CITY OF MANTECA
DEVELOPMENT SERVICES DEPARTMENT

Spreckels Distribution Center Project

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

April 2021

RANEY PLANNING & MANAGEMENT, INC. 20 years

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INITIAL STUDY

APRIL 2021

A. BACKGROUND

1.	Project Title:	Spreckels Distribution Center Project
2.	Lead Agency Name and Address:	City of Manteca Development Services Department 1215 West Center Street, Suite 201 Manteca, CA 95337
3.	Contact Person and Phone Number:	J.D. Hightower Deputy Director of Planning (209) 456-8505
4.	Project Location:	407 Spreckels Avenue Manteca, CA 95337 APN: 221-250-350
5.	Project Sponsor's Name and Address:	Prologis, Inc. Pier 1, Bay 1 San Francisco, CA 94111 (415) 292-5181
6.	General Plan Designation:	Light Industrial (LI)
7.	Zoning Designation:	Business Industrial Park (BIP)
8.	Required Approvals from Other Public Agencies:	San Joaquin Valley APCD SJCOG HCP

9. Surrounding Land Uses and Setting:

The 14.83-acre project site is located at 407 Spreckels Avenue, which is part of the existing Spreckels Business Park in the City of Manteca. The project site is currently vacant and covered in routinely disked ruderal grassland, but was previously developed as a portion of the Spreckels Sugar Factory. Six trees exist on the northwest corner of the project site. Surrounding land uses include single-family residential units to the west, Spreckels Avenue to the east, and commercial and industrial land uses to the north and south. An eight-foot solid sound wall extends along the western site boundary, and the Manteca Tidewater Bikeway extends along the eastern site boundary.

10. Project Description Summary:

The Spreckels Distribution Center Project (proposed project) would include construction of a 304,120-square foot (sf) warehouse distribution facility and associated improvements. The development would include 56 truck dock doors, 180 standard parking spaces, six accessible parking spaces, and 63 truck trailer spaces. Site access would be provided through two driveways from Spreckels Avenue and a third entry way along the utility access road of the adjacent industrial park to the north.

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

    In compliance with Assembly Bill (AB) 52 (Public Resources Code Section 21080.3.1), on February 11, 2021, the City provided formal notification letters to local tribes that had requested notification. Responses were not received within the 30-day consultation period.

B. SOURCES

The following documents are referenced information sources used for the purposes of this Initial Study/Mitigated Negative Declaration (IS/MND):

1. AKF Development Holdings, LLC. *Covenant and Agreement to Restrict Use of Property Environmental Restriction (Re: 407 Spreckels Avenue, Manteca, San Joaquin County APN: 221-250-350-000).* July 3, 2018.
2. Barnett Environmental. *Wetland & Biological Resources Assessment of 407 Spreckels Avenue in Manteca, CA 95336 (APN 221-250-350)*. December 28, 2020.
3. Bollard Acoustical Consultants, Inc. *Environmental Noise & Vibration Assessment DCT Spreckels Distribution Center*. January 13, 2021.
4. California Air Resources Board. *The 2017 Climate Change Scoping Plan Update.* January 20, 2017.
5. California Department of Conservation. *California Important Farmland Finder.* Available at: https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed February 12, 2021.
6. California Department of Forestry and Fire Protection. *San Joaquin County, Draft High Fire Hazard Severity Zones in LRA*. October 2, 2007.
7. California Department of Transportation. *List of eligible and officially designated State Scenic Highways*. Available at: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed February 2021.
8. California Energy Commission. *Title 24 2019 Building Energy Efficiency Standards FAQ*. November 2018.
9. California Geological Survey. *Earthquake Zones of Required Investigation*. Available at: https://maps.conservation.ca.gov/cgs/EQZApp/app/. Accessed February 17, 2021.
10. CalRecycle. *SWIS Facility/Site Activity Details: Forward Landfill, Inc. (39-AA-0015)*. Available at: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1434?siteID=3106. Accessed March 2021.
11. Central California Information Center. *Records Search File#: 11551L, Project: Spreckels Distribution Center.* November 9, 2020.
12. City of Manteca. *City of Manteca 2015 Urban Water Management Plan*. July 2016.
13. City of Manteca. *General Plan Existing Conditions Report: 3.0 Utilities and Community Services*. October 2017.
14. City of Manteca. *Manteca General Plan 2023 Environmental Impact Report (SCH# 2002042088)*. October 6, 2003.
15. City of Manteca. *Spreckels Park Industrial Design / Architectural and Landscape Standards*. 1998.

16. Fehr & Peers. *Spreckels Avenue Warehouse Distribution Facility Transportation Impact Analysis Report*. December 2020.
17. Native American Heritage Commission. *Spreckels Distribution Center, San Joaquin County.* November 24, 2020.
18. Office of Environmental Health Hazard Assessment. *Air Toxics Hot Spots Program Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments* [pg. 8-18]. February 2015.
19. San Joaquin County. *County of San Joaquin Emergency Operations Plan*. April 23, 2019.
20. San Joaquin Valley Air Pollution Control District. *Small Project Analysis Levels (SPAL)*. November 13, 2020.
21. State Water Resources Control Board. *GeoTracker*. Available at: https://geotracker.waterboards.ca.gov/map/?global_id=L10006223066. Accessed March 2021.
22. U.S. Department of Agriculture. *Web Soil Survey*. Available at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed February 17, 2021.
23. U.S. Environmental Protection Agency. *User's Guide for the AMS/EPA Regulatory Model (AERMOD)*. December 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 “Less-Than-Significant with Mitigation Incorporated” 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 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 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 Project, nothing further is required.

______________________________	______________________________
Signature	Date
J.D. Hightower, Deputy Director of Planning	City of Manteca
Printed Name	For

E. BACKGROUND AND INTRODUCTION

This Initial Study identifies and analyzes the potential environmental impacts of the 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 IS/MND would be implemented in conjunction with the proposed project, as required by CEQA. The mitigation measures would be incorporated into the project through conditions of approval. The City would adopt findings and a Mitigation Monitoring and Reporting Program for the project in conjunction with approval of the project.

In October 2003, the City of Manteca approved the City of Manteca 2023 General Plan and certified an associated Environmental Impact Report (EIR) for the 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 IS/MND.

F. PROJECT DESCRIPTION

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

Project Location and Setting

The project site is located within the Spreckels Business Park, at 407 Spreckels Avenue in the City of Manteca, California (see Figure 1). The project site is approximately 14.83 acres in size, and is identified by Assessor's Parcel Number (APN) 221-250-350. Per the City's General Plan, the project site is designated Light Industrial (LI), and the site is zoned Business Industrial Park (BIP).

Currently, the project site is vacant and undeveloped. The site consists primarily of ruderal grasses, which appear to be regularly disked, with six trees in the northwest corner of the site. Surrounding land uses include single-family residential units to the west, Spreckels Avenue to the east, and commercial and industrial land uses to the north and south (see Figure 2). An eight-foot solid sound wall extends along the western site boundary, and the Manteca Tidewater Bikeway extends along the eastern site boundary.

Project Components

The proposed project would include the construction of a warehouse distribution facility and associated improvements. In addition to the warehouse, four vegetated swales would be provided on-site for stormwater treatment and infiltration. The project components and requested approvals are discussed in detail below.

Warehouse Building

The proposed warehouse would be 304,120 sf in total, 8,000 sf of which would be dedicated office space. The development would include 56 truck dock doors, 180 standard parking spaces, six accessible parking spaces, and 63 truck trailer spaces (see Figure 3). In addition, the project would provide both short-term and long-term bicycle parking spaces.

Figure 1
Regional Project Location

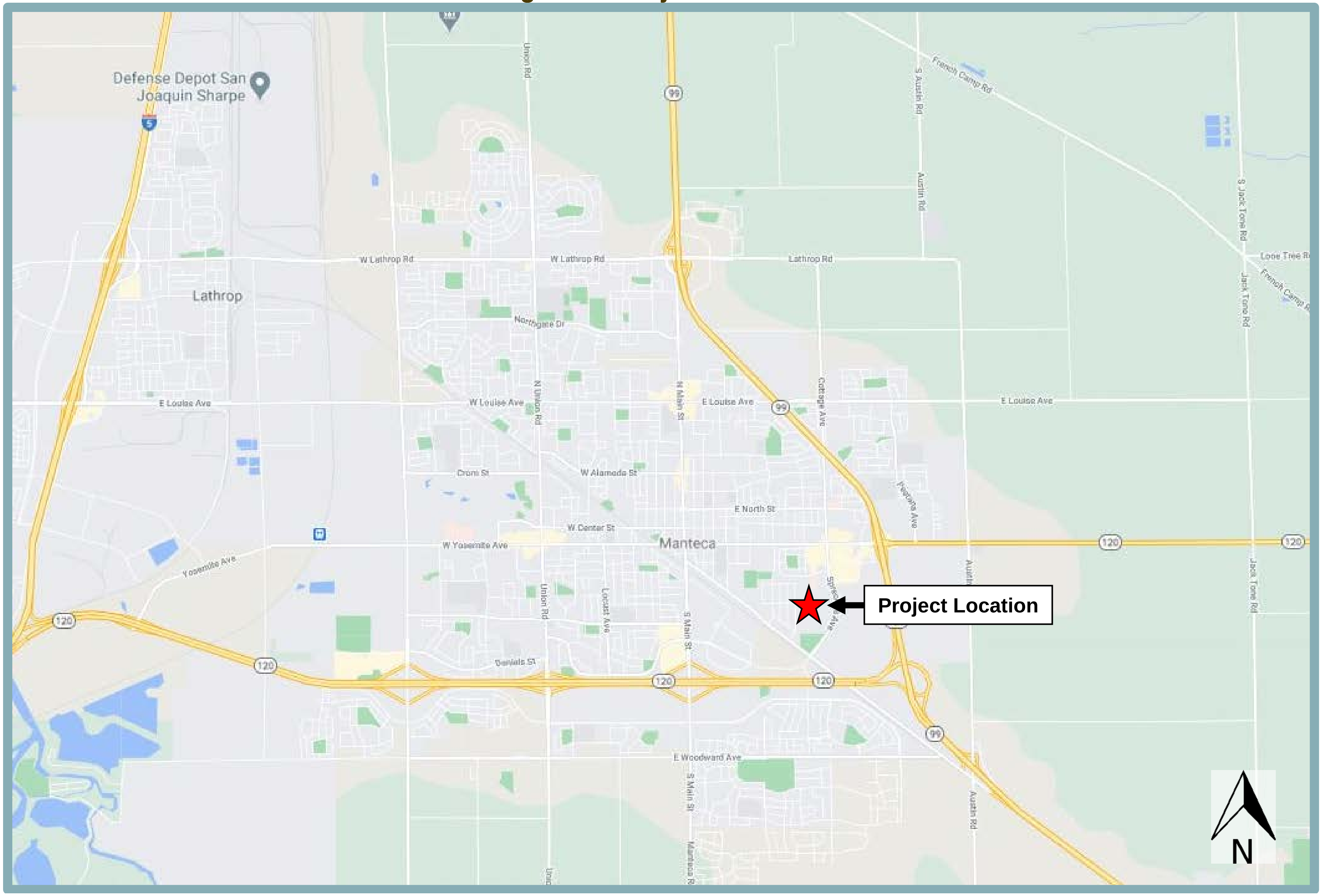
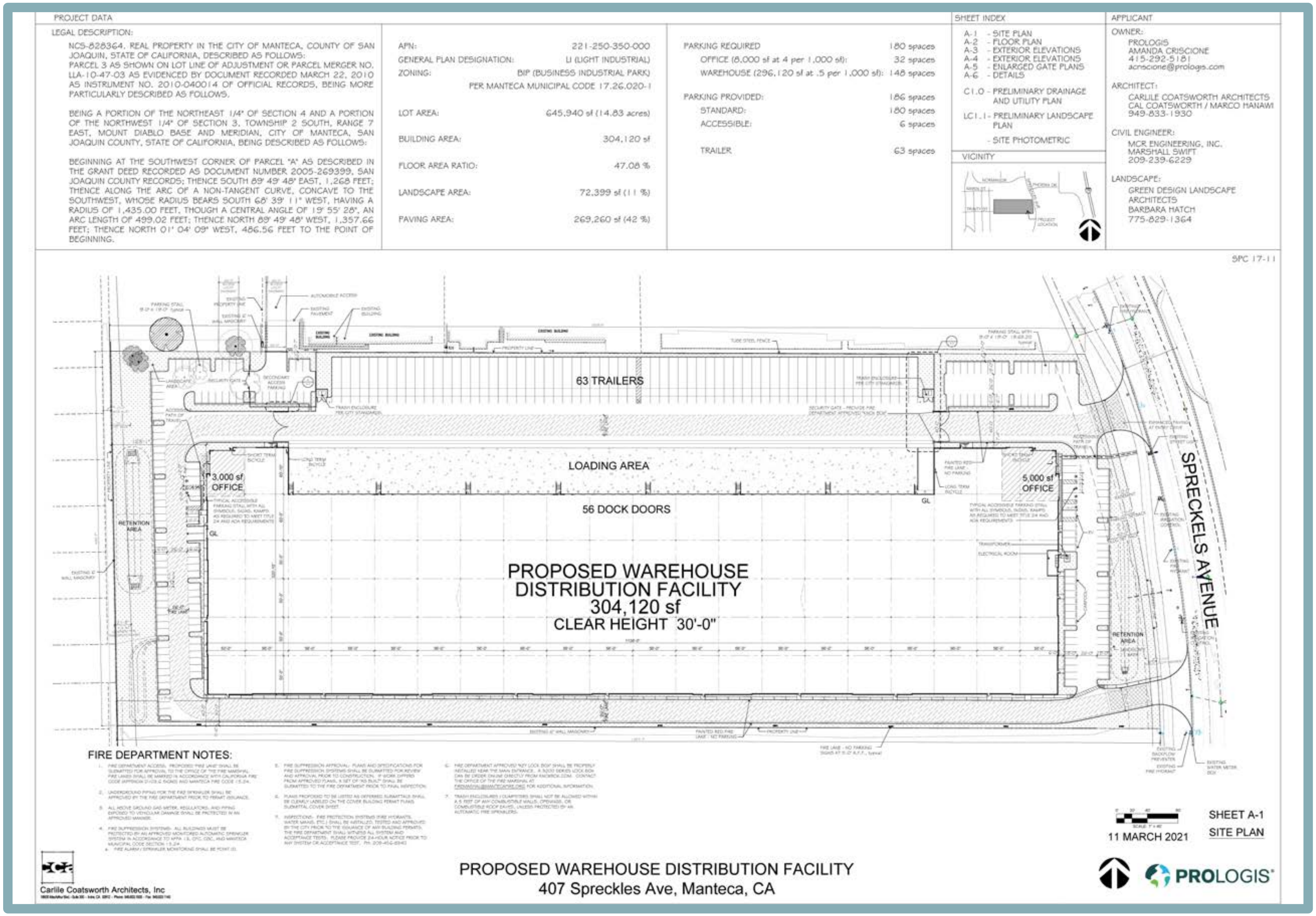


Figure 2
Project Site Boundaries

Figure 3
Site Plan



Site access would be provided through two driveways from Spreckels Avenue and a third entry way along the utility access road of the adjacent industrial park to the north. Each of the three access points would include pre-security parking and a security gate.

Although the tenants of the proposed warehouse are unknown at this time, this analysis assumes that business operations could occur 24 hours per day.

Utilities

A new six-inch sewer line and a new eight-inch water line would connect to the existing infrastructure in Spreckels Avenue. A new network of 15-, 24-, 30-, and 36-inch stormwater lines would direct stormwater through the on-site vegetated swales for treatment, and ultimately discharge to the existing storm drain stub in Spreckels Avenue (see Figure 4).

Water supply to the proposed development would be provided by the City of Manteca Water Division, and sewer service would be provided by the City of Manteca Sewer Division. Electricity and natural gas service would be provided by Pacific Gas and Electric (PG&E). The project would connect to existing electrical and natural gas infrastructure in the project vicinity.

Landscaping

The six trees located on the northwest corner of the site would be removed as part of the proposed project. As part of the proposed landscaping plan, 41 new trees would be planted on-site (see Figure 5). Proposed plants include, but are not limited to, the following species: deodar cedar, columnar oak, evergreen elm, hopseed, deer grass, coffeeberry, and fort night lily.

The landscaping would include trees and tall shrubs for visual screening along the northern, western, and southern site boundaries. In addition, the landscaping plan would ensure that at least 50 percent of the parking areas are shaded.

Project Approvals

The proposed project would require City approval of the following:

- Initial Study/Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program;
- Conditional Use Permit; and
- Site Plan Review.

Figure 4
Preliminary Utility and Drainage Plan

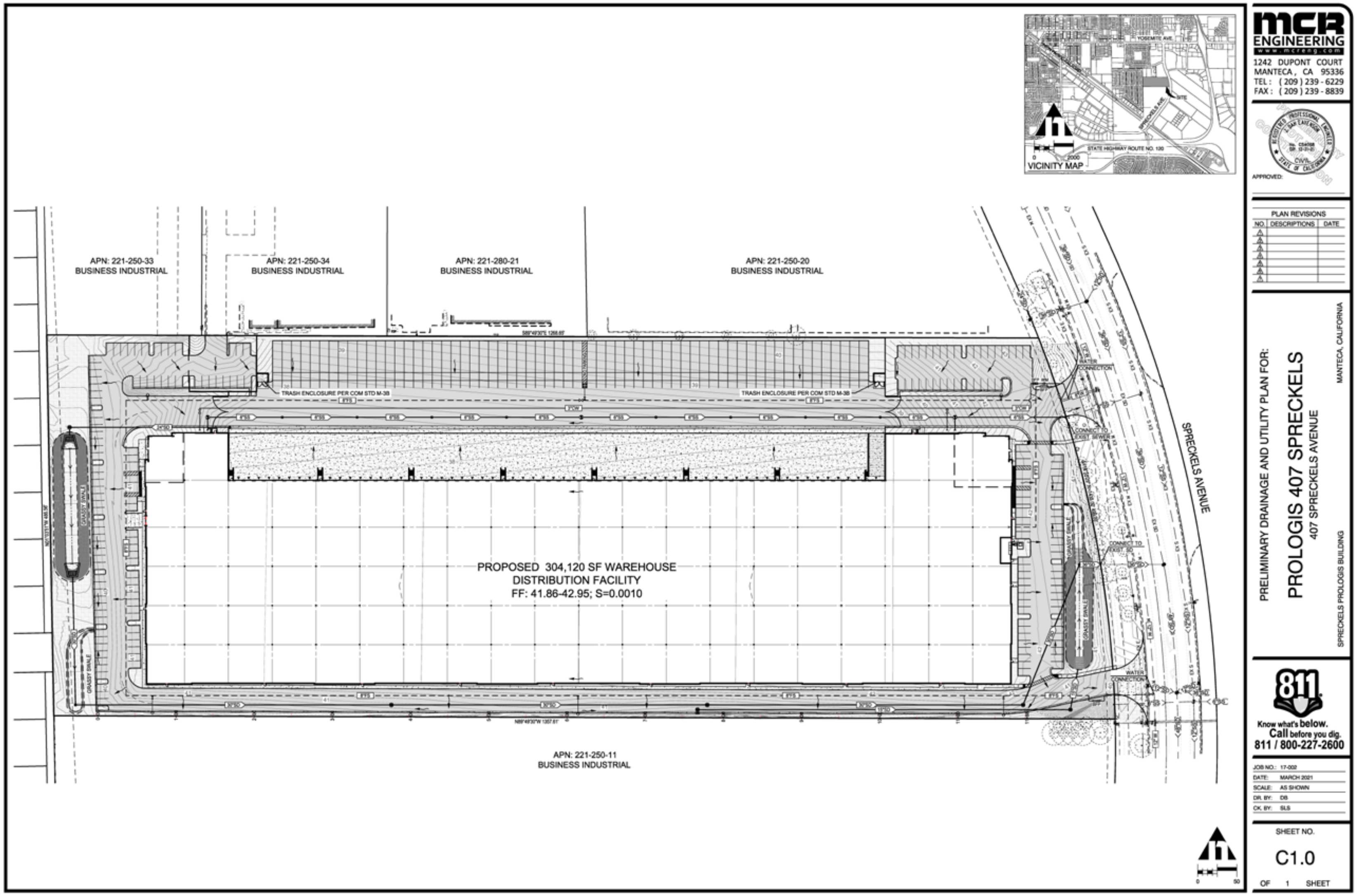
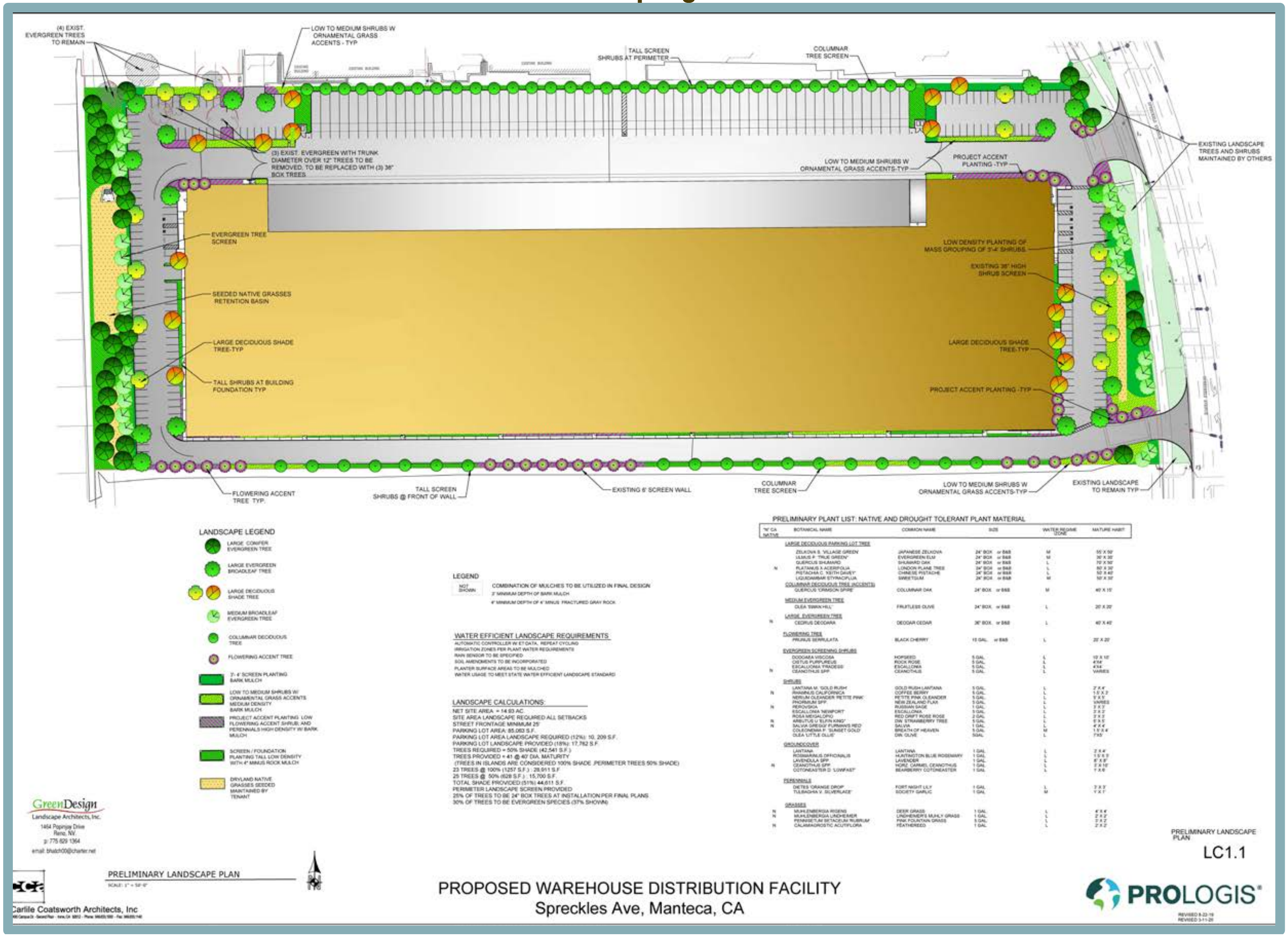


Figure 5
Landscaping Plan



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 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 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 proposed project would substantially change or remove a scenic vista. The City's General Plan does not identify any scenic vistas in the project area. Thus, the proposed industrial development would not have a substantial adverse effect on a designated scenic vista. In addition, according to the California Scenic Highway Mapping System, the project site is located approximately 17 miles east of the nearest State Scenic Highway, State Route (SR) 580.[1] The project site is not visible from SR 580.

Based on the above, 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. The proposed project would change the visual character and quality of the site from a vacant lot to an industrial development. However, the project site is already located within an urban area and is surrounded by existing development. Considering the project site is located in an urbanized area, the proposed project would essentially serve as an extension of the existing light industrial and commercial development in the project vicinity. In addition, the project would provide for landscaped strips with trees, shrubs, and groundcover along the project frontages. Such landscaped buffers would help to screen public views of the proposed buildings from the surrounding roadways. The proposed structure and landscape plan would be designed consistent with the Spreckels Park Industrial Design / Architectural and Landscape Standards.[2]

Furthermore, all components of the proposed project would be subject to the City's Site Plan Review process pursuant to Section 17.10.060 of the City's Municipal Code. The purpose of Site Plan Review is to provide a process to promote excellence in site planning and design, to encourage the harmonious appearance of buildings and sites, to ensure

1 California Department of Transportation. *List of eligible and officially designated State Scenic Highways*. Available at: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed February 2021.

2 City of Manteca. *Spreckels Park Industrial Design / Architectural and Landscape Standards*. 1998.

that new and modified uses and development would be compatible with the existing and potential development of the surrounding area, and to produce an environment of stable, desirable character. Site Plan Review approval by the Planning Commission would confirm that the proposed project is consistent with the City's community design policies and standards and would not degrade the visual character of the site, the surroundings, or the community.

Per the City's General Plan, the project site has been anticipated for industrial development. As such, changes to the visual character and quality of the site have been anticipated by the City. In addition, as discussed above, the proposed project would include landscaping elements to screen public views of the site and would be visually compatible with the surrounding development. Therefore, 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 does not contain any existing sources of light or glare. Implementation of the project would develop the site with a warehouse, and, thus, would introduce new sources of light and glare where none currently exist. Potential sources of light and glare associated with the proposed project would include interior light spilling through warehouse windows, exterior lighting, employee vehicle headlights, truck headlights, and light reflected off windows.

While the site does not currently contain sources of light or glare, the site is bordered by existing development that currently generates light and glare in the area.

The proposed project would be required to comply with Section 17.50.060D of the City's Municipal Code, which states that outdoor lighting shall be designed to illuminate at the minimum level necessary for safety and security while avoiding the harsh contrasts in lighting levels between the project site and adjacent properties. In addition, the project would be required to comply with Section 17.50.060C of the City's Municipal Code, which requires the following:

> …all outdoor lighting shall be constructed with full shielding and/or recessed to reduce light trespass to adjoining properties. Each fixture shall be directed downward and away from adjoining properties and public rights-of-way, so that no light fixture directly illuminates an area outside of the site. Fixtures located higher than 6 feet above the ground shall have shielding that limits to angle of the cone of direct illumination to 60 degrees or less.

Compliance with the aforementioned standards would ensure that on-site lighting would be directed downwards and within the project site, and would not substantially illuminate adjacent properties. In addition, the proposed landscaping elements along the project frontages help to further screen the proposed exterior light fixtures. Furthermore, considering the proposed project would be consistent with the adjacent land use types, any additional of light or glare associated with the proposed project would not be considered substantial.

Based on the above, implementation of the proposed project would result in a ***less-than-significant*** impact with respect to creating a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

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 designated as “Urban and Built-Up Land” per the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP).[3] Furthermore, the site is not zoned or designated in the General Plan for agriculture uses, and such uses would be incompatible with surrounding land uses in the area.

Given the FMMP designations for 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 project site is not under a Williamson Act contract and is not designated or zoned for agricultural uses. Therefore, buildout of the 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 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 February 12, 2021.

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

Discussion

a,b. The City of Manteca, including the project site, is located within the northern portion of the San Joaquin Valley Air Basin (SJVAB) and is within the jurisdictional boundaries of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The SJVAB area is currently designated as a non-attainment area for the State and federal ozone, State and federal particulate matter 2.5 microns in diameter ($PM_{2.5}$), and State particulate matter 10 microns in diameter (PM_{10}) standards. The SJVAB is designated attainment or unclassified for all other ambient air quality standards (AAQS). It should be noted that although the U.S. Environmental Protection Agency (EPA) revoked their 1-hour ozone standard in 2005, in May of 2016, the EPA proposed findings that the SJVAB was in attainment of the 1-hour ozone standard.

In compliance with regulations, due to the non-attainment designations of the area, the SJVAPCD 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 most recent ozone plan is the 2016 Ozone Plan for the 2008 8-Hour Ozone Standard, which was adopted by the SJVAPCD on June 16, 2016. The California Air Resources Board (CARB) subsequently conducted a public meeting to consider approval of the 2016 Ozone Plan for the 2008 8-Hour Ozone Standard, and approved the plan on July 21, 2016. Additionally, the most recent federal attainment plan for PM is the 2016 Plan for the 1997 $PM_{2.5}$ Standard, which was approved by the District Governing Board on April 16, 2015.

The aforementioned air quality plans contain mobile source controls, stationary source controls, and transportation control measures (TCMs) to be implemented in the region to attain the State and federal standards within the SJVAB. Adopted SJVAPCD rules and regulations, as well as the thresholds of significance, have been developed with the intent to ensure continued attainment of AAQS, or to work towards attainment of AAQS for which the area is currently designated non-attainment, consistent with applicable air quality plans. The SJVAPCD has established broad significance thresholds associated with the construction and operation emissions for various criteria pollutants including ozone precursors such as reactive organic gases (ROG) and oxides of nitrogen (NO_x), as well as for PM_{10}, $PM_{2.5}$, sulfur oxide (SO_x), and carbon monoxide (CO) expressed in tons per year. Thus, by exceeding the SJVAPCD's mass emission thresholds for operational emissions of ROG, NO_X, PM_{10}, $PM_{2.5}$, SO_x, or CO a project would be considered to conflict with or obstruct implementation of the SJVAPCD's air quality planning efforts. The

SJVAPCD's adopted thresholds of significance for criteria pollutant emissions are presented in Table 1. If the proposed project's emissions exceed the applicable thresholds of significance presented in the table, the project could violate an air quality standard, contribute to an existing or projected air quality violation or conflict with or obstruct implementation of the applicable air quality plans.

Table 1
SJVAPCD Criteria Pollutant Thresholds of Significance

Pollutant	Construction Emissions (tons/yr)	Operational Emissions (tons/yr)
ROG	10	10
NO_X	10	10
CO	100	100
SO_X	27	27
PM_{10}	15	15
$PM_{2.5}$	15	15

Source: SJVAPCD, March 19, 2015.

To streamline the process of assessing significance of criteria pollutant emissions from common projects, the SJVAPCD has developed the screening tool, Small Project Analysis Level (SPAL). Using project type and size, the SJVAPCD has pre-quantified mass emissions and determined a size below which mass emissions from a project would be reasonably considered not to exceed the thresholds of significance presented above for criteria pollutants. Projects less than the sizes identified by the SJVAPCD are deemed to have a less-than-significant impact on air quality due to criteria pollutant mass emissions and are excluded from quantifying criteria pollutant emissions for CEQA purposes. The SPAL by vehicle trips for an industrial use is 550 average daily one-way trips for all fleet types except for heavy trucks.[4] According to the Transportation Impact Analysis that was prepared for the proposed project, the project would generate approximately 633 vehicle trips per day. Thus, the project-generated traffic would exceed the SPAL, and further analysis is required.

The proposed project's construction and operational emissions were quantified using the California Emissions Estimator Model (CalEEMod) software version 2016.3.2 – a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify air quality emissions, including GHG emissions, from land use projects. The model applies inherent default values for various land uses, including construction data, trip generation rates, vehicle mix, trip length, average speed, compliance with the California Building Standards Code (CBSC), etc. Where project-specific information is available, such information should be applied in the model. Accordingly, the proposed project's modeling assumes the following project and/or site-specific information:

- Construction was assumed to commence on May 1, 2021;
- Vehicle trip generation rates were adjusted per the project-specific Transportation Impact Analysis;[5] and

[4] San Joaquin Valley Air Pollution Control District. *Small Project Analysis Levels (SPAL)*. November 13, 2020.
[5] Fehr & Peers. *Spreckels Avenue Warehouse Distribution Facility Transportation Impact Analysis Report*. December 2020.

- The proposed project would comply with all applicable provisions of the 2019 CBSC, the 2019 CALGreen Code, and the Model Water Efficient Landscape Ordinance (MWELO).

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

It should be noted that all development within the SJVAPCD, including the proposed project, is required to comply with all applicable SJVAPCD rules and regulations, including, but not limited to, Regulation VIII (Fugitive PM_{10} Prohibition), Rule 4101 (Visible Emissions), Rule 4601 (Architectural Coatings), Rule 4641 (Cutback Slow Cure, Emulsified Asphalt, Paving and Maintenance Operations), Rule 4101 (Visible Emissions), and Rule 4102 (Nuisance). Compliance with the aforementioned regulations would help to reduce criteria pollutant emissions associated with the construction activity discussed below.

Construction Emissions

According to the CalEEMod results, the proposed project would result in maximum construction emissions as shown in Table 2. As shown in the table, construction emissions from the proposed project would be below the applicable thresholds of significance for all relevant criteria pollutants.

Table 2
Maximum Construction Emissions (tons/yr)

Pollutant	Project Emissions	Threshold of Significance	Exceeds Threshold?
ROG	1.64	10	**NO**
NO_X	2.53	10	**NO**
CO	2.23	100	**NO**
SO_X	0.01	27	**NO**
PM_{10}	0.44	15	**NO**
$PM_{2.5}$	0.24	15	**NO**

Source: CalEEMod, January 2021 (see Appendix A).

Operational Emissions

According to the CalEEMod results, the operations of the proposed project would result in maximum criteria air pollutant emissions as shown in Table 3. As shown in the table, the proposed project's operational emissions would be below the applicable thresholds of significance for all pollutants.

In addition, the proposed project would be consistent with what has been anticipated by the City for the site per the General Plan and zoning designations. Accordingly, the emissions associated with buildout of the project site with industrial uses have been addressed in the General Plan. Furthermore, the proposed project would not involve any construction activities or operations that would be considered out of the ordinary for an industrial use and mass grading was completed when the surrounding industrial park was completed.

Table 3
Maximum Operational Emissions (tons/yr)

Pollutant	Project Emissions	Threshold of Significance	Exceeds Threshold?
ROG	1.68	10	**NO**
NO_X	2.61	10	**NO**
CO	2.86	100	**NO**
SO_X	0.01	27	**NO**
PM_{10}	0.69	15	**NO**
$PM_{2.5}$	0.22	15	**NO**
Source: CalEEMod, January 2021 (see Appendix A).			

Cumulative Emissions

A cumulative impact analysis considers a project over time in conjunction with other past, present, and reasonably foreseeable future projects whose impacts might compound those of the project being assessed. By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development. Future attainment of ambient air quality standards is a function of successful implementation of SJVAPCD attainment plans. Consequently, the SJVAPCD's application of thresholds of significance for criteria pollutants is relevant to the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project would comply with the requirements in a previously approved plan or mitigation program, including, but not limited to an air quality attainment or maintenance plan that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area in which the project is located [California Code of Regulations Section 15064(h)(1)]. Thus, as stated in Section 7.14 of the SJVAPCD *Guidance for Assessing and Mitigating Air Quality Impacts*, if project-specific emissions would exceed the thresholds of significance for criteria pollutants, the project would be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the area is in non-attainment under applicable ambient air quality standards. As further discussed in Section 8.8 of the SJVAPCD *Guidance for Assessing and Mitigating Air Quality Impacts*, the SJVAPCD would consider projects consistent with the following to result in a less-than-cumulatively-significant impact related to air quality:

- SJVAPCD attainment plans;
- SJVAPCD rules and regulations;
- State air quality regulations;
- Project emissions below SJVAPCD thresholds of significance for criteria pollutants, localized CO, and toxic air contaminants (TACs); and
- Project emissions below AAQS.

As presented above, the proposed project would be below the SJVAPCD's SPAL and is, thus, expected to result in construction-related and operational emissions below the applicable thresholds of significance. In addition, as discussed in further detail below, the proposed project would be below the applicable thresholds of significance related to localized CO and TAC concentrations. Therefore, the proposed project would not be considered to result in a cumulatively considerable net increase in any criteria pollutant for which the area is under nonattainment for a federal or State AAQS (i.e., ozone and PM). Consequently, in accordance with SJVAPCD guidance, because the proposed project would result in emissions less than the thresholds of significance, the proposed project would correspondingly be considered to result in a less-than-significant cumulative impact to air quality.

Conclusion

Based on the above, the proposed project would not exceed the applicable thresholds of significance for air pollutant emissions during construction or operation and, thus, would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard. Because the proposed project would not result in emissions of criteria pollutants that would exceed the applicable thresholds of significance, the proposed project would not be considered to conflict with or obstruct implementation of the applicable air quality plans. Therefore, the proposed project would not violate an air quality standard or contribute substantially to an existing or projected air quality violation, and a ***less-than-significant*** impact would result.

c. Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Heightened sensitivity may be caused by preexisting health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, childcare centers, playgrounds, retirement homes, convalescent homes, hospitals, and medical clinics. The proposed project would not be considered a sensitive receptor. The nearest sensitive receptors to the site would be the existing single-family residences located approximately 40 feet to the west.

The major pollutant concentrations of concern are localized CO emissions and TAC emissions, which are addressed in further detail below.

Localized CO Emissions

Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. Implementation of the proposed project would increase traffic volumes on streets near the project site; therefore, the project could be expected to increase local CO concentrations. Concentrations of CO approaching the AAQS are only expected where background levels are high, and traffic volumes and congestion levels are high. In accordance with the State CO Protocol, the SJVAPCD has established preliminary screening criteria for determining whether the effect that a project would have on any given intersection would cause a potential CO hotspot. If either of the following is true for the proposed project, further CO analysis would be required:

- A traffic study for the project indicates that the Level of Service (LOS) on one or more streets or at one or more intersections in the project vicinity would be reduced to LOS E or F; or
- A traffic study indicates that the project would substantially worsen (i.e., increase delay by more than five percent) an already existing LOS F on one or more streets or at more or more intersections in the project vicinity.

According to the Transportation Impact Analysis prepared for the proposed project, operations neither study intersections would be reduced to an unacceptable LOS due to the increase in traffic volumes that could result from implementation of the proposed project. Therefore, the project's impact related to a contribution to local mobile-sourced concentrations of CO would be less than significant.

TAC Emissions (Health Risk Assessment)

Another category of environmental concern is TACs. The CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook) provides recommended setback distances for sensitive land uses from major sources of TACs, including, but not limited to, freeways and high traffic roads, distribution centers, and rail yards. The CARB has identified diesel particulate matter (DPM) from diesel-fueled engines as a TAC; thus, high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Health risks from TACs are a function of both the concentration of emissions and the duration of exposure. Health-related risks associated with DPM in particular are primarily associated with long-term exposure and associated risk of contracting cancer.

Short-term, construction-related activities could result in the generation of TACs, specifically DPM, from on-road haul trucks and off-road equipment exhaust emissions. However, construction is temporary and occurs over a relatively short duration in comparison to the operational lifetime of the proposed project. Construction equipment would operate intermittently throughout the course of a day, would be restricted to daytime hours per the City's Noise Ordinance, and would likely only occur over portions of the improvement area at a time. In addition, all construction equipment and operation thereof would be regulated per the In-Use Off-Road Diesel Vehicle Regulation. Project construction would also be required to comply with all applicable SJVAPCD rules and regulations, particularly associated with permitting of air pollutant sources. Because health risks associated with TACs are a function of both the concentration of emissions and the duration of exposure, where the higher the concentration and/or the longer the period of time that a sensitive receptor is exposed to would correlate to a higher health risk, considering the short-term nature of construction activities, as well as the regulated and intermittent nature of the operation of construction equipment, the likelihood that any one sensitive receptor would be exposed to high concentrations of DPM for any extended period of time would be low.

DPM Emissions from Heavy Duty Truck Operations

Operation of the proposed warehouse distribution facility would require the movement of goods to and from the site. The movement of goods is anticipated to involve the use of heavy-duty diesel-powered trucks. The operation of heavy-duty diesel-powered trucks would result in the emission of DPM within the project site and on the surrounding roadways.

As noted in the project description, the tenants of the proposed warehouse are unknown at this time, and this IS/MND generally assumes that business operations could occur 24 hours per day. However, in evaluating possible health risks associated with DPM emissions from heavy truck use, this analysis considers ten-hour work days. Given that the number of assumed truck trips and the trip lengths would remain constant, the ten-hour work day analysis would generate the same amount of DPM emissions but at a more intense rate. Therefore, the ten-hour work day analysis described hereafter presents the more conservative analysis as compared to a 24-hour work day analysis.

DPM is considered a subset of $PM_{2.5}$ emissions. Thus, the estimated concentration of $PM_{2.5}$ was used as a proxy to represent emissions of DPM. Emissions rates for the heavy-duty diesel-powered trucks was obtained through the CARB's mobile source emissions inventory (EMFAC) database. Once the emissions of DPM from each source were determined, the concentration of DPM at nearby receptors was then estimated using the American Meteorological Society/Environmental Protection Agency (AMS/EPA) Regulatory Model (AERMOD) dispersion model. Finally, the associated cancer risk and non-cancer hazard index were calculated using the CARB's Hotspot Analysis Reporting Program Version 2 (HARP 2) Risk Assessment Standalone Tool (RAST), which calculates the cancer and non-cancer health impacts using the risk assessment guidelines of the 2015 Office of Environmental Health Hazard Assessment (OEHHA) Guidance Manual for Preparation of Health Risk Assessments.[6] The modeling was performed in accordance with the USEPA's User's Guide for the AMS/EPA Regulatory Model – AERMOD[7] and the 2015 OEHHA Guidance Manual. The maximum annual average and maximum one-hour average concentrations were applied to HARP 2 RAST to calculate the cancer risk and non-cancer hazard index. The exposure period in HARP 2 RAST was set to a 30-year exposure period. Table 4 presents the result of the health risk assessment prepared for the proposed project.

Table 4
Maximum Cancer Risk and Hazard Index Associated with Heavy-Duty Diesel Trucks

	Cancer Risk (per million persons)	Acute Hazard Index	Chronic Hazard Index
At Maximally Exposed Receptor	0.66	0.00	0.00
Thresholds of Significance	*10*	*1.0*	*1.0*
Exceed Thresholds?	**NO**	**NO**	**NO**

Sources: CalEEMod, EMFAC, AERMOD, and HARP 2 RAST, January 2021 (see Appendix A).

As shown in Table 4, operation of heavy-duty diesel-powered trucks on roadways and within the project site would result in cancer risk and hazard index below the applicable SJVAPCD thresholds of significance. Consequently, operation of the proposed project would not expose sensitive receptors to excess concentrations of pollutants, and the proposed project would result in a less-than-significant impact related to DPM from diesel engines.

6 Office of Environmental Health Hazard Assessment. *Air Toxics Hot Spots Program Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments* [pg. 8-18]. February 2015.
7 U.S. Environmental Protection Agency. *User's Guide for the AMS/EPA Regulatory Model (AERMOD)*. December 2016.

Conclusion

Based on the above, the proposed project would not cause or be exposed to substantial pollutant concentrations, including localized CO or TACs, and impacts related to such would be ***less than significant***.

d. Emissions such as those leading to odors have the potential to adversely affect sensitive receptors within the project area. Pollutants of principal concern include emissions leading to odors, emission of dust, or emissions considered to constitute air pollutants. Air pollutants have been discussed in section "a" through "c" above. Therefore, the following discussion focuses on emissions of odors and dust.

Odors

Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The presence of an odor impact is dependent on several variables including: the nature of the odor source; the frequency of odor generation; the intensity of odor; the distance of odor source to sensitive receptors; wind direction; and sensitivity of the receptor.

Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, it is difficult to quantitatively determine the presence of a significant odor impact. Typical odor-generating land uses include, but are not limited to, wastewater treatment plants, landfills, and composting facilities. The potential future development on the project site would not introduce any of the aforementioned land uses. Moreover, the project is not located in the vicinity of any existing or planned land uses that would be considered major sources of odors. Nonetheless, the project would be subject to the SJVAPCD's Rule 4102, which allows members of the public to submit complaints regarding odor.

Construction activities often include diesel-fueled equipment and heavy-duty diesel trucks, which can create odors associated with diesel fumes, which could be found to be objectionable. However, as discussed above, construction activities would be temporary, and operation of construction equipment would be regulated and intermittent. Project construction would also be required to comply with all applicable SJVAPCD rules and regulations, particularly associated with permitting of air pollutant sources. The aforementioned regulations would help to minimize air pollutant emissions as well as any associated odors. Accordingly, substantial objectionable odors would not occur during construction activities or affect a substantial number of people.

Dust

During construction, the project would be required to comply with all applicable SJVAPCD rules and regulations regarding fugitive dust. Following project construction, vehicles operating within the project site would be limited to paved areas of the site, and non-paved areas would be landscaped. Thus, project operations would not include sources of dust that could adversely affect a substantial number of people.

Conclusion

For the reasons discussed above, construction and operation of the proposed project would not result in emissions, such as those leading to odors and/or dust, that would adversely affect a substantial number of people, and a ***less-than-significant*** impact would occur.

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. A Wetland & Biological Resources Assessment (WBRA) was prepared for the proposed project by Barnett Environmental (see Appendix B).[8] The results of the WBRA are presented below.

Per the WBRA, vegetation on the project site consists of a highly disturbed grassland community that combines two San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) vegetation types: C5 (ruderal) and G (Valley grasslands). Several redwood and other landscape trees are located in the northwestern corner of the property and along the Manteca Tidewater Bikeway on the east side of the property. Designated critical habitat does not exist within the project site.

As part of the WBRA, Barnett Environmental reviewed California Natural Diversity Database (CNDDB), California Native Plant Society (CNPS) Inventory, and U.S. Fish & Wildlife Service (USFWS) iPAC database for special status species potentially occurring within a file-mile radius of the project site. In addition, in December 2021, a field survey was conducted to evaluate the project site for the presence of special-status species and/or habitat types which could support special-status species. The results of the database search and field survey are discussed in further detail below.

