approximately 9.4 daily trips per dwelling unit).
- Morning peak hour trip generation is approximately 0.16 trips per dwelling unit, a 25 percent decrease from data collected in 2003. The current observed daily rate in Brentwood

is also lower than other active adult communities, as documented in the 10th Edition of Trip Generation (conventional single-family homes generate approximately 0.74 morning peak hour trips per dwelling unit).

- Evening peak hour trip generation is approximately 0.28 trips per dwelling unit, slightly lower than data collected in 2003. The current observed daily rate in Brentwood is similar to other active adult communities, as documented in the 10th Edition of Trip Generation (conventional single-family homes generate approximately 0.99 evening peak hour trips per dwelling unit).
- The age of a community has some influence upon its trip generation as residents age in place, with trip generation rates per unit tending to decrease over time before stabilizing.

DATA COLLECTION

Fehr & Peers retained a traffic data collection firm to document the number of vehicles entering and exiting the Summerset I, III and IV neighborhoods over a three-day period in November 2016 at the following locations, also shown on **Figure 1:**

1. Central Boulevard / Apple Hill Drive
2. Central Boulevard / Pippin Drive
3. Fairview Avenue / Baldwin Drive
4. Fairview Avenue / Regent Drive / Wolfe Road
5. Bacchini Lane / Concord Avenue

These locations are the only vehicle access points to the neighborhoods, and only access to these neighborhoods and associated on-site recreational amenities is provided from the intersections. There are no other services provided within the communities that would generate external traffic, or reduce a residents need for external travel.

The data was compiled on a daily and peak hour basis. On average, the 1,711 homes in the three neighborhoods combined generate approximately 6,220 daily trips, with 290 morning peak hour trips (highest hour between 7:00 to 9:00 AM) and 490 evening peak hour trips (highest hour between 4:00 to 6:00 PM). During the mid-day, the neighborhoods generate the most trips during any one hour with approximately 660 trips generated from 12:15 to 1:15 PM. A summary of the daily, morning, and evening peak hour trip generation by neighborhood is provided in **Table 1**.

TABLE 1
TRIP GENERATION BY NEIGHBORHOOD

Data Source	Total Trips/Neighborhood Trip Rate						
	Daily	Morning Peak Hour			Evening Peak Hour		
		Inbound	Outbound	Total	Inbound	Outbound	Total
Summerset I (671 Homes) Total Trips	1,980	42	56	98	85	59	144
Summerset I (671 Homes) Trip Rate	2.95	0.06	0.08	0.14	0.13	0.09	0.22
Summerset III (364 Homes) Total Trips	1,800	26	43	69	76	59	135
Summerset III (364 Homes) Trip Rate	4.95	0.07	0.12	0.19	0.21	0.16	0.37
Summerset IV (676 Homes) Total Trips	2,440	43	74	117	121	87	208
Summerset IV (676 Homes) Trip Rate	3.61	0.06	0.11	0.17	0.18	0.13	0.29
Overall Trips	6,220	111	173	284	282	205	487
Overall Average Trip Rate	**3.64**	**0.06**	**0.10**	**0.16**	**0.16**	**0.12**	**0.28**

Source: Fehr & Peers, 2018

To develop daily, morning and evening peak hour trip generation rates, the three days of count data were averaged and then divided by the total number of households to produce a trip rate per household. Summerset I has the lowest trip generation rate per household, while Summerset III has the highest trip generation per household. Review of the data indicates a daily variation of around 3 percent during the three days of data collection, with slightly more variation in the peak levels of activity. The resulting trip generation rates were then compared with rates developed during a similar data collection effort documented in the 2004 Study as well as the standard ITE trip

rates per household for age-restricted detached housing, as presented in **Table 2**, as well as traditional, non-age restricted housing.

TABLE 2
TRIP GENERATION RATE COMPARISON

Data Source	Trips per Household						
	Daily	Morning Peak Hour			Evening Peak Hour		
		Inbound	Outbound	Total	Inbound	Outbound	Total
ITE Trip Rates for Active Adult[1]	4.27	0.08	0.16	0.24	0.18	0.12	0.30
ITE Trip Rates for Traditional Single-Family[2]	9.44	0.19	0.55	0.74	0.62	0.37	0.99
2004 Study for Summerset	5.24	0.08	0.14	0.22	0.20	0.13	0.33
Weighted average of 3 survey sites from 2004 Study[3]	3.96	0.05	0.12	017.	0.14	0.09	0.23
2016 Summerset	**3.64**	**0.06**	**0.10**	**0.16**	**0.16**	**0.12**	**0.28**

Notes: 1. 10th Edition ITE Trip rates are average rates for Land Use 251 Detached Senior Adult Housing.
2. 10th Edition ITE Trip rates are average rates for Land Use 210 Detached Single-Family Housing.
3. Reflects the weighted average Summerset Brentwood, Sun City Roseville and Clover Springs in Cloverdale as detailed in the 2004 Study.

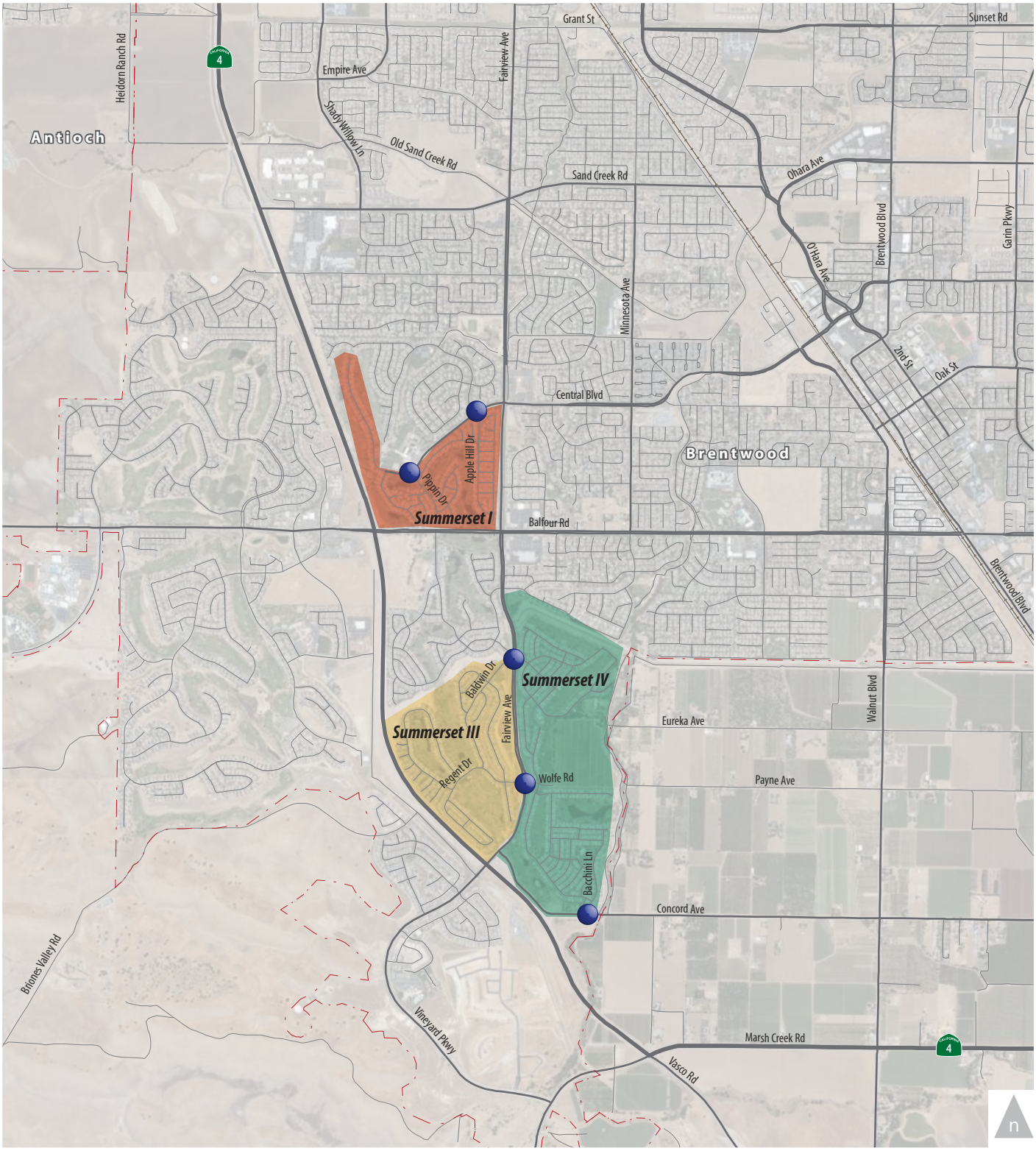
Source: Fehr & Peers, 2003 and 2016.