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8 Barnett Environmental. *Wetland & Biological Resources Assessment of 407 Spreckels Avenue in Manteca, CA 95336 (APN 221-250-350)*. December 28, 2020.

Special-status species include those plant and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal and State Endangered Species Acts. Both acts afford protection to listed and proposed species. In addition, California Department of Fish and Wildlife (CDFW) Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, USFWS Birds of Conservation Concern, sensitive species included in USFWS Recovery Plans, and CDFW special-status invertebrates are all considered special-status species. Although CDFW Species of Special Concern generally do not have special legal status, they are given special consideration under CEQA. 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. In addition, plant species on CNPS Lists 1 and 2 are considered special-status plant species and are protected under CEQA.

Special-Status Plants

According to the records search, two special-status plant species have the potential to occur within the project vicinity. However, neither species has been recorded within the project site and neither species were identified during the December 2020 field survey. Due to the lack of suitable habitat on the project site, development of the project would result in no impacts to special-status plant species.

Special-Status Wildlife

According to the CNDDB records search, 11 special-status wildlife species have the potential to occur within a five-mile radius of the project site. However, based on the results of the field survey and database review, the WBRA concluded that the following special-status wildlife species have the potential to occur on-site: Swainson’s hawk, and burrowing owl.

Swainson’s Hawk

Swainson’s hawk is a State-listed threatened species. In the California Central Valley, Swainson’s hawks nest in isolated trees, small groves, or large woodlands next to open grasslands or agricultural fields. The species typically nests near riparian areas, but can nest in urban areas as well. Nests of twigs and grasses are constructed in isolated trees or bushes, shelterbelts, riparian groves, or abandoned homesteads, approximately nine to 15 feet above the ground in cottonwood, poplar, oak and the occasional pine tree in the Central Valley.

The CNDDB search returned 15 records of Swainson’s hawk occurrences within five miles of the project site. The nearest occurrence is approximately 0.9-mile to the north. The species was not observed during the field survey; however, the site assessment was conducted when the species is not expected to be present within the Central Valley.

Because several documented occurrences for this species exist within the vicinity of the project site, and because the project site provides suitable foraging habitat, the Swainson’s hawk has the potential to occur on-site. As such, in the absence of mitigation, implementation of the proposed project could result in adverse effects to Swainson’s hawk.

Burrowing Owl

Burrowing owl is a State Species of Special Concern as designated by the CDFW. Burrowing owls generally inhabit gently-sloping areas characterized by low, sparse vegetation, and the breeding season for burrowing owls is from February to August. Burrowing owls nest in burrows in the ground, often in old ground squirrel burrows. Burrowing owls are also known to use artificial burrows, including pipes, stockpiles, culverts, and nest boxes.

The CNDDB search returned three occurrences for the species within five miles of the project site, with the closest documented occurrence being 3.3 miles to the northeast. The burrowing owl was not identified during the December 2020 field survey. In addition, no burrows or other holes were found on site that could serve as nesting habitat for the species. However, the flat and open grassland that exists on-site provides suitable habitat for the species. Thus, in the absence of mitigation, implementation of the proposed project could result in adverse effects to the burrowing owl.

Conclusion

Based on the above, implementation of the proposed project could potentially result in adverse effects to Swainson's hawk and burrowing owl. As such, the proposed project could result in 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. Therefore, the impact would be ***potentially significant***.

Mitigation Measure(s)

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

Swainson's Hawk

IV-1 *Prior to the commencement of construction activities during the nesting season for Swainson's hawk (between March 1 and September 15):*

1. *A qualified biologist or qualified ornithologist shall conduct a nesting survey within 15 days prior to construction. If disturbance associated with the project would occur outside of the nesting season, no surveys shall be required.*
2. *If Swainson's hawk are identified as nesting on 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 a qualified ornithologist has determined that the young have attained sufficient flight skills to leave the area or that the nesting cycle has otherwise completed.*

Results of the preconstruction survey shall be submitted to the City of Manteca Development Services Department for review.

Burrowing Owl

IV-2 A qualified biologist or ornithologist shall perform a pre-construction field survey during either non-breeding or breeding seasons – the non-breeding survey between September 1 and January 31 and breeding season between February 15 and August 15. The survey shall be conducted from two hours before until one hour after sunset or from one hour before to two hours after sunrise when the species is most active. The survey techniques shall be consistent with the CDFW survey protocol and include a 500-foot-wide buffer zone surrounding the project site. If no burrowing owls are detected during preconstruction surveys, then no further mitigation is required. Results of the preconstruction survey shall be submitted to the City of Manteca Development Services Department for review.

If active burrowing owl burrows are identified, project activities shall not disturb the burrow during the nesting season (February 1–August 31) or until a qualified biologist has determined that the young have fledged or the burrow has been abandoned. A no disturbance buffer zone of 660-feet is required to be established around each burrow with an active nest until the young have fledged the burrow as determined by a qualified biologist.

b,c. Neither the National Wetlands Inventory nor the California Aquatic Resource Inventory identify any wetlands on-site. While several detention ponds previously existed on the project site during operation of the old Spreckels sugar factory, no wetlands or “other waters of the U.S.” or “waters of the state” currently occur on-site, and none were observed during December 2020 field survey.[9]

Aquatic resources, protected wetlands, riparian habitat, and otherwise sensitive communities do not exist on the project site. Therefore, implementation of the proposed project would not result in impacts related to having a substantial adverse effect on a riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS or related to having a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. Thus, a ***less-than-significant*** impact would occur.

d. Movement corridors or landscape linkages are usually linear habitats that connect two or more habitat patches, providing assumed benefits to the species by reducing inbreeding depression and increasing the potential for recolonization of habitat patches. The project site is located in an industrial area of the City, and is bordered by Spreckels Avenue to the east, a single-family residential development to the west, and industrial/commercial buildings to the north and south. The existing setting of the surrounding area limits the potential for use of the project site as a wildlife movement corridor. In addition, the site has been regularly disked. Due to the disturbed nature of the project site, the site does not offer, and is not adjacent to, any prime habitat such as wetlands, riparian, or forest, and, as such, the potential for use of the site as a wildlife corridor or native wildlife nursery site is limited.

9 Barnett Environmental. *Wetland & Biological Resources Assessment of 407 Spreckels Avenue in Manteca, CA 95336 (APN 221-250-350)*. December 28, 2020.

Based on the above, development of the proposed project would not substantially interfere 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, and a ***less-than-significant*** impact would occur.

e. Six trees currently exist in the northwest corner of the project site. The City of Manteca Municipal Code does not specifically identify protected tree types. However, removal of trees would be required to comply with all provisions set forth in Section 12.08.070, Tree Trimming or Removal, and Section 17.48.060, Landscape Care, Maintenance, and Replacement, of the Municipal Code. In addition, the proposed project would offset the removal of the six existing trees by planting an additional 41 trees as part of the landscaping plan for the site.

Because development of the project site would comply with the City of Manteca's Municipal Code provisions related to tree removal, and the proposed project would incorporate additional new trees as part of the landscaping plan, the proposed project would have a ***less-than-significant*** impact related to conflicting with local policies or ordinances protecting biological resources.

f. On February 5, 2001, the City of Manteca adopted the SJMSCP. The SJMSCP covers 97 fish, plant, and wildlife species which are afforded varying degrees of protection under CEQA, the California Endangered Species Act, the U.S. Endangered Species Act, the MBTA, and other local, State, and federal regulations. Chapter 13.40 of the City's Municipal Code requires project applicants to pay applicable development fees to fund implementation of the SJMSCP. However, as demonstrated in General Plan EIR Figure 6-2, the project site is located in an area designated as Category A: Exempt (Urban/Developed Lands). Considering the developed nature of the area surrounding the project site, development of the project would not influence an area of concern under the SJMSCP. Furthermore, implementation of Mitigation Measures IV-1 and IV-2 would ensure that any potential impacts to Swainson's hawk and burrowing owl, which are covered by the SJMSCP, would be reduced to less-than-significant levels. As such, the proposed project would result in a ***less-than-significant*** impact related to conflicting with the provisions of an adopted Habitat Conservation 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

a-c. 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. Examples of typical historical resources include, but are not limited to, buildings, farmsteads, rail lines, bridges, and trash scatters containing objects such as colored glass and ceramics.

Currently, the site is vacant and undeveloped. Thus, the site does not contain any existing structures, buildings, or other features which would be considered historical.

A records search of the California Historic Resources Information System (CHRIS) was performed by the Central California Information Center (CCIC) for cultural resource site records and survey reports within the project area.[10] The CCIC concluded that the project site does not contain any recorded historic buildings or structures on any lists of historic resources. Based on the results of the records search of the CHRIS, the CCIC concluded that the project site does not contain any recorded archaeological resources, and the potential for unrecorded archaeological resources to occur on the project site is low-moderate. A search of the Native American Heritage Commission (NAHC) Sacred Lands File indicated that the project site does not contain any known Tribal Cultural Resources.[11]

Furthermore, the proposed project would be consistent with the site's current land use and zoning designations. As such, buildout of the site with an industrial use was previously analyzed in the General Plan EIR. The General Plan EIR concluded that buildout of the General Plan, including the project site, would result in a less-than-significant impact related to cultural resources, provided that development projects within the City implement project-level mitigation to avoid resources.

While known resources do not exist on-site, previously unknown historical or archaeological resources, including human remains, may exist in the project area. Such resources have the potential to be uncovered during ground-disturbing activities at the project site, and 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, without mitigation, impacts could be considered ***potentially significant***.

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10 Central California Information Center. *Records Search File#: 11551L, Project: Spreckels Distribution Center.* November 9, 2020.

11 Native American Heritage Commission. *Spreckels Distribution Center, San Joaquin County.* November 24, 2020.

Mitigation Measure(s)

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

V-1 *If potentially significant historic resources are encountered during subsurface excavation activities, all construction activities within a 100-foot radius of the resource shall cease until a qualified archaeologist determines whether the resource requires further study. The City shall require that the applicant include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Any previously undiscovered resources found during construction shall be recorded on appropriate California Department of Parks and Recreation forms and evaluated for significance in terms of California Environmental Quality Act criteria by a qualified archaeologist. Potentially significant cultural resources consist of but are not limited to stone, bone, fossils, wood, or shell artifacts or features, including hearths, structural remains, or historic dumpsites. If the resource is determined to be significant under CEQA, the City and a qualified archaeologist shall determine whether preservation in place is feasible. Such preservation in place is the preferred mitigation. If such preservation is infeasible, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan for the resource. The archaeologist shall also conduct appropriate technical analyses, prepare a comprehensive written report and file it with the appropriate information center (California Historical Resources Information System), and provide for the permanent curation of the recovered materials.*

V-2 *If potentially significant archaeological resources are encountered during subsurface excavation activities, all construction activities within a 100-foot radius of the resource shall cease until a qualified archaeologist determines whether the resource requires further study. The City shall require that the applicant include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Any previously undiscovered resources found during construction shall be recorded on appropriate Department of Parks and Recreation forms and evaluated for significance in terms of California Environmental Quality Act criteria by a qualified archaeologist. Potentially significant cultural resources consist of but are not limited to stone, bone, fossils, wood, or shell artifacts or features, including hearths, structural remains, or historic dumpsites. If the resource is determined to be significant under CEQA, the City and a qualified archaeologist shall determine whether preservation in place is feasible. Such preservation in place is the preferred mitigation. If such preservation is infeasible, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan for the resource. The archaeologist shall also conduct appropriate technical analyses, prepare a comprehensive written report and file it with the appropriate information center (California Historical Resources Information System), and provide for the permanent curation of the recovered materials.*

V-3 *If previously unknown human remains are encountered during construction activities, Section 7050.5 of the California Health and Safety Code applies, and the following procedures shall be followed: In the event of an accidental discovery or recognition of any human remains, Public Resource Code Section 5097.98 must be followed. Once project-related ground disturbance begins and if there is accidental discovery of human remains, the following steps shall be taken:*

- *There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the San Joaquin County Coroner's Office is contacted to determine if the remains are Native American and if an investigation into cause of death is required. If the coroner determines the remains are Native American, the coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the "most likely descendant" of the deceased Native American. The most likely descendant may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.*

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 (California Code of Regulations Title 24, Part 11), is a portion of the 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' MWELO, or a local ordinance, whichever is more stringent, to reduce outdoor water use;
- Diversion of 65 percent of construction and demolition waste from landfills;
- Mandatory periodic inspections of energy systems (i.e., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 sf to ensure that all are working at their maximum capacity according to their design efficiencies; and
- Mandatory use of low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particle board.

Building Energy Efficiency Standards

The 2019 Building Energy Efficiency Standards is a portion of the CBSC, which expands upon energy-efficiency measures from the 2016 Building Energy Efficiency Standards. The 2019 Building Energy Efficiency Standards went into effect on January 1, 2020. The 2019 standards provide for additional efficiency improvements beyond the current 2016 standards. Non-residential buildings built in compliance with the 2019 standards are anticipated to use approximately 30 percent less energy compared to the 2016 standards, primarily due to lighting upgrades.[12]

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 energy use. Technological innovations and more stringent standards are being researched, such as multi-function equipment, hybrid equipment, or other design changes, which could help to reduce demand on oil and emissions associated with construction.

The CARB has recently prepared the *2017 Climate Change Scoping Plan Update* (2017 Scoping Plan),[13] 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 regulations described above, with which the project must comply, would be consistent with the intention of the 2017 Scoping Plan and the recommended actions included in Appendix B of the 2017 Scoping Plan.

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

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

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 industrial land uses, requiring electricity and natural gas for interior and exterior building lighting, ventilation, and air conditioning (HVAC), electronic equipment, machinery, 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 employee commutes and the movement of goods.

The 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 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. In addition, as discussed in Section XVII, Transportation, of this IS/MND, the vehicle miles travelled (VMT) associated with development of the proposed project would be below the Citywide VMT Baseline.

Based on the above, compliance with the State's latest Energy Efficiency Standards would ensure that the proposed project would implement all necessary energy efficiency regulations. Additionally, the inclusion of solar panels and other sustainable features by the proposed project would further reduce any impacts associated with energy consumption.

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, and ***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

ai-ii. Per the California Geological Survey's (CGS) map of seismic shaking hazards in California, the nearest mapped fault is the Greenville Fault within the Altamont Fault Zone, located approximately 26 miles southwest of the City of Manteca.[14] The City does not contain any active or potentially active faults, and is not located within an Alquist-Priolo Earthquake Fault Zone. Thus, the potential for surface rupture due to faulting occurring beneath the project site during the design life of the proposed development would be low.

In addition, the proposed warehouse would be properly designed in accordance with the CBSC. Projects designed in accordance with the CBSC should be able to: 1) resist minor earthquakes without damage; 2) resist moderate earthquakes without structural damage, but with some non-structural damage; and 3) resist major earthquakes without collapse, but with some structural, as well as non-structural, damage. Although conformance with the CBSC does not guarantee that substantial structural damage would not occur in the event of a maximum magnitude earthquake, conformance with the CBSC can reasonably be assumed to ensure that the proposed structure would be survivable, allowing occupants to safely evacuate in the event of a major earthquake.

[14] California Geological Survey. *Earthquake Zones of Required Investigation*. Available at: https://maps.conservation.ca.gov/cgs/EQZApp/app/. Accessed February 17, 2021.

Furthermore, the General Plan EIR concluded that impacts related to ground shaking would be reduced to a less-than-significant level with implementation of the policies and implementation measures presented therein.[15] For instance, the following General Plan implementation measures would ensure that hazards related to seismic shaking do not occur:

- Measure S-I-1. All new development shall comply with the current Uniform Building Code (UBC) requirements that stipulate building structural material and reinforcement.
- Measure S-I-2. All new development shall comply with California Health and Safety Code Section 19100 et seq. (Earthquake Protection Law), which requires that buildings be designed to resist stresses produced by natural forces such as earthquakes and wind.

Based on the above, 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, subsidence, landslides, lateral spreading, and expansive soils are discussed in detail below.

Liquefaction

Liquefaction is the loss of soil strength due to seismic forces generating various types of ground failure. As noted in the General Plan EIR, given that a relatively high water table exists throughout Manteca, liquefaction could result in a significant impact. However, potential impacts related to liquefaction would be reduced to a less-than-significant level with implementation of the policies and implementation measures presented in the General Plan EIR.[16] For example, the following policies would ensure hazards related to liquefaction do not occur:

- Policy S-P-1. The City shall require preparation of geological reports and/or geological engineering reports for proposed new development located in areas of potentially significant geological hazards, including potential subsidence (collapsible surface soils) due to groundwater extraction.
- Policy S-P-2. The City shall require new development to mitigate the potential impacts of geologic hazards through Building Plan review.
- Policy S-P-3. requires that new development reduce any potential impacts of seismic-induced settlement of uncompacted fill and liquefaction (water-saturated soil) due to the presence of a high water table.

Landslides

Seismically-induced landslides are triggered by earthquake ground shaking. The risk of landslide hazard is greatest in areas with steep, unstable slopes. The project site does not contain, and is not adjacent to, any steep slopes. Thus, landslides are not likely to occur on- or off-site as a result of the proposed project.

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15 City of Manteca. *Manteca General Plan 2023 Environmental Impact Report (SCH# 2002042088)* [pg. 1-33]. October 6, 2003.

16 City of Manteca. *Manteca General Plan 2023 Environmental Impact Report (SCH# 2002042088)* [pg. 8-13]. October 6, 2003.

Lateral Spreading

Lateral spreading is horizontal/lateral ground movement of relatively flat-lying soil deposits towards a free face such as an excavation, channel, or open body of water; typically, lateral spreading is associated with liquefaction of one or more subsurface layers near the bottom of the exposed slope. The project site does not contain open faces within a distance that would be considered susceptible to lateral spreading. Therefore, the potential for lateral spreading to affect the site is low.

Subsidence and Expansive Soils

When subsurface earth materials move, the movement can cause the gradual settling or sudden sinking of ground. The phenomenon of settling or sinking ground is referred to as subsidence, or settlement. Expansive soils are soils which undergo significant volume change with changes in moisture content. Specifically, such soils shrink and harden when dried and expand and soften when wetted, potentially resulting in damage to building foundations.

The General Plan EIR determined that, as part of the Soil Survey performed for the Planning Area, subsidence is not a characteristic of the soils within the City limits. As such, impacts related to subsidence would be less than significant. Per the U.S. Department of Agriculture's Web Soil Survey, the soils on the project site consist of approximately 69 percent Urban land and 31 percent Delhi-Urban land complex. Neither soil classification is considered expansive or otherwise limited for building purposes.[17]

Conclusion

Based on the above discussion, the proposed project would not result in potential hazards or risks related to liquefaction, landslides, lateral spreading, subsidence, or expansive soils. Therefore, the project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving liquefaction or landslides, and would not 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. In addition, substantial risks would not occur related to being located on expansive soil. Thus, a ***less-than-significant*** impact would occur

b. Issues related to erosion are discussed in Section X, Hydrology and Water Quality, of this IS/MND. As noted therein, the proposed project would not result in substantial soil erosion or the loss of topsoil. Thus, a ***less-than-significant*** impact would occur.

e. The proposed project would connect to the existing City sanitary sewer lines located in the project vicinity. The construction or operation of septic tanks or other alternative wastewater disposal systems is not included as part of the 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. The project is located on a site that has been previously mass graded and developed with the sugar factory, and known unique paleontological or geological features do not exist on-site. Although unlikely, if a unique paleontological resource or unique geologic feature were to be found during construction, a ***potentially significant*** impact could occur.

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[17] U.S. Department of Agriculture. *Web Soil Survey*. Available at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed February 17, 2021.

Mitigation Measure(s)

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

VII-1. In the event that plant or animal fossils are discovered during subsurface excavation activities for the proposed project, all excavation within 50 feet of the fossil shall cease until a qualified paleontologist has determined the significance of the find and provides recommendations in accordance with Society of Vertebrate Paleontology standards. The paleontologist shall notify the City of Manteca to determine procedures to be followed before construction is allowed to resume at the location of the find. If the find is determined to be significant and the City determines that avoidance is not feasible, the paleontologist shall design and implement a data recovery plan consistent with the Society of Vertebrate Paleontology standards. The plan shall be submitted to the City for review and approval. Upon approval, the plan shall be incorporated into the project.

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.

Implementation of the project would cumulatively contribute to increases of GHG emissions. Estimated GHG emissions attributable to future development would be primarily associated with increases of carbon dioxide (CO_2) and, to a lesser extent, other GHG pollutants, such as methane (CH_4) and nitrous oxide (N_2O) associated with area sources, mobile sources or vehicles, utilities (electricity), water usage, wastewater generation, and the generation of solid waste. The primary source of GHG emissions for the project would be mobile source emissions. The common unit of measurement for GHG is expressed in terms of annual metric tons of CO_2 equivalents ($MTCO_2e$/yr).

In September 2006, AB 32 was enacted, which requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. AB 32 delegated the authority for implementation to the CARB and directs the CARB to enforce the statewide cap. In accordance with AB 32, CARB prepared the Climate Change Scoping Plan (Scoping Plan) for California, which was approved in 2008 and subsequently revised in 2014 and 2017. The 2017 revision to the Scoping Plan updated the plan in compliance with Senate Bill (SB) 32. SB 32 codified emissions reduction targets for the year 2030, which had previously been established by Executive Order B-30-15.

Per Section 15183.5 of the CEQA Guidelines, a project may satisfy applicable GHG analysis requirements under CEQA by demonstrating compliance with a qualified Climate Action Plan (CAP_. Specifically, Section 15183.5 states the following:

> Lead agencies may analyze and mitigate the significant effects of greenhouse gas emissions at a programmatic level, such as in a general plan, a long range development plan, or a separate plan to reduce greenhouse gas emissions. Later Project-specific environmental documents may tier from and/or incorporate by reference that existing programmatic review. Project-specific environmental documents may rely on an EIR containing a programmatic analysis of greenhouse gas emissions as provided in section 15152 (tiering), 15167 (staged EIRs) 15168 (program EIRs), 15175-15179.5 (Master EIRs), 15182 (EIRs Prepared for Specific

Plans), and 15183 (EIRs Prepared for General Plans, Community Plans, or Zoning).

On October 15, 2013, the City of Manteca adopted their CAP, which is intended to support the goals of AB 32 and SB 32. The CAP is designed to reduce community-related and City operations-related GHG emissions to a degree that would not hinder or delay implementation of AB 32. In order to do such, the City has outlined a course of action for the City government and the community of Manteca to reduce per capita GHG emissions. Projects showing consistency with the CAP would be considered not to contribute significant GHG emissions impacts.

For new development projects constructed in the City of Manteca, the CAP requires the development projects to achieve GHG emissions reductions by implementing specific reduction strategies. The City of Manteca CAP is consistent with the goals presented in AB 32 and SB 32 and, therefore, projects considered consistent with the CAP would be considered to result in a less-than-significant impact related to GHG emissions. The proposed project's consistency with the reduction strategies in the CAP is assessed in Table 5 below.

Table 5
City of Manteca CAP Consistency

CAP Strategy	Consistency Discussion
Comply with the applicable land use, sustainable development, and resource conservation policies of the Manteca General Plan.	The project site is located within an existing commercial and industrial development known as Spreckels Business Park. The project would be considered infill development, would be consistent with the existing surrounding industrial uses, and would serve as an extension of the existing development. The proposed warehouse distribution center is an allowed use within the Light Industrial (LI) land use designation and Business Industrial Park (BIP) zoning designation of the site. As noted previously, the proposed project would be subject to a use permit and site plan review approval pursuant to the Spreckels Park Industrial Guidelines page 5 of 16T[3e], which stipulates that where a residential use abuts an industrial use, a conditional use permit shall be required to ensure provision of adequate buffers. Major Site Plan Review approval, pursuant to Section 17.10.060 of the City's Municipal Code. Site Plan Review approval would ensure that the proposed project is consistent with any applicable land use plan, policy, or regulation. Accordingly, consistency with the applicable land use, sustainable development, and resource conservation policies of the Manteca General Plan, would be verified during the Site Plan Review process, and the proposed project would comply with this measure.
Construct project transportation infrastructure that supports walking, bicycling, and transit use.	As the proposed project would be located within an existing commercial and industrial development, new roadways or transportation infrastructure are

	not proposed as part of the project, with the exception of site access and parking lots. In accordance with Table 17.52.110-1, Bicycle Parking Requirements by Land Use, of the City's Municipal Code, the proposed project would be required to provide at least seven bicycle parking spaces, based on the number of vehicle parking spaces proposed. In addition, the project site is located within 1,000 feet of the Spreckels Avenue at Norman Avenue Manteca Transit bus stop, which would offer public transit accessibility options to future employees of the proposed project. As such, the proposed project would comply with this measure.
Implement Transportation Demand Management (TDM) programs in projects with large numbers of employees.	According to the CAP, the SJVAPCD has adopted Rule 9410, Employer Based Trip Reduction, which requires employers with over 100 employees to implement trip reduction programs. If more than 100 employees would be expected at the site, the proposed project would be required to implement a TDM program, which would include measures to reduce VMT and trips by increasing transit use, carpooling, vanpooling, bicycling, or other measures. The proposed project is anticipated to employ approximately 358 people. As such, a TDM program would be required for the proposed project, and the project would comply with this measure.
Design and construct project buildings to exceed Title 24 Energy Efficiency Standards by at least 10 percent.	The proposed project would be required to comply with all applicable standards sets forth in Title 24. However, the applicant has not committed to the 10 percent exceedance at this time. Implementation of Mitigation Measure VIII-1 would ensure compliance with this measure.
Implement project buildings including water conservation measures that meet or exceed the California Green Building Code standards 20 percent requirement.	The proposed project would be required to meet the water efficiency regulations within the CALGreen Code. As such, the proposed project would comply with this measure.
Install project landscaping that meets or exceeds water conservation standards of the City's adopted landscaping ordinance 20 percent reduction requirement.	Landscaping within the project site would be required to comply with the CALGreen Code and all water efficiency measures therein, including the MWELO. In addition, the project would be required to comply with the adopted water conservation standards set forth in Chapter 17.48 of the City's Municipal Code. As such, the proposed project would comply with this measure.
Develop programs to exceed state recycling and diversion targets by at least 10 percent.	Pursuant to Municipal Code Section 13.02.120, all construction materials associated with the proposed project shall be recycled. The City of Manteca offers a free commercial recycling pickup service which would be available to the proposed project during operations. Implementation of Mitigation Measure VIII-1 would ensure compliance with this measure.
Source: City of Manteca. Climate Action Plan. October 15, 2013.	

As shown above, with implementation of Mitigation Measure VIII-1, the proposed project would comply with all applicable measures presented within the CAP. However, without the required implementation of Mitigation Measure VIII-1, consistency with several measures cannot be ensured at this time, and a potentially significant impact could occur.

Conclusion

As noted previously, the City's CAP was established to ensure the City's compliance with the statewide GHG reduction goals required by AB 32 and SB 32. As demonstrated in the table above, implementation of Mitigation Measure VIII-1 would be required to ensure consistency with all applicable measures within the City's CAP. As such, without mitigation, the proposed project could generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and 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.

VIII-1. *Prior to issuance of any grading or building permits, Project Building Plans shall demonstrate compliance with the following applicable measures included in the City's Climate Action Plan, to the satisfaction of the City of Manteca Development Services Department:*

- *Provide proof (through calculations or other) that the proposed project would exceed current Title 24 Energy Efficiency Standards by 10 percent. If the project design cannot meet this requirement, the project applicant shall coordinate with the City to determine alternative options (e.g., solar energy, exterior lighting, water savings, etc.); and*
- *Provide proof (through calculations, notation on project plans, or other) that the proposed project shall implement a recycling or waste diversion program sufficient to exceed the State recycling and diversion targets by at least 10 percent.*

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. Operations associated with the proposed project would be typical of other warehouses in the City, and would be governed by the uses permitted for the site per the City's Municipal Code and General Plan. While not currently anticipated, in the event that future operations associated with the proposed project would involve the routine use, transport, or disposal of hazardous materials, such materials would be safely managed in accordance with the applicable regulations. Such regulations would be enforced by the City of Manteca and the San Joaquin County Environmental Health Department. Therefore, the proposed 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 associated with the proposed project would involve the use of heavy equipment, which would contain fuels and oils, and various other products such as concrete, paints, and adhesives. 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 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. Pursuant to California Health and Safety Code Section

25510(a), except as provided in subdivision (b),[18] the handler or an employee, authorized representative, agent, or designee of a handler, shall, upon discovery, immediately report any release or threatened release of a hazardous material to the unified program agency (in the case of the proposed project, the San Joaquin County Environmental Health Department) in accordance with the regulations. The handler or an employee, authorized representative, agent, or designee of the handler shall provide all State, city, or county fire or public health or safety personnel and emergency response personnel with access to the handler's facilities. In the case of this project, the contractor is required to notify the San Joaquin County Environmental Health Department in the event of an accidental release of a hazardous material, who would then monitor the conditions and recommend appropriate remediation measures.

The project site is currently vacant, and was previously developed with the Spreckels Sugar Factory. Per the State Water Resources Control Board (SWRCB), the project site was identified as a Cleanup Program Site, but the case has been resolved and closed as of July 2018. Other known hazardous materials do not exist on the project site. Nonetheless, the use of the project site is restricted under a Covenant and Agreement to Restrict Use of Property.[19] As noted in the Covenant and Agreement to Restrict Use of Property, investigations at the project site indicate limited areas of shallow soil contamination with the pesticide dichlorodiphenyldichloroethylene (4,4'-DDE) at concentrations which exceed the screening level for protection of groundwater. In addition, other areas of the site had levels of metals, including arsenic, cobalt, and thallium, that exceed the risk-based screening level for protection of groundwater. However, such metals are naturally occurring and exist at background levels for the area. As such, cleanup is not required for these soils if they remain on-site. However, if the soils are transported off-site and relocated in an area where groundwater quality would be threatened, a soil management plan would be required to prevent potential contamination of off-site locations. As such, the following restriction applies to soils on the project site:

(1) Any soils brought to the surface by digging, grading, excavation, or trenching that are to be taken offsite shall be managed in accordance with all applicable provisions of state and federal law, and in accordance with a soil management plan that has been submitted to the Central Valley Water Board for concurrence.

Given that the project site has been mass graded and subject to prior development, implementation of the proposed project would not require extensive grading and/or excavation. As such, the export of on-site soils is not anticipated as part of the project. If soil export becomes necessary, the contractor would be required to prepare and abide by the approved soil management plan. Thus, development of the site would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.

Construction activities would be required to adhere to all relevant guidelines and ordinances regulating the handling, storage, and transportation of hazardous materials. In addition, known hazardous materials have not been identified on the project site. Thus, the proposed project would not create a significant hazard to the public or the environment

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18 Subdivision (a) does not apply to a person engaged in the transportation of a hazardous material on a highway that is subject to, and in compliance with, the requirements of Sections 2453 and 23112.5 of the Vehicle Code.

19 AKF Development Holdings, LLC. *Covenant and Agreement to Restrict Use of Property Environmental Restriction (Re: 407 Spreckels Avenue, Manteca, San Joaquin County APN: 221-250-350-000).* July 3, 2018.

through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment, and a ***less-than-significant*** impact would occur.

c. The nearest school, Lincoln Elementary School, is located approximately 0.54 miles northwest of the project site. In addition, as discussed above, hazardous materials would not be emitted during construction or operation of the project. Therefore, the proposed project would result in ***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 SWRCB GeoTracker data management system, the project site is not located on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.[20] As such, the proposed 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 project site is the Stockton Metropolitan Airport, which is located more than seven miles north of the project 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 April 2019, the San Joaquin County Board of Supervisors adopted an Emergency Operations Plan (EOP).[21] The primary purpose of the EOP is to outline the County's all-hazard approach to emergency operations to protect the safety, health, and welfare of its citizens throughout all emergency management mission areas. Given that the proposed project is consistent with the site's current land use and zoning designations, the project would not physically interfere with the EOP. Specifically, development of the site and associated effects on emergency evacuation has been anticipated by the City and analyzed in the General Plan EIR. The General Plan EIR concluded that, with implementation of General Plan policies, buildout of the City, including the project site, would result in a less-than-significant impact related to conflicting with evacuation routes in the event of an emergency. Thus, the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation 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. As noted therein, the project site is not located within a Very High Fire Hazard Severity Zone.[22] In addition, the project site is located within an urbanized area of the City of Manteca and is bordered by existing development. The developed nature of the area surrounding the project site precludes the spread of wildfire to the site. Thus, the potential for wildland fires to reach the project site would be relatively limited. The proposed project would not expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands, and a ***less-than-significant*** impact would occur

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20 State Water Resources Control Board. *GeoTracker*. Available at: https://geotracker.waterboards.ca.gov/map/?global_id=L10006223066. Accessed March 2021.

21 San Joaquin County. *County of San Joaquin Emergency Operations Plan*. April 23, 2019.

22 California Department of Forestry and Fire Protection. *San Joaquin County, Draft High Fire Hazard Severity Zones in LRA*. October 2, 2007.

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 during construction and operation.

Construction

During the early stages of project construction activities, topsoil would be exposed due to grading, trenching for utilities, and other standard ground-disturbing activities. 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 downstream.

The 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 that subject projects must file a Notice of Intent with the SWRCB and develop a site-specific Storm Water Pollution Prevention Plan (SWPPP). 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. BMPs include, but are not limited to, tracking controls, perimeter sediment controls, drain inlet protection, wind erosion/dust controls, and waste management control. Because the proposed project would disturb greater than one acre of land, the project would be subject to the requirements of the State's General Construction Permit.

Operation

The proposed warehouses 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, the 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.

As part of the project, a new network of 15-, 24-, 30-, and 36-inch stormwater lines would direct stormwater through one of four on-site vegetated swales for treatment, and ultimately to the existing storm drain stub in Spreckels Avenue. All stormwater associated with the site would be treated on-site prior to entering the City's system. Furthermore, the proposed project would be designed in accordance with requirements established by the City's NPDES Phase II MS4 stormwater permit. Therefore, during operation, the proposed project would comply with all relevant water quality standards and waste discharge requirements, and would not degrade water quality.

Conclusion

Based on the above, the proposed project would not include land uses typically associated with the generation or discharge of polluted water, and would be designed to adequately treat stormwater runoff from the site prior to discharge. In addition, compliance with the required SWPPP would ensure that water quality impacts do not occur during construction. Therefore, a ***less-than-significant*** impact related to water quality and waste discharge requirements could occur.

b,e. The City of Manteca is located in the Eastern San Joaquin County Groundwater Basin (ESJCGB), which is a subbasin of the San Joaquin Valley Groundwater Basin. The Department of Water Resources has classified the ESJCGB as a basin in a critical condition of overdraft. Groundwater overdraft in the ESJCGB and the City's groundwater withdrawal rate is of vital concern to the City as this poses a long-term risk to the reliability of the groundwater supply. According to the City's Urban Water Management Plan (UWMP), in order to reduce dependence on groundwater and ensure sustainable yields, the City's goal is to achieve a 53 percent to 47 percent annual balance of surface water to groundwater, respectively. The combined use of surface water and groundwater by the City is intended to reduce the groundwater withdrawal to the established sustainable yield of one acre-foot per year per acre (AFY/ac). The resulting reduction in groundwater withdrawal has stabilized groundwater levels in the Manteca area.[23] As buildout of the General Plan continues over time, groundwater pumped would remain limited to the safe yield of one AFY/ac, and projected future water demands will be met by a combination of groundwater, imported water, and recycled water.

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23 City of Manteca. *City of Manteca 2015 Urban Water Management Plan*. July 2016.

The proposed project would generate an increase in water demand. However, such demand would be met through a combination of the aforementioned water sources. Development of the project site would not result in an increase in groundwater pumping because the City cannot exceed the sustainable groundwater pumping yield.

In addition, the project site constitutes a relatively small area compared to the size of the groundwater basin and, thus, does not constitute a substantial source of groundwater recharge. The project would allow for some continued infiltration through the proposed grassy swales and unpaved/landscaped areas of the site. Therefore, the proposed project would not substantially interfere with groundwater recharge.

Given that the proposed project is consistent with the site's General Plan land use and zoning designations, groundwater use associated with development of the project has been anticipated by the City and accounted for in regional planning efforts, including the projections included in the City's UWMP. Therefore, the proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin, and 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.

A Stormwater Plan was prepared for the proposed project. As noted therein, all stormwater runoff would be treated on-site using four grassy swales on-site and would ultimately discharge to the 36-inch storm drain stub in Spreckels Avenue. Each grassy swale has been designed according to the *2015 Post-Construction Stormwater Standards Manual*, and the dimensions would adequately treat the associated drainage management area. In addition, per Section 17.48.040(I), Stormwater Management, of the City's Municipal Code, projects shall implement stormwater best management practices into landscape design plans to minimize runoff and increase retention and infiltration.

In conclusion, the proposed project would not substantially alter the existing drainage pattern of the site or area 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, implementation of the proposed project would result in a ***less-than-significant*** impact.

civ. According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) number 06077C0640F, the project site lies within Flood Zone X, which is defined as areas of minimal flood hazard. As such, the proposed project would not impede or redirect flood flows, and a ***less-than-significant*** impact would result.

d. Impacts related to development within a flood hazard zone are discussed under Question 'civ', above. 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 site is not located within the vicinity of an ocean or a large closed body of water. Thus, the project site would not be exposed to flooding risks associated with tsunamis or seiches, 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 project site is currently vacant, and is located within the existing Spreckels Business Park. The site is bordered by commercial and industrial land uses to the north, south, and east. In addition, the proposed project would be consistent with the General Plan land use designations for the site. Overall, the project would not alter the general development trends in the area nor isolate an existing land use, and impacts related to physically dividing an established community would be ***less than significant***.

b. Per the City's General Plan, the project site is designated LI and zoned BIP. The proposed project would be consistent with the site's current land use and zoning designations.

As discussed throughout this IS/MND, the proposed project would not result in any significant environmental effects that cannot be mitigated to a less-than-significant level by the mitigation measures provided herein. 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, City policies and guidelines related to the City's noise standards and all applicable State regulations related to stormwater. Additionally, as discussed in Section IV, Biological Resources, the proposed project would comply with Section 12.08.070, Tree Trimming or Removal, and would mitigate for any potential impacts to Swainson's hawk and burrowing owl. Therefore, the proposed project would not cause a significant environmental impact in excess of what has already been analyzed and anticipated in the General Plan EIR, and 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 Manteca 2023 General Plan EIR, the nearest identified Significant Mineral Resource Zone is located approximately five miles west of the project site.[24] As such, the project site is not located in an area of known mineral resources. Therefore, implementation of the proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State or result in the loss of availability of a locally-important mineral resource recovery site delineated in the City's General Plan. As such, ***no impact*** to mineral resources would occur.

[24] City of Manteca. *Manteca General Plan 2023 Environmental Impact Report (SCH# 2002042088)* [pg. 1-7]. October 6, 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

The following discussion is based primarily on the Environmental Noise & Vibration Assessment prepared for the proposed project by Bollard Acoustical Consultants, Inc. (see Appendix C).[25]

a. 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. The nearest sensitive receptors to the project site are the residential units located approximately 40 feet west of the project site. An existing eight-foot solid masonry sound wall is located along the western end of the project site, separating the sensitive receptors from the property boundary line.

City Noise Standards

Section 17.58.050(D) of the Manteca Municipal Code exempts noise sources associated with construction activities when constructed as part of an approved building permit, except as prohibited in Section 17.58.050(E)(1), which prohibits construction noise daily between the hours of 7:00 PM and 7:00 AM. In addition, Municipal Code Section 9.52.040 prohibits the use of any construction equipment between the hours of 8:00 PM and 7:00 AM.

The City of Manteca Noise Element establishes standards for daytime and nighttime noise levels. The standards are reproduced in Table 6. The City of Manteca does not currently have a policy for assessing noise impacts associated with increases in ambient noise levels from project-generated noise sources. As a result, the noise criteria developed by the Federal Interagency Commission on Noise (FICON) was applied to the project, as is the industry standard. Table 7 presents the FICON's significance thresholds that are used for analyzing changes in cumulative noise levels.

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25 Bollard Acoustical Consultants, Inc. *Environmental Noise & Vibration Assessment DCT Spreckels Distribution Center*. January 13, 2021.

Table 6
Performance Standards for Stationary Noise Sources[1,2]

Noise Level Descriptor	Daytime (7 AM to 10 PM)	Nighttime (10 PM to 7 AM)
Hourly L_{eq}, dB[3]	50	45
Maximum Level, dB[3]	70	65

[1] Each of the noise levels specified above should be lowered by 5 dB for simple noise tones, noises consisting of primarily speech or music, or recurring impulsive noises. Such noises are generally considered by residents to be particularly annoying and are a primary source of noise complaints.
[2] No standards have been included for interior noise levels. Standard construction practices should, with the exterior noise levels identified, result in acceptable interior noise levels.

Source: City of Manteca General Plan 2023, Noise Element, Table 9-2.

Table 7
Significance of Changes in Cumulative Noise Exposure

Ambient Noise Level Without Project	Increase Required for Significant Impact
< 60 dB	5.0 dB, or greater
60 to 65 dB	3.0 dB, or greater
> 65 dB	1.5 dB, or greater

Source: Federal Interagency Committee on Noise (FICON).

Existing Noise Environment

The existing ambient noise environment within the project vicinity is defined primarily by noise from traffic on nearby surface streets and by adjacent industrial operations. To generally quantify the existing ambient noise environment at the nearest residential uses, BAC conducted long-term (48-hour) ambient noise level measurements from November 11 to 12, 2020. The ambient noise level survey results are summarized below in Table 8.

Table 8
Summary of Long-Term Noise Survey Measurement Results

Site Description[2]	Date	DNL	Average Measured Hourly Noise Levels, dBA: Daytime[3] L_{eq}	Daytime[3] L_{max}	Nighttime[4] L_{eq}	Nighttime[4] L_{max}
Site 1: Northwest end of the project property along residential property boundary	11/11/20	60	56	72	53	70
	11/12/20	57	50	67	50	64

[1] Detailed summaries of the noise monitoring results are provided in Appendices D and E of the Noise & Vibration Assessment.
[2] Long-term noise survey location is shown on Figure 1 of the Noise & Vibration Assessment.
[3] Daytime hours: 7:00 AM to 10:00 PM.
[4] Nighttime hours: 10:00 PM to 7:00 AM.

Source: Bollard Acoustical Consultants, Inc. (2020)

Construction Noise

During the construction of the proposed project, heavy equipment would be used for grading, excavation, paving, and building construction, which could result in temporary noise level increases at nearby sensitive receptors. 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. Standard construction equipment, such as graders, backhoes, loaders, and trucks, would be used on-site. Table 9 presents predicted noise levels for the use of typical construction equipment. The data included in Table 9 also includes predicted maximum equipment noise levels at the property lines of the nearest existing sensitive uses located approximately 40 feet away, which assume a standard spherical spreading loss of six dB per doubling of distance and includes consideration of shielding that would be provided by the existing eight-foot sound wall constructed along the western project site boundary.

Table 9
Construction Equipment Reference Noise Levels and Predicted Noise Levels at 40 Feet

Equipment Description	Maximum Noise Level at 50 Feet, dBA	Predicted Maximum Noise Level at 40 feet, dBA[1]
Air compressor	80	75
Backhoe	80	75
Ballast equalizer	82	77
Ballast tamper	83	78
Compactor	82	77
Concrete mixer	85	80
Concrete pump	82	77
Concrete vibrator	76	71
Crane, mobile	83	78
Dozer	85	80
Generator	82	80
Grader	85	77
Impact wrench	85	80
Jack hammer	88	80
Loader	80	75
Paver	85	80
Pneumatic tool	85	80
Pump	77	72
Saw	76	71
Scarifier	83	78
Scraper	85	80
Shovel	82	77
Spike driver	77	72
Tie cutter	84	79
Tie handler	80	75
Tie inserter	85	80
Truck	84	79

[1] Predicted noise levels include an adjustment of -8 dB to account for shielding that would be provided by the existing eight-foot sound wall constructed along the western project property boundary.

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, Table 7-1 (2018).

As shown in Table 9, typical activities involved in construction would generate maximum noise levels ranging from 71 to 80 dBA at a distance of 40 feet. Thus, it is possible that some of the equipment used in project construction could generate noise in excess of the performance standards for stationary noise sources (see Table 6) at the nearest sensitive receptors.

However, as noted above, construction activities are exempt from the City's Noise Ordinance during allowable hours. Considering project construction activities would be required to comply with the City's regulations, construction activities would be exempt from the General Plan noise level limits. As a result, a less-than-significant impact would occur related to creation of a substantial temporary or periodic increase in ambient noise levels in the project vicinity.

Operational Noise

During project operations, noise would be generated from transportation and non-transportation sources. Both are discussed separately below.

Transportation Noise

Development of the proposed project would result in an increase in traffic volumes on the local roadway network. Such an increases in daily traffic volumes would result in a corresponding increase in traffic noise levels at existing uses located along those roadways. Traffic data in the form of AM and PM peak hour movements for Existing, Existing Plus Project, Cumulative, and Cumulative Plus Project conditions in the project area roadway network were obtained from the project Transportation Impact Analysis prepared by the traffic consultant.[26]

Existing versus Existing Plus Project and Cumulative versus Cumulative Plus Project traffic noise levels on the local roadway network are shown in Table 10. The following section includes an assessment of predicted traffic noise levels relative to the FICON increase significance noise criteria identified in Table 7. The Table 10 data are provided in terms of the day-night average noise level (DNL) at a standard distance of 100 feet from the centerlines of the project-area roadways.

As indicated in Table 10, traffic generated by the project would not result in a substantial increase of traffic noise levels on the local roadway network relative to the FICON significance criteria. As a result, off-site traffic noise impacts related to increases in traffic resulting from the implementation of the project under all study scenarios would be less than significant.

Non-Transportation Noise

The primary non-transportation noise sources associated with the proposed project would be from on-site heavy truck circulation, truck backing and trailering, and parking lot activity. Each of the aforementioned noise sources are discussed below. Although the future occupants of the warehouse building have yet to be identified, operational activities could occur during the nighttime hours. Therefore, non-transportation noise is compared to both the daytime and nighttime General Plan noise standards.

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26 See Section XIV, Transportation, and Appendix D, Transportation Impact Analysis, of this IS/MND for additional detail regarding transportatin modeling assumptions and analysis technique.

Table 10
Traffic Noise Modeling Results and Project-Related Traffic Noise Increases

Segment	Intersection	Direction	Traffic Noise Level at 100 feet, dB DNL			Substantial Increase?	Traffic Noise Level at 100 feet, dB DNL			Substantial Increase?
			E	E+P	Increase		C	C+P	Increase	
1	Spreckels Ave/E Yosemite Ave	North	59.4	59.5	0.1	No	60.4	60.4	0.0	No
2		South	62.5	62.7	0.2	No	64.3	64.4	0.1	No
3		East	63.3	63.3	0.0	No	64.7	64.8	0.1	No
4		West	61.7	61.8	0.1	No	62.5	62.6	0.1	No
5	Industrial Park Dr/Spreckels Ave	North	63.2	63.4	0.2	No	64.8	64.9	0.1	No
6		South	62.2	62.3	0.1	No	63.9	64.0	0.1	No
7		East	61.3	61.4	0.1	No	63.4	63.5	0.1	No
8		West	61.5	61.6	0.1	No	62.7	62.8	0.1	No
9	Spreckels Ave/Norman Dr	North	62.7	62.8	0.1	No	64.3	64.3	0.0	No
10		South	62.4	62.5	0.1	No	64.0	64.1	0.1	No
11		East	--	--	--	--	--	--	--	--
12		West	53.5	53.5	0.0	No	53.8	53.8	0.0	No
13	Spreckels Ave/Phoenix Dr	North	62.4	62.5	0.1	No	64.0	64.1	0.1	No
14		South	63.4	63.5	0.1	No	64.8	64.9	0.1	No
15		East	56.1	56.1	0.0	No	56.9	56.9	0.0	No
16		West	47.4	47.4	0.0	No	48.9	48.9	0.0	No

Blank cell = no traffic data was provided
E = Existing Conditions
E + P = Existing Plus Project Conditions
C = Cumulative Conditions
C + P = Cumulative Plus Project Conditions

Source: FHWA-RD-77-108 with inputs from TJKM. Appendix B contains the FHWA model inputs.

Another noise source associated with operations of the project would be mechanical equipment/heating, ventilation, and air conditions equipment (HVAC). However, in similar industrial warehouse projects, HVAC systems are typically housed in an equipment room or located on the roof of the building and shielded by screen walls (parapets). Therefore, according to Bollard Acoustical Consultants, HVAC noise associated with the project would be minimal, and is not addressed herein.

On-site Heavy Truck Circulation

The project would provide two primary access points for heavy trucks to the project site, both located off Spreckels Avenue. Based on the project site plan, it is likely that heavy trucks would enter and exit the project site through the northern access point off Spreckels Avenue, which allows for heavy truck traffic to flow directly to the truck bays on the northern end of the warehouse building. However, because the project proposes full on-site drive around capability, it is possible that heavy truck traffic could potentially flow west of the truck bays to exit the property at the southern access point off Spreckels Avenue (i.e., circulation of truck traffic around the building counterclockwise). For the purposes of this analysis, it was conservatively assumed that a total of eight heavy truck trips could occur during any given hour (AM or PM).

Assuming standard sound wave spreading loss, on-site heavy truck circulation noise exposure at the nearest existing residential uses to the west of the project was calculated and the results of those calculations are presented in Table 11. The results presented below include consideration of the shielding that would be provided by the existing sound wall along the western project property boundary.

Table 11
On-Site Heavy Truck Circulation Noise at Nearest Receptor

Nearest Sensitive Uses	Distance from Truck Route (ft)[1]	Predicted Noise Level (dB)[2]		General Plan Noise Standards (dB)			
				Daytime		Nighttime	
		L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
Residential – West	100	44	60	50	70	45	65

[1] Distance measured from center of nearest potential truck circulation route (west side of building) to nearest residential property lines using provided site plan dated February 2017.
[2] Predicted noise levels include an adjustment of -8 dB to account for shielding that would be provided by the existing 8' sound wall constructed along the western project property boundary.

Source: Bollard Acoustical Consultants, Inc. (2020)

As indicated in Table 11, on-site heavy truck circulation noise levels are predicted to be below the applicable City of Manteca General Plan hourly average and maximum daytime and nighttime noise level standards at the nearest existing residential uses to the west.

Heavy Truck Backing and Trailering

According to the site plan, the proposed project would include 56 loading bays that would be located on the north side of the warehouse building. Noise would be generated by trucks backing into loading bays (backup beepers) during trailer coupling/decoupling activities. It is assumed that heavy trucks would not be permitted to idle while on-site, and that refrigerator trucks (if applicable) would be plugged into loading bay power. On-site truck backing, coupling and decoupling noise exposure at the nearest existing residential uses to the west of the project was calculated and the results of those calculations are presented in Table 12. The results presented below include consideration of the shielding that would be provided by the existing sound wall along the western project property boundary.

Table 12
Truck Backing and Trailering Noise at Nearest Receptor

Nearest Sensitive Uses	Distance from Loading Bay Area (ft)[1]	Predicted Noise Level (dB)[2]		General Plan Noise Standards (dB)			
				Daytime		Nighttime	
		L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
Residential – West	700	33	46	50	70	45	65

[1] Distance measured from effective noise center of the loading bay area to nearest residential property lines using the provided site plan dated February 2017.
[2] Predicted noise levels include an adjustment of -8 dB to account for shielding that would be provided by the existing 8' sound wall constructed along the western project property boundary.

Source: Bollard Acoustical Consultants, Inc. (2020)

The Table 12 data indicate that noise levels generated by project heavy truck backing and trailer coupling/decoupling activities are predicted to be less than the City of Manteca General Plan daytime and nighttime hourly average and maximum noise level standards at the nearest existing residential uses to the west.

Parking Lot Activity

According to the site plan, the proposed parking area could accommodate approximately 186 total parking spaces. For this analysis, Bollard conservatively assumed that 105 parking stalls could fill or empty during any given peak hour. It is likely that parking area activity would be spread out throughout the day.

In order to determine potential noise exposure due to project parking lot activities, BAC used specific parking lot noise level measurements; specifically, a series of individual noise measurements were conducted of multiple vehicle types arriving and departing a parking area, including engines starting and stopping, car doors opening and closing, and persons conversing as they entered and exited the vehicles. Worst-case parking area noise exposure at the nearest existing residential uses to the west of the project was calculated and the results of those calculations are presented in Table 13. The results presented below include consideration of the shielding that would be provided by the existing sound wall along the western project property boundary.

As indicated in Table 13, worst-case project parking activity noise exposure is predicted to be less than the City of Manteca General Plan daytime and nighttime hourly average and maximum noise level standards at the nearest existing residential uses to the west.

Combined On-site Noise

Combined on-site noise sources include all sources of non-transportation noise, including on-site heavy truck circulation, heavy truck backing and trailering, and parking lot activity. The calculated combined hourly average and maximum noise levels of project on-site operations at the nearest existing residential uses to the west are presented in Table 14 and Table 15.

Table 13
Parking Lot Activity Noise at Nearest Receptor

Nearest Sensitive Uses	Distance from Parking Area (ft)[1]	Predicted Noise Level (dB)[2]		General Plan Noise Standards (dB)			
				Daytime		Nighttime	
		L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
Residential – West	120	39	49	50	70	45	65

[1] Distance measured from effective noise center of nearest parking area (west/northwest of building) to residential property lines using the provided site plan dated February 2017.
[2] Predicted noise levels include an adjustment of -8 dB to account for shielding that would be provided by the existing 8' sound wall constructed along the western project property boundary.

Source: Bollard Acoustical Consultants, Inc. (2020)

Table 14
Combined Project Average Noise Levels at Nearest Receptor

Nearest Sensitive Uses	Predicted Project Operations Exterior Noise Levels, L_{eq} (dB)				General Plan Noise Level Standards, L_{eq} (dB)	
	Truck Circulation	Truck Backing & Trailering	Parking Area	Cumulative[1]	Daytime	Nighttime
Residential – West	44	33	39	45	50	45

[1] Calculated cumulative (combined) hourly average noise level based on predicted noise levels presented in Impacts 2-5, which includes consideration of the shielding provided by the existing 8' sound wall constructed along the western project property boundary.

Source: Bollard Acoustical Consultants, Inc. (2020)

Table 15
Combined Project Maximum Noise Levels at Nearest Receptor

Nearest Sensitive Uses	Predicted Project Operations Exterior Noise Levels, L_{max} (dB)				General Plan Noise Level Standards, L_{max} (dB)	
	Truck Circulation	Truck Backing & Trailering	Parking Area	Cumulative[1]	Daytime	Nighttime
Residential – West	60	46	49	61	70	65

[1] Calculated cumulative (combined) maximum noise level based on predicted noise levels presented in Impacts 2-5, which includes consideration of the shielding provided by the existing 8' sound wall constructed along the western project property boundary.

Source: Bollard Acoustical Consultants, Inc. (2020)

As indicated in Table 14 and Table 15, the calculated combined noise levels from project-generated on-site operations would be less than the City of Manteca General Plan daytime and nighttime hourly average (L_{eq}) and maximum (L_{max}) noise level standards at the nearest existing residential uses to the west. The calculated cumulative hourly average and maximum noise levels shown in Tables 14 and 15 include consideration of the shielding that would be provided by the existing eight-foot sound wall constructed along the western project property line. In addition, the calculated cumulative noise levels shown in Tables 14 and 15 are below measured ambient daytime and nighttime noise levels measured at the nearest residential uses to the west.

Because calculated combined noise levels from project-generated on-site operations would satisfy the applicable City of Manteca General Plan daytime and nighttime noise level limits at the nearest existing residential uses, and because cumulative on-site operations noise levels are not expected to significantly increase ambient noise levels at those sensitive receptors, this impact is identified as being less than significant.

Conclusion

Based on the above, existing sensitive receptors would not experience project-related noise levels in excess of the City's applicable noise level standards. Thus, a ***less-than-significant*** impact would occur related to generation of 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, or applicable standards of other agencies.

b. Similar to noise, vibration involves a source, a transmission path, and a receiver. However, 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 depends 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 is measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration 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. 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.

The City of Manteca does not currently have adopted standards for groundborne vibration. As a result, the vibration impact criteria developed by the California Department of Transportation (Caltrans) was applied for this analysis. The Caltrans criteria applicable to damage and annoyance from transient and continuous vibration typically associated with construction activities are presented in Table 16 and Table 17.

Existing Vibration Setting

During the site visit on November 10, 2020, vibration levels were below the threshold of perception at the project site. Nonetheless, to quantify existing vibration levels at the project site, BAC conducted short-term (10-minute) vibration measurements. The results are summarized in Table 18.

Construction

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. The range of vibration source levels for typical construction equipment are shown in Table 19.

Table 16
Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (inches/second)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.20	0.10
Historic and some old buildings	0.50	0.25
Older residential structures	0.50	0.30
New residential structures	1.00	0.50
Modern industrial/commercial buildings	2.00	0.50

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.
PPV = Peak Particle Velocity

Source: California Department of Transportation, Transportation and Construction Vibration Guidance Manual (2013).

Table 17
Guideline Vibration Annoyance Potential Criteria

Human Response	Maximum PPV (inches/second)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.40	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.90	0.10
Severe	2.00	0.40

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.
PPV = Peak Particle Velocity

Source: California Department of Transportation, Transportation and Construction Vibration Guidance Manual (2013).

Table 18
Summary of Ambient Vibration Level Survey Results

Site Description	Time	Average Measured Vibration Level, PPV (in/sec)[1]
Site 1: Northwest end of the project property along residential property boundary	11:54 AM	<0.001

[1] PPV = Peak Particle Velocity (inches/second)

Source: Bollard Acoustical Consultants, Inc. (2020).

Table 19
Vibration Source Levels for Construction Equipment and Predicted Levels at 50 Feet

Equipment	Maximum PPV (inches/second)[1]	
	Maximum PPV at 25 Feet[2]	Predicted PPV at 50 Feet
Hoe ram	0.089	0.032
Large bulldozer	0.089	0.032
Caisson drilling	0.089	0.032
Loaded trucks	0.076	0.027
Jackhammer	0.035	0.012
Small bulldozer	0.003	0.011

[1] PPV = Peak Particle Velocity
[2] Reference vibration level obtained from the Federal Transit Administration (FTA), Transit Noise and Vibration Impact Assessment Manual (2018).

Source: Bollard Acoustical Consultants, Inc. (2020).

As indicated in Table 19, vibration levels generated from on-site construction activities at the nearest existing residences are predicted to be well below the Caltrans threshold for damage to residential structures (0.30 in/sec PPV) as well as the Caltrans threshold for annoyance (0.1 in/sec PPV). Therefore, on-site construction within the project area would not result in excessive groundborne vibration levels at nearby existing residential uses.

Operations

Project operations would include on-site activities such as heavy truck circulation, loading and unloading activities (within the proposed warehouse building), parking lot movements, and mechanical equipment (HVAC). According to BAC, operations associated with the proposed land use do not typically generate appreciable vibration. Specifically, vibration levels that would be generated by the types of equipment associated with commercial and light industrial uses dissipate rapidly with distance and are expected to be well below the Caltrans thresholds for damage to structures and thresholds for annoyance at the nearest existing residences to the west. In addition, the proposed project would not include the use of specific equipment during operations which would produce appreciable vibration. Furthermore, results from the ambient vibration level monitoring at the project site (see Table 18) indicate that measured average vibration levels were below the strictest Caltrans thresholds for damage to structures and thresholds for annoyance. Therefore, any minor increase in groundeborne vibration levels associated with implementation of the proposed project is not anticipated to result in an exceedance of the Caltrans thresholds. As such, operations of the proposed project would not result in the exposure of persons to excessive groundborne vibration levels.

Conclusion

Based on the above, the proposed project would not result in the exposure of persons to or generation of excessive groundborne vibration levels at the project site. 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 Stockton Metropolitan Airport, located approximately 7.5 miles north 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 site. Given that the project site is not located within two miles of a public airport or public use airport, the proposed project would not expose people residing or working in the project area to excessive noise levels associated with such. Thus, ***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 a distribution center on a site that is currently designated for industrial uses. Given that the project would not include any residential development, the project would not directly induce population growth. While the proposed project would include the creation of new jobs, which could potentially result in an increase in the housing demand in the area, such an increase would be minimal due to the relatively small scale of the proposed project. In addition, given that the project is consistent with the site's current land use and zoning designations, potential growth associated with development of the site has been anticipated by the City and analyzed in the City of Manteca General Plan EIR. Therefore, the proposed project would not induce substantial unplanned population growth in an area, either directly or indirectly, and a ***less-than-significant*** impact would occur.

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

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 for the City of Manteca is provided by the Manteca Fire Department (MFD). MFD's main functions are to provide fire prevention, organized and efficient response to fires, first response to hazardous materials incidents, basic level "first responder" medical response, and public fire education. The MFD serves approximately 72,880 residents throughout approximately 17 square miles within the City limits. The nearest MFD station, Fire Station No. 1, located at 290 South Powers Avenue, is approximately 0.4-mile northwest of the project site. The existing goal is to maintain as average five-minute response time for all emergencies, and engine and ladder companies should be staffed with a minimum of three personnel.

Because the proposed project is consistent with the land use designation for the site, buildout of the site with an industrial land use was already considered in the General Plan EIR. The General Plan EIR concluded that by adhering to Fire Protection Policies PF-P-42 through PF-P-45, PF-I-24, and PF-I-25, as specified in the General Plan, along with complying with the 2005 Water Master Plan, the Public Facilities Implementation Plan Update, and participation in the South San Joaquin Irrigation District Surface Water Supply Project, potential impacts from buildout of the General Plan would be reduced to a less-than-significant level.

In addition, the project would be subject to payment of fire prevention fees in accordance with Chapter XI, Fire Prevention Fees, of the City's Municipal Code, which is used to pay for costs associated with development of new fire stations. Furthermore, the proposed buildings would be constructed in accordance with the fire protection requirements of the most recent California Fire Code.

Based on the above, the proposed project would result in 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. Police protection services within the City of Manteca are provided by the Manteca Police Department. As noted in the General Plan EIR, the Manteca Police Department is a full-service municipal law enforcement agency with specialized assignments and recognized specialties. The Manteca Police Department is headquartered at 1001 W. Center Street, which is located approximately 1.75-mile northwest of the project site. According to the

General Plan EIR, the City meets their service standard of one sworn officer per 1,000 residents.

Considering the proposed project is consistent with the land use designation for the site, buildout of the site with an industrial land use was already considered in the General Plan EIR. Additionally, similar to fire protection, the General Plan EIR analyzed the potential impact of development associated with buildout of the General Plan to police protection and concluded that adherence to Police Protection Policies PF-P-39 through PF-P-41, PF-I-22, and PF-I-23 would reduce potential impacts to a less-than-significant level. Furthermore, new staff and equipment necessary to provide law enforcement services to new development would be funded by the City's Public Safety Tax levied on new development, as well as ongoing payments of property taxes.

Given required payment of development fees, the proposed 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-e. The proposed project would not include any residential development and, thus, would not result in population growth such that demand for schools, parks, or other public facilities would increase substantially. In addition, the project would be subject to payment of School Impact Mitigation Development Fees to fund local school services. 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." Furthermore, the project would be subject to payment of the Manteca Unified School District Residential/Commercial Property Developer fee pursuant to Chapter VI, Development Fees, of the City's Municipal Code.

Because the project applicant would be required to pay appropriate development fees, and development of the project would not increase the demand for schools, parks, or other public facilities, the proposed project would have a ***less-than-significant*** impact related to the need for new or physically altered schools, parks, or other public facilities, the construction of which could cause significant environmental impacts.

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 a distribution center on a site designated for industrial use. As such, the proposed project would not result in population growth that could result in increased demand on existing recreational facilities or cause the construction or expansion of recreational facilities. Overall, the project would not 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, and 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. This section discusses any potential conflict between the proposed project and any applicable programs, plans, ordinances, or policy addressing the circulation system. This includes all modes of transportation, including transit, roadway, bicycle, and pedestrian facilities.

Consistency with General Plan Policies - Intersection Control

The law has recently changed with respect to how transportation-related impacts may be addressed under CEQA. Traditionally, lead agencies used LOS to assess the significance of such impacts, with greater levels of congestion considered to be more significant than lesser levels. Mitigation measures typically took the form of capacity-increasing improvements, which often had their own environmental impacts (e.g., to biological resources). Depending on circumstances, and an agency's tolerance for congestion (e.g., as reflected in its general plan), LOS D, E, or F often represented significant environmental effects. In 2013, however, the State Legislature passed legislation with the intention of ultimately doing away with LOS in most instances as a basis for environmental analysis under CEQA.

As noted above, LOS may no longer be used to identify significant transportation impacts in CEQA documents for land use projects. However, this analysis includes a LOS analysis to determine if the proposed project would result in unacceptable intersection operations per the City of Manteca standards. Policy C-P-2 of the 2023 General Plan strives for LOS D or better while LOS E or worse is considered unacceptable.

As part of the Transportation Impact Analysis that was prepared for the proposed project by Fehr & Peers, intersection performance was evaluated for consistency with the City's performance targets (see Appendix D).[27] The analysis considered two study intersections:

1. Spreckels Avenue / E Yosemite Avenue; and
2. Spreckels Avenue / Moffat Boulevard.

The study intersections were evaluated for operations under the following four scenarios:

- Existing Conditions – Analyzes operations as they exist today.

[27] Fehr & Peers. *Spreckels Avenue Warehouse Distribution Facility Transportation Impact Analysis Report*. December 2020

- Existing Plus Project Conditions – Analyzes existing operations with the addition of trips generated from the proposed project.
- Cumulative No Project Conditions – Analyzes cumulative year (2042) volumes based on the City of Manteca / San Joaquin Council of Governments Travel Demand Forecasting (TDF) Model, assuming the project site remains in its current state.
- Cumulative Plus Project Conditions – Analyzes cumulative year volumes with the addition of trips generated from the proposed project.

The results of the evaluation are presented in Table 20.

Table 20
Intersection Operations

Intersection	Control Type	Peak Hour	Existing Conditions		Existing Plus Project Conditions		Cumulative No Project Conditions		Cumulative Plus Project Conditions	
			Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
1. Spreckels Avenue / E Yosemite Avenue	Traffic Signal	AM PM	18 22	B C	18 22	B C	24 32	C C	24 33	C C
2. Spreckels Avenue / Moffat Boulevard	Traffic Signal	AM PM	24 29	C C	25 30	C C	40 50	D D	42 53	D D

Notes:
[1] For signalized intersections, intersection delay is reported in seconds of average delay for all approaches.
[2] LOS = level of service

Source: Fehr & Peers, 2020.

As shown in Table 20, the addition of the proposed project would result in a maximum increase in peak hour delay of one second under Existing Plus Project Conditions, and a maximum increase in peak hour delay of three seconds under Cumulative Plus Project Conditions. Such increases in peak hour delay would not be substantial enough to degrade intersection LOS and, thus, the project would be consistent with General Plan Policy C-P-2. It is noted that the Spreckels Avenue/Moffat Boulevard intersection would operate at LOS D both with or without the project under Cumulative Conditions. Therefore, implementation of the proposed project would not conflict with the General Plan performance standards related to intersection control.

Consistency with City of Manteca General Plan Policies - Transit, Bicycle, and Pedestrian Facilities

The following section discusses the availability of bicycle and pedestrian facilities and transit service and facilities in the project area.

Pedestrian and Bicycle Facilities

Considering the proposed industrial land use, extensive pedestrian and bicycle transportation is not anticipated. Nonetheless, pedestrian and bicycle facilities do exist in the project vicinity.

The City of Manteca maintains four classes of bicycle facilities (Class I, Class II, Class III, and Class IV). A Class I Multi-Use Path named the Manteca Tidewater Bikeway is located on Spreckels Avenue between Moffat Boulevard and Yosemite Avenue and would provide pedestrian and bicycle connections between the project site and adjacent major roadways. In addition, the project would include on-site pedestrian pathways, and both long-term and short-term bicycle parking spaces. Implementation of the proposed project would not conflict with any planned pedestrian or bicycle facilities noted in the City of Manteca Active Transportation Plan.

Overall, the existing pedestrian and bicycle facilities are anticipated to have substantial capacity to accommodate any pedestrian and bicycle traffic generated from implementation of the proposed project.

Transit Service and Facilities

Manteca Transit operates a fixed-route and Dial-a-Ride bus service with stops throughout the City. Route 1 provides fixed route service to the project area. The nearest stop to the project site is located near the Spreckels Avenue / Norman Drive intersection. In addition to Manteca Transit, the San Joaquin Regional Transportation District provides both weekday and weekend service to the City of Manteca. Therefore, existing transit services and facilities contain sufficient capacity to accommodate potential transit users at the proposed project.

Conclusion

Based on the above, a ***less-than-significant*** impact would occur related to conflicting with a program, plan, ordinance, or policy addressing the circulation system, including transit, bicycle, and pedestrian facilities.

b. Section 15064.3 of the CEQA Guidelines provides specific considerations for evaluating a project's transportation impacts. Pursuant to Section 15064.3, analysis of VMT attributable to a project is the most appropriate measure of transportation impacts. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Although the City of Manteca has not yet established any standards or thresholds regarding VMT, pursuant to Section 15064.3(b)(3), a lead agency may analyze a project's VMT qualitatively based on the availability of transit, proximity to destinations, etc.

It should be noted that SB 743 directly states that the analysis of VMT is required to achieve the goals established in SB 375. SB 375 was focused on reducing GHG emissions through changing land use patterns and transportation policy in a way that reduces automobile and light truck use, rather than by reducing the use of heavy trucks for the movement of goods. Based on the above, the legislative intent of SB 743 and the associated CEQA Guidelines Section 15064.3 is to ensure that lead agencies analyze VMT for passenger car and light truck trips related to land use projects. Although the proposed project would generate an increase in heavy truck trips, such trips are associated with an industrial land use type and, thus, are not subject to a defined threshold established by the CEQA Guidelines or the City of Manteca. For the purposes of this analysis, the proposed project would result in a significant impact to VMT is project-generated VMT would exceed the Citywide Baseline VMT.

Table 21 presents the modeled Baseline Citywide VMT per industrial employee and the Cumulative Project VMT per industrial employee. The City of Manteca travel demand model that was derived from the San Joaquin Council of Government Regional Travel Demand Model was used to calculate Baseline Citywide and Cumulative Project VMT.

Table 21
Project Vehicle Miles Traveled Analysis

Scenario	VMT Per Industrial Employee	VMT Reduction Per Industrial Employee	Percentage Reduction Per Industrial Employee
Baseline Citywide	27.1		
Cumulative Project VMT	23.6	-3.5	-12.9%

Source: City of Manteca Travel Demand Model – Fehr & Peers, 2020.

As displayed, the proposed project would generate an average of 23.6 VMT per industrial employee, which is 3.5 less VMT per industrial employee when compared to the Baseline Citywide VMT per industrial employee, and represents a 12.9 percent decrease from the Citywide Baseline. Therefore, construction of the proposed project would result in an reduction in VMT per employee.

Based on the above, the proposed project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b), and a ***less-than-significant*** impact would occur.

c,d. Access to the project site would be provided by a primary entrance off of Spreckels Avenue. The project driveway and internal drive aisles would be at least 26 feet wide, which is sufficient for truck and emergency vehicle access. In addition, the new internal roadway would provide two points of access to the project site, which would be adequate for emergency vehicle access. The proposed building would be sufficiently set back from Spreckels Avenue such that visibility for motorists would not be hindered. During project construction, public roads in the vicinity would remain open and available for use by emergency vehicles and other traffic.

In addition, queueing operations were evaluated at the intersection with Spreckels Avenue. Based on anticipated volumes and the existing two-way left turn lane on Spreckels Avenue, the project is not anticipated to generate a queue that could result in substantial impacts and/or traffic hazards on Spreckels Avenue.

Implementation of the proposed project would introduce additional truck traffic along Spreckels Avenue. However, as noted in the General Plan EIR, with implementation of General Plan goals and policies, buildout of the General Plan would result in less-than-significant impacts related to emergency response and evacuation (see Impact HM-4). Considering the proposed project would be consistent with the General Plan land use designation for the site, impacts related to hazards and emergency access associated with the proposed project were already analyzed and anticipated in the General Plan EIR.

Based on the above, the proposed project 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) or result in inadequate emergency access. Therefore, a ***less-than-significant*** impact would occur.

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 IS/MND, a records search of the CHRIS performed by the CCIC concluded that the project site does not contain any recorded historic buildings or structures on any lists of historic resources.[28] Based on the results of the records search of the CHRIS, the CCIC concluded that the project site does not contain any recorded archaeological resources, and the potential for unrecorded archaeological resources to occur on the project site is low-moderate. In addition, a search of the NAHC Sacred Lands File indicated that the project site does not contain any known Tribal Cultural Resources.[29]

In compliance with AB 52 (Public Resources Code Section 21080.3.1), project notification letters were distributed to local tribes that had requested notification. The letters were distributed on February 11, 2021, and requests to consult were not received within the mandatory 30-day response period.

Based on lack of identified cultural resources at the site and the extensive disturbance that has occurred within the project vicinity, known Tribal Cultural Resources do not exist within the site. Nevertheless, the possibility exists that construction of the proposed project could result in a substantial adverse change in the significance of a Tribal Cultural Resource if previously unknown Tribal Cultural Resources are uncovered during grading or other ground-disturbing activities. Thus, a ***potentially significant*** impact to Tribal Cultural Resources could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure, which refers to the mitigation measures presented previously in Section V of this IS/MND, would reduce the above impact to a *less-than-significant* level.

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28 Central California Information Center. *Records Search File#: 11551L, Project: Spreckels Distribution Center.* November 9, 2020.

29 Native American Heritage Commission. *Spreckels Distribution Center, San Joaquin County.* November 24, 2020.

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. The sections below describe the wastewater, water supply, stormwater drainage, electric power, and telecommunications infrastructure necessary to serve the proposed project.

Wastewater Conveyance Infrastructure

Sewer service for the proposed project would be provided by the City of Manteca Sewer Division. As part of the project, a new six-inch sewer line would connect to the existing infrastructure in Spreckels Avenue. Given that the proposed project would connect to existing wastewater lines located in the project vicinity, construction of substantial off-site infrastructure would not be required. In addition, given that the project is consistent with the site's current General Plan land use designations, construction of on-site wastewater conveyance improvements has been previously anticipated by the City and analyzed in the General Plan EIR. Therefore, a less-than-significant impact would occur related to construction of new or expanded wastewater conveyance supply facilities.

Wastewater Treatment

Pursuant to the General Plan EIR, the City of Manteca Wastewater Quality Control Facility (WQCF) is a combined biofilter-activated sludge wastewater treatment plant that serves commercial and residential properties in the City of Manteca, the City of Lathrop, and one frozen food packager (Eckert Cold Storage). The WQCF is located southwest of downtown Manteca at 2450 West Yosemite Avenue. Currently, the WQCF treats an average dry weather flow (ADWF) of about 6 million gallons per day (mgd) and has an average dry weather design capacity of 9.87 mgd. Per the 2007 WQCF Master Plan, wastewater flow is projected to reach 19.5 mgd by 2023 and 23 mgd by buildout of the General Plan. The

City is planning to expand the facility to 27 mgd by buildout.[30] Considering the WQCF has been master planned to have a capacity of 27 mgd, and buildout of the City is expected to generate a wastewater treatment demand of 23 mgd, the WQCF would have adequate capacity to serve the City of Manteca at General Plan buildout. Given that the proposed project is consistent with the General Plan land use designation for the site, buildout of the site with an industrial land use was considered in the WQCF planning efforts. In addition, the General Plan EIR notes that, the planned improvements to the WQCF would be more than sufficient to accommodate the growth planned in General Plan, and impacts related to wastewater treatment capacity would be less than significant.

Furthermore, the project applicant would be required to pay Chapter 13.38, Public Facilities Implementation Program Fees, and, specifically, Section 13.38.050, which requires developers of property to pay a sewer facility development fee. Required payment of the sewer facility development fee would ensure that the WQCF receives adequate funding for necessary future improvements.

Based on the above, the proposed project would not result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

Water Supply Infrastructure

Water supply to the proposed development would be provided by the City of Manteca Water Division. As part of the project, a new eight-inch water line would connect to the existing infrastructure in Spreckels Avenue. Given that the proposed project would connect to existing water supply lines located in the project vicinity, construction of substantial off-site water supply infrastructure would not be required. In addition, given that the project is consistent with the site's current General Plan land use designations, construction of on-site water supply improvements has been previously anticipated by the City and analyzed in the General Plan EIR. Therefore, a less-than-significant impact would occur related to construction of new or expanded water supply facilities.

Stormwater Infrastructure

The project site is currently vacant and covered with ruderal vegetation. Completion of the proposed project would increase site runoff due to the introduction of impervious surfaces to the site. Stormwater from the project site would be directed through a new network on stormwater lines into one of four on-site vegetated swales for treatment, and ultimately discharged to the existing storm drain stub in Spreckels Avenue. As discussed in further detail in Section X, Hydrology and Water Quality, of this IS/MND, the proposed stormwater treatment facilities would be designed with adequate capacity to capture and treat runoff from the proposed impervious surfaces. Therefore, the proposed project would result in a less-than-significant impact with respect to requiring or resulting in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Electricity, Natural Gas, and Telecommunications Facilities

The project site is located within a developed area of the City of Manteca and is situated within close proximity to existing electric power, natural gas, and telecommunications

30 City of Manteca. *General Plan Existing Conditions Report: 3.0 Utilities and Community Services*. October 2017.

facilities. Thus, substantial expansion of such off-site utilities would not be required to serve the proposed development, and associated environmental effects would not occur.

Conclusion

Based on the above, a ***less-than-significant*** impact would occur related to requiring or resulting in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects, or resulting 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.

b. The City of Manteca is the water service provider for the City. The City's water supply is provided by two main sources: surface water from the Stanislaus River supplied via an agreement with South San Joaquin Irrigation District, and groundwater pumped from the Eastern San Joaquin Subbasin. Implementation of the South County Water Supply Project, which began in 2005, provides for the delivery of treated surface water and has enabled the City to significantly reduce reliance on local groundwater sources and enhance water supply reliability. The City's goal is to achieve a 53 percent to 47 percent annual balance of surface water to groundwater, respectively.

In 2016, the City adopted the City of Manteca 2015 UWMP, as required by the Urban Water Management Planning Act of 1983. The UWMP serves as a long-term planning document for sustainable water supply, and includes a description of water sources, historical and projected water use, and a comparison of water supply and demand during normal and dry years. The UWMP has identified regional water demand in normal, single dry, and multiple dry years in five-year increments. Water demand projections were based on buildout of the City's General Plan.

Table 22 and Table 23 show the projected water supply and demand totals during a normal year and during a single dry year, respectively. Table 24 shows the projected supply and demand totals under multiple dry year conditions for the first, second, and third years.

Table 22
Supply and Demand Assessment: Normal Year (AFY)

	2020	2025	2030	2035	2040
Supply totals	23,100	30,680	30,990	31,390	31,250
Demand totals	20,410	23,320	25,060	28,270	31,290
Difference	2,690	7,360	5,930	3,120	(40)

Notes:
( ) indicates negative value.
Demand does not include reductions due to implementation of the Water Shortage Contingency Plan.

Source: City of Manteca 2015 Urban Water Management Plan, July 2016.

Table 23
Supply and Demand Assessment: Single Dry Year (AFY)

	2020	2025	2030	2035	2040
Supply totals	20,220	26,050	26,360	26,760	26,620
Demand totals	20,410	23,320	25,060	28,270	31,290
Difference	(190)	2,730	1,300	(1,510)	(4,670)

Notes:
( ) indicates negative value.
Demand does not include reductions due to implementation of the Water Shortage Contingency Plan.

Source: City of Manteca 2015 Urban Water Management Plan, July 2016.

Table 24
Supply and Demand Assessment: Multiple Dry Years (AFY)

		2020	2025	2030	2035	2040
1st Year	Supply Totals	21,580	28,230	28,540	28,940	28,800
	Demand Totals	20,410	23,320	25,060	28,270	31,290
	Difference	1,170	4,910	3,480	670	(2,490)
2nd Year	Supply Totals	21,850	28,670	28,980	29,380	29,240
	Demand Totals	20,410	23,320	25,060	28,270	31,290
	Difference	1,440	5,350	3,920	1,110	(2,050)
3rd Year	Supply Totals	21,280	27,760	28,070	28,470	28,330
	Demand Totals	20,410	23,320	25,060	28,270	31,290
	Difference	870	4,440	3,010	200	(2,960)

Notes:
( ) indicates negative value.
Demand does not include reductions due to implementation of the Water Shortage Contingency Plan.

Source: City of Manteca 2015 Urban Water Management Plan, July 2016.

Based on the above, the City of Manteca anticipates a water supply shortage by 2040 in multiple-dry years. However, as described in the UWMP, three water supply options were identified to address future water supply shortfalls:

1. Reclaimed water: The City can develop their recycled water infrastructure to offset the groundwater used for park irrigation with reclaimed water. The quantity of groundwater replaced by recycled water can then be used for potable municipal uses, while staying within the sustainable yield constraints of 1 AFY/Ac.
2. Additional untreated surface water: As the City annexes areas, the raw water that irrigated the annexed lands could either be treated for potable municipal uses or used to offset the potable water used for irrigation.
3. Additional treated surface water: The City could negotiate and obtain additional potable water supply from the South County Water Supply Program.

Inclusion of the above water supply options as well as implementation of the City's Water Shortage Contingency Plan would ensure that adequate water supplies are available to serve buildout of the General plan.

Considering the proposed project is consistent with the General Plan land use designation, water demand associated with buildout of the project site with industrial uses was included in the projected water demand totals presented in the tables above. As such, implementation of the proposed project has already been accounted for in the UWMP and in the City's planning efforts.

Therefore, projected water supplies would be sufficient to satisfy water demands associated with the proposed project while still meeting the current and projected water demands of existing customers within the service area. Sufficient water supplies would be available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years, and a ***less-than-significant*** impact would occur.

d,e. The City of Manteca Solid Waste Division collects solid waste throughout the City and deposits it at the Lovelace Solid Waste Transfer Station. Recyclable materials are sorted at the Lovelace facility. Solid waste that is not recyclable is then transferred to other landfills in the area, including, but not limited to, the following:

1. Austin Road/Forward Landfill (I.D. SWIS #39-AA-0001): This green waste landfill has a closure date of 2053 and has a remaining capacity of 1,608,752 cubic yards (CY).[31]
2. Forward, Inc. (I.D. SWIS #39-AA-0015): This solid waste landfill has a remaining capacity of 22,100,000 CY.[32]

Due to the substantial amount of available capacity remaining at the landfills serving the City, sufficient capacity would be available to accommodate the project's solid waste disposal needs. In addition, the proposed project would be required to comply with all applicable regulations included in Chapter 13.02, Solid Waste Collection and Disposal, of the City's Municipal Code.

The General Plan EIR concluded, under Impacts PFS-4 and PFS-5, that buildout of the General Plan would result in less-than-significant impacts related to solid waste with implementation of the plans and policies included in the General Plan. Given that the proposed project is consistent with the site's current General Plan land use designation, solid waste generation associated with the project has been anticipated by the City and accounted for in regional planning efforts.

Based on the above, implementation of the proposed project would result in a ***less-than-significant*** impact related to generating solid waste in excess of State or local standards or complying with federal, State, and local management and reduction statutes and regulations related to solid waste.

[31] City of Manteca. *Manteca General Plan 2023 Environmental Impact Report (SCH# 2002042088)* [pg 14-5]. October 6, 2003.

[32] CalRecycle. *SWIS Facility/Site Activity Details: Forward Landfill, Inc. (39-AA-0015)*. Available at: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1434?siteID=3106. Accessed March 2021.

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

Discussion

a-d. According to the California Department of Forestry and Fire Protection (CAL FIRE) Fire and Resource Assessment Program, the project site is not located within or near a Very High Fire Hazard Severity Zone.[33] As such, 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.

[33] California Department of Forestry and Fire Protection. *San Joaquin County, Draft High Fire Hazard Severity Zones in LRA*. October 2, 2007.

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

Discussion

a. As discussed in Section IV, Biological Resources, of this IS/MND, while the potential exists for Swainson's hawk and burrowing owl to occur on-site, Mitigation Measures IV-1 and IV-2 would ensure that impacts to such species would be reduced to a less-than-significant level. The project site has been previously developed and does not contain any known historic or prehistoric resources. Thus, implementation of the proposed project is not anticipated to have the potential to result in impacts related to historic or prehistoric resources. Nevertheless, Mitigation Measures V-1 and V-2 would ensure that, in the event that historic or prehistoric resources are discovered within the project site during construction activities, such resources are protected in compliance with the requirements of CEQA.

Considering the above, the proposed project would not: 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 Manteca could incrementally contribute to cumulative impacts in the area. However, as demonstrated in this IS/MND, all potential environmental impacts that could occur as a result of project implementation would be reduced to a less-than-significant level with implementation of project-specific mitigation measures and compliance with applicable General Plan policies. As discussed in Section XVII of this IS/MND, while the proposed project would include generation of vehicle trips on local roadways, the proposed project would result in an average VMT per industrial employee which is less than the City's Baseline Citywide VMT and, therefore, a less-than-significant impact related to VMT would occur. In addition, as noted in Section VIII, Greenhouse Gas Emissions, Mitigation

Measure VIII-1 would ensure project consistency with the City's CAP, thereby resulting in a less-than-significant impact related to cumulative GHG emissions.

When viewed in conjunction with other closely related past, present, or reasonably foreseeable future projects, development of the project would result in a cumulatively considerable contribution to cumulative impacts in the City of Manteca, and the project's cumulative impact would be ***less than significant****.*

c. As described in this IS/MND, the proposed project would comply with all applicable General Plan policies, Municipal Code standards, other applicable local and State regulations, and mitigation measures included herein. In addition, as discussed in the Air Quality, Geology and Soils, Hazards and Hazardous Materials, Greenhouse Gas Emissions, and Noise sections of this IS/MND, the proposed project would not cause substantial effects to human beings, which cannot be mitigated to less-than-significant levels, including effects related to exposure to air pollutants, geologic hazards, GHG emissions, hazardous materials, and excessive noise. As such, the proposed project would not result in direct or indirect impacts to human beings and, thus, the project's impact would be ***less than significant****.*

APPENDIX A

AIR QUALITY AND GHG MODELING RESULTS

Spreckels Distribution Center

San Joaquin Valley Unified APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	304.11	1000sqft	13.12	304,110.00	0
Parking Lot	190.00	Space	1.71	76,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	45
Climate Zone	2			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	257.69	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor updated per PG&E's RPS projections.

Land Use - Acreage adjusted per site plan.

Construction Phase - Phase timing adjusted so that architechtural coating takes places concurrently with building construction.

Mobile Land Use Mitigation -

Energy Mitigation - Title 24 exceedance applied to represent compliance with the 2019 CBSC for non-residential buildings.

Water Mitigation - Water conservation strategy applied to reflect compliance with the 2019 CalGreen Code and MWELO.

Vehicle Trips - Trip rate adjusted according to Traffic Impact Analysis prepared for the proposed project.