The trip generation data suggests that a new active adult community, which could initially expect an overall younger senior population that may be more active, would have higher trip rates in its initial years but over time as the members of the community age and their travel patterns change, vehicle trip generation rates per household are expected to decrease.

To assess the long-term impact of development of Active Adult neighborhoods on the transportation system in Eastern Contra Costa County, use of the most recent data collection effort is recommended. Please contact Kathrin or Delia at (925) 930-7100 if you have questions.

Attachments:

Figure 1 Data Collection Locations and Neighborhoods



LEGEND

Count Location | Summerset I | Summerset III | Summerset IV

Figure 1

Study Intersections

WC16-3328_1_StudyInters

Appendix E: Near-term Projects Information and Trip Generation

Vineyards at Deer Creek
Approved and Pending Projects Trip Generation

1. TSM 8506 (Discovery Builders) Bridle Gate (Vistro Zones 56+57)

Land Use	ITE Code	Units	Daily	AM Peak Hour (8 to 9 AM)			PM Peak Hour (5 to 6 PM)		
				In	Out	Total	In	Out	Total
Single Family - Detached DU	210	265	2520	50	149	199	167	98	265
Elementary School		700	900	173	142	315	51	54	105
Apartment (Enclave)	220	258	1720	26	106	132	104	56	160
Retail	820	150	6410	89	55	144	267	290	557
Less Pass-by		-25%	-1600	-18	-18	-36	-70	-70	-140
Net-New Retail			4810	71	37	108	197	220	417
Net NEW Trips			9950	320	434	754	519	428	947

2. TSM 9451/DR 16-020 Pioneer Square (Vistro Zone 63)

Land Use	ITE Code	Units	Daily	AM Peak Hour (8 to 9 AM)			PM Peak Hour (5 to 6 PM)		
				In	Out	Total	In	Out	Total
Active Adult - Attached		72	270	5	9	14	10	9	19

2. Trilogy at the Vineyards (TSM 8796/DR06-02) (Vistro Zone 63)

Land Use	ITE Code	Units	Daily	AM Peak Hour (8 to 9 AM)			PM Peak Hour (5 to 6 PM)		
				In	Out	Total	In	Out	Total
Single Family - Detached DU Active Adult		707	3020	56	114	170	129	83	212

4. Sciortino (Vistro Zone 64)

Land Use	ITE Code	Units	Daily	AM Peak Hour (8 to 9 AM)			PM Peak Hour (5 to 6 PM)		
				In	Out	Total	In	Out	Total
Single Family	220	326	3080	60	181	241	203	120	323
Retail	820	126	4760	73	45	118	230	250	480
Less Pass-by		-50%	-2380	-30	-30	-60	-120	-120	-240
Net-New Retail			2380	43	15	58	110	130	240
			5460	103	196	299	313	250	563

5. Streets of Brentwood (Vistro Zone 65)

Land Use	ITE Code	Units	Daily	AM Peak Hour (8 to 9 AM)			PM Peak Hour (5 to 6 PM)		
				In	Out	Total	In	Out	Total
Apartment	220	320	2340	34	113	147	113	66	179
Retail	820	32	1210	19	11	30	59	63	122
Less Pass-by		-25%	-300	-4	-4	-8	-16	-15	-31
Net-New Retail			910	15	7	22	43	48	91
			3250	49	120	169	156	114	270

6. PDP-13-01 Heidorn Village (Vistro Zone 45)

Land Use	ITE Code	Units	Daily	AM Peak Hour (8 to 9 AM)			PM Peak Hour (5 to 6 PM)		
				In	Out	Total	In	Out	Total
Single Family - Detached DU	210	117	1100	22	65	87	73	43	116

11. PDP-13-01 Quail Ridge (Vistro Zone 46)

Land Use	ITE Code	Units	Daily	AM Peak Hour (8 to 9 AM)			PM Peak Hour (5 to 6 PM)		
				In	Out	Total	In	Out	Total
Single Family - Detached DU	210	32	300	6	18	24	20	12	32

7. R-16-02 Aviano (Vistro Zone 43)

Land Use	ITE Code	Units	Daily	AM Peak Hour (8 to 9 AM)			PM Peak Hour (5 to 6 PM)		
				In	Out	Total	In	Out	Total
Single Family - Detached DU	210	533	5030	99	295	394	333	195	528

8. GP-14-01 Vineyards at Sand Creek (Vistro Zone 62)

Land Use	ITE Code	Units	Daily	AM Peak Hour (8 to 9 AM)			PM Peak Hour (5 to 6 PM)		
				In	Out	Total	In	Out	Total
Age Restricted - Detached		440	1880	35	71	106	81	51	132

Vineyards at Deer Creek

Approved and Pending Projects Trip Generation

Single Family - Detached DU	210	192	1810	36	106	142	120	70	190
			3690	71	177	248	201	121	322

3. Community College Phase 1(Vistro Zone 66)

Land Use	ITE Code	Units	Daily	AM Peak Hour (8 to 9 AM)			PM Peak Hour (5 to 6 PM)		
				In	Out	Total	In	Out	Total
Community College	210	2500	5580	342	108	450	236	139	375

10. Laurel Ranch

Land Use	ITE Code	Units	Daily	AM Peak Hour (8 to 9 AM)			PM Peak Hour (5 to 6 PM)		
				In	Out	Total	In	Out	Total
Single Family - Detached DU	210	178	1680	33	99	132	111	65	176
Retail	820	10	380	6	3	9	18	20	38
Less Pass-by		-25%	-100	-1	-1	-2	-5	-5	-10
Net-New Retail			280	5	2	7	13	15	28
			1960	38	101	139	124	80	204

11. Quail Cove

Land Use	ITE Code	Units	Daily	AM Peak Hour (8 to 9 AM)			PM Peak Hour (5 to 6 PM)		
				In	Out	Total	In	Out	Total
Single Family - Detached DU	210	32	300	6	18	24	20	12	32

12. Park Ridge

Land Use	ITE Code	Units	Daily	AM Peak Hour (8 to 9 AM)			PM Peak Hour (5 to 6 PM)		
				In	Out	Total	In	Out	Total
Single Family - Detached DU	210	178	1680	33	99	132	111	65	176

12. The Ranch

Land Use	ITE Code	Units	Daily	AM Peak Hour (8 to 9 AM)			PM Peak Hour (5 to 6 PM)		
				In	Out	Total	In	Out	Total
Single Family - Detached DU	210	755	7130	140	419	559	471	276	747
Age Restricted Single Family Homes[1]		422	1800	33	68	101	77	50	127
Fire Station			20	1	1	2	1	1	2
General Commercial[3]		54000	2040	32	19	51	99	107	206
			10990	206	507	713	648	434	1082

13. TSM 9428 (Richland Communities) Orfanos

Land Use	ITE Code	Units	Daily	AM Peak Hour (8 to 9 AM)			PM Peak Hour (5 to 6 PM)		
				In	Out	Total	In	Out	Total
Single Family - Detached DU	210	160	1520	30	90	120	101	59	160

14. TSM 9412 (Alvernaz Partners)

Land Use	ITE Code	Units	Daily	AM Peak Hour (8 to 9 AM)			PM Peak Hour (5 to 6 PM)		
				In	Out	Total	In	Out	Total
Single Family - Detached DU	210	48	460	9	27	36	30	18	48

15. Chick-Fil-A

Land Use	ITE Code	Units	Daily	AM Peak Hour (8 to 9 AM)			PM Peak Hour (5 to 6 PM)		
				In	Out	Total	In	Out	Total
Grocery Store	850	31	3,170	65	40	105	150	144	294
High Turnover Resturaunt	932	5.74	730	6	1	7	34	23	57
Drive Thru	934	12.75	6,330	295	284	579	216	200	416
Automated Car Wash	948	4.33	520	22	22	44	31	31	61
			10,750	389	347	736	431	397	828
Pass by trips			(4,460)	(169)	(156)	(326)	(170)	(155)	(325)
Total Estimated Trip Gen			6,290	220	191	410	261	242	503

CITY OF ANTIOCH
DEVELOPMENT PROJECT PIPELINE

Project Number(s) and Plans	Project	Applicant	Location	APN(s)	Project Description	Site Size	Status
RESIDENTIAL PROJECTS							
UNDER REVIEW							
UP-18-20, AR-18-21, Z-18-09	Windsor Manufactured Home Community	Shawn Rowles 1730 Ninth St. Berkeley, CA 94710	2709 Windsor Drive	068-252-041, 042, 043 & 045	31 units of Senior Housing	2.5 acres	Under Review
Z-18-01, UP-18-04, AR-18-06	AMCAL Apartments	Jay Ross, Darin Hansen AMCAL Multi-Housing 30141 Agoura Rd, Suite 100 Agoura Hills, CA 91301-4332	3530-3560 E. 18th St.	051-200-025 & -026	Construct 394 Affordable Apartments.	14.7 acres	Under Review
GP-18-02, PD-18-03, UP-18-19, AR-18-20	Delta Fair Village	Gabriel Chiu Chiu Family LLC 1767 Garmano Way Pleasanton, CA 94566	2710-3040 Delta Fair Blvd.	076-440-029, 030,031	Drive-thru restaurant and 210 apartments		Under Review
AR-19-03	Parkridge Phase II	Steve Abbs Davidon Homes 1600 S. Main St, Suite 150 Walnut Creek, CA 94596		053-060-034-5	Design Review for Phase 2 (58 Lots)		Under Review