Operational Off-Road Equipment - Assumed the use of forklifts during operations.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	300.00
tblLandUse	LotAcreage	6.98	13.12
tblOperationalOffRoadEquipment	OperLoadFactor	0.20	0.20
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	6.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	257.69
tblVehicleTrips	ST_TR	1.68	2.08
tblVehicleTrips	SU_TR	1.68	2.08
tblVehicleTrips	WD_TR	1.68	2.08

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					
2021	1.0194	2.5324	2.1377	4.9300e-003	0.3354	0.1086	0.4439	0.1347	0.1014	0.2361	0.0000	439.5851	439.5851	0.0808	0.0000	441.6038
2022	1.6442	2.2216	2.2287	5.7100e-003	0.1813	0.0853	0.2666	0.0491	0.0807	0.1298	0.0000	510.9761	510.9761	0.0672	0.0000	512.6560
Maximum	**1.6442**	**2.5324**	**2.2287**	**5.7100e-003**	**0.3354**	**0.1086**	**0.4439**	**0.1347**	**0.1014**	**0.2361**	**0.0000**	**510.9761**	**510.9761**	**0.0808**	**0.0000**	**512.6560**

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					
2021	1.0194	2.5324	2.1377	4.9300e-003	0.3354	0.1086	0.4439	0.1347	0.1014	0.2361	0.0000	439.5848	439.5848	0.0808	0.0000	441.6035
2022	1.6442	2.2216	2.2287	5.7100e-003	0.1813	0.0853	0.2666	0.0491	0.0807	0.1298	0.0000	510.9759	510.9759	0.0672	0.0000	512.6557
Maximum	**1.6442**	**2.5324**	**2.2287**	**5.7100e-003**	**0.3354**	**0.1086**	**0.4439**	**0.1347**	**0.1014**	**0.2361**	**0.0000**	**510.9759**	**510.9759**	**0.0808**	**0.0000**	**512.6557**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	5-1-2021	7-31-2021	1.2066	1.2066
2	8-1-2021	10-31-2021	1.3968	1.3968
3	11-1-2021	1-31-2022	1.4046	1.4046
4	2-1-2022	4-30-2022	1.3023	1.3023
5	5-1-2022	7-31-2022	1.3442	1.3442
6	8-1-2022	9-30-2022	0.7668	0.7668
		Highest	1.4046	1.4046

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	1.4061	4.0000e-005	4.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.8300e-003	8.8300e-003	2.0000e-005	0.0000	9.4100e-003
Energy	0.0100	0.0911	0.0765	5.5000e-004		6.9200e-003	6.9200e-003		6.9200e-003	6.9200e-003	0.0000	265.7779	265.7779	0.0207	5.7000e-003	267.9921
Mobile	0.1910	1.8640	2.0647	0.0111	0.7040	6.5000e-003	0.7105	0.1893	6.0900e-003	0.1954	0.0000	1,030.6608	1,030.6608	0.0521	0.0000	1,031.9631
Offroad	0.0804	0.7523	0.8974	1.2000e-003		0.0465	0.0465		0.0428	0.0428	0.0000	105.2710	105.2710	0.0341	0.0000	106.1221
Waste						0.0000	0.0000		0.0000	0.0000	58.0270	0.0000	58.0270	3.4293	0.0000	143.7594
Water						0.0000	0.0000		0.0000	0.0000	22.3110	44.4788	66.7898	2.2966	0.0551	140.6368
Total	**1.6874**	**2.7074**	**3.0431**	**0.0128**	**0.7040**	**0.0599**	**0.7639**	**0.1893**	**0.0558**	**0.2451**	**80.3380**	**1,446.1973**	**1,526.5354**	**5.8327**	**0.0608**	**1,690.4829**

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	1.4061	4.0000e-005	4.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.8300e-003	8.8300e-003	2.0000e-005	0.0000	9.4100e-003
Energy	7.0100e-003	0.0638	0.0536	3.8000e-004		4.8500e-003	4.8500e-003		4.8500e-003	4.8500e-003	0.0000	230.6992	230.6992	0.0195	5.0300e-003	232.6846
Mobile	0.1833	1.7934	1.9052	0.0102	0.6336	5.9100e-003	0.6395	0.1704	5.5400e-003	0.1759	0.0000	943.7491	943.7491	0.0502	0.0000	945.0035
Offroad	0.0804	0.7523	0.8974	1.2000e-003		0.0465	0.0465		0.0428	0.0428	0.0000	105.2710	105.2710	0.0341	0.0000	106.1221
Waste						0.0000	0.0000		0.0000	0.0000	58.0270	0.0000	58.0270	3.4293	0.0000	143.7594
Water						0.0000	0.0000		0.0000	0.0000	17.8488	35.5831	53.4319	1.8373	0.0441	112.5095
Total	**1.6767**	**2.6095**	**2.8607**	**0.0117**	**0.6336**	**0.0573**	**0.6909**	**0.1704**	**0.0532**	**0.2235**	**75.8758**	**1,315.3112**	**1,391.1870**	**5.3703**	**0.0492**	**1,540.0885**

	ROG	NOx	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	**0.63**	**3.62**	**6.00**	**8.64**	**10.00**	**4.44**	**9.56**	**10.00**	**4.70**	**8.79**	**5.55**	**9.05**	**8.87**	**7.93**	**19.21**	**8.90**

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	5/1/2021	5/14/2021	5	10	
2	Grading	Grading	5/15/2021	6/25/2021	5	30	
3	Paving	Paving	6/26/2021	7/23/2021	5	20	
4	Building Construction	Building Construction	7/24/2021	9/16/2022	5	300	
5	Architectural Coating	Architectural Coating	8/7/2021	9/30/2022	5	300	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 1.71

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 456,165; Non-Residential Outdoor: 152,055; Striped Parking Area: 4,560 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	160.00	62.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	32.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0194	0.2025	0.1058	1.9000e-004		0.0102	0.0102		9.4000e-003	9.4000e-003	0.0000	16.7179	16.7179	5.4100e-003	0.0000	16.8530
Total	**0.0194**	**0.2025**	**0.1058**	**1.9000e-004**	**0.0903**	**0.0102**	**0.1006**	**0.0497**	**9.4000e-003**	**0.0591**	**0.0000**	**16.7179**	**16.7179**	**5.4100e-003**	**0.0000**	**16.8530**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	3.5000e-004	2.3000e-004	2.3800e-003	1.0000e-005	7.2000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6237	0.6237	2.0000e-005	0.0000	0.6241
Total	**3.5000e-004**	**2.3000e-004**	**2.3800e-003**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.6237**	**0.6237**	**2.0000e-005**	**0.0000**	**0.6241**

3.2 Site Preparation - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0194	0.2025	0.1058	1.9000e-004		0.0102	0.0102		9.4000e-003	9.4000e-003	0.0000	16.7178	16.7178	5.4100e-003	0.0000	16.8530
Total	**0.0194**	**0.2025**	**0.1058**	**1.9000e-004**	**0.0903**	**0.0102**	**0.1006**	**0.0497**	**9.4000e-003**	**0.0591**	**0.0000**	**16.7178**	**16.7178**	**5.4100e-003**	**0.0000**	**16.8530**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	3.5000e-004	2.3000e-004	2.3800e-003	1.0000e-005	7.2000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6237	0.6237	2.0000e-005	0.0000	0.6241
Total	**3.5000e-004**	**2.3000e-004**	**2.3800e-003**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.6237**	**0.6237**	**2.0000e-005**	**0.0000**	**0.6241**

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0629	0.6960	0.4632	9.3000e-004		0.0298	0.0298		0.0274	0.0274	0.0000	81.7425	81.7425	0.0264	0.0000	82.4034
Total	**0.0629**	**0.6960**	**0.4632**	**9.3000e-004**	**0.1301**	**0.0298**	**0.1599**	**0.0540**	**0.0274**	**0.0814**	**0.0000**	**81.7425**	**81.7425**	**0.0264**	**0.0000**	**82.4034**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.1700e-003	7.7000e-004	7.9300e-003	2.0000e-005	2.4000e-003	2.0000e-005	2.4100e-003	6.4000e-004	2.0000e-005	6.5000e-004	0.0000	2.0789	2.0789	5.0000e-005	0.0000	2.0803
Total	**1.1700e-003**	**7.7000e-004**	**7.9300e-003**	**2.0000e-005**	**2.4000e-003**	**2.0000e-005**	**2.4100e-003**	**6.4000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.0789**	**2.0789**	**5.0000e-005**	**0.0000**	**2.0803**

3.3 Grading - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0629	0.6960	0.4632	9.3000e-004		0.0298	0.0298		0.0274	0.0274	0.0000	81.7424	81.7424	0.0264	0.0000	82.4033
Total	**0.0629**	**0.6960**	**0.4632**	**9.3000e-004**	**0.1301**	**0.0298**	**0.1599**	**0.0540**	**0.0274**	**0.0814**	**0.0000**	**81.7424**	**81.7424**	**0.0264**	**0.0000**	**82.4033**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.1700e-003	7.7000e-004	7.9300e-003	2.0000e-005	2.4000e-003	2.0000e-005	2.4100e-003	6.4000e-004	2.0000e-005	6.5000e-004	0.0000	2.0789	2.0789	5.0000e-005	0.0000	2.0803
Total	**1.1700e-003**	**7.7000e-004**	**7.9300e-003**	**2.0000e-005**	**2.4000e-003**	**2.0000e-005**	**2.4100e-003**	**6.4000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.0789**	**2.0789**	**5.0000e-005**	**0.0000**	**2.0803**

3.4 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0126	0.1292	0.1465	2.3000e-004		6.7800e-003	6.7800e-003		6.2400e-003	6.2400e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854
Paving	2.2400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0148**	**0.1292**	**0.1465**	**2.3000e-004**		**6.7800e-003**	**6.7800e-003**		**6.2400e-003**	**6.2400e-003**	**0.0000**	**20.0235**	**20.0235**	**6.4800e-003**	**0.0000**	**20.1854**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	3.8000e-004	3.9700e-003	1.0000e-005	1.2000e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0395	1.0395	3.0000e-005	0.0000	1.0402
Total	**5.8000e-004**	**3.8000e-004**	**3.9700e-003**	**1.0000e-005**	**1.2000e-003**	**1.0000e-005**	**1.2100e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0395**	**1.0395**	**3.0000e-005**	**0.0000**	**1.0402**

3.4 Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0126	0.1292	0.1465	2.3000e-004		6.7800e-003	6.7800e-003		6.2400e-003	6.2400e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854
Paving	2.2400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0148**	**0.1292**	**0.1465**	**2.3000e-004**		**6.7800e-003**	**6.7800e-003**		**6.2400e-003**	**6.2400e-003**	**0.0000**	**20.0235**	**20.0235**	**6.4800e-003**	**0.0000**	**20.1854**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	3.8000e-004	3.9700e-003	1.0000e-005	1.2000e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0395	1.0395	3.0000e-005	0.0000	1.0402
Total	**5.8000e-004**	**3.8000e-004**	**3.9700e-003**	**1.0000e-005**	**1.2000e-003**	**1.0000e-005**	**1.2100e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0395**	**1.0395**	**3.0000e-005**	**0.0000**	**1.0402**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1093	1.0024	0.9531	1.5500e-003		0.0551	0.0551		0.0518	0.0518	0.0000	133.1914	133.1914	0.0321	0.0000	133.9948
Total	**0.1093**	**1.0024**	**0.9531**	**1.5500e-003**		**0.0551**	**0.0551**		**0.0518**	**0.0518**	**0.0000**	**133.1914**	**133.1914**	**0.0321**	**0.0000**	**133.9948**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0115	0.3931	0.0717	1.0000e-003	0.0236	1.1100e-003	0.0247	6.8300e-003	1.0600e-003	7.8900e-003	0.0000	95.3677	95.3677	7.2800e-003	0.0000	95.5498
Worker	0.0358	0.0235	0.2433	7.1000e-004	0.0736	5.1000e-004	0.0741	0.0196	4.7000e-004	0.0200	0.0000	63.7536	63.7536	1.6800e-003	0.0000	63.7957
Total	**0.0473**	**0.4165**	**0.3150**	**1.7100e-003**	**0.0972**	**1.6200e-003**	**0.0988**	**0.0264**	**1.5300e-003**	**0.0279**	**0.0000**	**159.1213**	**159.1213**	**8.9600e-003**	**0.0000**	**159.3455**

3.5 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1093	1.0023	0.9531	1.5500e-003		0.0551	0.0551		0.0518	0.0518	0.0000	133.1913	133.1913	0.0321	0.0000	133.9946
Total	**0.1093**	**1.0023**	**0.9531**	**1.5500e-003**		**0.0551**	**0.0551**		**0.0518**	**0.0518**	**0.0000**	**133.1913**	**133.1913**	**0.0321**	**0.0000**	**133.9946**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0115	0.3931	0.0717	1.0000e-003	0.0236	1.1100e-003	0.0247	6.8300e-003	1.0600e-003	7.8900e-003	0.0000	95.3677	95.3677	7.2800e-003	0.0000	95.5498
Worker	0.0358	0.0235	0.2433	7.1000e-004	0.0736	5.1000e-004	0.0741	0.0196	4.7000e-004	0.0200	0.0000	63.7536	63.7536	1.6800e-003	0.0000	63.7957
Total	**0.0473**	**0.4165**	**0.3150**	**1.7100e-003**	**0.0972**	**1.6200e-003**	**0.0988**	**0.0264**	**1.5300e-003**	**0.0279**	**0.0000**	**159.1213**	**159.1213**	**8.9600e-003**	**0.0000**	**159.3455**

3.5 Building Construction - 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	0.1578	1.4445	1.5136	2.4900e-003		0.0748	0.0748		0.0704	0.0704	0.0000	214.3459	214.3459	0.0514	0.0000	215.6296
Total	**0.1578**	**1.4445**	**1.5136**	**2.4900e-003**		**0.0748**	**0.0748**		**0.0704**	**0.0704**	**0.0000**	**214.3459**	**214.3459**	**0.0514**	**0.0000**	**215.6296**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0172	0.5991	0.1064	1.6000e-003	0.0380	1.5400e-003	0.0396	0.0110	1.4700e-003	0.0125	0.0000	151.9929	151.9929	0.0113	0.0000	152.2753
Worker	0.0534	0.0337	0.3567	1.0900e-003	0.1183	7.9000e-004	0.1191	0.0315	7.3000e-004	0.0322	0.0000	98.8950	98.8950	2.4200e-003	0.0000	98.9555
Total	**0.0706**	**0.6328**	**0.4631**	**2.6900e-003**	**0.1563**	**2.3300e-003**	**0.1587**	**0.0424**	**2.2000e-003**	**0.0446**	**0.0000**	**250.8879**	**250.8879**	**0.0137**	**0.0000**	**251.2307**

3.5 Building Construction - 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	0.1578	1.4445	1.5136	2.4900e-003		0.0748	0.0748		0.0704	0.0704	0.0000	214.3456	214.3456	0.0514	0.0000	215.6294
Total	**0.1578**	**1.4445**	**1.5136**	**2.4900e-003**		**0.0748**	**0.0748**		**0.0704**	**0.0704**	**0.0000**	**214.3456**	**214.3456**	**0.0514**	**0.0000**	**215.6294**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0172	0.5991	0.1064	1.6000e-003	0.0380	1.5400e-003	0.0396	0.0110	1.4700e-003	0.0125	0.0000	151.9929	151.9929	0.0113	0.0000	152.2753
Worker	0.0534	0.0337	0.3567	1.0900e-003	0.1183	7.9000e-004	0.1191	0.0315	7.3000e-004	0.0322	0.0000	98.8950	98.8950	2.4200e-003	0.0000	98.9555
Total	**0.0706**	**0.6328**	**0.4631**	**2.6900e-003**	**0.1563**	**2.3300e-003**	**0.1587**	**0.0424**	**2.2000e-003**	**0.0446**	**0.0000**	**250.8879**	**250.8879**	**0.0137**	**0.0000**	**251.2307**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.7456					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0115	0.0802	0.0954	1.6000e-004		4.9400e-003	4.9400e-003		4.9400e-003	4.9400e-003	0.0000	13.4046	13.4046	9.2000e-004	0.0000	13.4276
Total	**0.7571**	**0.0802**	**0.0954**	**1.6000e-004**		**4.9400e-003**	**4.9400e-003**		**4.9400e-003**	**4.9400e-003**	**0.0000**	**13.4046**	**13.4046**	**9.2000e-004**	**0.0000**	**13.4276**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	6.5400e-003	4.2900e-003	0.0444	1.3000e-004	0.0134	9.0000e-005	0.0135	3.5700e-003	9.0000e-005	3.6500e-003	0.0000	11.6420	11.6420	3.1000e-004	0.0000	11.6497
Total	**6.5400e-003**	**4.2900e-003**	**0.0444**	**1.3000e-004**	**0.0134**	**9.0000e-005**	**0.0135**	**3.5700e-003**	**9.0000e-005**	**3.6500e-003**	**0.0000**	**11.6420**	**11.6420**	**3.1000e-004**	**0.0000**	**11.6497**

3.6 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.7456					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0115	0.0802	0.0954	1.6000e-004		4.9400e-003	4.9400e-003		4.9400e-003	4.9400e-003	0.0000	13.4046	13.4046	9.2000e-004	0.0000	13.4276
Total	**0.7571**	**0.0802**	**0.0954**	**1.6000e-004**		**4.9400e-003**	**4.9400e-003**		**4.9400e-003**	**4.9400e-003**	**0.0000**	**13.4046**	**13.4046**	**9.2000e-004**	**0.0000**	**13.4276**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	6.5400e-003	4.2900e-003	0.0444	1.3000e-004	0.0134	9.0000e-005	0.0135	3.5700e-003	9.0000e-005	3.6500e-003	0.0000	11.6420	11.6420	3.1000e-004	0.0000	11.6497
Total	**6.5400e-003**	**4.2900e-003**	**0.0444**	**1.3000e-004**	**0.0134**	**9.0000e-005**	**0.0135**	**3.5700e-003**	**9.0000e-005**	**3.6500e-003**	**0.0000**	**11.6420**	**11.6420**	**3.1000e-004**	**0.0000**	**11.6497**

3.6 Architectural Coating - 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	1.3846					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0199	0.1373	0.1768	2.9000e-004		7.9700e-003	7.9700e-003		7.9700e-003	7.9700e-003	0.0000	24.8942	24.8942	1.6200e-003	0.0000	24.9347
Total	**1.4046**	**0.1373**	**0.1768**	**2.9000e-004**		**7.9700e-003**	**7.9700e-003**		**7.9700e-003**	**7.9700e-003**	**0.0000**	**24.8942**	**24.8942**	**1.6200e-003**	**0.0000**	**24.9347**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0113	7.1100e-003	0.0752	2.3000e-004	0.0249	1.7000e-004	0.0251	6.6300e-003	1.5000e-004	6.7800e-003	0.0000	20.8481	20.8481	5.1000e-004	0.0000	20.8609
Total	**0.0113**	**7.1100e-003**	**0.0752**	**2.3000e-004**	**0.0249**	**1.7000e-004**	**0.0251**	**6.6300e-003**	**1.5000e-004**	**6.7800e-003**	**0.0000**	**20.8481**	**20.8481**	**5.1000e-004**	**0.0000**	**20.8609**

3.6 Architectural Coating - 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	1.3846					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0199	0.1373	0.1768	2.9000e-004		7.9700e-003	7.9700e-003		7.9700e-003	7.9700e-003	0.0000	24.8942	24.8942	1.6200e-003	0.0000	24.9347
Total	**1.4046**	**0.1373**	**0.1768**	**2.9000e-004**		**7.9700e-003**	**7.9700e-003**		**7.9700e-003**	**7.9700e-003**	**0.0000**	**24.8942**	**24.8942**	**1.6200e-003**	**0.0000**	**24.9347**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0113	7.1100e-003	0.0752	2.3000e-004	0.0249	1.7000e-004	0.0251	6.6300e-003	1.5000e-004	6.7800e-003	0.0000	20.8481	20.8481	5.1000e-004	0.0000	20.8609
Total	**0.0113**	**7.1100e-003**	**0.0752**	**2.3000e-004**	**0.0249**	**1.7000e-004**	**0.0251**	**6.6300e-003**	**1.5000e-004**	**6.7800e-003**	**0.0000**	**20.8481**	**20.8481**	**5.1000e-004**	**0.0000**	**20.8609**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Transit Accessibility

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1833	1.7934	1.9052	0.0102	0.6336	5.9100e-003	0.6395	0.1704	5.5400e-003	0.1759	0.0000	943.7491	943.7491	0.0502	0.0000	945.0035
Unmitigated	0.1910	1.8640	2.0647	0.0111	0.7040	6.5000e-003	0.7105	0.1893	6.0900e-003	0.1954	0.0000	1,030.660 8	1,030.660 8	0.0521	0.0000	1,031.963 1

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	632.55	632.55	632.55	1,846,733	1,662,060
Total	632.55	632.55	632.55	1,846,733	1,662,060

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
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.517262	0.031316	0.171418	0.114437	0.017015	0.004840	0.021467	0.112166	0.001792	0.001507	0.005146	0.000939	0.000694
Unrefrigerated Warehouse-No Rail	0.517262	0.031316	0.171418	0.114437	0.017015	0.004840	0.021467	0.112166	0.001792	0.001507	0.005146	0.000939	0.000694

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	161.2901	161.2901	0.0182	3.7600e-003	162.8630
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	166.6220	166.6220	0.0188	3.8800e-003	168.2469
NaturalGas Mitigated	7.0100e-003	0.0638	0.0536	3.8000e-004		4.8500e-003	4.8500e-003		4.8500e-003	4.8500e-003	0.0000	69.4092	69.4092	1.3300e-003	1.2700e-003	69.8216
NaturalGas Unmitigated	0.0100	0.0911	0.0765	5.5000e-004		6.9200e-003	6.9200e-003		6.9200e-003	6.9200e-003	0.0000	99.1559	99.1559	1.9000e-003	1.8200e-003	99.7452

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					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	1.85811e+006	0.0100	0.0911	0.0765	5.5000e-004		6.9200e-003	6.9200e-003		6.9200e-003	6.9200e-003	0.0000	99.1559	99.1559	1.9000e-003	1.8200e-003	99.7452
Total		**0.0100**	**0.0911**	**0.0765**	**5.5000e-004**		**6.9200e-003**	**6.9200e-003**		**6.9200e-003**	**6.9200e-003**	**0.0000**	**99.1559**	**99.1559**	**1.9000e-003**	**1.8200e-003**	**99.7452**

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					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	1.30068e+006	7.0100e-003	0.0638	0.0536	3.8000e-004		4.8500e-003	4.8500e-003		4.8500e-003	4.8500e-003	0.0000	69.4092	69.4092	1.3300e-003	1.2700e-003	69.8216
Total		**7.0100e-003**	**0.0638**	**0.0536**	**3.8000e-004**		**4.8500e-003**	**4.8500e-003**		**4.8500e-003**	**4.8500e-003**	**0.0000**	**69.4092**	**69.4092**	**1.3300e-003**	**1.2700e-003**	**69.8216**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	26600	3.1092	3.5000e-004	7.0000e-005	3.1395
Unrefrigerated Warehouse-No Rail	1.39891e+006	163.5128	0.0184	3.8100e-003	165.1074
Total		**166.6220**	**0.0188**	**3.8800e-003**	**168.2469**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	26600	3.1092	3.5000e-004	7.0000e-005	3.1395
Unrefrigerated Warehouse-No Rail	1.35329e+006	158.1809	0.0178	3.6800e-003	159.7235
Total		**161.2901**	**0.0182**	**3.7500e-003**	**162.8630**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.4061	4.0000e-005	4.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.8300e-003	8.8300e-003	2.0000e-005	0.0000	9.4100e-003
Unmitigated	1.4061	4.0000e-005	4.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.8300e-003	8.8300e-003	2.0000e-005	0.0000	9.4100e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2130					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1926					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.2000e-004	4.0000e-005	4.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.8300e-003	8.8300e-003	2.0000e-005	0.0000	9.4100e-003
Total	**1.4061**	**4.0000e-005**	**4.5400e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**8.8300e-003**	**8.8300e-003**	**2.0000e-005**	**0.0000**	**9.4100e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2130					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1926					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.2000e-004	4.0000e-005	4.5400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.8300e-003	8.8300e-003	2.0000e-005	0.0000	9.4100e-003
Total	**1.4061**	**4.0000e-005**	**4.5400e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**8.8300e-003**	**8.8300e-003**	**2.0000e-005**	**0.0000**	**9.4100e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	53.4319	1.8373	0.0441	112.5095
Unmitigated	66.7898	2.2966	0.0551	140.6368

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	70.3254 / 0	66.7898	2.2966	0.0551	140.6368
Total		**66.7898**	**2.2966**	**0.0551**	**140.6368**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	56.2604 / 0	53.4319	1.8373	0.0441	112.5095
Total		**53.4319**	**1.8373**	**0.0441**	**112.5095**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	58.0270	3.4293	0.0000	143.7594
Unmitigated	58.0270	3.4293	0.0000	143.7594

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	285.86	58.0270	3.4293	0.0000	143.7594
Total		**58.0270**	**3.4293**	**0.0000**	**143.7594**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	285.86	58.0270	3.4293	0.0000	143.7594
Total		**58.0270**	**3.4293**	**0.0000**	**143.7594**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Forklifts	6	8.00	260	89	0.20	Diesel

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Forklifts	0.0804	0.7523	0.8974	1.2000e-003		0.0465	0.0465		0.0428	0.0428	0.0000	105.2710	105.2710	0.0341	0.0000	106.1221
Total	**0.0804**	**0.7523**	**0.8974**	**1.2000e-003**		**0.0465**	**0.0465**		**0.0428**	**0.0428**	**0.0000**	**105.2710**	**105.2710**	**0.0341**	**0.0000**	**106.1221**

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

Spreckels Distribution Center

San Joaquin Valley Unified APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	304.11	1000sqft	13.12	304,110.00	0
Parking Lot	190.00	Space	1.71	76,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	45
Climate Zone	2			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	257.69	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor updated per PG&E's RPS projections.

Land Use - Acreage adjusted per site plan.

Construction Phase - Phase timing adjusted so that architechtural coating takes places concurrently with building construction.

Mobile Land Use Mitigation -

Energy Mitigation - Title 24 exceedance applied to represent compliance with the 2019 CBSC for non-residential buildings.

Water Mitigation - Water conservation strategy applied to reflect compliance with the 2019 CalGreen Code and MWELO.

Vehicle Trips - Trip rate adjusted according to Traffic Impact Analysis prepared for the proposed project.

Operational Off-Road Equipment - Assumed the use of forklifts during operations.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	300.00
tblLandUse	LotAcreage	6.98	13.12
tblOperationalOffRoadEquipment	OperLoadFactor	0.20	0.20
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	6.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	257.69
tblVehicleTrips	ST_TR	1.68	2.08
tblVehicleTrips	SU_TR	1.68	2.08
tblVehicleTrips	WD_TR	1.68	2.08

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					
2021	17.3646	46.4470	31.4916	0.0637	18.2141	2.0455	20.2596	9.9699	1.8818	11.8517	0.0000	6,295.4806	6,295.4806	1.9473	0.0000	6,315.7472
2022	17.0783	23.8318	24.6155	0.0630	1.9975	0.9173	2.9148	0.5394	0.8680	1.4073	0.0000	6,221.9006	6,221.9006	0.7961	0.0000	6,241.8034
Maximum	**17.3646**	**46.4470**	**31.4916**	**0.0637**	**18.2141**	**2.0455**	**20.2596**	**9.9699**	**1.8818**	**11.8517**	**0.0000**	**6,295.4806**	**6,295.4806**	**1.9473**	**0.0000**	**6,315.7472**

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					
2021	17.3646	46.4470	31.4916	0.0637	18.2141	2.0455	20.2596	9.9699	1.8818	11.8517	0.0000	6,295.4806	6,295.4806	1.9473	0.0000	6,315.7472
2022	17.0783	23.8318	24.6155	0.0630	1.9975	0.9173	2.9148	0.5394	0.8680	1.4073	0.0000	6,221.9006	6,221.9006	0.7961	0.0000	6,241.8034
Maximum	**17.3646**	**46.4470**	**31.4916**	**0.0637**	**18.2141**	**2.0455**	**20.2596**	**9.9699**	**1.8818**	**11.8517**	**0.0000**	**6,295.4806**	**6,295.4806**	**1.9473**	**0.0000**	**6,315.7472**

	ROG	**NOx**	**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	7.7068	4.6000e-004	0.0504	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1081	0.1081	2.8000e-004		0.1152
Energy	0.0549	0.4991	0.4192	2.9900e-003		0.0379	0.0379		0.0379	0.0379		598.9080	598.9080	0.0115	0.0110	602.4670
Mobile	1.2563	10.1090	12.4898	0.0643	3.9714	0.0356	4.0071	1.0654	0.0334	1.0988		6,582.2968	6,582.2968	0.3105		6,590.0597
Offroad	0.6183	5.7869	6.9031	9.2200e-003		0.3576	0.3576		0.3290	0.3290		892.6259	892.6259	0.2887		899.8432
Total	**9.6362**	**16.3954**	**19.8626**	**0.0765**	**3.9714**	**0.4313**	**4.4028**	**1.0654**	**0.4005**	**1.4659**		**8,073.9389**	**8,073.9389**	**0.6110**	**0.0110**	**8,092.4852**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.7068	4.6000e-004	0.0504	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1081	0.1081	2.8000e-004		0.1152
Energy	0.0384	0.3494	0.2935	2.1000e-003		0.0266	0.0266		0.0266	0.0266		419.2356	419.2356	8.0400e-003	7.6900e-003	421.7269
Mobile	1.2124	9.7421	11.4555	0.0589	3.5743	0.0324	3.6067	0.9589	0.0304	0.9893		6,027.3536	6,027.3536	0.2982		6,034.8081
Offroad	0.6183	5.7869	6.9031	9.2200e-003		0.3576	0.3576		0.3290	0.3290		892.6259	892.6259	0.2887		899.8432
Total	**9.5760**	**15.8788**	**18.7025**	**0.0702**	**3.5743**	**0.4167**	**3.9910**	**0.9589**	**0.3861**	**1.3450**		**7,339.3233**	**7,339.3233**	**0.5952**	**7.6900e-003**	**7,356.4935**

	ROG	NOx	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	**0.63**	**3.15**	**5.84**	**8.27**	**10.00**	**3.38**	**9.35**	**10.00**	**3.60**	**8.25**	**0.00**	**9.10**	**9.10**	**2.58**	**29.96**	**9.09**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/1/2021	5/14/2021	5	10	
2	Grading	Grading	5/15/2021	6/25/2021	5	30	
3	Paving	Paving	6/26/2021	7/23/2021	5	20	
4	Building Construction	Building Construction	7/24/2021	9/16/2022	5	300	
5	Architectural Coating	Architectural Coating	8/7/2021	9/30/2022	5	300	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 1.71

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 456,165; Non-Residential Outdoor: 152,055; Striped Parking Area: 4,560 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	160.00	62.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	32.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0794	0.0425	0.5518	1.5100e-003	0.1479	9.9000e-004	0.1489	0.0392	9.1000e-004	0.0401		150.7309	150.7309	4.0300e-003		150.8318
Total	**0.0794**	**0.0425**	**0.5518**	**1.5100e-003**	**0.1479**	**9.9000e-004**	**0.1489**	**0.0392**	**9.1000e-004**	**0.0401**		**150.7309**	**150.7309**	**4.0300e-003**		**150.8318**

3.2 Site Preparation - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0794	0.0425	0.5518	1.5100e-003	0.1479	9.9000e-004	0.1489	0.0392	9.1000e-004	0.0401		150.7309	150.7309	4.0300e-003		150.8318
Total	**0.0794**	**0.0425**	**0.5518**	**1.5100e-003**	**0.1479**	**9.9000e-004**	**0.1489**	**0.0392**	**9.1000e-004**	**0.0401**		**150.7309**	**150.7309**	**4.0300e-003**		**150.8318**

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0883	0.0472	0.6131	1.6800e-003	0.1643	1.1000e-003	0.1654	0.0436	1.0100e-003	0.0446		167.4788	167.4788	4.4800e-003		167.5908
Total	**0.0883**	**0.0472**	**0.6131**	**1.6800e-003**	**0.1643**	**1.1000e-003**	**0.1654**	**0.0436**	**1.0100e-003**	**0.0446**		**167.4788**	**167.4788**	**4.4800e-003**		**167.5908**

3.3 Grading - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0883	0.0472	0.6131	1.6800e-003	0.1643	1.1000e-003	0.1654	0.0436	1.0100e-003	0.0446		167.4788	167.4788	4.4800e-003		167.5908
Total	**0.0883**	**0.0472**	**0.6131**	**1.6800e-003**	**0.1643**	**1.1000e-003**	**0.1654**	**0.0436**	**1.0100e-003**	**0.0446**		**167.4788**	**167.4788**	**4.4800e-003**		**167.5908**

3.4 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.2240					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4796**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0662	0.0354	0.4599	1.2600e-003	0.1232	8.3000e-004	0.1241	0.0327	7.6000e-004	0.0334		125.6091	125.6091	3.3600e-003		125.6931
Total	**0.0662**	**0.0354**	**0.4599**	**1.2600e-003**	**0.1232**	**8.3000e-004**	**0.1241**	**0.0327**	**7.6000e-004**	**0.0334**		**125.6091**	**125.6091**	**3.3600e-003**		**125.6931**

3.4 Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.2240					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4796**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0662	0.0354	0.4599	1.2600e-003	0.1232	8.3000e-004	0.1241	0.0327	7.6000e-004	0.0334		125.6091	125.6091	3.3600e-003		125.6931
Total	**0.0662**	**0.0354**	**0.4599**	**1.2600e-003**	**0.1232**	**8.3000e-004**	**0.1241**	**0.0327**	**7.6000e-004**	**0.0334**		**125.6091**	**125.6091**	**3.3600e-003**		**125.6931**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1963	6.7520	1.1539	0.0177	0.4202	0.0189	0.4392	0.1210	0.0181	0.1391		1,852.8726	1,852.8726	0.1323		1,856.1799
Worker	0.7061	0.3777	4.9051	0.0135	1.3144	8.8000e-003	1.3232	0.3486	8.1100e-003	0.3567		1,339.8301	1,339.8301	0.0359		1,340.7267
Total	**0.9024**	**7.1297**	**6.0590**	**0.0311**	**1.7346**	**0.0277**	**1.7623**	**0.4696**	**0.0262**	**0.4959**		**3,192.7027**	**3,192.7027**	**0.1682**		**3,196.9067**

3.5 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.363 9	2,553.363 9	0.6160		2,568.764 3
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.363 9**	**2,553.363 9**	**0.6160**		**2,568.764 3**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1963	6.7520	1.1539	0.0177	0.4202	0.0189	0.4392	0.1210	0.0181	0.1391		1,852.872 6	1,852.872 6	0.1323		1,856.179 9
Worker	0.7061	0.3777	4.9051	0.0135	1.3144	8.8000e-003	1.3232	0.3486	8.1100e-003	0.3567		1,339.830 1	1,339.830 1	0.0359		1,340.726 7
Total	**0.9024**	**7.1297**	**6.0590**	**0.0311**	**1.7346**	**0.0277**	**1.7623**	**0.4696**	**0.0262**	**0.4959**		**3,192.702 7**	**3,192.702 7**	**0.1682**		**3,196.906 7**

3.5 Building Construction - 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	0.1824	6.4028	1.0631	0.0175	0.4202	0.0164	0.4366	0.1210	0.0157	0.1367		1,835.8245	1,835.8245	0.1274		1,839.0103
Worker	0.6533	0.3374	4.4794	0.0130	1.3144	8.5300e-003	1.3229	0.3486	7.8500e-003	0.3565		1,291.9120	1,291.9120	0.0320		1,292.7123
Total	**0.8357**	**6.7402**	**5.5426**	**0.0305**	**1.7346**	**0.0249**	**1.7595**	**0.4696**	**0.0235**	**0.4931**		**3,127.7366**	**3,127.7366**	**0.1594**		**3,131.7226**

3.5 Building Construction - 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	0.1824	6.4028	1.0631	0.0175	0.4202	0.0164	0.4366	0.1210	0.0157	0.1367		1,835.8245	1,835.8245	0.1274		1,839.0103
Worker	0.6533	0.3374	4.4794	0.0130	1.3144	8.5300e-003	1.3229	0.3486	7.8500e-003	0.3565		1,291.9120	1,291.9120	0.0320		1,292.7123
Total	**0.8357**	**6.7402**	**5.5426**	**0.0305**	**1.7346**	**0.0249**	**1.7595**	**0.4696**	**0.0235**	**0.4931**		**3,127.7366**	**3,127.7366**	**0.1594**		**3,131.7226**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	14.2012					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**14.4201**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1412	0.0755	0.9810	2.6900e-003	0.2629	1.7600e-003	0.2646	0.0697	1.6200e-003	0.0714		267.9660	267.9660	7.1700e-003		268.1454
Total	**0.1412**	**0.0755**	**0.9810**	**2.6900e-003**	**0.2629**	**1.7600e-003**	**0.2646**	**0.0697**	**1.6200e-003**	**0.0714**		**267.9660**	**267.9660**	**7.1700e-003**		**268.1454**

3.6 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	14.2012					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**14.4201**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1412	0.0755	0.9810	2.6900e-003	0.2629	1.7600e-003	0.2646	0.0697	1.6200e-003	0.0714		267.9660	267.9660	7.1700e-003		268.1454
Total	**0.1412**	**0.0755**	**0.9810**	**2.6900e-003**	**0.2629**	**1.7600e-003**	**0.2646**	**0.0697**	**1.6200e-003**	**0.0714**		**267.9660**	**267.9660**	**7.1700e-003**		**268.1454**

3.6 Architectural Coating - 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	14.2012					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	**14.4057**	**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	0.1307	0.0675	0.8959	2.5900e-003	0.2629	1.7100e-003	0.2646	0.0697	1.5700e-003	0.0713		258.3824	258.3824	6.4000e-003		258.5425
Total	**0.1307**	**0.0675**	**0.8959**	**2.5900e-003**	**0.2629**	**1.7100e-003**	**0.2646**	**0.0697**	**1.5700e-003**	**0.0713**		**258.3824**	**258.3824**	**6.4000e-003**		**258.5425**

3.6 Architectural Coating - 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	14.2012					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	**14.4057**	**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	0.1307	0.0675	0.8959	2.5900e-003	0.2629	1.7100e-003	0.2646	0.0697	1.5700e-003	0.0713		258.3824	258.3824	6.4000e-003		258.5425
Total	**0.1307**	**0.0675**	**0.8959**	**2.5900e-003**	**0.2629**	**1.7100e-003**	**0.2646**	**0.0697**	**1.5700e-003**	**0.0713**		**258.3824**	**258.3824**	**6.4000e-003**		**258.5425**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Transit Accessibility

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.2124	9.7421	11.4555	0.0589	3.5743	0.0324	3.6067	0.9589	0.0304	0.9893		6,027.353 6	6,027.353 6	0.2982		6,034.808 1
Unmitigated	1.2563	10.1090	12.4898	0.0643	3.9714	0.0356	4.0071	1.0654	0.0334	1.0988		6,582.296 8	6,582.296 8	0.3105		6,590.059 7

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	632.55	632.55	632.55	1,846,733	1,662,060
Total	632.55	632.55	632.55	1,846,733	1,662,060

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
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.517262	0.031316	0.171418	0.114437	0.017015	0.004840	0.021467	0.112166	0.001792	0.001507	0.005146	0.000939	0.000694
Unrefrigerated Warehouse-No Rail	0.517262	0.031316	0.171418	0.114437	0.017015	0.004840	0.021467	0.112166	0.001792	0.001507	0.005146	0.000939	0.000694

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0384	0.3494	0.2935	2.1000e-003		0.0266	0.0266		0.0266	0.0266		419.2356	419.2356	8.0400e-003	7.6900e-003	421.7269
NaturalGas Unmitigated	0.0549	0.4991	0.4192	2.9900e-003		0.0379	0.0379		0.0379	0.0379		598.9080	598.9080	0.0115	0.0110	602.4670

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					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	5090.72	0.0549	0.4991	0.4192	2.9900e-003		0.0379	0.0379		0.0379	0.0379		598.9080	598.9080	0.0115	0.0110	602.4670
Total		**0.0549**	**0.4991**	**0.4192**	**2.9900e-003**		**0.0379**	**0.0379**		**0.0379**	**0.0379**		**598.9080**	**598.9080**	**0.0115**	**0.0110**	**602.4670**

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					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	3.5635	0.0384	0.3494	0.2935	2.1000e-003		0.0266	0.0266		0.0266	0.0266		419.2356	419.2356	8.0400e-003	7.6900e-003	421.7269
Total		**0.0384**	**0.3494**	**0.2935**	**2.1000e-003**		**0.0266**	**0.0266**		**0.0266**	**0.0266**		**419.2356**	**419.2356**	**8.0400e-003**	**7.6900e-003**	**421.7269**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.7068	4.6000e-004	0.0504	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1081	0.1081	2.8000e-004		0.1152
Unmitigated	7.7068	4.6000e-004	0.0504	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1081	0.1081	2.8000e-004		0.1152

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	1.1672					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.5349					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.6700e-003	4.6000e-004	0.0504	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1081	0.1081	2.8000e-004		0.1152
Total	**7.7068**	**4.6000e-004**	**0.0504**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**		**0.1081**	**0.1081**	**2.8000e-004**		**0.1152**

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	1.1672					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.5349					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.6700e-003	4.6000e-004	0.0504	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1081	0.1081	2.8000e-004		0.1152
Total	**7.7068**	**4.6000e-004**	**0.0504**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**		**0.1081**	**0.1081**	**2.8000e-004**		**0.1152**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

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
Forklifts	6	8.00	260	89	0.20	Diesel

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Forklifts	0.6183	5.7869	6.9031	9.2200e-003		0.3576	0.3576		0.3290	0.3290		892.6259	892.6259	0.2887		899.8432
Total	**0.6183**	**5.7869**	**6.9031**	**9.2200e-003**		**0.3576**	**0.3576**		**0.3290**	**0.3290**		**892.6259**	**892.6259**	**0.2887**		**899.8432**

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

Spreckels Distribution Center

San Joaquin Valley Unified APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	304.11	1000sqft	13.12	304,110.00	0
Parking Lot	190.00	Space	1.71	76,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	45
Climate Zone	2			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	257.69	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor updated per PG&E's RPS projections.

Land Use - Acreage adjusted per site plan.

Construction Phase - Phase timing adjusted so that architechtural coating takes places concurrently with building construction.

Mobile Land Use Mitigation -

Energy Mitigation - Title 24 exceedance applied to represent compliance with the 2019 CBSC for non-residential buildings.

Water Mitigation - Water conservation strategy applied to reflect compliance with the 2019 CalGreen Code and MWELO.

Vehicle Trips - Trip rate adjusted according to Traffic Impact Analysis prepared for the proposed project.

Operational Off-Road Equipment - Assumed the use of forklifts during operations.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	300.00
tblLandUse	LotAcreage	6.98	13.12
tblOperationalOffRoadEquipment	OperLoadFactor	0.20	0.20
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	6.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	257.69
tblVehicleTrips	ST_TR	1.68	2.08
tblVehicleTrips	SU_TR	1.68	2.08
tblVehicleTrips	WD_TR	1.68	2.08

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					
2021	17.3232	46.4558	31.4000	0.0635	18.2141	2.0455	20.2596	9.9699	1.8818	11.8517	0.0000	6,154.3654	6,154.3654	1.9467	0.0000	6,203.0338
2022	17.0415	23.9590	23.9956	0.0606	1.9975	0.9180	2.9155	0.5394	0.8686	1.4080	0.0000	5,976.9441	5,976.9441	0.8083	0.0000	5,997.1509
Maximum	**17.3232**	**46.4558**	**31.4000**	**0.0635**	**18.2141**	**2.0455**	**20.2596**	**9.9699**	**1.8818**	**11.8517**	**0.0000**	**6,154.3654**	**6,154.3654**	**1.9467**	**0.0000**	**6,203.0338**

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					
2021	17.3232	46.4558	31.4000	0.0635	18.2141	2.0455	20.2596	9.9699	1.8818	11.8517	0.0000	6,154.3654	6,154.3654	1.9467	0.0000	6,203.0337
2022	17.0415	23.9590	23.9956	0.0606	1.9975	0.9180	2.9155	0.5394	0.8686	1.4080	0.0000	5,976.9441	5,976.9441	0.8083	0.0000	5,997.1509
Maximum	**17.3232**	**46.4558**	**31.4000**	**0.0635**	**18.2141**	**2.0455**	**20.2596**	**9.9699**	**1.8818**	**11.8517**	**0.0000**	**6,154.3654**	**6,154.3654**	**1.9467**	**0.0000**	**6,203.0337**

	ROG	**NOx**	**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	7.7068	4.6000e-004	0.0504	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1081	0.1081	2.8000e-004		0.1152
Energy	0.0549	0.4991	0.4192	2.9900e-003		0.0379	0.0379		0.0379	0.0379		598.9080	598.9080	0.0115	0.0110	602.4670
Mobile	0.9981	10.2900	11.5462	0.0593	3.9714	0.0359	4.0073	1.0654	0.0336	1.0991		6,072.5396	6,072.5396	0.3304		6,080.8002
Offroad	0.6183	5.7869	6.9031	9.2200e-003		0.3576	0.3576		0.3290	0.3290		892.6259	892.6259	0.2887		899.8432
Total	**9.3780**	**16.5764**	**18.9190**	**0.0715**	**3.9714**	**0.4316**	**4.4030**	**1.0654**	**0.4007**	**1.4662**		**7,564.1816**	**7,564.1816**	**0.6309**	**0.0110**	**7,583.2256**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.7068	4.6000e-004	0.0504	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1081	0.1081	2.8000e-004		0.1152
Energy	0.0384	0.3494	0.2935	2.1000e-003		0.0266	0.0266		0.0266	0.0266		419.2356	419.2356	8.0400e-003	7.6900e-003	421.7269
Mobile	0.9559	9.8887	10.7060	0.0542	3.5743	0.0327	3.6069	0.9589	0.0306	0.9895		5,555.8861	5,555.8861	0.3190		5,563.8615
Offroad	0.6183	5.7869	6.9031	9.2200e-003		0.3576	0.3576		0.3290	0.3290		892.6259	892.6259	0.2887		899.8432
Total	**9.3194**	**16.0254**	**17.9530**	**0.0655**	**3.5743**	**0.4170**	**3.9913**	**0.9589**	**0.3863**	**1.3452**		**6,867.8557**	**6,867.8557**	**0.6160**	**7.6900e-003**	**6,885.5468**

	ROG	NOx	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	**0.62**	**3.32**	**5.11**	**8.31**	**10.00**	**3.39**	**9.35**	**10.00**	**3.59**	**8.25**	**0.00**	**9.21**	**9.21**	**2.35**	**29.96**	**9.20**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/1/2021	5/14/2021	5	10	
2	Grading	Grading	5/15/2021	6/25/2021	5	30	
3	Paving	Paving	6/26/2021	7/23/2021	5	20	
4	Building Construction	Building Construction	7/24/2021	9/16/2022	5	300	
5	Architectural Coating	Architectural Coating	8/7/2021	9/30/2022	5	300	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 1.71

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 456,165; Non-Residential Outdoor: 152,055; Striped Parking Area: 4,560 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	160.00	62.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	32.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0746	0.0504	0.4694	1.3300e-003	0.1479	9.9000e-004	0.1489	0.0392	9.1000e-004	0.0401		132.5897	132.5897	3.5400e-003		132.6783
Total	**0.0746**	**0.0504**	**0.4694**	**1.3300e-003**	**0.1479**	**9.9000e-004**	**0.1489**	**0.0392**	**9.1000e-004**	**0.0401**		**132.5897**	**132.5897**	**3.5400e-003**		**132.6783**

3.2 Site Preparation - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0746	0.0504	0.4694	1.3300e-003	0.1479	9.9000e-004	0.1489	0.0392	9.1000e-004	0.0401		132.5897	132.5897	3.5400e-003		132.6783
Total	**0.0746**	**0.0504**	**0.4694**	**1.3300e-003**	**0.1479**	**9.9000e-004**	**0.1489**	**0.0392**	**9.1000e-004**	**0.0401**		**132.5897**	**132.5897**	**3.5400e-003**		**132.6783**

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0829	0.0560	0.5215	1.4800e-003	0.1643	1.1000e-003	0.1654	0.0436	1.0100e-003	0.0446		147.3219	147.3219	3.9400e-003		147.4203
Total	**0.0829**	**0.0560**	**0.5215**	**1.4800e-003**	**0.1643**	**1.1000e-003**	**0.1654**	**0.0436**	**1.0100e-003**	**0.0446**		**147.3219**	**147.3219**	**3.9400e-003**		**147.4203**

3.3 Grading - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0829	0.0560	0.5215	1.4800e-003	0.1643	1.1000e-003	0.1654	0.0436	1.0100e-003	0.0446		147.3219	147.3219	3.9400e-003		147.4203
Total	**0.0829**	**0.0560**	**0.5215**	**1.4800e-003**	**0.1643**	**1.1000e-003**	**0.1654**	**0.0436**	**1.0100e-003**	**0.0446**		**147.3219**	**147.3219**	**3.9400e-003**		**147.4203**

3.4 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.2240					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4796**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0621	0.0420	0.3911	1.1100e-003	0.1232	8.3000e-004	0.1241	0.0327	7.6000e-004	0.0334		110.4914	110.4914	2.9500e-003		110.5652
Total	**0.0621**	**0.0420**	**0.3911**	**1.1100e-003**	**0.1232**	**8.3000e-004**	**0.1241**	**0.0327**	**7.6000e-004**	**0.0334**		**110.4914**	**110.4914**	**2.9500e-003**		**110.5652**

3.4 Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.2240					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4796**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0621	0.0420	0.3911	1.1100e-003	0.1232	8.3000e-004	0.1241	0.0327	7.6000e-004	0.0334		110.4914	110.4914	2.9500e-003		110.5652
Total	**0.0621**	**0.0420**	**0.3911**	**1.1100e-003**	**0.1232**	**8.3000e-004**	**0.1241**	**0.0327**	**7.6000e-004**	**0.0334**		**110.4914**	**110.4914**	**2.9500e-003**		**110.5652**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.363 9	2,553.363 9	0.6160		2,568.764 3
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.363 9**	**2,553.363 9**	**0.6160**		**2,568.764 3**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2068	6.8166	1.3713	0.0171	0.4202	0.0197	0.4399	0.1210	0.0188	0.1398		1,794.286 0	1,794.286 0	0.1496		1,798.025 0
Worker	0.6629	0.4480	4.1720	0.0118	1.3144	8.8000e-003	1.3232	0.3486	8.1100e-003	0.3567		1,178.575 4	1,178.575 4	0.0315		1,179.362 6
Total	**0.8697**	**7.2645**	**5.5433**	**0.0290**	**1.7346**	**0.0285**	**1.7630**	**0.4696**	**0.0269**	**0.4965**		**2,972.861 4**	**2,972.861 4**	**0.1811**		**2,977.387 6**