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DEVELOPMENT PROJECT PIPELINE

Project Number(s) and Plans	Project	Applicant	Location	APN(s)	Project Description	Site Size	Status
APPROVED, UNDER CONSTRUCTION							
AR-18-23	Vineyards at Sand Creek Amenity Building and Landscape plan	Alicia Wilson Century Communities 6700 Koll Center Pkwy #240 Pleasanton, CA 94566	Sand Creek Road, Heidorn Road and Hillcrest Avenue	057-030-007	Amenity building and landscaping plan for 641 unit residential development	140.37 acres	Planning Commission Approved 2/20/19
PDP-13-01 PD-14-02 UP-14-08 AR-14-03	Heidorn Village	Douglas Krah 1917 Parkmont Drive Alamo, CA 94507	Heidorn Ranch Road @ Prewett Park Drive	056-130-013, 015, 017, 018	117 SFD	20.09	Planning Commission approved 11/4/15 City Council approved 1/12/16 Under construction
AR-14-07 UP-08-04 AR-05-05 Z-09-02	Park Ridge	Steve Abbs Davidon Homes 1600 S. Main St, Suite 150 Walnut Creek, CA 94596	Parkridge Subdivision 8846 Canada Valley Road	053-060-023 053-072-016	Design Review 525 SFD	171 Acres	Phase 1 Permits issued
UP-18-06	Vineyards at Sand Creek Use Permit Phases 1-3	Matthew Beinke GBN Partners LLC 3820 Blackhawk Road Danville, CA 94506	3052 Heidorn Ranch Road	057-030-003	Use permit for Phases 1-3=337 units	140.37 acres	Zoning Administrator approved on 5/24/18 Under construction
AR-18-17	Vineyards at Sand Creek Phases 1-3 Design Review	Talli Robinson Century Communities 99 Almaden Blvd, #400 San Jose, CA 95113	Sand Creek, Heidorn Ranch & Hillcrest Ave.	057-030-007	Master Plan Architecture for Village 1, 2 & 3.	66+ acres	Planning Commission approved on 10/3/18
GP-14-01	Vineyards at Sand Creek	Matthew Beinke GBN Partners LLC 3820 Blackhawk Road Danville, CA 94506	Heidorn Ranch Road	057-030-003	641 unit residential subdivision	140.37 acres	City Council approved on 2/9/16

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DEVELOPMENT PROJECT PIPELINE

Project Number(s) and Plans	Project	Applicant	Location	APN(s)	Project Description	Site Size	Status
GP-16-03 Z-16-02 UP-16-19 AR-16-14	Almond Knolls	The Grupe Company Kyle Masters 3255 West March Lane 4th Floor Stockton, CA 95219	Worrell Road, East of Lone Tree Way	071-072-015-2	58 apartments, parcel map for condominium purposes	2.9+ acres	City Council approved 7/25/17 Under construction
AR-16-02 PD-14-01 UP-16-14	Aviano	Mike Evans DeNova Homes 1500 Willow Pass Court Concord, CA 94520	Near Hillcrest Avenue & Sand Creek Road	057-030-005 057-050-022 057-050-014	533 single family detached homes	189 acres	City Council approved 9/8/15 Under construction
APPROVED, AWAITING CONSTRUCTION							
AR-18-10	Nelson Ranch Unit 3	K. Hovnanian Homes 3721 Douglas Blvd, Suite 150 Roseville, CA 95661	Goode St, Parkside		3rd Phase Design Review		Planning Commission approved 2/6/19
PD-18-01	McCauley SFD/Barn	Sean McCauley 420 Beatrice Ct, Suite E Brentwood, CA 94513	7901-7979 Deer Valley Road	057-060-014-15	SFD/Barn Roddy Ranch	40 acres	City Council approved 11/13
PD-15-02	Quail Cove	West Coast Home Builders, Inc. 4061 Port Chicago Hwy Concord, CA 94520	Prewett Ranch Dr. & Cochico Drive	056-130-012	Vesting Tentative Map for 32 units Single-Family	5.59 acres	City Council approved 10/9/18
PD-16-01	Black Diamond Ranch Unit 4	Discovery Builders, Inc. 4061 Port Chicago Hwy, #H Concord, CA 94520	Countryside Way; Torgensen Court	089-160-010	10 SFD	20.98 acres	Planning Commission approved 6/6/18
MDP-17-01	The Ranch	Richland Communities Aaron Ross-Swain 3000 Lava Ridge Ct., Ste. 115 Roseville, CA 95661	West of Deer Valley Rd., East of Empire Mine Rd.	057-010-002 057-010-003 057-021-003	Approx. 1,100 SFD, 54,000 s.f. of commercial space, 3.5 acres of public/institutional uses	551.5	Initiative adopted by Council 7/24/18

CITY OF ANTIOCH
DEVELOPMENT PROJECT PIPELINE

Project Number(s) and Plans	Project	Applicant	Location	APN(s)	Project Description	Site Size	Status
PD-15-01	Oakley Knolls	Discovery Builders, Inc. 4061 Port Chicago Hwy Concord, CA 94520	Oakley Road and Honeynut Street	051-430-001-018	Vesting Tentative Map for 31 units	5.56 acres	City Council approved 4/10/18
UP-15-16 AR-15-16	Delta Courtyard Apts.	William R. Spann Pacific West Communities Inc. 26302 Table Meadow Rd. Auburn, CA 95602	701 & 810 Wilbur Ave.	065-110-006 & 007	Design Review, Use Permit and Lot Line Adjustment to develop 126 unit multi-family apt. complex	4.46 acres	Planning Commission approved 9/7/16
PD-15-03	Laurel Ranch	Richland Communities Inc. 801 Ygnacio Valley Rd, Suite 110 Walnut Creek, CA 94596	West of Hwy 4 Bypass, North of future Laurel Road extension	053-060-031	Proposed residential Development for approx. 187 lots	54 acres	Planning Commission approved 7/20/16 City Council approved 9/13/16

CITY OF ANTIOCH
DEVELOPMENT PROJECT PIPELINE

Project Number(s) and Plans	Project	Applicant	Location	APN(s)	Project Description	Site Size	Status
COMMERCIAL AND MIXED USE PROJECTS							
UNDER REVIEW							
PD-18-02	Acorn Business Park	JMI Properties Corporation 8117 Marsh Creek Rd. Clayton, CA 94517	NW corner of 18th St. and Drive-in Way	051-052-112 051-052-113	Self storage (5.44 acres), business park (10.52 acres), commercial and hospitality businesses (13.79 acres)		Under Review
UP-18-13	Delta Dispensary	Rick Hoke 1636 Lillian St. Brentwood, CA 94513	2101 W. 10th St, Suite B	074-051-005-2	Cannabis Sales		Under Review
UP-18-14	Eagle Extracts	Rick Hoke 1636 Lillian St. Brentwood, CA 94513	2101 W. 10th St, Suite A	074-051-005-2	Cannabis Extractions		Under Review
UP-18-21	Alluvium Inc.	Alluvium Inc. 2625 Crow Court Antioch, CA 94509	2625 Crow Court	074-052-022	Cannabis Retail/Delivery		Under Review
UP-18-23	Contra Costa Farms LLC	Contra Costa Farms LLC 420 S. 2nd Street Rio Vista, CA 94571	3400 Wilbur Avenue	051-051-021	Cannabis – Cultivation, manufacturing, distribution and retail		Under Review
UP-18-22	Element 7	Robert M. Divito Jr. Element 7 LLC 7936 Hillside Avenue Los Angeles, CA 90046	729 Fulton Shipyard Road	065-040-030	Cannabis – Manufacturing, distribution, delivery and retail storefront dispensary		Under Review

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DEVELOPMENT PROJECT PIPELINE