3.5 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2068	6.8166	1.3713	0.0171	0.4202	0.0197	0.4399	0.1210	0.0188	0.1398		1,794.2860	1,794.2860	0.1496		1,798.0250
Worker	0.6629	0.4480	4.1720	0.0118	1.3144	8.8000e-003	1.3232	0.3486	8.1100e-003	0.3567		1,178.5754	1,178.5754	0.0315		1,179.3626
Total	**0.8697**	**7.2645**	**5.5433**	**0.0290**	**1.7346**	**0.0285**	**1.7630**	**0.4696**	**0.0269**	**0.4965**		**2,972.8614**	**2,972.8614**	**0.1811**		**2,977.3876**

3.5 Building Construction - 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	0.1923	6.4550	1.2663	0.0170	0.4202	0.0171	0.4373	0.1210	0.0163	0.1373		1,777.4046	1,777.4046	0.1443		1,781.0132
Worker	0.6144	0.3999	3.7936	0.0114	1.3144	8.5300e-003	1.3229	0.3486	7.8500e-003	0.3565		1,136.4649	1,136.4649	0.0281		1,137.1661
Total	**0.8067**	**6.8549**	**5.0599**	**0.0284**	**1.7346**	**0.0256**	**1.7602**	**0.4696**	**0.0242**	**0.4938**		**2,913.8695**	**2,913.8695**	**0.1724**		**2,918.1793**

3.5 Building Construction - 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	0.1923	6.4550	1.2663	0.0170	0.4202	0.0171	0.4373	0.1210	0.0163	0.1373		1,777.4046	1,777.4046	0.1443		1,781.0132
Worker	0.6144	0.3999	3.7936	0.0114	1.3144	8.5300e-003	1.3229	0.3486	7.8500e-003	0.3565		1,136.4649	1,136.4649	0.0281		1,137.1661
Total	**0.8067**	**6.8549**	**5.0599**	**0.0284**	**1.7346**	**0.0256**	**1.7602**	**0.4696**	**0.0242**	**0.4938**		**2,913.8695**	**2,913.8695**	**0.1724**		**2,918.1793**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	14.2012					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**14.4201**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1326	0.0896	0.8344	2.3700e-003	0.2629	1.7600e-003	0.2646	0.0697	1.6200e-003	0.0714		235.7151	235.7151	6.3000e-003		235.8725
Total	**0.1326**	**0.0896**	**0.8344**	**2.3700e-003**	**0.2629**	**1.7600e-003**	**0.2646**	**0.0697**	**1.6200e-003**	**0.0714**		**235.7151**	**235.7151**	**6.3000e-003**		**235.8725**

3.6 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	14.2012					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**14.4201**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1326	0.0896	0.8344	2.3700e-003	0.2629	1.7600e-003	0.2646	0.0697	1.6200e-003	0.0714		235.7151	235.7151	6.3000e-003		235.8725
Total	**0.1326**	**0.0896**	**0.8344**	**2.3700e-003**	**0.2629**	**1.7600e-003**	**0.2646**	**0.0697**	**1.6200e-003**	**0.0714**		**235.7151**	**235.7151**	**6.3000e-003**		**235.8725**

3.6 Architectural Coating - 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	14.2012					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	**14.4057**	**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	0.1229	0.0800	0.7587	2.2800e-003	0.2629	1.7100e-003	0.2646	0.0697	1.5700e-003	0.0713		227.2930	227.2930	5.6100e-003		227.4332
Total	**0.1229**	**0.0800**	**0.7587**	**2.2800e-003**	**0.2629**	**1.7100e-003**	**0.2646**	**0.0697**	**1.5700e-003**	**0.0713**		**227.2930**	**227.2930**	**5.6100e-003**		**227.4332**

3.6 Architectural Coating - 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	14.2012					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	**14.4057**	**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	0.1229	0.0800	0.7587	2.2800e-003	0.2629	1.7100e-003	0.2646	0.0697	1.5700e-003	0.0713		227.2930	227.2930	5.6100e-003		227.4332
Total	**0.1229**	**0.0800**	**0.7587**	**2.2800e-003**	**0.2629**	**1.7100e-003**	**0.2646**	**0.0697**	**1.5700e-003**	**0.0713**		**227.2930**	**227.2930**	**5.6100e-003**		**227.4332**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Transit Accessibility

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Mitigated	0.9559	9.8887	10.7060	0.0542	3.5743	0.0327	3.6069	0.9589	0.0306	0.9895		5,555.8861	5,555.8861	0.3190		5,563.8615
Unmitigated	0.9981	10.2900	11.5462	0.0593	3.9714	0.0359	4.0073	1.0654	0.0336	1.0991		6,072.5396	6,072.5396	0.3304		6,080.8002

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	632.55	632.55	632.55	1,846,733	1,662,060
Total	632.55	632.55	632.55	1,846,733	1,662,060

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
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.517262	0.031316	0.171418	0.114437	0.017015	0.004840	0.021467	0.112166	0.001792	0.001507	0.005146	0.000939	0.000694
Unrefrigerated Warehouse-No Rail	0.517262	0.031316	0.171418	0.114437	0.017015	0.004840	0.021467	0.112166	0.001792	0.001507	0.005146	0.000939	0.000694

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0384	0.3494	0.2935	2.1000e-003		0.0266	0.0266		0.0266	0.0266		419.2356	419.2356	8.0400e-003	7.6900e-003	421.7269
NaturalGas Unmitigated	0.0549	0.4991	0.4192	2.9900e-003		0.0379	0.0379		0.0379	0.0379		598.9080	598.9080	0.0115	0.0110	602.4670

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					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	5090.72	0.0549	0.4991	0.4192	2.9900e-003		0.0379	0.0379		0.0379	0.0379		598.9080	598.9080	0.0115	0.0110	602.4670
Total		**0.0549**	**0.4991**	**0.4192**	**2.9900e-003**		**0.0379**	**0.0379**		**0.0379**	**0.0379**		**598.9080**	**598.9080**	**0.0115**	**0.0110**	**602.4670**

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					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	3.5635	0.0384	0.3494	0.2935	2.1000e-003		0.0266	0.0266		0.0266	0.0266		419.2356	419.2356	8.0400e-003	7.6900e-003	421.7269
Total		**0.0384**	**0.3494**	**0.2935**	**2.1000e-003**		**0.0266**	**0.0266**		**0.0266**	**0.0266**		**419.2356**	**419.2356**	**8.0400e-003**	**7.6900e-003**	**421.7269**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.7068	4.6000e-004	0.0504	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1081	0.1081	2.8000e-004		0.1152
Unmitigated	7.7068	4.6000e-004	0.0504	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1081	0.1081	2.8000e-004		0.1152

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	1.1672					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.5349					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.6700e-003	4.6000e-004	0.0504	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1081	0.1081	2.8000e-004		0.1152
Total	**7.7068**	**4.6000e-004**	**0.0504**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**		**0.1081**	**0.1081**	**2.8000e-004**		**0.1152**

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	1.1672					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.5349					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.6700e-003	4.6000e-004	0.0504	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1081	0.1081	2.8000e-004		0.1152
Total	**7.7068**	**4.6000e-004**	**0.0504**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**		**0.1081**	**0.1081**	**2.8000e-004**		**0.1152**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

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
Forklifts	6	8.00	260	89	0.20	Diesel

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Forklifts	0.6183	5.7869	6.9031	9.2200e-003		0.3576	0.3576		0.3290	0.3290		892.6259	892.6259	0.2887		899.8432
Total	**0.6183**	**5.7869**	**6.9031**	**9.2200e-003**		**0.3576**	**0.3576**		**0.3290**	**0.3290**		**892.6259**	**892.6259**	**0.2887**		**899.8432**

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

Spreckels Distribution Center

San Joaquin Valley Unified APCD Air District, Mitigation Report

Construction Mitigation Summary

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

OFFROAD Equipment Mitigation

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

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Air Compressors	3.14300E-002	2.17490E-001	2.72250E-001	4.50000E-004	1.29100E-002	1.29100E-002	0.00000E+000	3.82988E+001	3.82988E+001	2.54000E-003	0.00000E+000	3.83623E+001
Cranes	5.09600E-002	5.82650E-001	2.52920E-001	7.60000E-004	2.39700E-002	2.20500E-002	0.00000E+000	6.65346E+001	6.65346E+001	2.15200E-002	0.00000E+000	6.70726E+001
Excavators	6.88000E-003	6.46000E-002	9.81500E-002	1.60000E-004	3.13000E-003	2.88000E-003	0.00000E+000	1.36130E+001	1.36130E+001	4.40000E-003	0.00000E+000	1.37231E+001
Forklifts	5.38300E-002	4.96130E-001	5.21620E-001	6.90000E-004	3.38300E-002	3.11200E-002	0.00000E+000	6.04311E+001	6.04311E+001	1.95400E-002	0.00000E+000	6.09197E+001
Generator Sets	5.10700E-002	4.52920E-001	5.51900E-001	9.90000E-004	2.32300E-002	2.32300E-002	0.00000E+000	8.47811E+001	8.47811E+001	4.14000E-003	0.00000E+000	8.48847E+001
Graders	6.79000E-003	8.88700E-002	2.65100E-002	1.00000E-004	2.82000E-003	2.59000E-003	0.00000E+000	8.73189E+000	8.73189E+000	2.82000E-003	0.00000E+000	8.80249E+000
Pavers	4.92000E-003	5.19000E-002	5.81000E-002	9.00000E-005	2.51000E-003	2.31000E-003	0.00000E+000	8.25649E+000	8.25649E+000	2.67000E-003	0.00000E+000	8.32324E+000
Paving Equipment	3.84000E-003	3.88100E-002	5.08300E-002	8.00000E-005	1.92000E-003	1.76000E-003	0.00000E+000	7.15688E+000	7.15688E+000	2.31000E-003	0.00000E+000	7.21475E+000
Rollers	3.79000E-003	3.84800E-002	3.76100E-002	5.00000E-005	2.35000E-003	2.16000E-003	0.00000E+000	4.61011E+000	4.61011E+000	1.49000E-003	0.00000E+000	4.64739E+000
Rubber Tired Dozers	3.13900E-002	3.29140E-001	1.21130E-001	2.60000E-004	1.59700E-002	1.47000E-002	0.00000E+000	2.25168E+001	2.25168E+001	7.28000E-003	0.00000E+000	2.26989E+001
Scrapers	2.78800E-002	3.21080E-001	2.10140E-001	4.50000E-004	1.24900E-002	1.14900E-002	0.00000E+000	3.99500E+001	3.99500E+001	1.29200E-002	0.00000E+000	4.02730E+001
Tractors/Loaders/ Backhoes	7.76200E-002	7.87800E-001	9.97570E-001	1.38000E-003	4.43400E-002	4.07900E-002	0.00000E+000	1.21206E+002	1.21206E+002	3.92000E-002	0.00000E+000	1.22186E+002
Welders	4.30000E-002	2.22080E-001	2.55700E-001	3.80000E-004	1.01700E-002	1.01700E-002	0.00000E+000	2.82331E+001	2.82331E+001	3.49000E-003	0.00000E+000	2.83204E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	3.14300E-002	2.17490E-001	2.72250E-001	4.50000E-004	1.29100E-002	1.29100E-002	0.00000E+000	3.82988E+001	3.82988E+001	2.54000E-003	0.00000E+000	3.83623E+001
Cranes	5.09600E-002	5.82650E-001	2.52920E-001	7.60000E-004	2.39700E-002	2.20500E-002	0.00000E+000	6.65346E+001	6.65346E+001	2.15200E-002	0.00000E+000	6.70725E+001
Excavators	6.88000E-003	6.46000E-002	9.81500E-002	1.60000E-004	3.13000E-003	2.88000E-003	0.00000E+000	1.36130E+001	1.36130E+001	4.40000E-003	0.00000E+000	1.37231E+001
Forklifts	5.38300E-002	4.96130E-001	5.21620E-001	6.90000E-004	3.38300E-002	3.11200E-002	0.00000E+000	6.04310E+001	6.04310E+001	1.95400E-002	0.00000E+000	6.09196E+001
Generator Sets	5.10700E-002	4.52920E-001	5.51900E-001	9.90000E-004	2.32300E-002	2.32300E-002	0.00000E+000	8.47810E+001	8.47810E+001	4.14000E-003	0.00000E+000	8.48846E+001
Graders	6.79000E-003	8.88700E-002	2.65100E-002	1.00000E-004	2.82000E-003	2.59000E-003	0.00000E+000	8.73188E+000	8.73188E+000	2.82000E-003	0.00000E+000	8.80248E+000
Pavers	4.92000E-003	5.19000E-002	5.81000E-002	9.00000E-005	2.51000E-003	2.31000E-003	0.00000E+000	8.25648E+000	8.25648E+000	2.67000E-003	0.00000E+000	8.32323E+000
Paving Equipment	3.84000E-003	3.88100E-002	5.08300E-002	8.00000E-005	1.92000E-003	1.76000E-003	0.00000E+000	7.15688E+000	7.15688E+000	2.31000E-003	0.00000E+000	7.21474E+000
Rollers	3.79000E-003	3.84800E-002	3.76100E-002	5.00000E-005	2.35000E-003	2.16000E-003	0.00000E+000	4.61011E+000	4.61011E+000	1.49000E-003	0.00000E+000	4.64738E+000
Rubber Tired Dozers	3.13900E-002	3.29140E-001	1.21130E-001	2.60000E-004	1.59700E-002	1.47000E-002	0.00000E+000	2.25168E+001	2.25168E+001	7.28000E-003	0.00000E+000	2.26989E+001
Scrapers	2.78800E-002	3.21080E-001	2.10140E-001	4.50000E-004	1.24900E-002	1.14900E-002	0.00000E+000	3.99500E+001	3.99500E+001	1.29200E-002	0.00000E+000	4.02730E+001
Tractors/Loaders/Backhoes	7.76200E-002	7.87800E-001	9.97570E-001	1.38000E-003	4.43400E-002	4.07900E-002	0.00000E+000	1.21206E+002	1.21206E+002	3.92000E-002	0.00000E+000	1.22186E+002
Welders	4.30000E-002	2.22080E-001	2.55700E-001	3.80000E-004	1.01700E-002	1.01700E-002	0.00000E+000	2.82331E+001	2.82331E+001	3.49000E-003	0.00000E+000	2.83204E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.30552E-006	1.30552E-006	0.00000E+000	0.00000E+000	1.04269E-006
Cranes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20238E-006	1.20238E-006	0.00000E+000	0.00000E+000	1.19274E-006
Excavators	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.46918E-006	1.46918E-006	0.00000E+000	0.00000E+000	7.28700E-007
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.15834E-006	1.15834E-006	0.00000E+000	0.00000E+000	1.31320E-006
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.17951E-006	1.17951E-006	0.00000E+000	0.00000E+000	1.17807E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.14523E-006	1.14523E-006	0.00000E+000	0.00000E+000	1.13604E-006
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.21117E-006	1.21117E-006	0.00000E+000	0.00000E+000	1.20146E-006
Paving Equipment	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	1.38605E-006
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	2.15175E-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	1.33234E-006	1.33234E-006	0.00000E+000	0.00000E+000	1.32165E-006
Scrapers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.25156E-006	1.25156E-006	0.00000E+000	0.00000E+000	9.93221E-007
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.15506E-006	1.15506E-006	0.00000E+000	0.00000E+000	1.14579E-006
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.06258E-006	1.06258E-006	0.00000E+000	0.00000E+000	1.41241E-006

Fugitive Dust Mitigation

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

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

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.04	0.01	0.04	0.01	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.25	0.07	0.25	0.07	0.00	0.00
Grading	Fugitive Dust	0.13	0.05	0.13	0.05	0.00	0.00
Grading	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.09	0.05	0.09	0.05	0.00	0.00
Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.20	3.20	3.20	3.35	3.20
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	4.03	3.79	7.73	8.48	9.08	9.03	0.00	8.43	8.43	3.67	0.00	8.43
Natural Gas	30.04	30.00	30.00	30.91	29.91	29.91	0.00	30.00	30.00	30.00	30.22	30.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	20.00	20.00	20.00	20.00	19.99	20.00
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: Suburban Center

Mitigation Selected	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value 3
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.05	0.23		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
Yes	Land Use	Increase Transit Accessibility	0.20	0.14		
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.10			

No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.10			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"	4.50			
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	10.00			
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00				
		Total VMT Reduction	0.10				

Area Mitigation

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

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	30.00	
No	Install High Efficiency Lighting		
No	On-site Renewable		

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

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Apply Water Conservation on Strategy	20.00	20.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
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	0.00	
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape	0.00	0.00

Solid Waste Mitigation

Mitigation Measures	Input Value

Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

AERMOD Model Options

Model Options

Pathway	Keyword	Description	Value
CO	TITLEONE	Project title 1	Spreckels Distribution Center
CO	TITLETWO	Project title 2	
CO	MODELOPT	Model options	DFAULT,CONC,NODRYDPLT,NOWETDPLT
CO	AVERTIME	Averaging times	1,ANNUAL
CO	URBANOPT	Urban options	
CO	POLLUTID	Pollutant ID	PM25 H1H
CO	HALFLIFE	Half life	
CO	DCAYCOEF	Decay coefficient	
CO	FLAGPOLE	Flagpole receptor heights	1.8
CO	RUNORNOT	Run or Not	RUN
CO	EVENTFIL	Event file	F
CO	SAVEFILE	Save file	F
CO	INITFILE	Initialization file	
CO	MULTYEAR	Multiple year option	N/A
CO	DEBUGOPT	Debug options	N/A
CO	ERRORFIL	Error file	F
SO	ELEVUNIT	Elevation units	METERS
SO	EMISUNIT	Emission units	N/A
RE	ELEVUNIT	Elevation units	METERS
ME	SURFFILE	Surface met file	C:\Users\bshea\Desktop\METEOR~1\STOCKTON_2013-2017.SFC
ME	PROFFILE	Profile met file	C:\Users\bshea\Desktop\METEOR~1\STOCKTON_2013-2017.PFL
ME	SURFDATA	Surf met data info.	23237 2013
ME	UAIRDATA	U-Air met data info.	23230 2013
ME	SITEDATA	On-site met data info.	
ME	PROFBASE	Elev. above MSL	7.9
ME	STARTEND	Start-end met dates	
ME	WDROTATE	Wind dir. rot. adjust.	
ME	WINDCATS	Wind speed cat. max.	
ME	SCIMBYHR	SCIM sample params	
EV	DAYTABLE	Print summary opt.	N/A
OU	EVENTOUT	Output info. level	N/A

OU	DAYTABLE	Print summary opt.	

Source Parameter Tables

All Sources

Source ID / Pollutant ID	Source Type	Description	UTM		Elev.	Emiss. Rate	Emiss. Units	Release Height
			East (m)	North (m)	(m)			(m)
WOFFB022	POINT	Idling - Vertical	658531.6	4184262.6	0	4.76012E-05	(g/s)	3.84048
WOFFB023	POINT	Idling - Horizontal Low Level	658533.7	4184261.6	0	4.76012E-05	(g/s)	0.18288
WOFFB024	POINT	Idling - Horizontal High Level	658532.6	4184261.6	0	4.76012E-05	(g/s)	3.84048
WOFFB00C	VOLUME	Roadway Segment 1	658653.4	4184840.9	0	3.825779E-06	(g/s)	2.3
WOFFB00D	VOLUME	Roadway Segment 1	658654.8	4184788.9	0	3.825779E-06	(g/s)	2.3
WOFFB00E	VOLUME	Roadway Segment 1	658656.3	4184736.9	0	3.825779E-06	(g/s)	2.3
WOFFB00F	VOLUME	Roadway Segment 1	658657.7	4184685	0	3.825779E-06	(g/s)	2.3
WOFFB00G	VOLUME	Roadway Segment 1	658659.1	4184633	0	3.825779E-06	(g/s)	2.3
WOFFB00H	VOLUME	Roadway Segment 1	658660.6	4184581	0	3.825779E-06	(g/s)	2.3
WOFFB00I	VOLUME	Roadway Segment 1	658670.3	4184530.3	0	3.825779E-06	(g/s)	2.3
WOFFB00J	VOLUME	Roadway Segment 1	658685	4184480.5	0	3.825779E-06	(g/s)	2.3
WOFFB00K	VOLUME	Roadway Segment 1	658701.4	4184431.2	0	3.825779E-06	(g/s)	2.3
WOFFB00L	VOLUME	Roadway Segment 1	658723.2	4184384	0	3.825779E-06	(g/s)	2.3
WOFFB00M	VOLUME	Roadway Segment 1	658744.9	4184336.8	0	3.825779E-06	(g/s)	2.3
WOFFB00N	VOLUME	Roadway Segment 1	658754.8	4184285.9	0	3.825779E-06	(g/s)	2.3
WOFFB00O	VOLUME	Roadway Segment 1	658763.7	4184234.6	0	3.825779E-06	(g/s)	2.3
WOFFB00P	VOLUME	Roadway Segment 1	658770.2	4184183.2	0	3.825779E-06	(g/s)	2.3
WOFFB00Q	VOLUME	Roadway Segment 1	658768.6	4184131.3	0	3.825779E-06	(g/s)	2.3
WOFFB00R	VOLUME	Roadway Segment 1	658761.4	4184079.8	0	3.825779E-06	(g/s)	2.3
WOFFB00S	VOLUME	Roadway Segment 1	658746.8	4184030	0	3.825779E-06	(g/s)	2.3
WOFFB00T	VOLUME	Roadway Segment 1	658728.8	4183981.3	0	3.825779E-06	(g/s)	2.3
WOFFB00U	VOLUME	Roadway Segment 1	658705	4183935.2	0	3.825779E-06	(g/s)	2.3
WOFFB00V	VOLUME	Roadway Segment 1	658675.8	4183892.1	0	3.825779E-06	(g/s)	2.3
WOFFB00W	VOLUME	Roadway Segment 1	658645	4183850.2	0	3.825779E-06	(g/s)	2.3
WOFFB00X	VOLUME	Roadway Segment 1	658614.2	4183808.3	0	3.825779E-06	(g/s)	2.3
WOFFB00Y	VOLUME	Roadway Segment 1	658583.5	4183766.4	0	3.825779E-06	(g/s)	2.3
WOFFB00Z	VOLUME	Roadway Segment 1	658552.7	4183724.5	0	3.825779E-06	(g/s)	2.3
WOFFB010	VOLUME	Roadway Segment 1	658521.9	4183682.6	0	3.825779E-06	(g/s)	2.3
WOFFB011	VOLUME	Roadway Segment 1	658491.1	4183640.7	0	3.825779E-06	(g/s)	2.3
WOFFB014	VOLUME	Roadway Segment 2	658476.1	4183594.2	0	2.318998E-06	(g/s)	2.3
WOFFB015	VOLUME	Roadway Segment 2	658504.3	4183571.9	0	2.318998E-06	(g/s)	2.3
WOFFB016	VOLUME	Roadway Segment 2	658532.6	4183549.5	0	2.318998E-06	(g/s)	2.3
WOFFB017	VOLUME	Roadway Segment 2	658560.8	4183527.2	0	2.318998E-06	(g/s)	2.3
WOFFB018	VOLUME	Roadway Segment 2	658589	4183504.8	0	2.318998E-06	(g/s)	2.3

WOFFB019	VOLUME	Roadway Segment 2	658617.2	4183482.5	0	2.318998E-06	(g/s)	2.3
WOFFB01A	VOLUME	Roadway Segment 2	658645.4	4183460.1	0	2.318998E-06	(g/s)	2.3
WOFFB01B	VOLUME	Roadway Segment 2	658673.7	4183437.8	0	2.318998E-06	(g/s)	2.3
WOFFB01C	VOLUME	Roadway Segment 2	658701.9	4183415.4	0	2.318998E-06	(g/s)	2.3
WOFFB01D	VOLUME	Roadway Segment 2	658730.1	4183393.1	0	2.318998E-06	(g/s)	2.3
WOFFB01E	VOLUME	Roadway Segment 2	658758.3	4183370.7	0	2.318998E-06	(g/s)	2.3
WOFFB01F	VOLUME	Roadway Segment 2	658786.6	4183348.4	0	2.318998E-06	(g/s)	2.3
WOFFB01I	VOLUME	Roadway Segment 3	658679.8	4184879.2	0	4.172604E-06	(g/s)	2.3
WOFFB01J	VOLUME	Roadway Segment 3	658735.8	4184878.8	0	4.172604E-06	(g/s)	2.3
WOFFB01K	VOLUME	Roadway Segment 3	658791.8	4184878.4	0	4.172604E-06	(g/s)	2.3
WOFFB01L	VOLUME	Roadway Segment 3	658847.8	4184878	0	4.172604E-06	(g/s)	2.3
WOFFB01M	VOLUME	Roadway Segment 3	658903.8	4184877.6	0	4.172604E-06	(g/s)	2.3
WOFFB01N	VOLUME	Roadway Segment 3	658959.8	4184877.2	0	4.172604E-06	(g/s)	2.3
WOFFB01O	VOLUME	Roadway Segment 3	659015.8	4184876.8	0	4.172604E-06	(g/s)	2.3
WOFFB01R	VOLUME	Roadway Segment 4	658419.7	4184294	0	6.488676E-06	(g/s)	2.3
WOFFB01S	VOLUME	Roadway Segment 4	658447.7	4184294.1	0	6.488676E-06	(g/s)	2.3
WOFFB01T	VOLUME	Roadway Segment 4	658475.7	4184294.3	0	6.488676E-06	(g/s)	2.3
WOFFB01U	VOLUME	Roadway Segment 4	658503.7	4184294.4	0	6.488676E-06	(g/s)	2.3
WOFFB01V	VOLUME	Roadway Segment 4	658531.7	4184294.5	0	6.488676E-06	(g/s)	2.3
WOFFB01W	VOLUME	Roadway Segment 4	658559.7	4184294.7	0	6.488676E-06	(g/s)	2.3
WOFFB01X	VOLUME	Roadway Segment 4	658587.7	4184294.8	0	6.488676E-06	(g/s)	2.3
WOFFB01Y	VOLUME	Roadway Segment 4	658615.7	4184295	0	6.488676E-06	(g/s)	2.3
WOFFB01Z	VOLUME	Roadway Segment 4	658643.7	4184295.1	0	6.488676E-06	(g/s)	2.3
WOFFB020	VOLUME	Roadway Segment 4	658671.7	4184295.2	0	6.488676E-06	(g/s)	2.3
WOFFB021	VOLUME	Roadway Segment 4	658699.7	4184295.4	0	6.488676E-06	(g/s)	2.3

Point Sources

Source ID / Pollutant ID	Description	UTM		Elev.	Emiss. Rate	Stack Height	Stack Temp	Stack Velocity	Stack Diameter
		East (m)	North (m)	(m)	(g/s)	(m)	(K)	(m/s)	(m)
WOFFB022	Idling - Vertical	658531.6	4184262.6	0	4.76012E-05	3.84048	366	50	0.1
WOFFB023	Idling - Horizontal Low Level	658533.7	4184261.6	0	4.76012E-05	0.18288	366	0.001	0.1
WOFFB024	Idling - Horizontal High Level	658532.6	4184261.6	0	4.76012E-05	3.84048	366	0.001	0.1

Volume Sources

Source ID / Pollutant ID	Description	UTM		Elev.	Emiss. Rate	Release Height	Init. Lat. Dim.	Init. Vert. Dim.
		East (m)	North (m)	(m)	(g/s)	(m)	(m)	(m)
WOFFB00C	Roadway Segment 1	658653.4	4184840.9	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00D	Roadway Segment 1	658654.8	4184788.9	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00E	Roadway Segment 1	658656.3	4184736.9	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00F	Roadway Segment 1	658657.7	4184685	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00G	Roadway Segment 1	658659.1	4184633	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00H	Roadway Segment 1	658660.6	4184581	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00I	Roadway Segment 1	658670.3	4184530.3	0	3.825779E-06	2.3	24.18605	2.139535

WOFFB00J	Roadway Segment 1	658685	4184480.5	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00K	Roadway Segment 1	658701.4	4184431.2	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00L	Roadway Segment 1	658723.2	4184384	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00M	Roadway Segment 1	658744.9	4184336.8	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00N	Roadway Segment 1	658754.8	4184285.9	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00O	Roadway Segment 1	658763.7	4184234.6	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00P	Roadway Segment 1	658770.2	4184183.2	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00Q	Roadway Segment 1	658768.6	4184131.3	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00R	Roadway Segment 1	658761.4	4184079.8	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00S	Roadway Segment 1	658746.8	4184030	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00T	Roadway Segment 1	658728.8	4183981.3	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00U	Roadway Segment 1	658705	4183935.2	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00V	Roadway Segment 1	658675.8	4183892.1	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00W	Roadway Segment 1	658645	4183850.2	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00X	Roadway Segment 1	658614.2	4183808.3	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00Y	Roadway Segment 1	658583.5	4183766.4	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB00Z	Roadway Segment 1	658552.7	4183724.5	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB010	Roadway Segment 1	658521.9	4183682.6	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB011	Roadway Segment 1	658491.1	4183640.7	0	3.825779E-06	2.3	24.18605	2.139535
WOFFB014	Roadway Segment 2	658476.1	4183594.2	0	2.318998E-06	2.3	16.74419	2.139535
WOFFB015	Roadway Segment 2	658504.3	4183571.9	0	2.318998E-06	2.3	16.74419	2.139535
WOFFB016	Roadway Segment 2	658532.6	4183549.5	0	2.318998E-06	2.3	16.74419	2.139535
WOFFB017	Roadway Segment 2	658560.8	4183527.2	0	2.318998E-06	2.3	16.74419	2.139535
WOFFB018	Roadway Segment 2	658589	4183504.8	0	2.318998E-06	2.3	16.74419	2.139535
WOFFB019	Roadway Segment 2	658617.2	4183482.5	0	2.318998E-06	2.3	16.74419	2.139535
WOFFB01A	Roadway Segment 2	658645.4	4183460.1	0	2.318998E-06	2.3	16.74419	2.139535
WOFFB01B	Roadway Segment 2	658673.7	4183437.8	0	2.318998E-06	2.3	16.74419	2.139535
WOFFB01C	Roadway Segment 2	658701.9	4183415.4	0	2.318998E-06	2.3	16.74419	2.139535
WOFFB01D	Roadway Segment 2	658730.1	4183393.1	0	2.318998E-06	2.3	16.74419	2.139535
WOFFB01E	Roadway Segment 2	658758.3	4183370.7	0	2.318998E-06	2.3	16.74419	2.139535
WOFFB01F	Roadway Segment 2	658786.6	4183348.4	0	2.318998E-06	2.3	16.74419	2.139535
WOFFB01I	Roadway Segment 3	658679.8	4184879.2	0	4.172604E-06	2.3	26.04651	2.139535
WOFFB01J	Roadway Segment 3	658735.8	4184878.8	0	4.172604E-06	2.3	26.04651	2.139535
WOFFB01K	Roadway Segment 3	658791.8	4184878.4	0	4.172604E-06	2.3	26.04651	2.139535
WOFFB01L	Roadway Segment 3	658847.8	4184878	0	4.172604E-06	2.3	26.04651	2.139535
WOFFB01M	Roadway Segment 3	658903.8	4184877.6	0	4.172604E-06	2.3	26.04651	2.139535
WOFFB01N	Roadway Segment 3	658959.8	4184877.2	0	4.172604E-06	2.3	26.04651	2.139535
WOFFB01O	Roadway Segment 3	659015.8	4184876.8	0	4.172604E-06	2.3	26.04651	2.139535
WOFFB01R	Roadway Segment 4	658419.7	4184294	0	6.488676E-06	2.3	13.02326	2.139535
WOFFB01S	Roadway Segment 4	658447.7	4184294.1	0	6.488676E-06	2.3	13.02326	2.139535
WOFFB01T	Roadway Segment 4	658475.7	4184294.3	0	6.488676E-06	2.3	13.02326	2.139535
WOFFB01U	Roadway Segment 4	658503.7	4184294.4	0	6.488676E-06	2.3	13.02326	2.139535
WOFFB01V	Roadway Segment 4	658531.7	4184294.5	0	6.488676E-06	2.3	13.02326	2.139535
WOFFB01W	Roadway Segment 4	658559.7	4184294.7	0	6.488676E-06	2.3	13.02326	2.139535
WOFFB01X	Roadway Segment 4	658587.7	4184294.8	0	6.488676E-06	2.3	13.02326	2.139535

WOFFB01Y	Roadway Segment 4	658615.7	4184295	0	6.488676E-06	2.3	13.02326	2.139535
WOFFB01Z	Roadway Segment 4	658643.7	4184295.1	0	6.488676E-06	2.3	13.02326	2.139535
WOFFB020	Roadway Segment 4	658671.7	4184295.2	0	6.488676E-06	2.3	13.02326	2.139535
WOFFB021	Roadway Segment 4	658699.7	4184295.4	0	6.488676E-06	2.3	13.02326	2.139535

BREEZE AERMOD Model Results

Max. Annual (5 YEARS) Results of Pollutant: PM25 (ug/m**3)

Group ID	High	Avg. Conc.	UTM East (m)	UTM North (m)	Elev. (m)	Hill Ht. (m)	Flag Ht. (m)	Rec. Type	Grid ID
ALL	1ST	0.00076	658327.20	4184345.70	0.00	0.00	1.80	DC	
	2ND	0.00076	658327.20	4184340.70	0.00	0.00	1.80	DC	
	3RD	0.00076	658327.20	4184350.70	0.00	0.00	1.80	DC	
	4TH	0.00076	658327.20	4184335.70	0.00	0.00	1.80	DC	
	5TH	0.00076	658327.20	4184355.70	0.00	0.00	1.80	DC	
	6TH	0.00076	658327.20	4184330.70	0.00	0.00	1.80	DC	
	7TH	0.00076	658327.20	4184360.70	0.00	0.00	1.80	DC	
	8TH	0.00076	658327.20	4184325.70	0.00	0.00	1.80	DC	
	9TH	0.00075	658327.20	4184365.70	0.00	0.00	1.80	DC	
	10TH	0.00075	658327.20	4184320.70	0.00	0.00	1.80	DC	

Highest Results of Pollutant: PM25

Avg. Per.	Grp ID	High	Type	Val	Units	Date YYMMDDHH	UTM East (m)	UTM North (m)	Elev. (m)	Hill Ht. (m)	Flag Ht. (m)	Rec. Type	Grid ID
1-HR	ALL	1ST	Avg. Conc.	0.31160	ug/m**3	17122608	658327.20	4184315.70	0.00	0.00	1.80	DC	

Summary of Total Messages

#	Message Type
0	Fatal Error Message(s)
15	Warning Message(s)
971	Informational Message(s)
43824	Hours Were Processed
442	Calm Hours Identified
529	Missing Hours Identified (1.21 Percent)

Error & Warning Messages

Msg. Type	Pathway	Ref. #	Description
WARNING	CO	W276	Special proc for 1h-NO2/SO2 24hPM25 NAAQS disabled PM25 H1H
WARNING	CO	W363	Multiyr 24h/Ann PM25 processing not applicable for PM25 H1H

WARNING	ME	W186	THRESH_1MIN 1-min ASOS wind speed threshold used 0.50

www.breeze-software.com

HARP2 - HRACalc (dated 19044) 1/13/2021 1:52:55 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: All
Calculation Method: HighEnd

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 30

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 2
2<9 Years Bin: 0
2<16 Years Bin: 14
16<30 Years Bin: 14
16 to 70 Years Bin: 0

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors

Worker adjustment factors enabled: NO

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: ON

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating cancer risk
Cancer risk saved to: C:\Users\bshea\Desktop\HARP results\Spreckels Draft 1_CancerRisk.csv
Calculating chronic risk
Chronic risk saved to: C:\Users\bshea\Desktop\HARP results\Spreckels Draft 1_NCChronicRisk.csv
Calculating acute risk
Acute risk saved to: C:\Users\bshea\Desktop\HARP results\Spreckels Draft 1_NCAcuteRisk.csv
HRA ran successfully

*HARP - HRACalc v19044 1/13/2021 1:52:55 PM - Cancer Risk - Input File: C:\Users\bshea\Desktop\HARP results\Spreckels Draft 1_HRAInput.hra

INDEX	GRP1	GRP2	POLID	POLABBREV	CONC	RISK_SUM	SCENARIO	DETAILS	INH_RISK	SOIL_RISK	DERMAL_RISK
1			9901	DieselExhPM	0.00076	6.58E-07	30YrCancerHighEnd_Inh_FAH16to70	*	6.58E-07	0.00E+00	0.00E+00

MMILK_RISK	WATER_RISK	FISH_RISK	CROP_RISK	BEEF_RISK	DAIRY_RISK	PIG_RISK	CHICKEN_RISK	EGG_RISK	1ST_DRIVER	2ND_DRIVER
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA

PASTURE_CONC	FISH_CONC	WATER_CONC
0.00E+00	0.00E+00	0.00E+00

*HARP - HRACalc v19044 1/13/2021 1:52:55 PM - Chronic Risk - Input File: C:\Users\bshea\Desktop\HARP results\Spreckels Draft 1_HRAInput.hra

INDEX	GRP1	GRP2	POLID	POLABBREV	CONC	SCENARIO	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL
1			9901	DieselExhPM	0.00076	NonCancerChronicHighEnd_Inh	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	GENERAL	DETAILS	INH_CONC	SOIL_DOSE	DERMAL_DOSE	MMILK_DOSE
1.52E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	*	7.60E-04	0.00E+00	0.00E+00	0.00E+00

WATER_DOSE	FISH_DOSE	CROP_DOSE	BEEF_DOSE	DAIRY_DOSE	PIG_DOSE	CHICKEN_DOSE	EGG_DOSE	1ST_DRIVER	2ND_DRIVER	3RD_DRIVER
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	INHALATION	NA	NA

PASTURE_CONC	FISH_CONC	WATER_CONC
0.00E+00	0.00E+00	0.00E+00

*HARP - HRACalc v19044 1/13/2021 1:52:55 PM - Acute Risk - Input File: C:\Users\bshea\Desktop\HARP results\Spreckels Draft 1_HRAInput.hra

INDEX	GRP1	GRP2	POLID	POLABBREV	CONC	SCENARIO	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP
1			9901	DieselExhPM	0.3116	NonCancerAcute	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

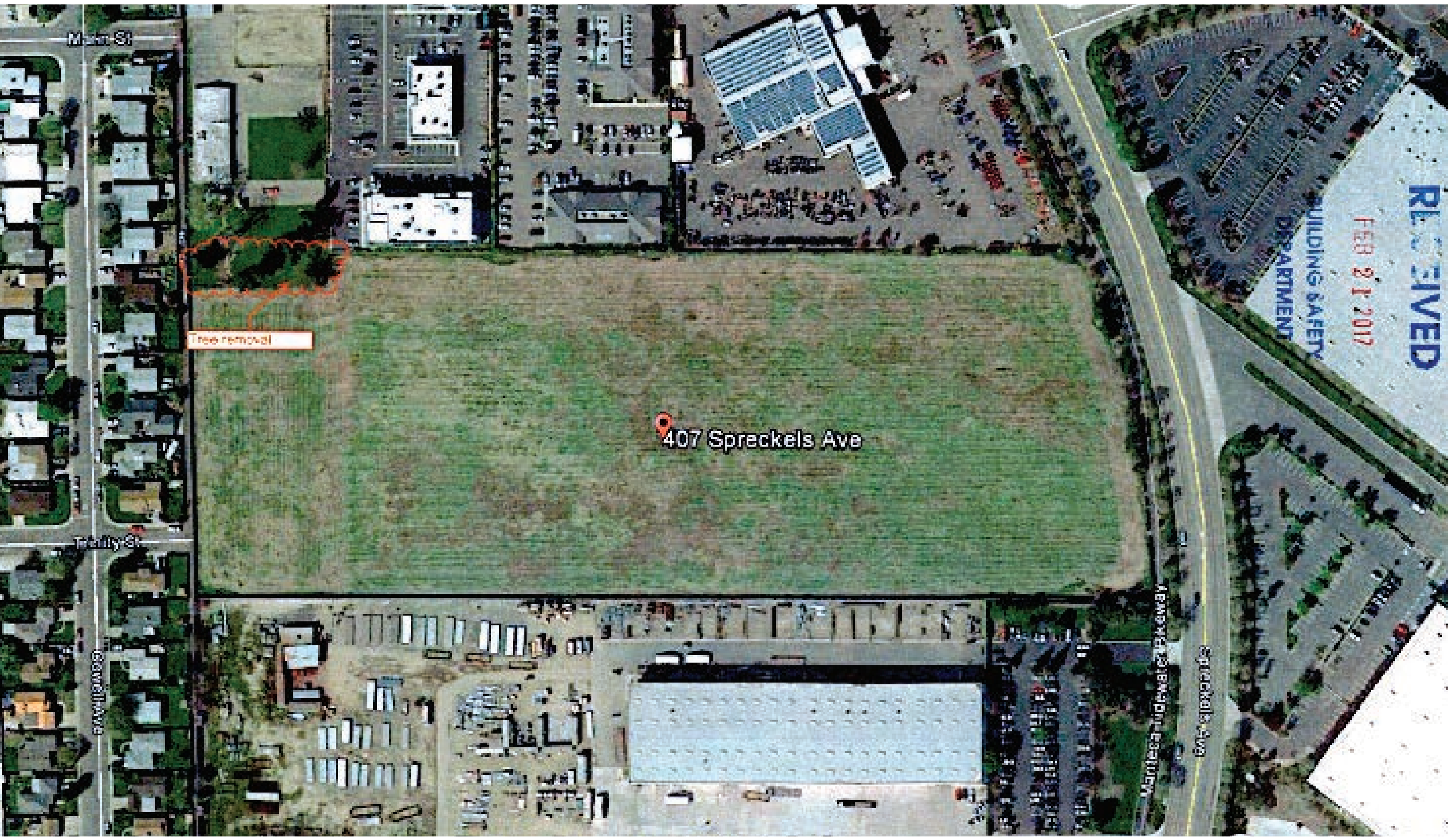
SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	GENERAL
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

APPENDIX B

WETLAND & BIOLOGICAL RESOURCES ASSESSMENT

Wetland & Biological Resources Assessment

of 407 Spreckels Avenue in Manteca, CA 95336 (APN 221-250-11)



Prepared By:

BARNETT ENVIRONMENTAL

Prepared For:
Raney Management & Planning
1501 Sports Dr.
Sacramento, CA 95834

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1.0 Introduction

Barnett Environmental has prepared this Biological Resources Assessment (BRA) of a 14.86-acre property at 407 Spreckles in Manteca, California (APN: 221-250-11) in San Joaquin County 95336 (Figure 1). It is situated within Section 4, Township 2 South, Range 7 East of the California 7.5-minute USGS Manteca quadrangle (Figure 1) and lies within the San Joaquin Delta watershed (HUC 18040003) at approximately 44 to 47 feet above mean sea level (msl). It is also centered at 37°47'30.15"N and longitude 121°11'57.80"W. The parcel is currently unoccupied, and the immediate surrounding parcels are residential, commercial, or light industrial.

Beyond a delineation of and "waters of the State" within the Study Area according to U.S. Army Corps of Engineers (1987) and California Regional Water Quality Control Board (2020) protocol, this report also:

- Identifies and describes extant vegetation communities
- Records all plant and animal species observed during the field survey(s);
- Evaluates and identifies sensitive habitats and special status plant and animal species that may occur in the Study Area and could be affected by project activities; and
- Provides conclusions and recommendations for mitigating potential adverse impacts to identified resources.

2.0 Regulatory Setting

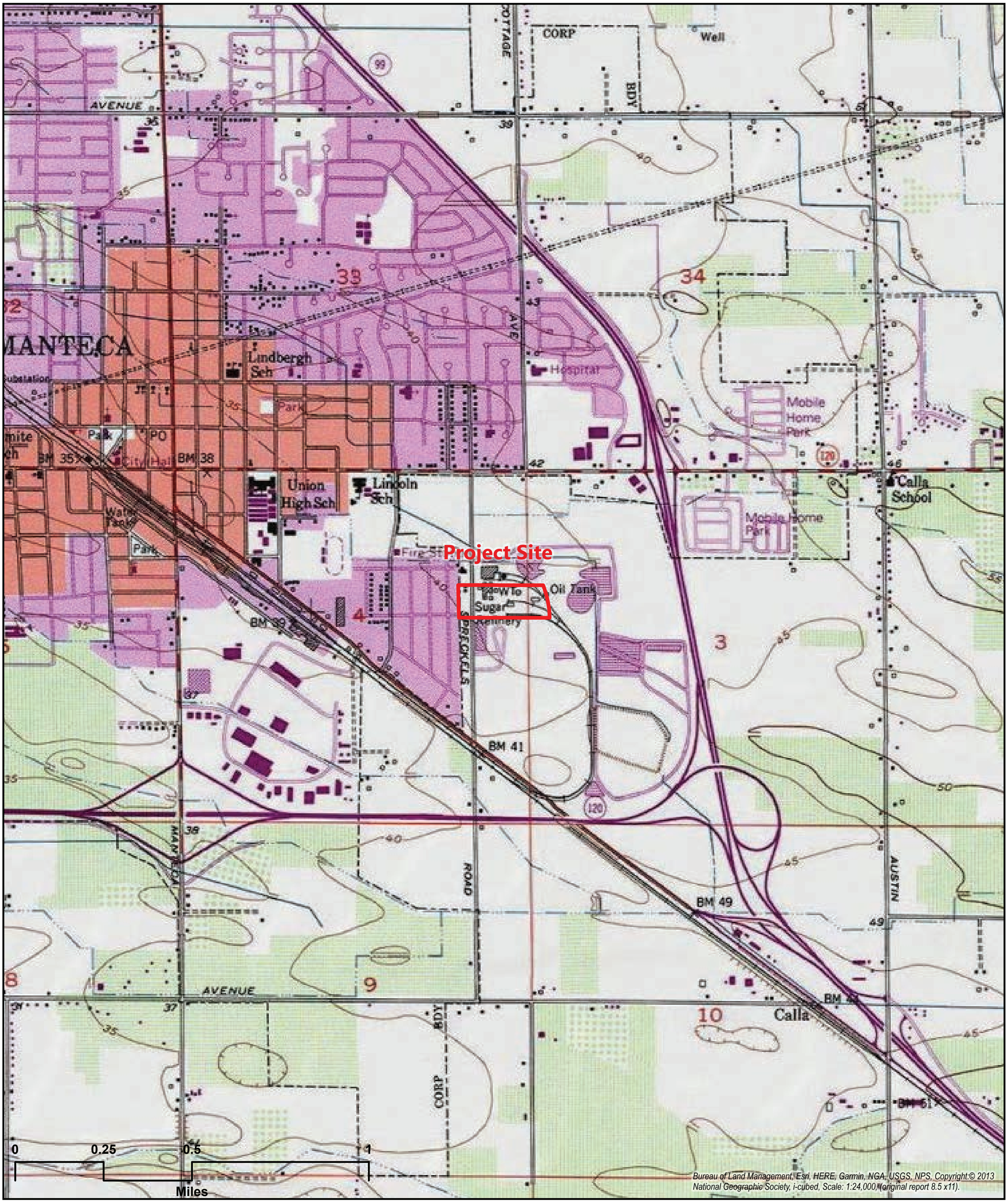
The following federal laws, regulations and/or policies provide the legal framework guiding the protection of biological resources. We have included those laws most relevant to biological and wetland resources in and around the Study Area.