Project Number(s) and Plans	Project	Applicant	Location	APN(s)	Project Description	Site Size	Status
PD-18-04	PG&E OPS – Office	Victor Ogu Pacific Gas & Electric Company 1850 Gateway Blvd, Suite 600 Concord, CA 94520	2111 Hillcrest Avenue	051-160-002	Service Center Upgrade		Under Review
UP-19-01 AR-19-02 V-19-02	Jack in the Box	Greg Borchardt PM Design Group Inc. 6930 Destiny Dr, Suite 100 Rocklin, CA 95677	2505 A Street	068-142-022	Construct new 2,847 sf		Accepted
UP-19-02	Cell Site at Comfort Inn	Michelle Thompson Jacobs 6597 Goya Way El Dorado Hills, CA 95762	2436 Mahogany Way	074-370-033	Relocate Sprint antennas to rooftop of existing hotel.		Accepted
UP-19-03	Contra Costa Sports Complex Bar	Josh Wells Marine & Industrial Services Inc. 2391 W. 10th Street Antioch, CA 94509	1208 & 1210 Sunset Drive	068-253-010	UP to allow bar inside Indoor Sports Center		Accepted
UP-19-04	Mahogany Way Billboard	Mike McCoy Mesa Outdoor 696 San Ramon Valley Blvd, #192 Danville, CA 94526	2404 Mahogany Way	074-370-025	50' Digital Billboard	.67 acre	Accepted

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Project Number(s) and Plans	Project	Applicant	Location	APN(s)	Project Description	Site Size	Status
APPROVED, UNDER CONSTRUCTION							
UP-17-05 V-17-04 AR-17-15	ARCO AM/PM Gas Station and Car Wash	Patrick Lemons PO Box 430 Tracy, CA 95478	1800 W. 10th St.	074-040-041	Demolish existing structures and replace with new gas station, convenience store and car wash		Planning Commission approved 3/7/18 Under Construction
PD-16-03 GP-16-01 UP-16-08 AR-16-04	Wildflower Station	Mike Evans DeNova Homes 1500 Willow Pass Ct. Concord, CA 94520	North Section of the intersection @ Wildflower Dr & Davison Dr.	053-140-002	10.45 acres of commercial use, 7.00 acres of condominiums (98 condos), 4.5 acres of single family (22 lots)	23.03 acres	City Council Approved 2/13/18 Under Construction
UP-17-03 AR-17-13	ARCO AM/PM Gas Station and Car Wash	Patrick Lemons PO Box 430 Tracy, CA 95478	Hillcrest Ave. and Wildflower Dr.	052-460-011	New gas station, convenience store and car wash		Planning Commission approved 1/17/18 Under Construction
UP-16-03 AR-16-07 V-16-05	Delta Bowl Addition & Remodel	Kenneth Melton Melton Recreation Inc. 4745 Del Valle Pkwy Pleasanton, CA 94566	3300 Delta Fair Blvd.	074-122-049	Building expansion and exterior modernization/ parking variance	3.337 acres	Planning Commission approved 6/7/17 Under Construction
UP-16-09 AR-16-05 V-16-02	4 Star Auto Repair	Kalsoom Ghafoor 3420 E. 18th Street Antioch, CA 94509	3420 E. 18th Street	051-200-060	Install 4 Car Bays & Prefab Metal Bldg for Auto Repair Shop	.433 acres	Planning Commission approved 4/5/17 Under Construction

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DEVELOPMENT PROJECT PIPELINE

Project Number(s) and Plans	Project	Applicant	Location	APN(s)	Project Description	Site Size	Status
UP-16-18 AR-16-12	Granite Expo	Jacky Li Granite Expo 1368 40th Street Emeryville, CA 94608	1888 Verne Roberts Circle	075-051-011	Commercial Remodel 389,000 sf	28.31 acres	Planning Commission approved 5/3/17 Under Construction
AR-19-01	Target Rebrand	Sophia Lai Kimley-Horn 100 West San Fernando St, Suite 250 San Jose, CA 95113	5769 Lone Tree Way	056-120-059-3	Rebrand		Approved
AR-18-16	Walmart Online Pickup	Sunday Bougher SGA Design Group 1437 South Boulder, Suite 550 Tulsa, OK 74119	4893 Lone Tree Way	056-011-030	Online Grocery Pickup	21.6 acres	Zoning Administrator approved 10/31/18
UP-18-12 AR-18-11	Costco Fuel Facility Additions	David Babcock David Babcock & Associates 3581 Mt. Diablo Blvd, Suite 235 Lafayette, CA 94549	2201 Verne Roberts Circle	074-052-040-8	Expand fuel facility, increase canopy and add 4 new fuel dispensers	15.23 acres	Zoning Administrator approved 11/8/18
AR-17-17	Kaiser Solar	Tyge Nason Ameresco, Inc. 2375 E. Camelback Rd, Suite 400 Phoenix, AZ 85016	4501 Sand Creek Rd.	057-022-021	New Steel Parking Canopies with Solar		Planning Commission Approved 4/18/18 Under Construction
PD-16-02 AR-16-03 UP-16-06	Vineyard Self Storage	Reid Hamilton American Recess 85 Keystone Ave, Suite E Reno, NV 89503	E. 18th & Vineyard	051-052-074	Storage Facility	6.68 acres	City Council approved 10/11/16 Under Construction

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DEVELOPMENT PROJECT PIPELINE

Project Number(s) and Plans	Project	Applicant	Location	APN(s)	Project Description	Site Size	Status
APPROVED, AWAITING CONSTRUCTION							
UP-18-16 AR-18-14	Verizon Empire Shopping Center	David Haddock Verizon Wireless by Ridge Communications, Inc. 12667 Alcosta Blvd, Suite 175 San Ramon, CA 94583	5887 Lone Tree Way	056-390-007-5	Install new cell site	1.19 acres	Zoning Administrator approved 11/8/18
UP-18-05 AR-18-07	AT & T Monopine	Tom Swarner PEN for AT & T Mobility 2615 Camino Lenada Oakland, CA 94611	3215 Fairview Drive	074-123-009-8	Unmanned Wireless Antenna Facility	.01 acre	Planning Commission approved 11/7/18 In plan check
AR-17-16	Revised Somersville Towne Center Out Parcels	Kevin Le Courtney + Le Architects 801 S. Myrtle Avenue Monrovia, CA 91016	Somersville & Fairview	074-450-033-1	Design Review to approve 2016 CUP modification of out parcel development. Phase I to be a 3000 sf drive-thru		Planning Commission approved 12/6/17
AR-15-14	Buchanan Crossings Shops Building E	Matt Nohr Buchanan Crossings LLC 10 Harris Court, Suite B1 Monterey, CA 93940	3140 Buchanan Road	074-080-013	Design Review for single story multi- tenant retail building	13.5 acres	City Council approved 10/27/15
PD-06-04 UP-06-21 S-08-01	Hillcrest Summit	Bedrock Ventures Inc. 4045 Balfour Avenue Oakland, CA 94610	Hillcrest Avenue and E Tregallas	052-100-055	1500 sq feet retail 35,077 sq ft office	5 acres	Planning Commission approved 1/16/08 DRB approved 1/23/08 City Council approved 2/26/08 Extension until 3/11/19

CITY OF ANTIOCH
DEVELOPMENT PROJECT PIPELINE

Project Number(s) and Plans	Project	Applicant	Location	APN(s)	Project Description	Site Size	Status
AR-16-08	Big Break Solar	NRG Solar DG, LLC c/o Joe Corning 100 California St, Suite 400 San Francisco, CA 94111	3201 Wilbur Avenue	051-031-020	Design Review for a solar generating facility	16 acres	Planning Commission approved 5/3/17
AR-16-15	Tri Delta Park & Ride	Steve Ponte Tri Delta Transit 801 Wilbur Avenue Antioch, CA 94509	W. 6th St. and Auto Center Drive	074-130-081	New Park and Ride Lot	4.25+ acres	Planning Commission approved 5/17/17
AR-17-11 V-17-03	Pinkys Klassy Kar Wash Solar	Richard Patterson Spectrum Solar Energy 1588 Ashwood Drive Oakley, CA 94561	300 E. 18th Street		Solar Canopy Installation		Zoning Administrator approved 11/9/17
AR-17-10	Contra Loma Plaza Monument Sign	Richard Luchini Arrow Sign Co. 1051 46th Avenue Oakland, CA 94601	3100 Contra Loma Blvd.		Monument Sign	49,048	Zoning Administrator approved 9/14/17 In plan check
AR-18-03	All Star Rents	John Wooten All Star Rents 2525 Clay Bank Rd. Fairfield, CA 94533	1205 Sunset Drive	068-300-016	New Structures for equipment rental yard	1.281 acre	Zoning Administrator approved on 8/9/18 In Plan Check
UP-18-18 AR-18-18	Event Hall	Prince Nwosu 517 West 2nd Street Antioch, CA 94509	509 W. 2nd Street	066-053-009	Event Center		Planning Commission approved 2/20/19 In Plan Check

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DEVELOPMENT PROJECT PIPELINE

Project Number(s) and Plans	Project	Applicant	Location	APN(s)	Project Description	Site Size	Status
UP-18-15	One Plant	Sidney Dunmore 3941 Park Drive, Suite 20-626 El Dorado Hills, CA 95762	2701 West 10th Street	074-051-029	Commercial Cannabis		City Council approved 4/23/19