2.1 Federal Laws & Regulations

Federal Endangered Species Act (FESA)

The FESA, enacted in 1973, prohibits the taking, possession, sale, or transport of endangered species. Under the FESA, the Secretary of the Interior and the Secretary of Commerce jointly have the authority to list a species as threatened or endangered. Both the National Marine Fisheries Service (NMFS) and the U.S. Fish & Wildlife Service (NMFS) and the U.S. Fish & Wildlife Service (USFWS) administer FESA. NMFS is accountable for animals that are threatened or endangered (16 United States Code [USC] 1533[c]) and spend most of their lives in marine waters, including marine fish, most marine mammals, and anadromous fish such as Pacific salmon. The USFWS is accountable for all other federally listed plants and animals.

Pursuant to the requirements of FESA, a federal agency reviewing a project within its jurisdiction must determine whether any federally listed threatened or endangered species could be present in the Study Area and whether the project will have a potentially significant impact on such species. In addition, federal agencies are required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed



Source: USGS 7.5-Minute Topographic Quad Manteca, San Joaquin County, CA

FIGURE 1 - VICINITY MAP

Date: November 21, 2020

RANEY-MANTECA, 407 SPRECKELS AVE • SAN JOAQUIN COUNTY, CA

N

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Parcel (APN 22125035)

NWI Wetlands

Freshwater Emergent Wetland

Freshwater Pond

Riverine

U. S. Fish and Wildlife Service. Publication date May 2020. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. http://www.fws.gov/wetlands/. Accessed October 5, 2020. Base Map Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, USDA FSA, GeoEye, Maxar, County of Los Angeles, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, City of Stockton, San Joaquin County Public Works, San Joaquin County GIS/Planning, Bureau of Land Management, Esri, HERE, Garmin, INCREMENT P, NGA, USGS, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA. Scale 1:10,000 original report (8.5 x 11).

FIGURE 2 - NATIONAL WETLANDS INVENTORY (NWI) WETLAND

Date: November 21, 2020

N

RANEY-MANTECA, 407 SPRECKELS AVE • SAN JOAQUIN COUNTY, CA

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under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536[3], [4]).

Projects that would result in a "take" of any federally-listed threatened or endangered species are required to obtain authorization from NMFS and/or USFWS through either Section 7 (interagency consultation) or section 10(a) (incidental take permit) of FESA, depending on whether the federal government is involved in permitting or funding the project. The Section 7 authorization process is used to determine if a project with a federal nexus would jeopardize the continued existence of a listed species and what mitigation measures would be required to avoid jeopardizing the species. The Section 10(a) process allows take of endangered species or their habitat in non-federal activities.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) regulates or prohibits taking, killing, possession of, or harm to migratory bird species listed in Title 50 Code of Federal Regulations (CFR) Section 10.13. The MBTA is an international treaty for the conservation and management of bird species that migrate through more than one country and is enforced in the United States by the USFWS. Hunting of specific migratory game birds is permitted under the regulations listed in Title 50 CFR 20. The MBTA was amended in 1972 to include protection for migratory birds of prey (raptors).

Bald and Golden Eagle Protection Act

The federal Bald and Golden Eagle Protection Act regulates or prohibits taking, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit (16 U.S.C. 668(a); 50 CFR 22). "Take" includes pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb (16 U.S.C. 668c; 50 CFR 22.3).

Federal Clean Water Act (CWA)

Section 404

Section 404 of the CWA identifies the U.S. Army Corps of Engineers (USACE) as the principal authority to regulate activity that could discharge fill or dredge material or otherwise adversely modify wetlands or Waters of the U.S. (WOUS). The USACE implements the federal policy embodied in Executive Order 11990, which, when implemented, is intended to result in no net loss of wetland values or function. U.S. Congress has authorized the Environmental Protection Agency (EPA) to have a specific oversight role over USACE's authority.

Section 401

The State Water Resources Control Board (SWRCB) has authority over wetlands through Section 401 of the CWA, as well as the Porter-Cologne Act, California Code of Regulations Section 3831(k), and California Wetlands Conservation Policy.

The CWA requires that an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the United States) first obtain a certificate from the appropriate state agency stating that the fill is consistent with the State's water quality standards and criteria. In California, the authority to either grant certification or waive the requirement for permits is delegated by the SWRCB to the nine regional boards. The Central Valley Regional Water Quality Control Board (CVRWQCB) is the appointed authority for Section 401 compliance in the project site. The SWRCB additionally requires additional Waste Discharge Requirements under Porter-Cologne to protect aquatic resources that are outside federal jurisdiction.

A request for certification or waiver is submitted to the Regional Board at the same time an application is filed with the USACE. The regional board has 60 days to review the application and act on it. Because no USACE permit is valid under the CWA unless "certified" by the state, these boards may effectively veto or add conditions to any USACE permit.

2.2 State Laws & Regulations

California Endangered Species Act (CESA)

The CESA was enacted in 1984. Under the CESA, the California Fish and Wildlife Commission (CFWC) has the responsibility for maintaining a list of threatened and endangered species, while The California Department of Fish & Wildlife (CDFW) is responsible for enforcement. CDFW also maintains lists of species of special concern. A(CSC) is a species, subspecies, or distinct population of an animal native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:is extirpated from the State or, in the case of birds, in its primary seasonal or breeding role;

- is listed as Federally-, but not State-, threatened or endangered;
- meets the State definition of threatened or endangered but has not formally been listed;
- is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status;
- has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.

CESA prohibits the take of California listed animals and plants in most cases, but CDFW may issue incidental take permits under special conditions. Pursuant to the requirements of CESA, a State agency reviewing a project within its jurisdiction must determine whether any state-listed endangered or threatened species could be present in the project site and determine whether the project would have a potentially significant impact on such species. In addition, CDFW encourages consultation on any project that could affect a listed or candidate species.

Fish and Game Code – Sections 1600-1616

Under Sections 1600-1616 of the California Fish and Game Code, the CDFW regulates activities that would alter the flow, bed, channel, or bank of streams and lakes. The limits of CDFW's jurisdiction are defined in the code as the "… *bed, channel or bank of any river, stream, or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit* ..." (Section 1601). In practice, the

CDFW usually marks its jurisdictional limit at the top of the stream or bank, or at the outer edge of the riparian vegetation, whichever is wider.

The CDFW also derives its authority to oversee activities that affect wetlands *from state legislation. This authority includes Sections 1600-1616 of the Fish and Game Code (lake and streambed alteration agreements), Section 30411 of the California Coastal Act (CDFW becomes the lead agency for the study and identification of degraded* wetlands within the Coastal Zone), CESA (protection of state listed species and their habitats - which could include wetlands), and the Keene-Nejedly California Wetlands Preservation Act of 1976 (states a need for an affirmative and sustained public policy program directed at wetlands preservation, restoration, and enhancement). In general, the CDFW asserts authority over wetlands within the state either through review and comment on USACE Section 404 permits, review and comment on CEQA documents, preservation of state listed species, or through stream and lakebed alteration agreements.

Fish and Game Code – Sections 1900-1913

These Sections embody the Native Plant Protection Act, which is intended to preserve, protect, and enhance endangered or rare native plants in the state. The act directs CDFW to establish criteria for determining what native plants are rare or endangered. Under Section 1901, a species is endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes. A species is rare when, although not threatened with immediate extinction, it is in such small numbers throughout its range that it may become endangered if its present environment worsens. Under the act, CDFW may adopt regulations governing the taking, possessing, propagation or sale of any endangered or rare native plant.

Section 1913 of that Act allows landowners in conducting certain activities to take actions that will destroy rare or endangered plants, provided that, where the Department of Fish and Game (DFG) has previously notified the owner "that rare or endangered plants are growing" on his or her land, the owner notifies CDFW "at least 10 days in advance of changing the land" to allow the state agency to come and "salvage" the plants. Subject to this requirement, section 1913 states that "the presence of rare or endangered plants" on a property shall not restrict (1) timber operations conducted pursuant to an approved timber harvest plan, (2) "required mining assessment work pursuant to federal or state mining laws," (3) "the removal of endangered or rare native plants from a canal, lateral ditch, building site, or road, other right-of-way by the owner of the land or his agent," or (4) "the performance by a public agency or publicly or privately owned public utility of its obligation to provide service to the public."

Fish and Game Code – Sections 3503, 3503.5, 3513

Fish and Game Code Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Fish and Game Code Section 3503.5 protects all birds-of-prey (raptors) and their eggs and nests. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the Migratory Bird Treaty Act.

Fish and Game Code – Sections 3511, 4700, 5050, and 5515

Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the California Fish and Game Code designate certain species as "fully protected." Fully protected species, or parts thereof, may not be taken or possessed at any time, and no provision of the CFWC or any other law may be construed to authorize the issuance of permits of licenses to take any fully protected species. No such permits or licenses heretofore issued may have any force or effect for any such purpose, except that the CFGC may authorize the collecting of such species for necessary scientific research. Legally imported and fully protected species or parts thereof ay be possessed under a permit issued by CDFW. Porter-Cologne Water Quality Control Act

California Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act established the SWRCB and each Regional Water Quality Control Board (RWQCB) as the principal state agencies for coordinating and controlling water quality in California. Responsibility for the protection of water quality in California rests with the SWRCB and nine RWQCBs. The SWRCB establishes statewide policies and regulations for the implementation of water quality control programs mandated by federal and state water quality statutes and regulations. Pursuant to the Act, each of California's nine regional boards must prepare and periodically update basin plans that set forth water quality standards for surface and groundwater, as well as actions to control point and non-point sources of pollution to achieve and maintain these standards. Basin plans offer an opportunity to achieve wetlands protection through enforcement of water quality standards.

The Porter-Cologne Water Quality Control Act provides that "All discharges of waste into the waters of the State are privileges, not rights." Waters of the State are defined in Section 13050(e) of the Porter-Cologne Water Quality Control Act as "…any surface water or groundwater, including saline waters, within the boundaries of the state." All dischargers are subject to regulation under the Porter-Cologne Water Quality Control Act, including both point and nonpoint source dischargers. The RWQCB has the authority to implement water quality protection standards through the issuance of permits for discharges to waters at locations within its jurisdiction, which would include the project site. As noted above, the RWQCB is the appointed authority for Section 401 compliance in the project site. If the USACE determines that they have no regulatory authority on the project site and they also determine that a CWA Section 404 permit is not required, the project proponent could still be responsible for obtaining the appropriate CWA Section 401 permit or waiver from RWQCB for impacts to Waters of the State.

In 2019, the State Water Resource Control Board extended their water quality certification to include waste discharge requirements as adopted in the "State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State," which include elements of the Clean Water Act. These procedures also lay out the steps for the submission, review, and approval of applications for activities related to these activities.

California Environmental Quality Act

Although specific federal and state statutes protect threatened and endangered species, California Environmental Quality Act (CEQA) Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals and allows a public agency to undertake a review to determine if a significant effect on a species that has not yet been listed by either the USFWS or CDFW (i.e., species of concern) would occur. Whether a species is rare, threatened, or endangered can be legally significant because, under CEQA Guidelines Section 15065, an agency must find an impact to be significant if a project would "substantially reduce the number or restrict the range of an endangered, rare, or threatened species." Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

2.3 Local Laws and Regulations

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan – San Joaquin County and other participating agencies have prepared the San Joaquin Multi-Species Habitat Conservation and Open Space Plan (SJMSCP, San Joaquin Council of Governments, 2000) with the goal of protecting special-status plants and wildlife and their habitats, while allowing for planned growth in the County. This protection is accomplished through identification of important habitats and habitat features to aid in the development of protection areas, and the establishment of funding mechanisms through which project proponents can provide replacement habitat while enabling them to meet their no net loss of habitat value goals. Participants under the SJMSCP may conduct SJMSCP-permitted activities that result in or could result in "incidental take" of listed species and other unlisted species should they become listed.

The following goals and policies from the SJMSCP are applicable to the proposed project in the City of Manteca.

Natural Resources

Goal B: To promote the continuation of agricultural uses in the Manteca area and to discourage the premature conversion of agricultural land to nonagricultural uses, while providing for the urban development of Manteca.

Goal C: To protect sensitive native vegetation and wildlife communities and habitat in Manteca.

Policy: The City shall attempt to ensure in approving new development that its impact on native vegetation and wildlife will be minimized. New development in the vicinity of the San Joaquin River shall be conditioned to promote and protect riparian, wetlands, and other native vegetation and wildlife communities and habitats.

Agriculture

Goal 6B: To minimize the effect on agricultural lands in South Manteca, while providing for orderly growth.

Goal 6B.5: Encourage the donation of agricultural easements on lands designated for agricultural.

Vegetation and Wildlife

Goal 6C:	Protect Sensitive Native vegetation and wildlife communities and habitat in South Manteca.
Goal 6C.1:	Minimize impact of new development on native vegetation and wildlife.

City of Manteca General Plan – The following goals and policies from the *City of Manteca's General Plan* are applicable to the proposed project.

Goal RC-10:	Protect sensitive native vegetation and wildlife communities and habitat in Manteca.
Policy RC-P-31:	Minimize impact of new development on native vegetation and wildlife.
Policy RC-P-33:	Discourage the premature removal of orchard trees in advance of development, and discourage the removal of other existing healthy mature trees, both native and introduced.
Policy RC-P-34:	Protect special status species and other species that are sensitive to human activities.

City of Manteca Municipal Code – The Manteca Municipal Code calls for the avoidance of heritage trees. Heritage trees are defined under section 17.61.030 of the code as any natural woody plant rooted in the ground and having a diameter of 30 inches or more when measured two feet above the ground. Section 17.19.060 calls for the protection of all existing trees having a diameter of six inches or more when measured 4½ feet above the ground. The City planning department must be notified of planned construction or grade changes within the proximity of existing mature trees. Existing trees must be protected from construction equipment, machinery, grade changes, and excavation for utilities, paving, and footers. Replacement of existing trees is subject to approval from the planning director and must be with a minimum 24-inch box tree of compatible species for the development site and be consistent with Section 17.19.030. Orchard areas of one acre or more are exempt from Section 17.19.060(A); however, as outlined above, policy RC-P-33 of the City's General Plan discourages the premature removal of orchard trees in advance of development.

Section 12.08.070 of the municipal code prohibits cutting, pruning, removing, injuring, or interference with any tree, shrub, or plant upon or in any street tree area or other public place in the City without prior approval from the superintendent. The City is authorized to grant such permission at their discretion and where necessary. Except for utility companies, as provided in Section 12.08.080, no such permission shall be valid for a longer period than 30 days after its issuance.

3.0 Methodology

Prior to our field surveys, we queried the *U.S. Fish & Wildlife Service's National Wetland Inventory* (NWI; Figure 3); EcoAtlas' *California Aquatic Resources Inventory* (CARI; Figure 3); NRCS Web Soil Survey (Appendix A; Figure 5); and Hydric Soil Map Units for Los Angeles County, California to determine whether any wetlands or "other waters of the U.S.," "waters of the State," or soils compatible with wetland resources had been historically recorded on or around, or are likely to occur on the site, as defined by the 1987 U.S. Army Corps of Engineers (USACE, 1987) *Wetlands Delineation Manual and its 2008 Arid West Regional Supplement.* We also assessed potentially federal and/or state jurisdictional wetlands and "other waters of the U.S." in the Study Area in accordance with the 2014 Corps *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) for Non-perennial Streams in the Arid West Region of the Western United States.*

To provide a vision of what potential biological resources may be present on the property, we queried the following online sources for information on the Study Area's potential plant and wildlife communities.

1. California Department of Fish & Wildlife's Natural Diversity Database (RareFind 5) for observations of special status plant and animal species within five miles of the Study Area (Figure 6; Appendix D),
2. U.S. Fish and Wildlife Service's iPac Database of federally-listed special status species in Sacramento County (Appendix E),
3. The California Native Plant Society's Inventory of Rare & Endangered Plants in California

A Barnett Environmental biologist surveyed the Study Area in December 2020 for special status plant and wildlife species that could be supported onsite. The survey included recorded observations of: (1) dominant plant communities, (2) plant and animal species (with emphasis on rare and endangered species) observed or their sign (nests, burrows, tracks, scat) and (3) the suitability of onsite habitats and those immediately adjoining the Study Area to support special status plant or animal species. We used generalized plant community classification schemes to classify onsite habitat types (Sawyer, Keeler-Wolf, and Evens, 2009).

4.0 Existing Conditions

4.1 Soils

According to Natural Resource Conservation Service (NRCS), the Study Area is comprised of two soil types: Dehli-Urban Land Complex, 0 to 2 percent slopes and Urban Land (Figure 5 and Appendix A).

<u>Dehli-Urban Land Complex, 0 to 2 percent slope</u>: covering a third of the Study Area, this type of soil consists of sands and loamy sands. The parent material is wind-modified alluvium derived from granitic rock sources. These soils are found in dunes with slopes ranging from 0 to 2 percent. They are somewhat excessively drained, and the capacity of the most limiting layer to transmit water is high to very high: 5.95 to 19.98 inches/hour. The depth to the water table is typically more than 80 inches. It has no tendency to flood or pond.

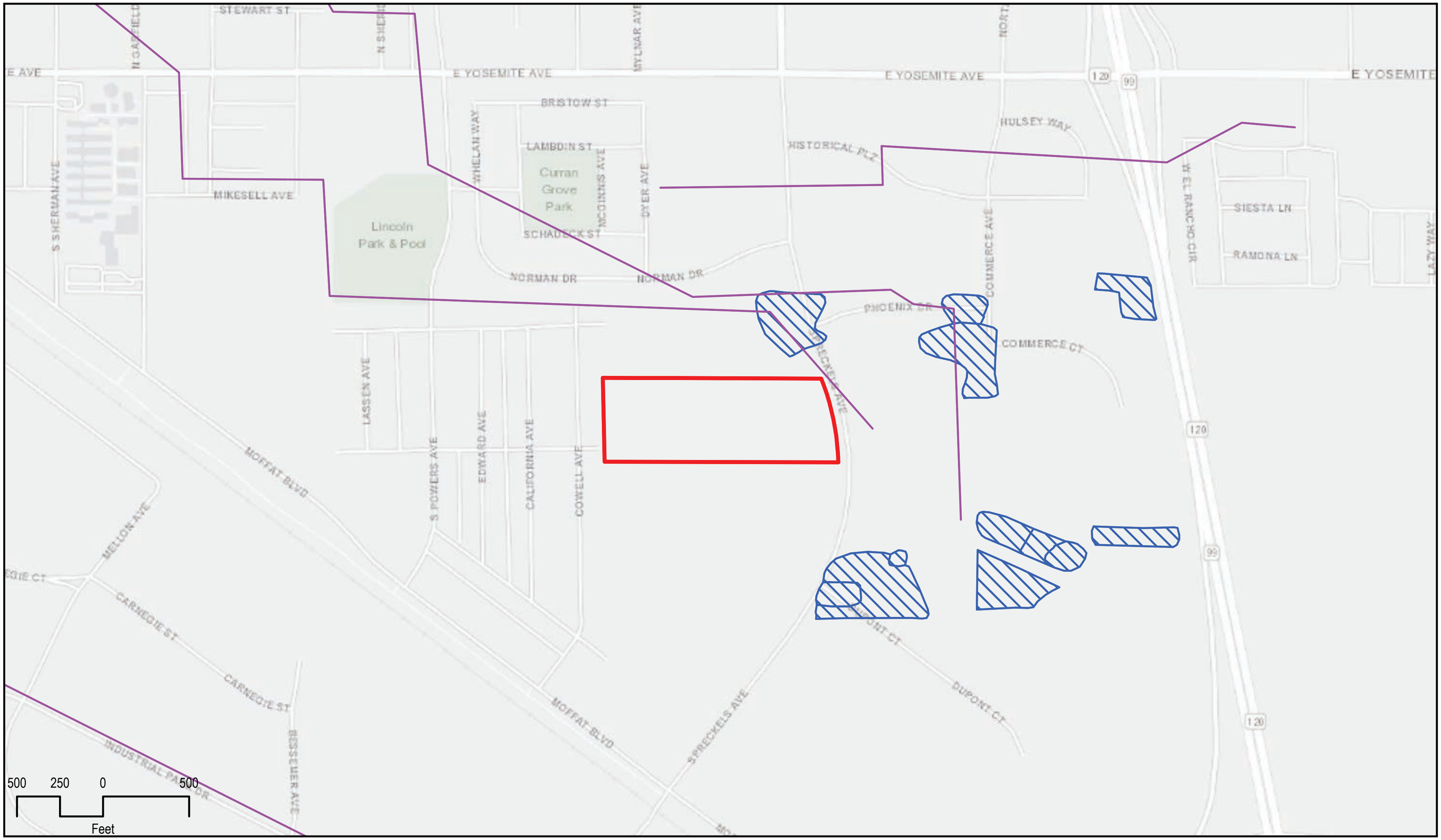
<u>Urban Land</u>: This designation can designate small areas where the soil material has been disturbed by construction or where fill has been added. These soils are also sometimes obscured by urban works

4.2 Hydrology

The project site sits at an elevation of roughly 45 feet above mean sea level within the San Joaquin Delta watershed (Hydrologic Unit Code18040003). The topography is flat, and receives water from rainfall, which averages 15 inches a year.

4.3 Wetlands and "Other Waters of the U.S. and "Waters of the State"

Neither the National Wetlands Inventory nor the California Aquatic Resource Inventory indicate any wetlands on site. Though there were several detention ponds on this parcel during operation of the old Spreckels sugar factory, no wetlands or "other waters of the U.S." or "waters of the state" currently occur onsite and none were observed during Barnett's field survey.



Parcel (APN 22125035)

Rivers, streams, canal/ditch

Fluvial Unnatural

Lakes and Wetlands

Pond and associated vegetation

"California Aquatic Resource Inventory (CARI) version 0.3." Accessed October 5, 2020. Basemap Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, Esri, HERE, USDA FSA, GeoEye, Maxar, County of Los Angeles, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, City of Stockton, San Joaquin County Public Works, San Joaquin County GIS/Planning, Bureau of Land Management, Esri, HERE, Garmin, INCREMENT P, NGA, USGS, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA. Original report (8.5 x 11) scale 1:10,000.

FIGURE 3 - CALIFORNIA AQUATIC RESOURCES INVENTORY (CARI) WETLAND

Date: November 21, 2020

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RANEY-MANTECA, 407 SPRECKELS AVE • SAN JOAQUIN COUNTY, CA

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Parcel (APN 22125035)

Soils

143, Delhi-Urban land complex, 0 to 2 percent slopes

260, Urban land

USDA NRCS Soil Survey accessed 11/22/20, https://datagateway.nrcs.usda.gov/GDGOrder.aspx. Original report scale , Basemap Esri, HERE, Garmin, (c)OpenStreetMap contributors, and the GIS user community, Esri, HERE, USDA FSA, GeoEye, Maxar, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, City of Stockton, San Joaquin County Public Works, San Joaquin County GIS/Planning, Bureau of Land Management, USGS, US Census Bureau, USDA.1:5,000 Original report 8.5x11.

FIGURE 4 - SOILS

Date: November 22, 2020

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BARNETT ENVIRONMENTAL

RANEY-MANTECA, 407 SPRECKELS AVE • SAN JOAQUIN COUNTY, CA

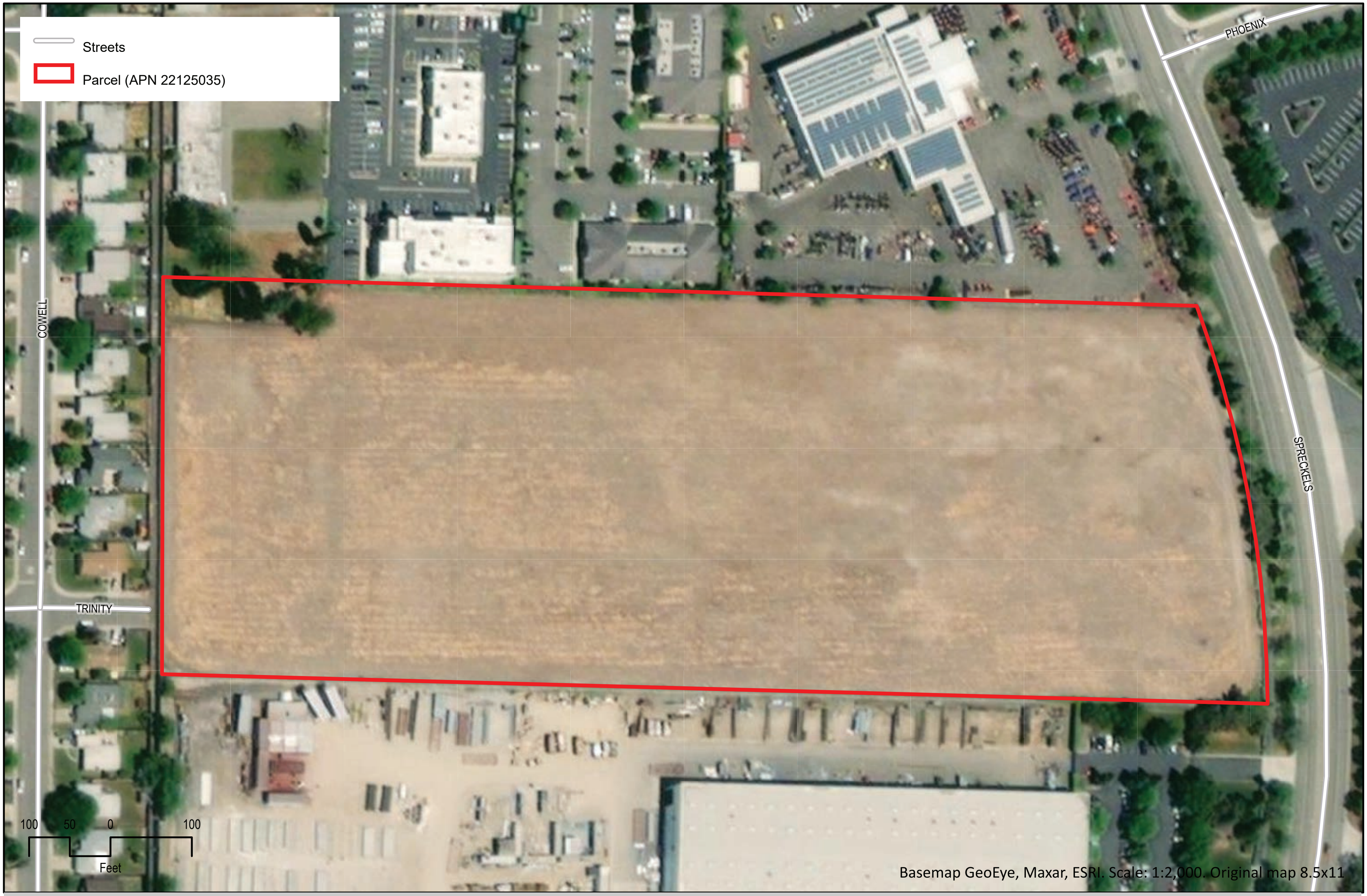


FIGURE 5 - EXISTING CONDITIONS

Date: December 21, 2020

RANEY-MANTECA, 407 SPRECKELS AVE • SAN JOAQUIN COUNTY, CA

BARNETT ENVIRONMENTAL

4.4 Vegetation Communities

Vegetation on the parcel consists of a highly disturbed (i.e. routinely disked) grassland community that combines two (2) SJMSCP vegetation types – C5 (ruderal) and G (Valley grasslands). The entire project site is vegetated with ruderal plant species that normally colonize disturbed areas, such as heronbill (*Erodium botrys*), Russian thistle (*Salsola tragus*), Italian thistle (*Carduus pycnocephalus*), turkey mullein (*Croton setigerus*), mugwort (*Artemisia douglasiana*), and common grasses such as wild oats (*Avena fatua*), Bermuda grass (*Cynodon dactylon*), and rip-gut brome *(Bromus diandrus*). There are several redwood and other landscape trees in the northwestern corner of the property and along the Manteca Tidewater Bikeway on the east side of the property, none of which provide significant value to local wildlife beyond shade and food (e.g. seed) resources.

4.5 Wildlife

Frequently disturbed (e.g. disked) grasslands such as those comprising the subject property offer few resources to wildlife species and few were observed on the property during the November 2020 field survey. Fence lizards (*Sceloporus occidentalis*) were the only reptiles observed onsite; black-tailed jackrabbits (*Lepus californicus)* voles (*Microtus californicus*), and common deer mice (*Peromyscus maniculatus*) the only mammals observed; and rock doves (*Columba livia*) black phoebes (*Sayornis nigricans*) and house finches (*Haemorhous mexicanus*) the only birds observed. Due to frequent disking of the parcel, no rodent or bird (e.g. owl) burrows were observed during the November field survey.

5.0 Special Status Species

Special status species are those that fall into one or more of the following categories:

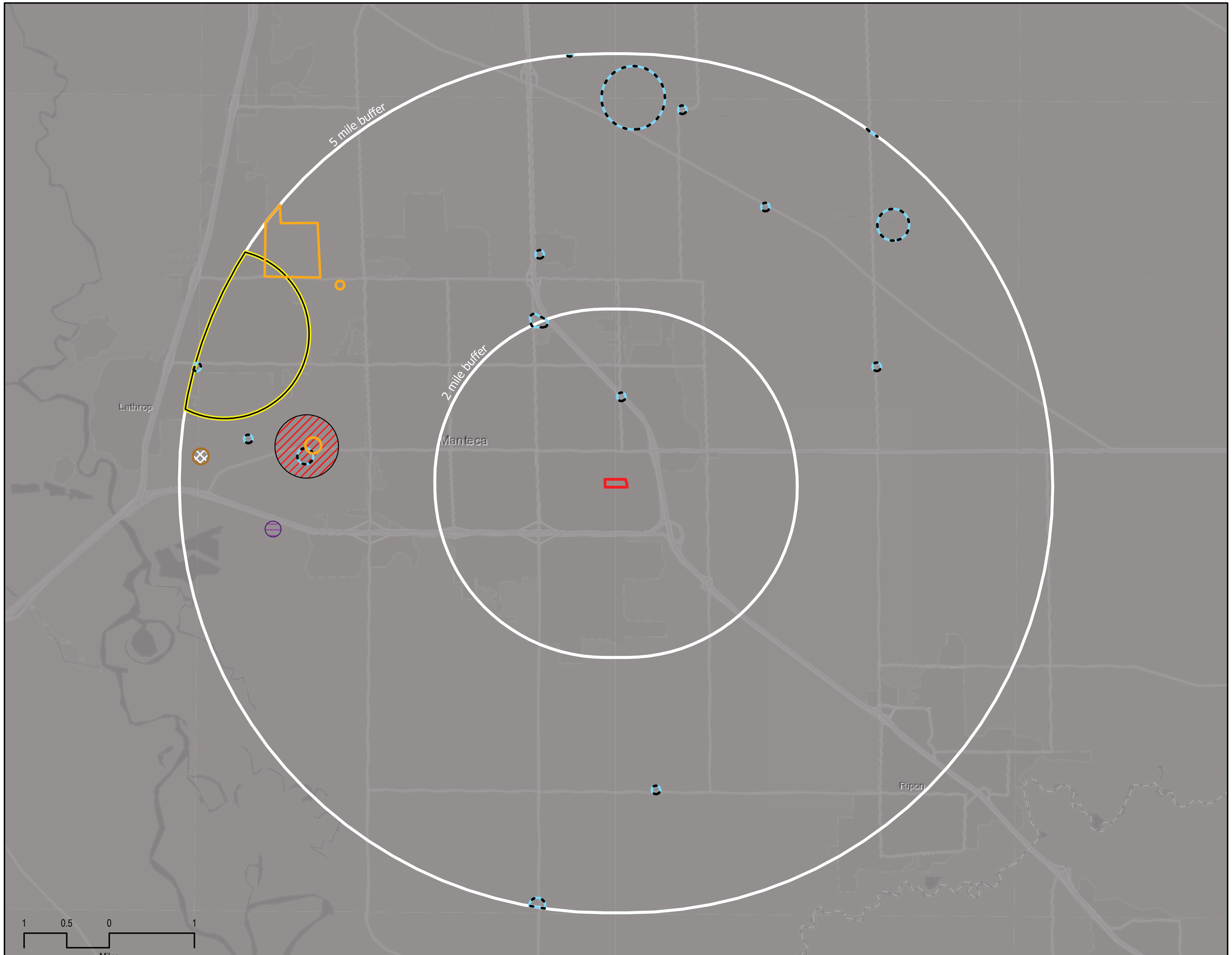
- Listed as endangered or threatened under the Federal Endangered Species Act (FESA) (50 CFR 17.11/17.12) (or formally proposed for listing) (64 FR 205, October 25, 1999; 57533-57547),
- Listed as endangered or threatened under the California Endangered Species Act (CESA) (or proposed for listing) (14 California Code of Regulations [CCR] 670.5),
- Designated as rare, protected, or fully protected pursuant to California Fish and Game Code (FGC, Section 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).
- Designated a Species of Concern by the California Department of Fish and Game,
- Defined as rare or endangered under the California Environmental Quality Act (CEQA), or
- Occurring on List 1 or 2 maintained by the California Native Plant Society.

We reviewed California Natural Diversity Database (CNDDB), California Native Plant Society (CNPS) Inventory, and U.S. Fish & Wildlife Service (FWS) iPAC database for special status species potentially occurring with vicinity (i.e. five-mile radius). While there may be a number of plant and animal species occurring within five miles of the

Study Area (Figure 6), we can refine the list of those species with any real potential of occurring in the Study Area by filtering our query for relevant onsite habitats, locations, and elevations. A summary of the results of this query can be found in Table 1.

5.1 Critical Habitat for Special Status Species

The Federal Endangered Species Act (FESA) requires the federal government to designate critical habitat for any listed species. Critical habitat is defined as: (1) specific areas within the geographical area occupied by the species at the time of listing, if they contain physical or biological features essential to conservation, and those features may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species if the agency determines that the area itself is essential for conservation. There is no designated critical habitat within the Study Area (Appendix C).



Detail Map

- Parcel (APN 22125035)
- California tiger salamander
- Swainson's hawk
- burrowing owl
- loggerhead shrike
- tricolored blackbird
- yellow-headed blackbird

CNDDB version 11/2020. The occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not yet been surveyed and/or mapped. Lack of information in the CNDDB about a species or an area can never be used as proof that no special status species occur in an area CDFW. https://www.wildlife.ca.gov/Data/CNDDB, November 22, 2020. Esri, HERE, USDA FSA, GeoEye, Maxar, San Joaquin County GIS/Planning, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, Esri, USDA Farm Service Agency Scale 1:78,000 original report 11x17.

FIGURE 6 - CALIFORNIA NATIONAL DIVERSITY DATABASE (CNDDB) RECORDED SPECIES OBSERVATION

Date: November 22, 2020

RANEY-MANTECA, 407 SPRECKELS AVE • SAN JOAQUIN COUNTY, CA

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Table 1: Special Status Species with Potential to Occur in the Study Area

Species	Federal	State	CNPS	Habitat	Potential for Occurence in Study Area	Rationale for Assessing Potential of Occurrence
Invertebrates						
Vernal Pool Fairy Shrimp *Brachinecta lynchi*	FT	-	NA	Habitat is grassland vernal pools or similar seasonal wetlands. They require cool water with low alkalinity and low total dissolved solids and tend to be found in smaller pools about six inches (fifteen centimeters) deep that stay flooded for relatively short amounts of time.	None	There are no vernal pools or other wetlands on site that could provide habitat for this species. There have been no CNDDB reported occurrences within five miles of the Study Area. In addition, there were no signs of this species during the Barnett Environment December 2020 site survey.
Vernal pool tadpole shrimp *Lepidurus packardi*	FT	-	NA	This species lives in a wide variety of ephemeral wetland habitats with waters ranging from 50 to 84 degrees Fahrenheit.	None	There is no suitable habitat on site due to the lack of vernal pools or other ephemeral water bodies. There have been no reported CNDDB occurrences within five miles of the Study Area, and there were no signs of this species during the Barnett Environmental December 2020 site survey.
Insects						
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT	-	NA	This species is found on or close to its host plant, red or blue elderberries, along rivers or streams.	None	No riparian habitat or elderberry plants occur on the project site. There have been no reported CNDDB occurrences within five miles of the Study Area. In addition, Barnett Environmental found no sign of this species during its December 2020 site visit.
Amphibians and Reptiles						
Giant Garter Snake *Thamnophis gigas*	FE	-	NA	This snake inhabits agricultural wetlands and other waterways such as irrigation and drainage canals, sloughs, ponds, small lakes, low gradient streams, and adjacent uplands.	None	There are no wetlands that can serve as suitable habitat for this species on the site. In addition, there have been no reported CNDDB occurrences within five miles of the Study Area, and there were no signs of this species during the Barnett Environmental December 2020 site survey.

Species	Federal	State	CNPS	Habitat	Potential for Occurence in Study Area	Rationale for Assessing Potential of Occurrence
Amphibians and Reptiles						
California red-legged frog *Rana draytonii*	FT	-	NA	This species inhabits aquatic habitats including pools and backwaters within streams and creeks, ponds, marshes, springs, sag ponds, dunes, and lagoons.	None	The Study Area does not contain wetlands or other waters that could provide suitable habitat for this species. There have been no reported CNDDB occurrences within five miles of the Study Area. In addition, there were no signs of this species during the Barnett Environmental site survey 2020.
California Tiger Salamander *Ambystoma californense*	FE	-	NA	This species is restricted to grasslands and low foothills with pools or ponds that are necessary for breeding.	None	There is no suitable habitat on this Study Area as it contains no wetlands or other waters. There has been a sole reported CNDDB occurrence within five miles of the Study Area. This occurrence was 3.8 miles to the west of the Study Area in 1996. In addition, there were no signs of this species during the Barnett Environmental site survey in December 2020.
Birds						
Swainson's Hawk *Buteos Swansonii*	-	CT	NA	This species habitat consists of open and semi-open country – deserts, wild prairie, and grasslands.	None	The site does provide marginal foraging habitat for the Swainson's hawkand there have been 15 reported CNDDB occurrences within five miles of the Study Area, the closest being 0.9 miles to the north. No Swainson's hawks were observed during the Barnett Environmental December 2020 field survey, but they are normally in their winter range in northern Mexico this time of year.

Species	Federal	State	CNPS	Habitat	Potential for Occurence in Study Area	Rationale for Assessing Potential of Occurrence
Birds						
Loggerhead shrike *Lanius ludovicianus*	-	SSC	NA	This species inhabits open country with short vegetation and well-spaced shrubs or low trees, especially those with spines or thorns. They frequent agricultural fields, pastures, old orchards, riparian areas, desert scrublands, savannas, and prairies.	None	The site lacks shrubs or low trees which could provide habitat for this species. There has been a sole CNDDB reported occurrence at 4.6 miles to the west of the Study Area in 2016. In addition, there was no sign of this species during the Barnett Environmental December 2020 site visit.
Tricolored blackbird *Agelaius tricolor*	-	CT	NA	This species prefers wetland and grassland habitats. Nesting takes place in native emergent marshes, silage, and other grain fields, and other upland and flooded habitats.	None	There are no wetlands on site that could serve as habitat for this species. There has been a sole CNDDB occurrence reported within five miles of the Study Area; the occurrence was 3.1 miles to the west in 1972. There was no sign of this species during the Barnett Environmental December 2020 site visit.
Burrowing Owl *Athene cunicularia*	None	SSC	NA	This species is found in open grassland, farmland, and airfields and favor areas of flat open ground with very short grass or bare soil. They nest in burrows, often in those left by prairie-dogs, ground squirrels, or other animals.	Low	No burrows or other holes were found on site that could serve as nesting habitat for this species. However, the flat, open, short-grass grassland does provide suitable habitat for the species. There are three CNDDB occurrences five miles from the Study Area; the closest being 3.3 miles to the northwest, and the most recent was in 2009. Neither this species or its sign was observed during the Barnett site survey in December 2020.

Species	Federal	State	CNPS	Habitat	Potential for Occurence in Study Area	Rationale for Assessing Potential of Occurrence
Birds						
Yellow-headed blackbird *Xanthocephalus xanthocephalus*	None	SSC	NA	During the summer, this species is found in freshwater marshes. They particularly like to live among cattails, tule, and bulrush. During migration and over the winter months, this species is found in open, cultivated lands, fields, and in pastures.	None	There are no wetlands, marshes or otherwise, that could provide habitat for this species on the site. There has been a sole reported CNDDB occurrence, which occurred in 1984 approximately 3.7 miles to the northwest. There was no sign of this species during the Barnett site visit in December 2020.

Special Status Species Codes:

<u>Federal</u>: FE = Federal Endangered. FT = Federal Threatened

<u>State</u>: SSC = California Species of Special Concern CE = California Endangered

CFP = California Fully Protected CT = California Threatened

SCT = State Candidate California Threatened

SCE = State Candidate California Endangered

<u>CNPS</u>: 1B = Rare or Threatened in CA and elsewhere 2B = Rare, Threatened, or Endangered in CA, but more common elsewhere

Potential for Occurrence Codes:

None: *No suitable habitat for the special status species within the Study Area*

Very Low: *Either the special status species is known to occur within five miles and there is marginal suitable habitat exists in the Study Area, or the Study Area provides suitable habitat, but the species is not known to occur within a five-mile radius.*

Low *Marginally suitable habitat exists in the Study Area and the special status species occurs within 5 miles but surrounding urban land use conditions and regularity of human activity make it unlikely that the species occurs in the Study Area.*

Moderate: *The special status species is known to occur within a five-mile radius and the Study Area contains suitable habitat, however surrounding urban land use conditions and onsite disturbance reduce the likelihood of occurrence.*

High: *The Study Area provides suitable habitat and there is either documentation of species occurrence within a five-mile radius or evidence gathered by a professional surveyor during an onsite field assessment.*

Present: *Species known to occur within the Study Area based on record search and/or evidence collect during onsite field surveys.*

5.2 Special Status Plants and Wildlife

There are no special status plant species that have any potential to occur in the Study Area.

5.3 Special Status Wildlife

Federally Listed Species

No federal species have the potential to occur in the Study Area (Table 2):

State-Listed Species

A single state-listed animal species – Swainson's hawk – has the potential to occur within the Study Area (Table 2).

1. **Swainson's hawk (*Buteo swainsoni*)** – The California threatened Swainson's hawk is a large (1.75 - 2 pounds), broad-winged bird-of-prey (raptor) that frequents open country. It is a long-distance migrator that nests in the Central Valley from March 1 to September 15 and over-winters in Mexico or South America. This hawk forages almost exclusively in agricultural row-crops and grasslands. Its favored prey is voles and small rodents that are more readily available in suitable densities on agricultural lands. Unlike some other local raptors, urban areas or dense vegetation do not provide suitable foraging habitat for this hawk. Swainson's hawks are monogamous and actively nest from March through July. Nests of twigs and grasses are constructed in isolated trees or bushes, shelterbelts, riparian groves, or abandoned homesteads, approximately nine to 15 feet above the ground in cottonwood, poplar, oak and the occasional pine tree in the Central Valley. The species' incubation period is 34 to 35 days, with fledging at about 38 to 46 days. Sacramento, Yolo, and San Joaquin Counties support most of the Central Valley Swainson's hawk breeding population. Narrow riparian systems and scattered Valley oak trees, combined with suitable agricultural foraging habitat, provide high-quality nesting conditions. There are 15 CNDDB recorded occurrences of Swainson's hawk within five miles of the Study Area, with the nearest sighting 0.9 miles to the north. No Swainson's hawks or their nests were observed during December 2020 field surveys, when most of these hawks are overwintering in northern Mexico.

2. **Burrowing owl** (*Athene cunicularia*) This raptor is found in annual or perennial grasslands, deserts and scrublands with low-growing vegetation. They are subterranean nesters dependent upon burrowing animals like the California ground squirrel, black-tailed jackrabbit, or gophers to excavate their burrows. Western burrowing owls are opportunistic feeders with a diet consisting of arthropods, small mammals, birds, and amphibians and reptiles. They nest in single pairs and in colonies within underground burrows in grasslands or prairies. The nests are constructed by a wide variety of material, most common being animal dung. Breeding takes place in late March through September in open grasslands or prairies. Incubation lasts 28-30 days, with young dispersing to nearby burrows in early fall. There were three CNDDB occurrences reported five miles from the Study Area. The closest was 3.3 miles to the northwest, and the most recent was in 2009. No burrowing owls or their nests were observed during the December 2020 field surveys and no rodent, ground squirrel or jackrabbit holes were found on site that could be used by this species.

California Species of Special Concern (CEQA)

No California Species of Special Concern has the potential to occur within the Study Area (Table 2).

6.0 Effects if Proposed Action

6.1 Effects of Proposed Action on Rare Plants and Habitat

The following discussion of biological resources impacts, and mitigation measures is based on implementation of the proposed project in comparison to existing conditions.

Rare plants

According to the CNDDB, there are two plant species that have the potential to occur within five miles. However, there is no appropriate habitat or documented occurrences of these species within the Study Area and none were observed during Barnett's December 2020 field surveys.

6.3 Effects of Proposed Action on Wildlife and Habitat

According to the CNDDB, there are two wildlife species that have the potential to occur within five miles: Swainson's hawk and Burrowing Owl.

Swainson's hawk

No Swainson's hawks were observed during the December 2020 field survey. However, a preconstruction raptor survey during the hawk's breeding period would reveal its presence or absence within the Study Area. Therefore, prior to construction:

1. A nesting survey should be conducted within 15 days prior to construction if between March 1st and September 1st ("the nesting season"). If disturbance associated with the project would occur outside of the nesting season, no surveys shall be required.

2. If Swainson's hawk are identified as nesting on the project site, a non-disturbance buffer of 75-feet should 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 a qualified ornithologist has determined that the young have attained sufficient flight skills to leave the area or that the nesting cycle has otherwise completed.

3. Mitigation for 14.83 acres of Swainson hawk foraging habitat (via Conservation Bank credit purchase or in-liew fee) may be required by the local entitling jurisdiction.

Burrowing Owl

No burrowing owls were observed during the December 2020 field survey, however, to ensure no adverse impact prior to construction:

1. A qualified biologist or ornithologist will perform a preconstruction field survey during either non-breeding or breeding seasons – the non-breeding survey between September 1 and January 31 and breeding season between February 15 and August 15. Ideally, the survey should be conducted from two hours before until one hour after sunset or from one hour before to two hours after sunrise when the species is most active. The survey techniques shall be consistent with the CDFW survey protocol and include a 500-foot-wide buffer zone surrounding the Study Area. If no burrowing owls are detected during preconstruction surveys, then no further mitigation is required.
2. If active burrowing owl burrows are identified, project activities shall not disturb the burrow during the nesting season (February 1–August 31) or until a qualified biologist has determined that the young have fledged or the burrow has been abandoned. A no disturbance buffer zone of 660-feet is required to be established around each burrow with an active nest until the young have fledged the burrow as determined by a qualified biologist.

7.0 Conclusions

1. There are no wetlands and "other waters of the United States" within the Study Area.

2. The California Natural Diversity Database (Rarefind) contains no records of any species of special concern within the Study Area. While several of the species in Table 2 occur within the vicinity of the Study area, two species – the Swainson's hawk and burrowing owl – could occupy the site based on habitat requirements, elevation, or observations within five miles. Barnett's recent biological survey did not, however, reveal these species within the Study Area. Historic and ongoing disturbance of the site (i.e. disking) may preclude any future presence of these species.

8.0 References

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Appendix A: (NRCS) Soils Report

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

San Joaquin County, California

407 Spreckels Ave

November 22, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Soil Map

Map Scale: 1:2,290 if printed on A landscape (11" x 8.5") sheet.

Map projection: Web Mercator   Corner coordinates: WGS84   Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Joaquin County, California
Survey Area Data: Version 14, May 29, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 16, 2020—Jun 19, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
143	Delhi-Urban land complex, 0 to 2 percent slopes	4.6	31.3%
260	Urban land	10.2	68.7%
Totals for Area of Interest		**14.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

San Joaquin County, California

143—Delhi-Urban land complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hhsc
Elevation: 30 to 140 feet
Mean annual precipitation: 11 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 270 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Delhi and similar soils: 50 percent
Urban land: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Delhi

Setting

Landform: Dunes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Wind-modified alluvium derived from granitic rock sources

Typical profile

A - 0 to 16 inches: loamy sand
C - 16 to 26 inches: loamy sand
C - 26 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Urban Land

Interpretive groups

Land capability classification (irrigated): 8

Land capability classification (nonirrigated): 8
Hydric soil rating: No

Minor Components

Honcut

Percent of map unit: 5 percent
Hydric soil rating: No

Veritas

Percent of map unit: 4 percent
Hydric soil rating: No

Tinnin

Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed, altered soils

Percent of map unit: 2 percent
Hydric soil rating: No

260—Urban land

Map Unit Composition

Urban land: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Interpretive groups

Land capability classification (irrigated): 8
Land capability classification (nonirrigated): 8
Hydric soil rating: No

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Appendix B: California Natural Diversity Database

Query Criteria: Quad IS (Manteca (3712172))
 AND Elevation IS greater than OR equal to "0"
 AND Elevation IS less than OR equal to "100"
 AND Habitat IS (Valley & foothill grassland)

Buteo swainsoni

Element Code: ABNKC19070

Swainson's hawk

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5
	State:	Threatened		**State:**	S3
	Other:	BLM_S-Sensitive, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern			
Habitat:	**General:**	BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, & AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.			
	Micro:	REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.			

Occurrence No.	386 **Map Index:** 21220	**EO Index:**	18632	**Element Last Seen:**	1992-XX-XX
Occ. Rank:	Good	**Presence:**	Presumed Extant	**Site Last Seen:**	1992-XX-XX
Occ. Type:	Natural/Native occurrence	**Trend:**	Unknown	**Record Last Updated:**	2013-10-28

Quad Summary: Manteca (3712172)

County Summary: San Joaquin

Lat/Long:	37.85625 / -121.14099	**Accuracy:**	2/5 mile
UTM:	Zone-10 N4191494 E663540	**Elevation (ft):**	50
PLSS:	T01S, R08E, Sec. 07, SW (M)	**Acres:**	0.0

Location: VICINITY OF JACK TONE ROAD ABOUT 0.5 MILE SOUTH OF THE WILDWOOD ROAD JUNCTION, 6 MI NE OF MANTECA.

Detailed Location: 1970 LOCALITY "6 MI NE OF MANTECA," ATTRIBUTED HERE. MAPPED TO TERRITORY #SJ051 FROM CDFW SWAINSON'S HAWK OBSERVATIONS DATABASE, "1/2 MI SSE OF JUNC JACK TONE RD & WILDWOOD RD." HOLT RECORDS GIVE LOCATION AS "JACK TONE RD X TEMPLE [CREEK]."

Ecological: 1980S-1990S NEST TREE WAS A LONE OAK SURROUNDED BY AGRICULTURAL FIELDS; CROP TYPES INCLUDED HAY, CORN, SUGAR BEETS, AND CRUCIFEROUS VEGETABLES. SURVEYOR'S NOTES AND AERIAL PHOTOGRAPHS INDICATE CONVERSION TO ORCHARD/VINEYARD.

General: ACTIVE NEST IN VICINITY IN 1970. NESTING PAIR OBSERVED IN 1988, 0 YOUNG FLEDGED. ACTIVE NEST OBS IN 1990, 1 DOWNY CHICK ON 22 MAY. PAIR NESTED AGAIN IN 1991 BUT NEST FAILED. 3 YOUNG FLEDGED IN 1992. 2 ADULTS OBS BUT NO NEST FOUND IN 1994.

Owner/Manager: PVT

Occurrence No.	588	**Map Index:** 23636	**EO Index:**	16755	**Element Last Seen:**	1991-XX-XX
Occ. Rank:	Unknown		**Presence:**	Presumed Extant	**Site Last Seen:**	1991-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown	**Record Last Updated:**	2013-08-05

Quad Summary: Manteca (3712172)

County Summary: San Joaquin

Lat/Long:	37.85761 / -121.19627	**Accuracy:**	2/5 mile
UTM:	Zone-10 N4191549 E658674	**Elevation (ft):**	35
PLSS:	T01S, R07E, Sec. 10, SW (M)	**Acres:**	0.0

Location: VICINITY OF LONE TREE CREEK, 0.7 MI NW OF THE INTERSECTION OF FRENCH CAMP ROAD & AUSTIN ROAD, 3 MILES NORTH OF MANTECA.

Detailed Location: TERRITORY SJ071 (PART- SEE ALSO EO#1631) FROM CDFW SWAINSON'S HAWK OBSERVATIONS DATABASE). MAPPED TO TRS GIVEN IN LIST OF SAN JOAQUIN COUNTY NESTS 1990-92. 2009 DETECTION IN VICINITY, NORTH OF FRENCH CAMP RD AT CASTLE RD.

Ecological: 1991 NEST TREE WAS AN OAK. 2009 SUSPECTED NEST IN VALLEY OAK.

General: 1 YOUNG FLEDGED IN 1991. HAWK PERCHED IN AREA ON 29 MAY 2009.

Owner/Manager: UNKNOWN

Occurrence No.	1631	**Map Index:** 64689	**EO Index:**	64768	**Element Last Seen:**	2002-07-18
Occ. Rank:	Unknown		**Presence:**	Presumed Extant	**Site Last Seen:**	2002-07-18
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown	**Record Last Updated:**	2013-08-05

Quad Summary: Manteca (3712172)

County Summary: San Joaquin

Lat/Long:	37.85564 / -121.18569	**Accuracy:**	80 meters
UTM:	Zone-10 N4191350 E659609	**Elevation (ft):**	40
PLSS:	T01S, R07E, Sec. 10, SE (M)	**Acres:**	0.0

Location: ALONG AUSTIN ROAD, ON THE SOUTH SIDE OF THE AUSTIN CREEK CROSSING, ABOUT 8 MILES SE OF STOCKTON.

Detailed Location: VICINITY OF 1994 DETECTION AT TERRITORY SJ071 (PART - SEE ALSO EO#588) FROM CDFW SWAINSON'S HAWK OBSERVATIONS DATABASE, "0.75 MI N OF SUMMER HOME E OF AUSTIN RD." MAPPED TO 2002 LOCATION FROM CDFW NEST RECORDS.

Ecological: 1994 DETECTION AT FARMSTEAD SURROUNDED BY AGRICULTURAL FIELDS. 2002 NEST TREE WAS A VALLEY OAK; SURROUNDED BY ROW CROPS TO THE EAST, ORCHARD/VINEYARD TO THE NW, AND FALLOW LAND TO THE SW.

General: 1 TERRITORIAL/DEFENSIVE ADULT OBSERVED IN 1994; SURVEYOR WAS UNABLE TO LOCATE NEST TREE. ACTIVE NEST OBSERVED ON 6 JUN 2002, WHEN 1 ADULT WAS INCUBATING, AND 18 JUL 2002, WHEN 2 FEATHERED JUVENILES WERE SEEN IN THE NEST.

Owner/Manager: UNKNOWN

Occurrence No.	2403	**Map Index:** 89842	**EO Index:**	90852		**Element Last Seen:**	2011-07-27
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2011-07-27
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2013-08-27

Quad Summary: Manteca (3712172)

County Summary: San Joaquin

Lat/Long:	37.83083 / -121.21610	**Accuracy:**	80 meters
UTM:	Zone-10 N4188545 E656986	**Elevation (ft):**	35
PLSS:	T01S, R07E, Sec. 21, SW (M)	**Acres:**	0.0

Location: NORTHEAST CORNER OF APACHE DRIVE AND NAVAJO WAY, ABOUT 0.3 MILE NNE OF SR 99 AT LATHROP ROAD, NORTH OF MANTECA.

Detailed Location: MAPPED TO COORDINATES GIVEN ON FIELD SURVEY FORM.

Ecological: NEST IN DEODAR CEDAR IN FRONT YARD OF RESIDENCE AT NORTHEAST CORNER OF INTERSECTION. ADULTS OBSERVED FORAGING IN STRAWBERRY FIELDS IMMEDIATELY SOUTH OF DEVELOPMENT (N SIDE LATHROP ROAD). SURROUNDING HABITAT AGRICULTURAL, RESIDENTIAL.

General: NEST MONITORED APR-JUL 2011; ADULTS FREQUENTLY FORAGED IN THE STRAWBERRY FIELDS. 2 YOUNG FLEDGED BY 27 JUL 2011.

Owner/Manager: PVT

Occurrence No.	2404	**Map Index:** 89845	**EO Index:**	90853		**Element Last Seen:**	2012-04-06
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2012-04-06
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2013-08-27

Quad Summary: Manteca (3712172)

County Summary: San Joaquin

Lat/Long:	37.81913 / -121.21680	**Accuracy:**	specific area
UTM:	Zone-10 N4187245 E656950	**Elevation (ft):**	35
PLSS:	T01S, R07E, Sec. 28, NW (M)	**Acres:**	16.0

Location: NORTH MAIN STREET/SR 99 INTERCHANGE IN MANTECA.

Detailed Location: 3 NEST SITES REPRESENTED. 2009 SITE IS E-MOST OF 4 TREES IN PARCEL JUST S OF INTERCHANGE, FROM CDFW SHAPEFILE. 2011 SITE AT W-MOST TREE IN PARCEL, JUST E OF MAIN STREET, 2012 NEST TREE IN MEDIAN WITHIN INTERCHANGE; FROM FIELD SURVEY FORMS.

Ecological: NEST TREES WERE EUCALYPTUS. HABITAT WAS FALLOW FIELDS, SURROUNDED BY FREEWAY, COMMERCIAL AND RESIDENTIAL LAND USE.

General: SUSPECTED NEST DOCUMENTED IN 2009. COPULATION, NEST-BUILDING OBSERVED IN APR 2011; NEST WAS DESTROYED BY JUL 13 BUT PAIR REMAINED IN AREA. PAIR OBSERVED COPULATING, NEST-BUILDING, FLYING TO & FROM THE NEST IN APR 2012; EGGS SUSPECTED.

Owner/Manager: PVT

Occurrence No.	2405 **Map Index:** 89846	**EO Index:**	90857	**Element Last Seen:**	2011-07-27
Occ. Rank:	Good	**Presence:**	Presumed Extant	**Site Last Seen:**	2011-07-27
Occ. Type:	Natural/Native occurrence	**Trend:**	Unknown	**Record Last Updated:**	2013-08-27

Quad Summary: Manteca (3712172)

County Summary: San Joaquin

Lat/Long:	37.80667 / -121.19833	**Accuracy:**	80 meters
UTM:	Zone-10 N4185894 E658602	**Elevation (ft):**	40
PLSS:	T01S, R07E, Sec. 34, NW (M)	**Acres:**	0.0

Location: SOUTHWEST CORNER OF COTTAGE AVENUE OVERPASS AT SR 99 IN MANTECA.

Detailed Location: MAPPED TO COORDINATES GIVEN ON FIELD SURVEY FORM.

Ecological: NEST IN EUCALYPTUS PARTIALLY OVERHANGING THE HIGHWAY. AT NORTHERN APEX OF A SMALL TRIANGULAR PARCEL OF OPEN SPACE, COMPLETELY SURROUNDED BY SUBURBAN DEVELOPMENT. ADULTS OBSERVED FORAGING IN PARCEL & IN FIELD NORTH OF COTTAGE AVE/LOUISE AVE.

General: NESTING PAIR MONITORED APR-JUL 2011; AT LEAST 1 JUVENILE SUCCESSFULLY FLEDGED.

Owner/Manager: PVT

Occurrence No.	2406 **Map Index:** 89849	**EO Index:**	90858	**Element Last Seen:**	2009-06-30
Occ. Rank:	Unknown	**Presence:**	Presumed Extant	**Site Last Seen:**	2009-06-30
Occ. Type:	Natural/Native occurrence	**Trend:**	Unknown	**Record Last Updated:**	2013-08-01

Quad Summary: Manteca (3712172)

County Summary: San Joaquin

Lat/Long:	37.81210 / -121.14355	**Accuracy:**	80 meters
UTM:	Zone-10 N4186591 E663413	**Elevation (ft):**	55
PLSS:	T01S, R08E, Sec. 31, NW (M)	**Acres:**	0.0

Location: SOUTHEAST CORNER OF JACK TONE ROAD AND LOUISE AVENUE, ABOUT 3 MILES EAST OF MANTECA.

Detailed Location: MAPPED TO POINT FROM CDFW SHAPEFILE OF NEST SITES RECORDED IN 2009.

Ecological: NEST IN 50' TREE CODED AS PINE (LOOKS LIKE DEODAR CEDAR IN GOOGLE STREET VIEW) SURROUNDED BY ORCHARD WITH CROPLAND TO THE NW.

General: NEST WITH YOUNG OBSERVED ON 30 JUN 2009.

Owner/Manager: UNKNOWN

Occurrence No.	2407 **Map Index:** 89851	**EO Index:**	90860	**Element Last Seen:**	2009-06-19
Occ. Rank:	Unknown	**Presence:**	Presumed Extant	**Site Last Seen:**	2009-06-19
Occ. Type:	Natural/Native occurrence	**Trend:**	Unknown	**Record Last Updated:**	2013-08-01

Quad Summary: Manteca (3712172)

County Summary: San Joaquin

Lat/Long:	37.83918 / -121.16770	**Accuracy:**	80 meters
UTM:	Zone-10 N4189553 E661228	**Elevation (ft):**	45
PLSS:	T01S, R07E, Sec. 23, NE (M)	**Acres:**	0.0

Location: SOUTHWEST CORNER OF FRENCH CAMP ROAD AT PRESCOTT ROAD, ABOUT 2.5 MILES NE OF MANTECA.

Detailed Location: MAPPED TO POINT FROM CDFW SHAPEFILE OF NEST SITES RECORDED IN 2009.

Ecological: NEST IN 45' TREE CODED AS "OTHER EXOTIC," WITH ALFALFA TO THE NORTHEAST, ORCHARD SOUTH AND CROPS TO THE NORTHWEST.

General: NEST WITH YOUNG OBSERVED ON 19 JUN 2009.

Owner/Manager: UNKNOWN

Occurrence No.	2408	**Map Index:**	89853	**EO Index:**	90862	**Element Last Seen:**	2012-04-06
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2012-04-06
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2013-08-27

Quad Summary: Manteca (3712172)

County Summary: San Joaquin

Lat/Long:	37.86417 / -121.22388	**Accuracy:**	80 meters
UTM:	Zone-10 N4192231 E656231	**Elevation (ft):**	25
PLSS:	T01S, R07E, Sec. 08, NE (M)	**Acres:**	0.0

Location: PARK VIEW CEMETERY, ON E FRENCH CAMP RD ABOUT 0.3 MILE EAST OF THE SR 99 INTERCHANGE.

Detailed Location: MAPPED TO COORDINATES GIVEN ON 2011 AND 2012 FIELD SURVEY FORMS.

Ecological: NEST TREE WAS A CEDAR, THE TALLEST TREE IN THE CEMETERY. SEVERAL OTHER CEMETERY TREES USED FOR PERCHING. SURROUNDED BY PRIME FORAGING HABITAT, INCLUDING AGRICULTURAL FIELDS AND GOLF COURSE. HAWKS OBSERVED FORAGING & FEEDING IN GOLF COURSE.

General: LOCALS SUGGESTED NESTING IN AREA FOR SERVERAL PREVIOUS YEARS. 1 ADULT AND 4 JUVENILES OBSERVED PERCHING NEAR THE NEST TREE IN JUL 2011. NESTING PAIR OBSERVED FOR 2 WEEKS IN APR 2012; FEMALE BELIEVED TO HAVE LAID EGGS IN EARLY APR.

Owner/Manager: PVT

Occurrence No.	2409	**Map Index:**	89855	**EO Index:**	90864	**Element Last Seen:**	2012-04-06
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2012-04-06
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2013-08-01

Quad Summary: Manteca (3712172)

County Summary: San Joaquin

Lat/Long:	37.86528 / -121.20999	**Accuracy:**	80 meters
UTM:	Zone-10 N4192378 E657451	**Elevation (ft):**	30
PLSS:	T01S, R07E, Sec. 09, N (M)	**Acres:**	0.0

Location: ABOUT 0.6 MILE NE OF SR 99 AT E FRENCH CAMP RD AND 1.5 MILES NW OF LONE TREE CREEK AT AUSTIN RD, NORTH OF MANTECA.

Detailed Location: MAPPED TO COORDINATES GIVEN ON 2012 FIELD SURVEY FORM.

Ecological: NEST IN VALLEY OAK ON THE PERIMETER OF AN AGRICULTUAL FIELD. BIRDS OBSERVED FORAGING IN SURROUNDING FIELDS. SURVEYORS NOTED HIGH DISTURBANCE LEVEL FROM AGRICULTURAL OPERATIONS.

General: NESTING PAIR MONITORED OVER A FOUR WEEK PERIOD, FEMALE BELIEVED TO HAVE LAID EGGS IN EARLY APRIL.

Owner/Manager: PVT

Occurrence No.	2414	**Map Index:**	89892	**EO Index:**	90908	**Element Last Seen:**	1988-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1988-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2013-08-05

Quad Summary: Manteca (3712172)

County Summary: San Joaquin

Lat/Long:	37.83630 / -121.14021	**Accuracy:**	1/5 mile
UTM:	Zone-10 N4189282 E663653	**Elevation (ft):**	50
PLSS:	T01S, R08E, Sec. 19, NW (M)	**Acres:**	0.0

Location: ALONG LONE TREE CREEK, ABOUT 0.25 MILE EAST OF THE JACK TONE RD CROSSING, 3 MILES NE OF MANTECA.

Detailed Location: TERRITORY SJ052 FROM CDFW SWAINSON'S HAWK OBSERVATIONS DATABASE AT "LONE TREE CREE, 1/4 MI EAST JACK TONE RD;" EXACT LOCATION UNKNOWN.

Ecological: NEST IN OAK SURROUNDED BY RIPARIAN/AGRICULTURAL HABITAT.

General: 2 ADULT SWAINSON'S HAWKS OBSERVED AT NEST SITE IN 1988.

Owner/Manager: PVT

Lytta moesta

Element Code: IICOL4C020

moestan blister beetle

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:** G2
	State:	None		**State:** S2
	Other:			
Habitat:	**General:**	CENTRAL CALIFORNIA.		
	Micro:			

Occurrence No.	9	**Map Index:**	64365	**EO Index:**	64444	**Element Last Seen:**	19XX-XX-XX
Occ. Rank:	Unknown			**Presence:**	Possibly Extirpated	**Site Last Seen:**	19XX-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-03-28

Quad Summary: Manteca (3712172)

County Summary: San Joaquin

Lat/Long:	37.79741 / -121.21887	**Accuracy:**	1 mile
UTM:	Zone-10 N4184832 E656813	**Elevation (ft):**	40
PLSS:	T01S, R07E, Sec. 32 (M)	**Acres:**	0.0

Location: MANTECA.

Detailed Location:

Ecological:

General: LOCALITY FROM CALIFORNIA BEETLE PROJECT ONLINE DATABASE; COLLECTION INFORMATION NOT GIVEN. HISTORICAL RECORD; EXACT LOCATION UNKNOWN.

Owner/Manager: UNKNOWN

Appendix C: U.S. Fish & Wildlife Service iPAC

IPaC **U.S. Fish & Wildlife Service**

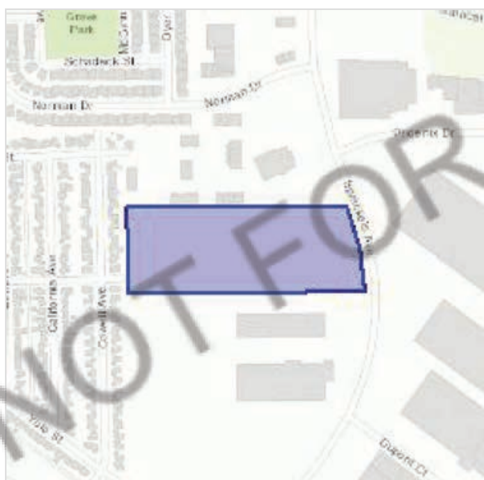
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

San Joaquin County, California



Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Reptiles

NAME	STATUS

Giant Garter Snake Thamnophis gigas — Threatened
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/4482

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp Branchinecta lynchi There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp Lepidurus packardi There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Burrowing Owl Athene cunicularia — Breeds Mar 15 to Aug 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9737

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Costa's Hummingbird Calypte costae — Breeds Jan 15 to Jun 10
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9470

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Song Sparrow Melospiza melodia — Breeds Feb 20 to Sep 5
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Spotted Towhee Pipilo maculatus clementae — Breeds Apr 15 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/4243

Yellow-billed Magpie Pica nuttalli — Breeds Apr 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9726

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

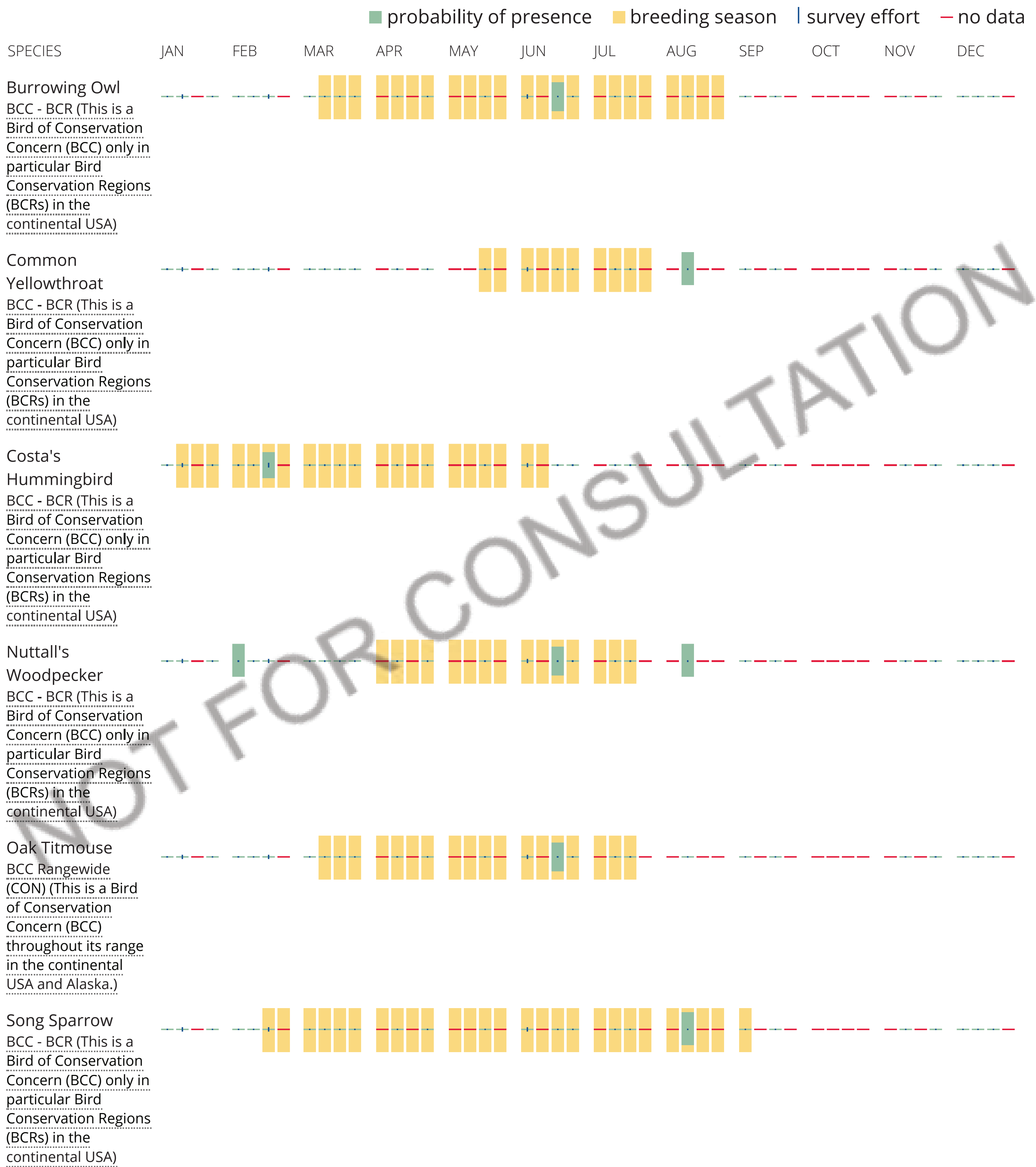
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

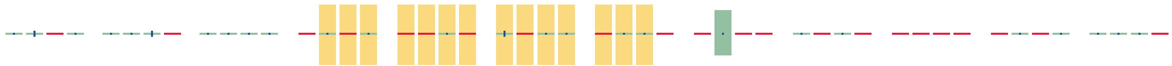
No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

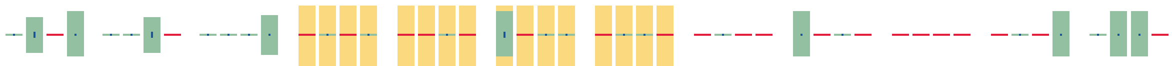
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Spotted Towhee
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Yellow-billed Magpie
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX C

ENVIRONMENTAL NOISE & VIBRATION ANALYSIS

Environmental Noise & Vibration Assessment

DCT Spreckels Distribution Center

Manteca, California

BAC Job # 2020-105

Prepared For:

Raney Planning & Management, Inc.

Attn: Rod Stinson
1501 Sports Drive, Suite A
Sacramento, CA 95834

Prepared By:

Bollard Acoustical Consultants, Inc.

Dario Gotchet, Senior Consultant

January 13, 2021

BOLLARD
Acoustical Consultants

CEQA Checklist

NOISE AND VIBRATION – **Would the Project Result in:**	**NA – Not Applicable**	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Generation of 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?			**X**		
b) Generation of excessive groundborne vibration or groundborne noise levels?				**X**	
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?					**X**

Introduction

The proposed DCT Spreckels Distribution Center (project) is located at 407 Spreckels Avenue in the City of Manteca, California. Existing land uses in the project vicinity include residential to the west, and industrial in all other directions. The project site is bordered by Spreckels Avenue to the east. The project area and site plan are shown on Figures 1 and 2, respectively.

The project proposes the development of a 305,000 sq. ft. industrial warehouse building on approximately 15 acres of unimproved land. The development will consist of full drive around capacity and two office locations for potential demising and leasing. The proposed facility will primarily be used for warehousing and distribution, with approximately 10,000 sq. ft. of office improvements. The project site is located within the Spreckels Park Development.

The purposes of this assessment are to quantify the existing noise and vibration environments, identify potential noise and vibration impacts resulting from the project, identify appropriate mitigation measures, and provide a quantitative and qualitative analysis of impacts associated with the project. Specifically, impacts are identified if project-related activities would cause a substantial increase in ambient noise or vibration levels at existing noise-sensitive uses in the project vicinity. An impact would also be identified if project-generated noise or vibration levels would exceed applicable federal, state, or City of Manteca standards at existing noise-sensitive uses in the project vicinity.

Noise and Vibration Fundamentals

Noise

Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard and are designated as sound. The number of pressure variations per second is called the frequency of sound and is expressed as cycles per second, or Hertz (Hz). Definitions of acoustical terminology are provided in Appendix A.

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 of pressure) as a point of reference, defined as 0 dB. Other sound pressures are then compared to the 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. Another useful aspect of the decibel scale is that changes in decibel levels correspond closely to human perception of relative loudness. Noise levels associated with common noise sources are provided in Figure 3.

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 filtering the frequency response of a sound level meter by means of the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. 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.

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 noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}). The L_{eq} is the foundation of the day/night average noise descriptor, L_{dn} or DNL and shows very good correlation with community response to noise.

DNL is based on the average noise level over a 24-hour day, with a +10-decibel weighting applied to noise occurring during nighttime hours (10:00 p.m. to 7:00 a.m.). The nighttime penalty is based on the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because DNL represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Vibration

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 noise is generally considered to be pressure waves transmitted through air, while vibration is usually associated with transmission through the ground or structures. As with noise, vibration consists of an amplitude and frequency. A person's response to vibration will depend on their individual sensitivity as well as the amplitude and frequency of the source.

Vibration can be described in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration in terms of velocity in inches per second peak particle velocity (IPS, PPV) or root-mean-square (VdB, RMS). Standards pertaining to perception as well as damage to structures have been developed for vibration in terms of peak particle velocity as well as RMS velocities.

As vibrations travel outward from the source, they excite the particles of rock and soil through which they pass and cause them to oscillate. Differences in subsurface geologic conditions and distance from the source of vibration will result in different vibration levels characterized by different frequencies and intensities. In all cases, vibration amplitudes will decrease with increasing distance. The maximum rate, or velocity of particle movement, is the commonly accepted descriptor of the vibration "strength".

According to the Transportation and Construction-Induced Vibration Guidance Manual (Caltrans, June 2004), operation of construction equipment and construction techniques generate ground vibration. Traffic traveling on roadways can also be a source of such vibration. At high enough amplitudes, ground vibration has the potential to damage structures and/or cause cosmetic damage. Ground vibration can also be a source of annoyance to individuals who live or work close to vibration-generating activities. However, traffic, rarely generates vibration amplitudes high enough to cause structural or cosmetic damage.

Legend

Project Border (Approximate)

Noise and Vibration Survey Location

N

Scale (feet)

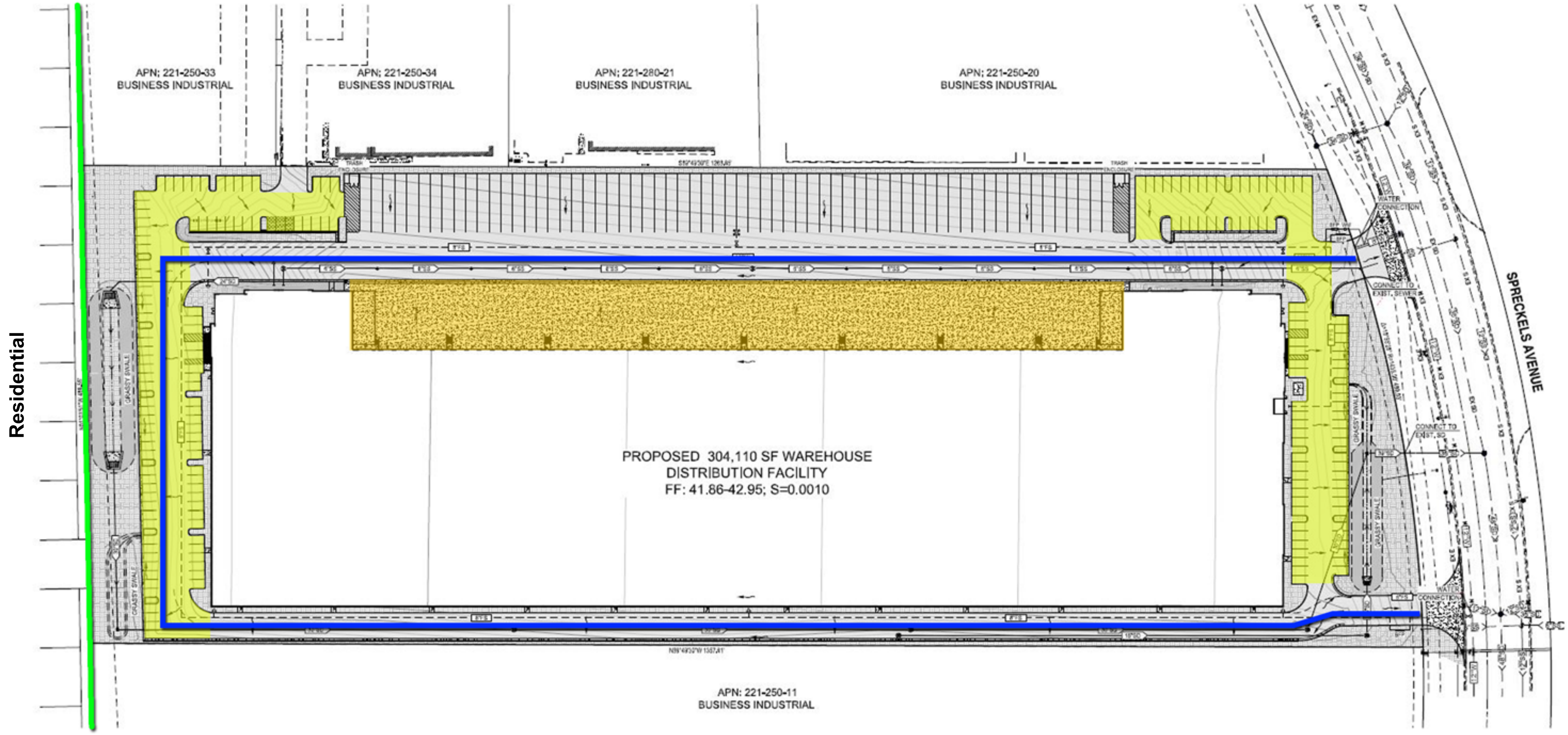
0 75 150

DCT Spreckels Distribution Center
Manteca, California

Project Area

Figure 1

BOLLARD Acoustical



Legend

- Existing 8' Solid Masonry Wall
- On-Site Heavy Truck Circulation Route (Assumed)
- Heavy Truck Loading Bay Area
- Passenger Vehicle Parking Areas

N

Scale (feet)

0 75 150

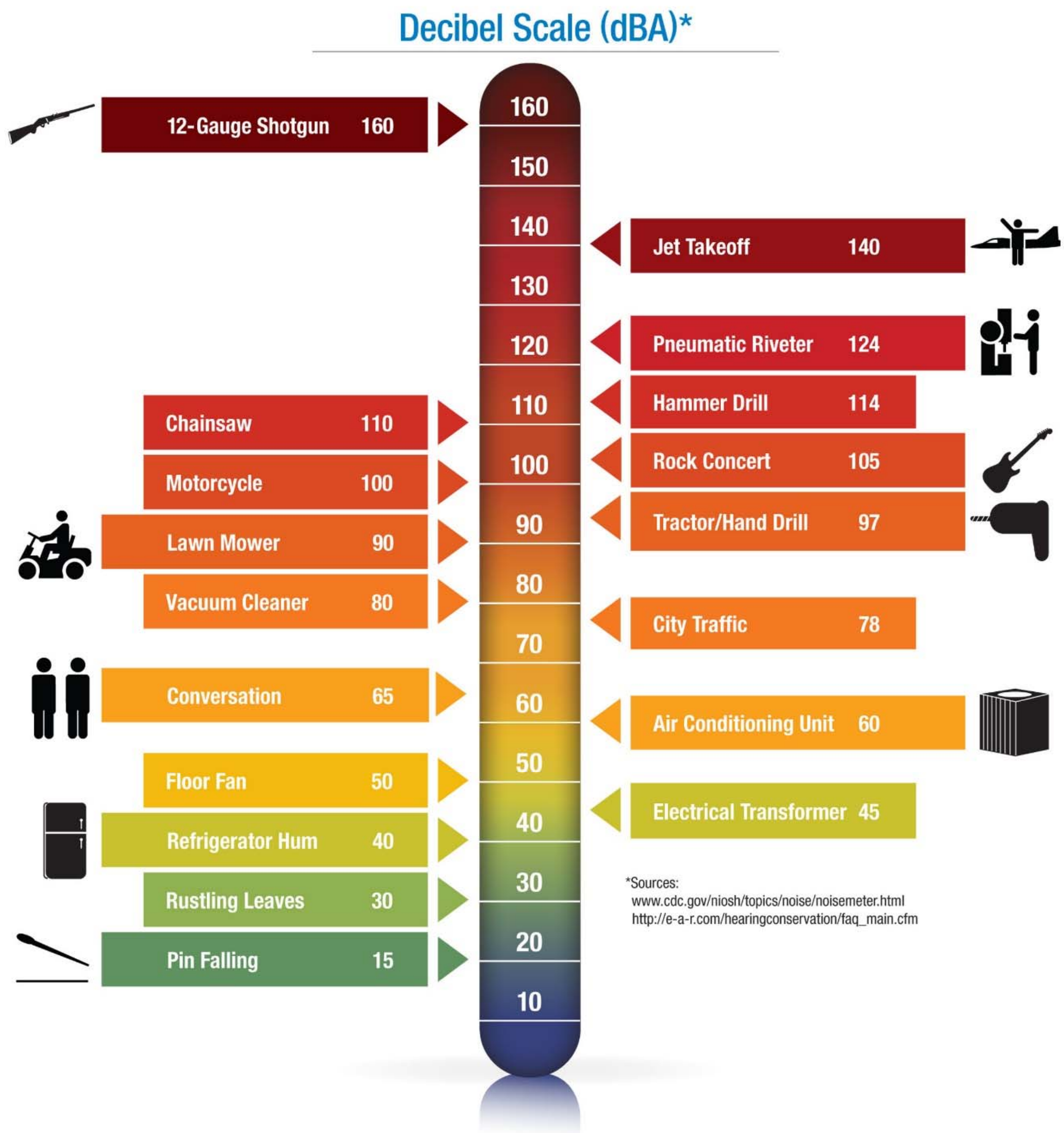
DCT Spreckels Distribution Center
Manteca, California

Site Plan

Figure 2

BOLLARD Acoustical

Figure 3
Noise Levels Associated with Common Noise Sources



Regulatory Setting: Criteria for Acceptable Noise and Vibration Exposure

Federal

There are no federal noise or vibration criteria which would be directly applicable to this project. However, the City of Manteca does not currently have a policy for assessing noise impacts associated with increases in ambient noise levels from project-generated noise sources. As a result, the following federal noise criteria was applied to the project.

Federal Interagency Commission on Noise (FICON)

The Federal Interagency Commission on Noise (FICON) has developed a graduated scale for use in the assessment of project-related noise level increases. The criteria shown in Table 1 was developed by FICON as a means of developing thresholds for impact identification for project-related noise level increases. The FICON standards have been used extensively in recent years by the authors of this section in the preparation of the noise sections of Environmental Impact Reports that have been certified in many California cities and counties.

The use of the FICON standards is considered conservative relative to thresholds used by other agencies in the State of California. For example, the California Department of Transportation (Caltrans) requires a project-related traffic noise level increase of 12 dB for a finding of significance, and the California Energy Commission (CEC) considers project-related noise level increases between 5 to 10 dB significant, depending on local factors. Therefore, the use of the FICON standards, which set the threshold for finding of significant noise impacts as low as 1.5 dB, provides a very conservative approach to impact assessment for this project.

Table 1
Significance of Changes in Cumulative Noise Exposure

Ambient Noise Level Without Project (L_{dn} or CNEL)	Change in Ambient Noise Level Due to Project
<60 dB	+5.0 dB or more
60 to 65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more
Source: Federal Interagency Committee on Noise (FICON)	

Based on the FICON research, as shown in Table 1, a 5 dB increase in noise levels due to a project is required for a finding of significant noise impact where ambient noise levels without the project are less than 60 dB. Where pre-project ambient conditions are between 60 and 65 dB, a 3 dB increase is applied as the standard of significance. Finally, in areas already exposed to higher noise levels, specifically pre-project noise levels in excess of 65 dB, a 1.5 dB increase is considered by FICON as the threshold of significance.

State of California

California Environmental Quality Act (CEQA)

The State of California has established regulatory criteria that are applicable to this assessment. Specifically, Appendix G of the State of California Environmental Quality Act (CEQA) Guidelines are used to assess the potential significance of impacts pursuant to local General Plan policies, Municipal Code standards, or the applicable standards of other agencies. According to Appendix G of the CEQA guidelines, the project would result in a significant noise or vibration impact if the following occur:

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 other 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?

It should be noted that audibility is not a test of significance according to CEQA. If this were the case, any project which added any audible amount of noise to the environment would be considered significant according to CEQA. Because every physical process creates noise, the use of audibility alone as significance criteria would be unworkable. CEQA requires a substantial increase in noise levels before noise impacts are identified, not simply an audible change.

California Department of Transportation (Caltrans)

The City of Manteca does not currently have adopted standards for groundborne vibration. As a result, the vibration impact criteria developed by the California Department of Transportation (Caltrans) was applied to the project. The Caltrans criteria applicable to damage and annoyance from transient and continuous vibration typically associated with construction activities are presented in Tables 2 and 3. Equipment or activities typical of continuous vibration include: excavation equipment, static compaction equipment, tracked vehicles, traffic on a highway, vibratory pile drivers, pile-extraction equipment, and vibratory compaction equipment. Equipment or activities typical of single-impact (transient) or low-rate repeated impact vibration include impact pile drivers, blasting, drop balls, “pogo stick” compactors, and crack-and-seat equipment (California Department of Transportation 2013).

Table 2
Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (inches/second)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.20	0.10
Historic and some old buildings	0.50	0.25
Older residential structures	0.50	0.30
New residential structures	1.00	0.50
Modern industrial/commercial buildings	2.00	0.50

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

PPV = Peak Particle Velocity

Source: California Department of Transportation, Transportation and Construction Vibration Guidance Manual (2013).

Table 3
Guideline Vibration Annoyance Potential Criteria

Human Response	Maximum PPV (inches/second)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.40	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.90	0.10
Severe	2.00	0.40

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

PPV = Peak Particle Velocity

Source: California Department of Transportation, Transportation and Construction Vibration Guidance Manual (2013).

Local

City of Manteca General Plan 2023

The Noise Element (Chapter 9) of the City of Manteca General Plan 2023 contains goals and policies to ensure that City residents are not subjected to noise beyond acceptable levels. The General Plan goals and policies which are applicable to the project are reproduced below.

9.3 NOISE GOALS

Goal N-1 Protect the residents of Manteca from the harmful and annoying effects of exposure to excessive noise.

Goal N-2 Protect the quality of life in the community and the tourism economy from noise generated by incompatible land uses.

Goal N-4 Protect public health and welfare by eliminating existing noise problems where feasible, by establishing standards for acceptable indoor and outdoor noise, and by preventing significant increases in noise levels.

9.4 POLICIES AND IMPLEMENTATION MEASURES

N-P-1 Areas within Manteca exposed to existing or projected exterior noise levels from mobile noise sources exceeding the performance standards in Table 4 (General Plan Table 9-1) shall be designated as noise-impacted areas.

N-P-4 The City shall require stationary noise sources proposed adjacent to noise-sensitive uses to be mitigated so as to not exceed the noise level performance standards in Table 5 (General Plan Table 9-2).

N-P-5 In accord with Table 5 (General Plan Table 9-2) standards, the City shall regulate construction-related noise impacts on adjacent uses.

Table 4
Maximum Allowable Noise Exposure – Mobile Noise Sources

Land Use	Outdoor Activity Areas[1]	Interior Spaces	
	L_{dn} / CNEL (dB)	L_{dn} / CNEL (dB)	L_{eq} (dB)[3]
Residential	60[2]	45	--
Transient Lodging	60[2]	45	--
Hospitals, Nursing Homes	60[2]	45	--
Theaters, Auditoriums	--	--	35
Churches, Music Halls	60[2]	--	40
Office Buildings	65	--	45
Schools, Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

[1] Outdoor activity areas for residential development are considered to be backyard patios or decks of single-family dwellings, and the common areas where people generally congregate for multi-family developments. Outdoor activity areas for non-residential developments are considered to be those common areas where people generally congregate, including pedestrian plazas, seating areas, and outside lunch facilities. Where the location of an outdoor activity area is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.

[2] In areas where it is not possible to reduce exterior noise levels to 60 dB Ldn or below using practical application of best noise-reduction technology, an exterior noise level of up to 65 dB Ldn will be allowed.

[3] Determined for a typical worst-case hour during periods of use.

Source: City of Manteca General Plan 2023, Noise Element, Table 9-1

Table 5
Performance Standards for Stationary Noise Sources or Projects Affected by Stationary Noise Sources[1,2]

Noise Level Descriptor	Daytime (7 AM to 10 PM)	Nighttime (10 PM to 7 AM)
Hourly L_{eq}, dB[3]	50	45
Maximum Level, dB[3]	70	65

[1] Each of the noise levels specified above should be lowered by 5 dB for simple noise tones, noises consisting of primarily speech or music, or recurring impulsive noises. Such noises are generally considered by residents to be particularly annoying and are a primary source of noise complaints.
[2] No standards have been included for interior noise levels. Standard construction practices should, with the exterior noise levels identified, result in acceptable interior noise levels.
Source: City of Manteca General Plan 2023, Noise Element, Table 9-2

<u>Manteca Municipal Code</u>

The Manteca Municipal Code provides the following noise regulations that would be applicable to the project.

9.52.040 Specific prohibited noises.

K. Construction equipment. The use or operation of any construction equipment between the hours of 8:00 p.m. and 7:00 a.m. and is sufficiently loud as to be plainly audible at the property line of the property from which the sound is emanating.

17.58.050(D) Exempt Activities.

8. Construction activities when constructed as part of an approved Building Permit, except as prohibited in subsection (E)(1)(Prohibited Activities) of this section.

17.58.050(E) Prohibited Activities.

1. Construction Noise. Operating or causing the operation of tools or equipment on private property used in alteration, construction, demolition, drilling, or repair work daily between the hours of 7:00 p.m. and 7:00 a.m., so that the sound creates a noise disturbance across a residential property line, except for emergency work of public service utilities.

Environmental Setting - Existing Ambient Noise and Vibration Environment

Noise-Sensitive Land Uses in the Project Vicinity

Noise-sensitive land uses are generally defined as locations where people reside or where the presence of unwanted sound could adversely affect the primary intended use of the land. Places where people live, sleep, recreate, worship, and study are generally considered to be sensitive to noise because intrusive noise can be disruptive to these activities.

The noise-sensitive land uses which would potentially be affected by the project consist of residential uses. Specifically, single-family residential land uses are located to the west of the project site. Existing industrial uses are located to the north, east and south of the project site. However, industrial uses are typically not considered to be noise-sensitive, but rather noise-generating. The project area and surrounding land uses are shown on Figure 1.

Existing Traffic Noise Levels along Project Area Roadway Network

The FHWA Traffic Noise Model (FHWA-RD-77-108) was used to develop existing noise contours expressed in terms of DNL for major roadways within the project study area. The FHWA Model predicts hourly L_{eq} values for free-flowing traffic conditions. Estimates of the hourly distribution of traffic for a typical 24-hour period were used to develop DNL values from L_{eq} values.

Traffic data in the form of AM and PM peak hour movements for existing conditions were obtained from the client (prepared by the traffic consultant, Fehr & Peers). Average daily traffic volumes were conservatively estimated by applying a factor of 5 to the sum of AM and PM peak hour conditions. Using these data and the FHWA Model, traffic noise levels were calculated. The traffic noise level at 100 feet from the roadway centerline and distances from the centerlines of selected roadways to the 60 dB, 65 dB, and 70 dB DNL contours are summarized in Table 6.

In many cases, the actual distances to noise level contours may vary from the distances predicted by the FHWA Model. Factors such as roadway curvature, roadway grade, shielding from local topography or structures, elevated roadways, or elevated receivers may affect actual sound propagation.

It is also recognized that existing sensitive land uses within the project vicinity are located varying distances from the centerlines of the local roadway network. The 100-foot reference distance is utilized in this analysis to provide a reference position at which changes in existing and future traffic noise levels resulting from the project can be evaluated. Appendix B contains the FWHA Model inputs for existing conditions.

Table 6
Existing (2020) Traffic Noise Modeling Results

Seg.	Intersection	Direction	DNL 100 Feet from Roadway	Distance to Contour (feet) 70 dB DNL	65 dB DNL	60 dB DNL
1	Spreckels Ave / E Yosemite Ave	North	59	20	43	92
2		South	63	32	68	147
3		East	63	36	77	166
4		West	62	28	61	130
5	Industrial Park Dr / Spreckels Ave	North	63	35	76	164
6		South	62	30	65	141
7		East	61	26	57	123
8		West	62	27	59	127
9	Spreckels Ave / Norman Dr	North	63	33	71	152
10		South	62	31	67	145
11		East	--	--	--	--
12		West	54	8	17	37
13	Spreckels Ave / Phoenix Dr	North	62	31	67	145
14		South	63	36	78	169
15		East	56	12	26	55
16		West	47	3	7	14

Blank cell = no traffic data was provided
Source: FHWA-RD-77-108 with inputs from Fehr & Peers and BAC.

Existing Overall Ambient Noise Environment within the Project Vicinity

The existing ambient noise environment within the project vicinity is defined primarily by noise from traffic on nearby surface streets and by adjacent industrial operations. To generally quantify the existing ambient noise environment at the nearest residential uses, BAC conducted long-term (48-hour) ambient noise level measurements from November 11-12, 2020. The noise survey location is shown on Figure 1. Photographs of the noise survey location are provided in Appendix C.

A Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meter was used to complete the long-term noise level measurements. The meter was calibrated immediately before and after use with an LDL Model CA200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all specifications of the American National Standards Institute requirements for Type 1 sound level meters (ANSI S1.4). The ambient noise level survey results are summarized below in Table 7. The detailed results of the ambient noise survey are contained in Appendix D in tabular format and graphically in Appendix E.

Table 7
Summary of Long-Term Noise Survey Measurement Results – November 11-12, 2020[1]

Site Description[2]	Date	DNL	Average Measured Hourly Noise Levels, dBA			
			Daytime[3]		Nighttime[4]	
			L_{eq}	L_{max}	L_{eq}	L_{max}
Site 1: Northwest end of the project property along residential property boundary	11/11/20	60	56	72	53	70
	11/12/20	57	50	67	50	64

[1] Detailed summaries of the noise monitoring results are provided in Appendices D and E.
[2] Long-term noise survey location is shown on Figure 1.
[3] Daytime hours: 7:00 a.m. to 10:00 p.m.
[4] Nighttime hours: 10:00 p.m. to 7:00 a.m.
Source: Bollard Acoustical Consultants, Inc. (2020)

As indicated in Table 7, measured day-night average noise levels during the monitoring period are at or below the City of Manteca General Plan 60 dB DNL exterior noise level standard applicable to residential uses affected by transportation noise sources. In addition, average measured hourly noise levels are generally consistent with the City of Manteca General Plan daytime and nighttime noise level standards for noise-sensitive uses affected by stationary noise sources shown in Table 5.

Existing Ambient Vibration Environment

During a site visit on November 10, 2020, vibration levels were below the threshold of perception at the project site. Nonetheless, to quantify existing vibration levels at the project site, BAC conducted short-term (10-minute) vibration measurements at the survey location identified on Figure 1. Photographs of the vibration survey equipment are provided in Appendix C.

A Larson-Davis Laboratories Model LxT precision integrating sound level meter equipped with a vibration transducer was used to complete the measurements. The results are summarized below in Table 8.

Table 8
Summary of Ambient Vibration Level Survey Results – November 10, 2020

Site Description	Time	Average Measured Vibration Level, PPV (in. sec)[1]
Site 1: Northwest end of the project property along residential property boundary	11:54 AM	<0.001

[1] PPV = Peak Particle Velocity (inches/second)
Source: Bollard Acoustical Consultants, Inc. (2020)

The Table 8 data indicate that the measured average vibration levels during the monitoring period were less than 0.001 in/sec PPV. The measured vibration levels are well below the Caltrans vibration annoyance criteria for “barely perceptible” human response identified in Table 2.

Impacts and Mitigation Measures

Thresholds of Significance

For the purposes of this report, a noise and vibration impact is considered significant if the project would result in:

- 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 other applicable standards of other agencies; or
- Generation of excessive groundborne vibration or groundborne noise levels; or
- 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.

The project site is not within the vicinity of a private airstrip, an airport land use plan, or within two miles of a public airport. Therefore, the last threshold listed above is not discussed further.

The following criteria based on standards established by the Federal Interagency Commission on Noise (FICON), California Department of Transportation (Caltrans), City of Manteca General Plan and Manteca Municipal Code were used to evaluate the significance of environmental noise and vibration resulting from the project:

- A significant noise impact would be identified if the project would expose persons to or generate noise levels that would exceed applicable noise standards presented in the City of Manteca General Plan or Manteca Municipal Code.
- A significant impact would be identified if off-site traffic noise exposure or on-site activities generated by the project would substantially increase noise levels at existing sensitive receptors in the vicinity. A substantial increase would be identified relative to the FICON standards provided in Table 1.
- A significant impact would be identified if project construction activities or proposed on-site operations would expose noise-sensitive receptors to excessive groundborne vibration levels. Specifically, an impact would be identified if groundborne vibration levels due to these sources would exceed the Caltrans vibration impact criteria.

Noise Impacts Associated with Project-Generated Increases in Off-Site Traffic

With development of the project, traffic volumes on the local roadway network will increase. Those increases in daily traffic volumes will result in a corresponding increase in traffic noise levels at existing uses located along those roadways. The FHWA Model was used with traffic input data from the traffic impact analysis (prepared by TJKM Traffic Consultants) to predict project traffic noise level increases relative to Existing and Cumulative conditions.

Impact 1: Increases in Existing Traffic Noise Levels due to the Project

Traffic data in the form of AM and PM peak hour movements for Existing and Existing Plus Project conditions in the project area roadway network were obtained from the project transportation impact analysis prepared by the traffic consultant (Fehr & Peers). Average daily traffic (ADT) volumes were conservatively estimated by applying a factor of 5 to the sum of AM and PM peak hour conditions.

Existing versus Existing Plus Project traffic noise levels on the local roadway network are shown in Table 9. The following section includes an assessment of predicted traffic noise levels relative to the FICON increase significance noise criteria identified in Table 1. The Table 9 data are provided in terms of DNL at a standard distance of 100 feet from the centerlines of the project-area roadways. Appendix B contains the FWHA Model inputs.

Table 9
Traffic Noise Modeling Results and Project-Related Traffic Noise Increases
Existing vs. Existing Plus Project Conditions

Segment	Intersection	Direction	Traffic Noise Level at 100 feet, dB DNL			Substantial Increase?
			E	E+P	Increase	
1	Spreckels Ave / E Yosemite Ave	North	59.4	59.5	0.1	No
2		South	62.5	62.7	0.2	No
3		East	63.3	63.3	0.0	No
4		West	61.7	61.8	0.1	No
5	Industrial Park Dr / Spreckels Ave	North	63.2	63.4	0.2	No
6		South	62.2	62.3	0.1	No
7		East	61.3	61.4	0.1	No
8		West	61.5	61.6	0.1	No
9	Spreckels Ave / Norman Dr	North	62.7	62.8	0.1	No
10		South	62.4	62.5	0.1	No
11		East	--	--	--	--
12		West	53.5	53.5	0.0	No
13	Spreckels Ave / Phoenix Dr	North	62.4	62.5	0.1	No
14		South	63.4	63.5	0.1	No
15		East	56.1	56.1	0.0	No
16		West	47.4	47.4	0.0	No

Blank cell = no traffic data was provided

Source: FHWA-RD-77-108 with inputs from TJKM. Appendix B contains the FHWA model inputs.

The data in Table 9 indicate that traffic generated by the project would not result in a substantial increase of traffic noise levels on the local roadway network relative to the FICON significance criteria identified in Table 1. As a result, off-site traffic noise impacts related to increases in traffic resulting from the implementation of the project (Existing vs. Existing Plus Project conditions) are identified as being ***less than significant***.

Impact 2: Increases in Cumulative Traffic Noise Levels due to the Project

Traffic data in the form of AM and PM peak hour movements for Cumulative (No Project) and Cumulative Plus Project conditions in the project area roadway network were obtained from the project transportation impact analysis prepared by the traffic consultant (Fehr & Peers). Average daily traffic (ADT) volumes were conservatively estimated by applying a factor of 5 to the sum of AM and PM peak hour conditions.

Cumulative versus Cumulative Plus Project traffic noise levels on the local roadway network are shown in Table 10. The following section includes an assessment of predicted traffic noise levels relative to the FICON increase significance noise criteria identified in Table 1. The Table 10 data are provided in terms of DNL at a standard distance of 100 feet from the centerlines of the project-area roadways. Appendix B contains the FWHA Model inputs.

Table 10
Traffic Noise Modeling Results and Project-Related Traffic Noise Increases
Cumulative vs. Cumulative Plus Project Conditions

Segment	Intersection	Direction	Traffic Noise Level at 100 feet, dB DNL			Substantial Increase?
			C	C+P	Increase	
1	Spreckels Ave / E Yosemite Ave	North	60.4	60.4	0.0	No
2		South	64.3	64.4	0.1	No
3		East	64.7	64.8	0.1	No
4		West	62.5	62.6	0.1	No
5	Industrial Park Dr / Spreckels Ave	North	64.8	64.9	0.1	No
6		South	63.9	64.0	0.1	No
7		East	63.4	63.5	0.1	No
8		West	62.7	62.8	0.1	No
9	Spreckels Ave / Norman Dr	North	64.3	64.3	0.0	No
10		South	64.0	64.1	0.1	No
11		East	--	--	--	--
12		West	53.8	53.8	0.0	No
13	Spreckels Ave / Phoenix Dr	North	64.0	64.1	0.1	No
14		South	64.8	64.9	0.1	No
15		East	56.9	56.9	0.0	No
16		West	48.9	48.9	0.0	No

Blank cell = no traffic data was provided
Source: FHWA-RD-77-108 with inputs from TJKM. Appendix B contains the FHWA model inputs.

As indicated in Table 10, traffic generated by the project would not result in a substantial increase of traffic noise levels on the local roadway network relative to the FICON significance criteria identified in Table 1. As a result, off-site traffic noise impacts related to increases in traffic resulting from the implementation of the project (Cumulative vs. Cumulative Plus Project conditions) are identified as being ***less than significant***.

Noise Impacts Associated with Proposed On-Site Activities

The project proposes the development of an industrial warehouse building that would primarily be used for warehousing and distribution. According to the project site plan, the truck loading/unloading bays are located on the north side of the proposed building. The site plan also indicates the potential for full on-site drive-around capability around the warehouse building. The locations of the truck bays and (assumed) on-site truck circulation route are shown on Figure 2.

Noise generated by trucks arriving and departing the site, backing into the loading bays, and trailer coupling/decoupling, will be one of the primary noise sources associated with this project. Once the trucks are docked at the loading bays, they will be loaded and unloaded from within the building, so no outside loading/unloading activities would occur, and noise generated by such activities would be contained within the building. Other primary noise sources associated with the project have been identified as parking activities and mechanical equipment (HVAC). However, it is the experience of BAC in similar industrial warehouse projects that mechanical equipment (HVAC) noise would either be housed in an equipment room or located on the roof of the building and shielded by screen walls (parapets). Finally, although the future occupants of the warehouse building have yet to be identified, the project description indicates that business activities could have 24-hour operations.

Noise generated by project-related activities were quantified through a combination of reference noise level measurements and application of accepted noise modeling techniques. Separate discussions of noise generated by on-site heavy truck circulation, truck trailer coupling/decoupling, and passenger vehicle parking area activities at the nearest residential uses to the west are provided in the following sections.

It should be noted that an existing 8' solid masonry sound wall is constructed along the western project property boundary. The following analyses of project-generated noise exposure at the nearest existing residential uses to the includes consideration of shielding that would be provided by the existing 8' foot tall property line noise barrier. The location of the existing sound wall is illustrated on Figure 2.

Impact 3: On-Site Heavy Truck Circulation Noise at Existing Sensitive Uses

The project proposes two primary access points for heavy trucks to the project site – both located off Spreckels Avenue. Based on a review of the project site plan, it is likely that heavy trucks will enter and exit the project site through the northern access point off Spreckels Avenue, which allows for heavy truck traffic to flow directly to the truck bays on the northern end of the warehouse building. However, because the project proposes full on-site drive around capability, it is possible that heavy truck traffic could potentially flow west of the truck bays to exit the property at the southern access point off Spreckels Avenue (i.e., circulation of truck traffic around the building counterclockwise). The locations of the heavy truck access points and assumed heavy truck circulation route are shown on Figure 2.

Heavy truck arrivals and departures, and on-site truck circulation, will occur at low speeds. To quantify the noise generation of slow-moving trucks, BAC utilized single-event passby noise test results for slow-moving heavy trucks conducted at the West El Camino truck stop in Sacramento, California. The passby measurements were conducted at a reference distance of 50 feet at a location suitable for isolation of individual passby events. The measurements included trucks accelerating from a stop (at a scale), passing the microphone, and decelerating to a stop along a distance of approximately 400 feet. This distance would be comparable to the average distance of truck movements at the project site.

During the truck passbys, Larson-Davis Laboratories Model 820 and 2900 sound level meters and frequency analyzers were used to quantify noise levels and event frequency content for each event. The results of the heavy truck measurements indicated that maximum noise levels ranged from 69 to 77 dB L_{max}, with a mean of 74 dB. Truck passby levels measured in terms of Sound Exposure Levels (SEL) ranged from 77 to 85 dB, with a mean of 83 dB SEL.

According to the project traffic impact study (prepared by Fehr & Peers), the project is estimated to generate approximately 633 total vehicle trips per day. Specifically, the project would generate approximately 510 passenger vehicle trips per day (81% of total) and 123 heavy truck trips per day (19% of total). The traffic study further indicates that greatest number of heavy truck trips that could occur during a given hour is 8 (during a worst-case AM peak hour). For the purposes of this analysis, it was conservatively assumed that a total of 8 heavy truck trips could occur during any given hour (AM or PM).

Because the City's noise standards are provided in terms of both individual maximum noise levels and hourly average noise levels, it is necessary to identify the number of truck movements occurring during a typical busy hour of operations to assess compliance with the L_{eq}-based standards. Based on 8 heavy truck trips per hour, and an SEL of 83 dB per passby, the hourly average noise level generated by on-site circulation computes to 56 dB L_{eq} at a reference distance of 50 feet from the passby route. As noted above, the maximum noise level generated at that same 50-foot distance was 74 dB L_{max}.

Assuming standard sound wave spreading loss (-4.5 dB per doubling of distance from a moving point source), on-site heavy truck circulation noise exposure at the nearest existing residential uses to the west of the project was calculated and the results of those calculations are presented in Table 11. The results presented in Table 11 include consideration of the shielding that would be provided by the existing 8' sound wall constructed along the western project property boundary, which is calculated to provide approximately 8 dB of noise level attenuation at the nearest residential uses to the west.

Table 11
Predicted On-Site Heavy Truck Circulation Noise Levels at Nearest Existing Sensitive Uses

Nearest Sensitive Uses	Distance from Truck Route (ft)[1]	Predicted Noise Level (dB)[2]		General Plan Noise Standards (dB)			
				Daytime		Nighttime	
		L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
Residential – West	100	44	60	50	70	45	65

[1] Distance measured from center of nearest potential truck circulation route (west side of building) to nearest residential property lines using provided site plan dated February 2017.
[2] Predicted noise levels include an adjustment of -8 dB to account for shielding that would be provided by the existing 8' sound wall constructed along the western project property boundary.
Source: Bollard Acoustical Consultants, Inc. (2020)

As indicated in Table 11, on-site heavy truck circulation noise levels are predicted to satisfy the applicable City of Manteca General Plan hourly average (L_{eq}) and maximum (L_{max}) daytime and nighttime noise level standards at the nearest existing residential uses to the west, including consideration of the shielding provided by the existing 8' property line sound wall. In addition, the predicted noise levels shown in Table 11 are below measured ambient daytime and nighttime noise levels measured at those sensitive receptors (Table 7).

Because project on-site heavy truck circulation noise level exposure is predicted to satisfy the applicable City of Manteca General Plan daytime and nighttime noise level limits at the nearest existing residential uses, and because on-site heavy truck circulation noise levels are not expected to significantly increase ambient noise levels at those sensitive receptors, this impact is identified as being ***less than significant.***

Impact 4: Heavy Truck Backing and Trailering Activity Noise at Existing Sensitive Uses

According to the project site plan, the project proposes 53 loading bays that would be located on the north side of the warehouse building. The location of the loading bay area is shown on Figure 2. Noise would be generated during brief periods by trucks backing into those loading bays (backup beepers) during trailer coupling/decoupling activities. It was assumed that heavy trucks would not be permitted to idle while on-site, and that refrigerator trucks (if applicable), would be plugged into loading bay power.

To quantify the noise generated by backup warning devices and trailer coupling/decoupling, BAC conducted noise level measurements of a similar sized distribution facility in Patterson California over a 48-hour period beginning Wednesday, August 26, 2015. The noise level results from the Patterson facility indicated that the measured average noise levels for the entire monitoring period were 54 dB L_{eq} and 71 dB L_{max} at a distance of 100 feet from the effective noise center of the truck backing, coupling and decoupling area.

Assuming standard sound wave spreading loss (-4.5 dB per doubling of distance from a moving point source), on-site truck backing, coupling and decoupling noise exposure at the nearest existing residential uses to the west of the project was calculated and the results of those calculations are presented in Table 12. The results presented in Table 12 include consideration of the shielding that would be provided by the existing 8' sound wall constructed along the western project property boundary, which is calculated to provide approximately 8 dB of noise level attenuation at the nearest residential uses to the west.

Table 12
Predicted Truck Backing and Trailer Activity Noise Levels at Nearest Existing Sensitive Uses

Nearest Sensitive Uses	Distance from Loading Bay Area (ft)[1]	Predicted Noise Level (dB)[2]		General Plan Noise Standards (dB)			
				Daytime		Nighttime	
		L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
Residential – West	700	33	46	50	70	45	65

[1] Distance measured from effective noise center of the loading bay area to nearest residential property lines using the provided site plan dated February 2017.
[2] Predicted noise levels include an adjustment of -8 dB to account for shielding that would be provided by the existing 8' sound wall constructed along the western project property boundary.
Source: Bollard Acoustical Consultants, Inc. (2020)

The Table 12 data indicate that noise levels generated by project heavy truck backing and trailer coupling/decoupling activities are predicted to satisfy the City of Manteca General Plan daytime and nighttime hourly average (L_{eq}) and maximum (L_{max}) noise level standards at the nearest existing residential uses to the west, including consideration of the shielding provided by the existing 8' property line sound wall. In addition, the predicted noise levels shown in Table 12 are well below measured ambient daytime and nighttime noise levels measured at those sensitive receptors (Table 7).

Because project heavy truck backing and trailering activity noise level exposure is predicted to satisfy the applicable City of Manteca General Plan daytime and nighttime noise level limits at the nearest existing residential uses, and because heavy truck backing and trailering activity noise levels are not expected to significantly increase ambient noise levels at those sensitive receptors, this impact is identified as being ***less than significant.***

Impact 5: Parking Lot Activity Noise at Existing Sensitive Uses

As a means of determining potential noise exposure due to project parking lot activities, Bollard Acoustical Consultants, Inc. (BAC) utilized specific parking lot noise level measurements conducted by BAC. Specifically, a series of individual noise measurements were conducted of multiple vehicle types arriving and departing a parking area, including engines starting and stopping, car doors opening and closing, and persons conversing as they entered and exited the vehicles. The results of those measurements revealed that individual parking lot movements generated mean noise levels of approximately 70 dB SEL at a reference distance of 50 feet. The maximum noise level associated with parking lot activity typically did not exceed 65 dB L_{max} at the same reference distance.

To compute hourly average (L_{eq}) noise levels generated by parking lot activities, the approximate number of hourly operations in any given area and distance to the effective noise center of those activities is required. The parking area proposed nearest to existing residential uses is located on the west/northwest side of the warehouse building. According to the project site plan, this parking area could accommodate approximately 105 parking spaces. It was conservatively assumed for the purposes of this analysis that all 105 parking stalls could fill or empty during any given peak hour (worst-case). However, it is likely that parking area activity would be more spread out. The hourly average noise level generated by parking lot movements is computed using the following formula:

$$\textit{Peak Hour } L_{eq} = 70+10*\log(N) - 35.6$$

Where 70 is the mean Sound Exposure Level (SEL) for an automobile parking lot arrival or departure, N is the number of parking lot operations in a given hour, and 35.6 is 10 times the logarithm of the number of seconds in an hour.

Using the information provided above, and assuming standard sound wave spreading loss (-6 dB per doubling of distance), worst-case parking area noise exposure at the nearest existing residential uses to the west of the project was calculated and the results of those calculations are presented in Table 13. The results presented in Table 13 include consideration of the shielding that would be provided by the existing 8' sound wall constructed along the western project property boundary, which is calculated to provide approximately 8 dB of noise level attenuation at the nearest residential uses to the west.

Table 13
Predicted Worst-Case Parking Area Noise Levels at Nearest Existing Sensitive Uses

Nearest Sensitive Uses	Distance from Parking Area (ft)[1]	Predicted Noise Level (dB)[2]		General Plan Noise Standards (dB)			
				Daytime		Nighttime	
		L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
Residential – West	120	39	49	50	70	45	65

[1] Distance measured from effective noise center of nearest parking area (west/northwest of building) to residential property lines using the provided site plan dated February 2017.
[2] Predicted noise levels include an adjustment of -8 dB to account for shielding that would be provided by the existing 8' sound wall constructed along the western project property boundary.
Source: Bollard Acoustical Consultants, Inc. (2020)

As indicated in Table 13, worst-case project parking activity noise exposure is predicted to satisfy the City of Manteca General Plan daytime and nighttime hourly average (L_{eq}) and maximum (L_{max}) noise level standards at the nearest existing residential uses to the west, including consideration of the shielding provided by the existing 8' property line sound wall. In addition, the predicted noise levels shown in Table 13 are well below measured ambient daytime and nighttime noise levels measured at those sensitive receptors (Table 7).

Because worst-case project parking area noise level exposure is predicted to satisfy the applicable City of Manteca General Plan daytime and nighttime noise level at the nearest existing residential uses, and because parking activity noise levels are not expected to significantly increase ambient noise levels at those sensitive receptors, this impact is identified as being ***less than significant.***

Impact 6: Cumulative (Combined) Noise Levels from On-Site Operations at Existing Sensitive Uses

The calculated cumulative (combined) hourly average (L_{eq}) and maximum (L_{max}) noise levels of project on-site operations at the nearest existing residential uses to the west are presented are Tables 14 and 15. It should be noted that due to the logarithmic nature of the decibel scale, the sum of two noise values which differ by 10 dB equates to an overall increase in noise levels of 0.4 dB. When the noise sources are equivalent, the sum would result in an overall increase in noise levels of 3 dB.

The results presented in Tables 14 and 15 include consideration of the shielding that would be provided by the existing 8' sound wall constructed along the western project property boundary, as discussed in this report.

Table 14
Predicted Cumulative Project Hourly Average Noise Levels at Nearest Existing Sensitive Uses

Nearest Sensitive Uses	Predicted Project Operations Exterior Noise Levels, L_{eq} (dB)				General Plan Noise Level Standards, L_{eq} (dB)	
	Truck Circulation	Truck Backing & Trailering	Parking Area	Cumulative[1]	Daytime	Nighttime
Residential – West	44	33	39	45	50	45

[1] Calculated cumulative (combined) hourly average noise level based on predicted noise levels presented in Impacts 2-5, which includes consideration of the shielding provided by the existing 8' sound wall constructed along the western project property boundary.
Source: Bollard Acoustical Consultants, Inc. (2020)

Table 15
Predicted Cumulative Project Maximum Noise Levels at Nearest Existing Sensitive Uses

Nearest Sensitive Uses	Predicted Project Operations Exterior Noise Levels, L_{max} (dB)				General Plan Noise Level Standards, L_{max} (dB)	
	Truck Circulation	Truck Backing & Trailering	Parking Area	Cumulative[1]	Daytime	Nighttime
Residential – West	60	46	49	61	70	65

[1] Calculated cumulative (combined) maximum noise level based on predicted noise levels presented in Impacts 2-5, which includes consideration of the shielding provided by the existing 8' sound wall constructed along the western project property boundary.
Source: Bollard Acoustical Consultants, Inc. (2020)

As indicated in Tables 14 and 15, the calculated cumulative (combined) noise levels from project-generated on-site operations would satisfy the City of Manteca General Plan daytime and nighttime hourly average (L_{eq}) and maximum (L_{max}) noise level standards at the nearest existing residential uses to the west. The calculated cumulative hourly average and maximum noise levels shown in Tables 14 and 15 include consideration of the shielding that would be provided by the existing 8' sound wall constructed along the western project property line. In addition, the calculated cumulative noise levels shown in Tables 14 and 15 are below measured ambient daytime and nighttime noise levels measured at the nearest residential uses to the west (Table 7).

Because calculated cumulative (combined) noise levels from project-generated on-site operations would satisfy the applicable City of Manteca General Plan daytime and nighttime noise level limits at the nearest existing residential uses, and because cumulative on-site operations noise levels are not expected to significantly increase ambient noise levels at those sensitive receptors, this impact is identified as being ***less than significant.***

Noise Impacts Associated with Project Construction Activities

Impact 7: Project Construction Noise Levels at Existing Sensitive Uses

During project construction, 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 it is operated, and how well it is maintained. Noise exposure at any single point outside the project work area would also vary depending upon the proximity of equipment activities to that point. The property lines of the nearest existing residential uses to the west are located approximately 40 feet away from where construction activities would occur on the project site.

Table 16 includes the range of maximum noise levels for equipment commonly used in general construction projects at full-power operation at a distance of 50 feet. Not all of these construction activities would be required of this project. The Table 16 data also include predicted maximum equipment noise levels at the property lines of the nearest existing sensitive uses located approximately 40 feet away, which assume a standard spherical spreading loss of 6 dB per doubling of distance and includes consideration of shielding that would be provided by the existing 8’ sound wall constructed along western project property boundary.

Table 16
Construction Equipment Reference Noise Levels and Predicted Noise Levels at 40 Feet

Equipment Description	Maximum Noise Level at 50 Feet, dBA	Predicted Maximum Noise Level at 40 feet, dBA[1]
Air compressor	80	75
Backhoe	80	75
Ballast equalizer	82	77
Ballast tamper	83	78
Compactor	82	77
Concrete mixer	85	80
Concrete pump	82	77
Concrete vibrator	76	71
Crane, mobile	83	78
Dozer	85	80
Generator	82	80
Grader	85	77
Impact wrench	85	80
Jack hammer	88	80
Loader	80	75
Paver	85	80
Pneumatic tool	85	80
Pump	77	72
Saw	76	71
Scarifier	83	78
Scraper	85	80
Shovel	82	77
Spike driver	77	72
Tie cutter	84	79
Tie handler	80	75
Tie inserter	85	80
Truck	84	79

[1] Predicted noise levels include an adjustment of -8 dB to account for shielding that would be provided by the existing 8’ sound wall constructed along the western project property boundary.

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, Table 7-1 (2018)

Based on the equipment noise levels in Table 16, worst-case on-site project construction equipment noise levels at the property lines of the nearest existing residential uses located approximately 40 feet away are expected to range from approximately 71 to 81 dB, including consideration of the shielding that would be provided by the existing 8’ sound wall constructed along the western project property boundary. Thus, it is possible that a portion of the project construction equipment could result in substantial short-term increases over ambient maximum noise levels at the nearest existing sensitive uses. Further, it is possible that those noise levels could exceed the applicable City of Manteca General Plan noise level limits.

As noted in the Regulatory Setting Section of this report, Section 17.58.050(D) of the Manteca Municipal Code exempts noise sources associated with construction activities when constructed as part of an approved building permit, except as prohibited in Section 17.58.050(E)(1), which prohibits construction noise daily between the hours of 7:00 p.m. and 7:00 a.m. In addition, Municipal Code Section 9.52.040 prohibits the use of any construction equipment between the hours of 8:00 p.m. and 7:00 a.m. Provided project construction activities comply with the above code sections, construction activities would be exempt, and this impact would be considered less than significant.

However, if construction activities do not comply with the criteria provided in the above code sections, noise levels generated by construction activities could exceed applicable City of Manteca maximum noise level standards at the nearest existing residential uses. As a result, noise impacts associated with construction activities are identified as being ***potentially significant.***

<u>Mitigation Impact 7:</u> Construction Noise Control Measures

MM 7: To the maximum extent practical, the following measures should be incorporated into the project construction operations:

- To comply with Manteca Municipal Code Section 17.58.050(D), all on-site construction activities should occur pursuant to criteria indicated in an approved building permit.
- Pursuant to Manteca Municipal Code Section 9.52.040, the operation of any on-site project construction equipment is prohibited between the hours of 8:00 p.m. and 7:00 a.m.
- Pursuant to Manteca Municipal Code Section 17.58.050(E)(1), the operation of any on-site project construction equipment is prohibited between the hours of 7:00 p.m. and 7:00 a.m.
- To the extent possible, the project shall utilize temporary construction noise control measures including the use of temporary noise barriers, or other appropriate measures as mitigation for noise generated during construction of projects.
- All noise-producing project equipment and vehicles using internal-combustion engines shall be equipped with manufacturers-recommended mufflers and be maintained in good working condition.
- All mobile or fixed noise-producing equipment used on the project site that are regulated for noise output by a federal, state, or local agency shall comply with such regulations while in the course of project activity.
- Electrically powered equipment shall be used instead of pneumatic or internal-combustion-powered equipment, where feasible.
- Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.
- Project area and site access road speed limits shall be established and enforced during the construction period.

- Nearby residences shall be notified of construction schedules so that arrangements can be made, if desired, to limit their exposure to short-term increases in ambient noise levels.

Significance of Impact 7 after Mitigation: ***Less than Significant***

Vibration Impacts Associated with Project Activities

Impact 8: Project Construction Vibration at Existing Sensitive Uses

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 the construction. The nearest existing sensitive uses are residential structures located approximately 50 feet from construction activities which would occur within the project site.

Table 17 includes the range of vibration levels for equipment commonly used in general construction projects at a distance of 25 feet. The Table 17 data also include predicted equipment vibration levels at the nearest existing residences to the project site located approximately 50 feet away.

Table 17
Vibration Source Levels for Construction Equipment and Predicted Levels at 50 Feet

Equipment	Maximum PPV (inches/second)[1]	
	Maximum PPV at 25 Feet[2]	Predicted PPV at 50 Feet
Hoe ram	0.089	0.032
Large bulldozer	0.089	0.032
Caisson drilling	0.089	0.032
Loaded trucks	0.076	0.027
Jackhammer	0.035	0.012
Small bulldozer	0.003	0.011

1 PPV = Peak Particle Velocity
2 Reference vibration level obtained from the Federal Transit Administration (FTA), Transit Noise and Vibration Impact Assessment Manual (2018).

As indicated in Table 17, vibration levels generated from on-site construction activities at the nearest existing residences are predicted to be well below the strictest Caltrans thresholds for damage to residential structures of 0.30 in/sec PPV shown in Table 2. Further, the predicted vibration levels are also below the Caltrans thresholds for annoyance presented in Table 3. Therefore, on-site construction within the project area would not result in excessive groundborne vibration levels at nearby existing residential uses.

Because vibration levels due to the proposed project will satisfy the applicable Caltrans groundborne impact vibration criteria at the nearest existing sensitive uses, this impact is considered to be ***less than significant***.

Impact 9: Project Commercial/Light Industrial Operations Vibration

The project proposes the development and operation of commercial and light industrial uses and would include on-site operations such as heavy truck circulation, loading and unloading activities (within the proposed warehouse building), parking lot movements, and mechanical equipment (HVAC). It is the experience of BAC that operations associated with these uses do not typically have equipment that generates appreciable vibration. Specifically, vibration levels that would be generated by the types of equipment associated with commercial and light industrial uses dissipate very rapidly with distance and are expected to be well below Caltrans thresholds for damage to structures and thresholds for annoyance at the nearest existing residences to the west. Finally, it is our understanding that the project does not propose on-site equipment that will produce appreciable vibration.

Results from the ambient vibration level monitoring at the project site (Table 8) indicate that measured average vibration levels were below the strictest Caltrans thresholds for damage to structures and thresholds for annoyance. Therefore, it is expected that the project would not result in the exposure of persons to excessive groundborne vibration levels at proposed uses of the project.

Because vibration levels due to and upon the proposed project are expected to satisfy the strictest Caltrans thresholds for damage to structures and thresholds for annoyance at sensitive receptors, this impact is considered to be ***less than significant***.

This concludes BAC's noise and vibration assessment of the DCT Spreckels Distribution Center project in Manteca, California. Please contact BAC at (916) 663-0500 or dariog@bacnoise.com if you have any comments or questions regarding this report.

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.

IIC Impact Insulation Class (IIC): A single-number representation of a floor/ceiling partition's impact generated noise insulation performance. The field-measured version of this number is the FIIC.

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.

Loudness A subjective term for the sensation of the magnitude of sound.

Masking The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.

Noise Unwanted sound.

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 "Maximum" 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.

STC Sound Transmission Class (STC): A single-number representation of a partition's noise insulation performance. This number is based on laboratory-measured, 16-band (1/3-octave) transmission loss (TL) data of the subject partition. The field-measured version of this number is the FSTC.

Appendix B-1
FHWA Highway Traffic Noise Prediction Model Data Inputs
DCT Spreckels Distribution Center
File Name: 2020-105 01 Existing
Model Run Date: 1/12/2021

Segment	Intersection	Direction	ADT	Day %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance
1	Spreckels Ave / E Yosemite Ave	North	6,910	80	20	2	2	30	100
2		South	9,125	80	20	2	2	40	100
3		East	14,450	80	20	2	2	35	100
4		West	10,095	80	20	2	2	35	100
5	Industrial Park Dr / Spreckels Ave	North	10,710	80	20	2	2	40	100
6		South	11,305	80	20	2	2	35	100
7		East	5,350	80	20	2	2	45	100
8		West	5,615	80	20	2	2	45	100
9	Spreckels Ave / Norman Dr	North	9,575	80	20	2	2	40	100
10		South	8,885	80	20	2	2	40	100
11		East							
12		West	2,410	80	20	2	2	25	100
13	Spreckels Ave / Phoenix Dr	North	8,885	80	20	2	2	40	100
14		South	11,195	80	20	2	2	40	100
15		East	3,205	80	20	2	2	30	100
16		West	585	80	20	2	2	25	100

Note: Blank cells represent roadways for which no traffic data was provided.

Appendix B-2
FHWA Highway Traffic Noise Prediction Model Data Inputs
DCT Spreckels Distribution Center
File Name: 2020-105 02 Existing Plus Project
Model Run Date: 1/12/2021

Segment	Intersection	Direction	ADT	Day %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance
1	Spreckels Ave / E Yosemite Ave	North	7,005	80	20	2	2	30	100
2		South	9,410	80	20	2	2	40	100
3		East	14,590	80	20	2	2	35	100
4		West	10,145	80	20	2	2	35	100
5	Industrial Park Dr / Spreckels Ave	North	11,060	80	20	2	2	40	100
6		South	11,550	80	20	2	2	35	100
7		East	5,425	80	20	2	2	45	100
8		West	5,645	80	20	2	2	45	100
9	Spreckels Ave / Norman Dr	North	9,850	80	20	2	2	40	100
10		South	9,160	80	20	2	2	40	100
11		East							
12		West	2,410	80	20	2	2	25	100
13	Spreckels Ave / Phoenix Dr	North	9,160	80	20	2	2	40	100
14		South	11,470	80	20	2	2	40	100
15		East	3,205	80	20	2	2	30	100
16		West	585	80	20	2	2	25	100

Note: Blank cells represent roadways for which no traffic data was provided.

Appendix B-3
FHWA Highway Traffic Noise Prediction Model Data Inputs
DCT Spreckels Distribution Center
File Name: 2020-105 03 Cumulative No Project
Model Run Date: 1/12/2021

Segment	Intersection	Direction	ADT	Day %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance
1	Spreckels Ave / E Yosemite Ave	North	8,550	80	20	2	2	30	100
2		South	13,750	80	20	2	2	40	100
3		East	20,150	80	20	2	2	35	100
4		West	12,150	80	20	2	2	35	100
5	Industrial Park Dr / Spreckels Ave	North	15,400	80	20	2	2	40	100
6		South	16,650	80	20	2	2	35	100
7		East	8,650	80	20	2	2	45	100
8		West	7,400	80	20	2	2	45	100
9	Spreckels Ave / Norman Dr	North	13,625	80	20	2	2	40	100
10		South	12,925	80	20	2	2	40	100
11		East							
12		West	2,600	80	20	2	2	25	100
13	Spreckels Ave / Phoenix Dr	North	12,925	80	20	2	2	40	100
14		South	15,525	80	20	2	2	40	100
15		East	3,825	80	20	2	2	30	100
16		West	825	80	20	2	2	25	100

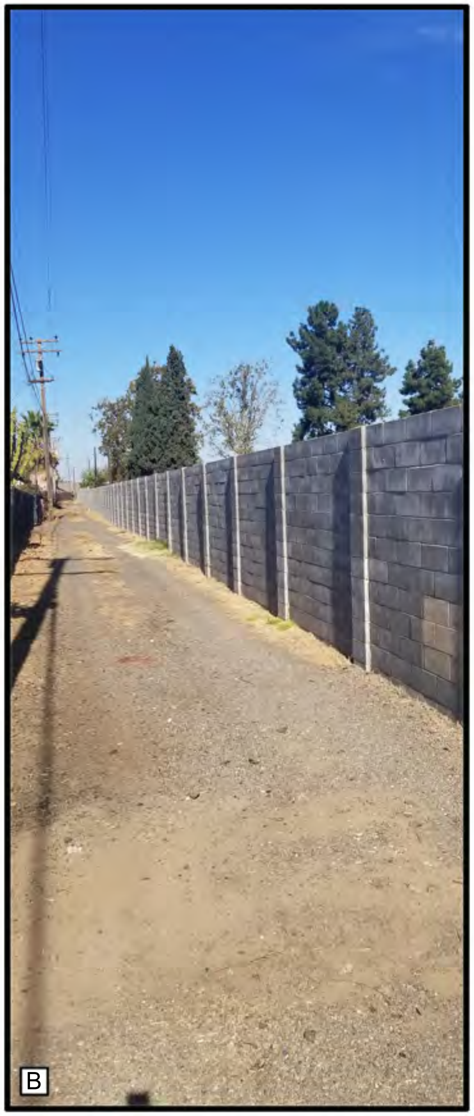
Note: Blank cells represent roadways for which no traffic data was provided.

Appendix B-4
FHWA Highway Traffic Noise Prediction Model Data Inputs
DCT Spreckels Distribution Center
File Name: 2020-105 04 Cumulative Plus Project
Model Run Date: 1/12/2021

Segment	Intersection	Direction	ADT	Day %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance
1	Spreckels Ave / E Yosemite Ave	North	8,645	80	20	2	2	30	100
2		South	14,035	80	20	2	2	40	100
3		East	20,290	80	20	2	2	35	100
4		West	12,200	80	20	2	2	35	100
5	Industrial Park Dr / Spreckels Ave	North	15,750	80	20	2	2	40	100
6		South	16,895	80	20	2	2	35	100
7		East	8,725	80	20	2	2	45	100
8		West	7,430	80	20	2	2	45	100
9	Spreckels Ave / Norman Dr	North	13,900	80	20	2	2	40	100
10		South	13,200	80	20	2	2	40	100
11		East							
12		West	2,600	80	20	2	2	25	100
13	Spreckels Ave / Phoenix Dr	North	13,200	80	20	2	2	40	100
14		South	15,800	80	20	2	2	40	100
15		East	3,825	80	20	2	2	30	100
16		West	825	80	20	2	2	25	100

Note: Blank cells represent roadways for which no traffic data was provided.

A



B

C

Legend

A Site 1: Noise level survey equipment

B Existing 8' solid masonry sound wall along western project property boundary

C Site 1: Vibration level survey equipment

DCT Spreckels Distribution Center
Manteca, California

Photographs of Survey Locations

Appendix C

BOLLARD Acoustical

Appendix D-1
Ambient Noise Monitoring Results - Site 1
DCT Spreckles Distribution Center - Manteca, California
Wednesday, November 11, 2020

Hour	Leq	Lmax	L50	L90
12:00 AM	53	74	50	48
1:00 AM	49	73	47	44
2:00 AM	52	78	46	43
3:00 AM	53	76	51	48
4:00 AM	54	61	53	52
5:00 AM	54	66	54	52
6:00 AM	55	60	55	52
7:00 AM	55	61	55	49
8:00 AM	48	66	46	43
9:00 AM	45	63	43	38
10:00 AM	55	81	39	37
11:00 AM	63	86	41	38
12:00 PM	58	83	44	40
1:00 PM	61	85	40	38
2:00 PM	42	59	39	37
3:00 PM	47	64	44	39
4:00 PM	48	75	42	40
5:00 PM	51	81	44	42
6:00 PM	52	75	45	43
7:00 PM	50	67	44	43
8:00 PM	46	70	44	43
9:00 PM	49	70	44	42
10:00 PM	50	71	44	42
11:00 PM	47	68	44	42

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	63	42	56	55	47	53
Lmax (Maximum)	86	59	72	78	60	70
L50 (Median)	55	39	44	55	44	49
L90 (Background)	49	37	41	52	42	47

Computed DNL, dB	60
% Daytime Energy	77%
% Nighttime Energy	23%

GPS Coordinates	37°47'32.93"N
	121°12'6.39"W

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Appendix D-2
Ambient Noise Monitoring Results - Site 1
DCT Spreckles Distribution Center - Manteca, California
Thursday, November 12, 2020

Hour	Leq	Lmax	L50	L90
12:00 AM	44	55	44	42
1:00 AM	42	62	42	40
2:00 AM	47	71	42	40
3:00 AM	48	59	48	46
4:00 AM	50	56	50	49
5:00 AM	51	58	51	50
6:00 AM	55	73	53	52
7:00 AM	54	63	53	50
8:00 AM	50	69	45	41
9:00 AM	46	58	45	40
10:00 AM	48	69	45	38
11:00 AM	48	71	42	40
12:00 PM	46	67	44	42
1:00 PM	46	70	41	38
2:00 PM	45	68	39	37
3:00 PM	56	84	42	39
4:00 PM	41	54	40	38
5:00 PM	52	80	45	43
6:00 PM	48	57	48	46
7:00 PM	49	62	48	47
8:00 PM	52	73	46	44
9:00 PM	46	59	45	44
10:00 PM	53	74	46	44
11:00 PM	46	66	43	41

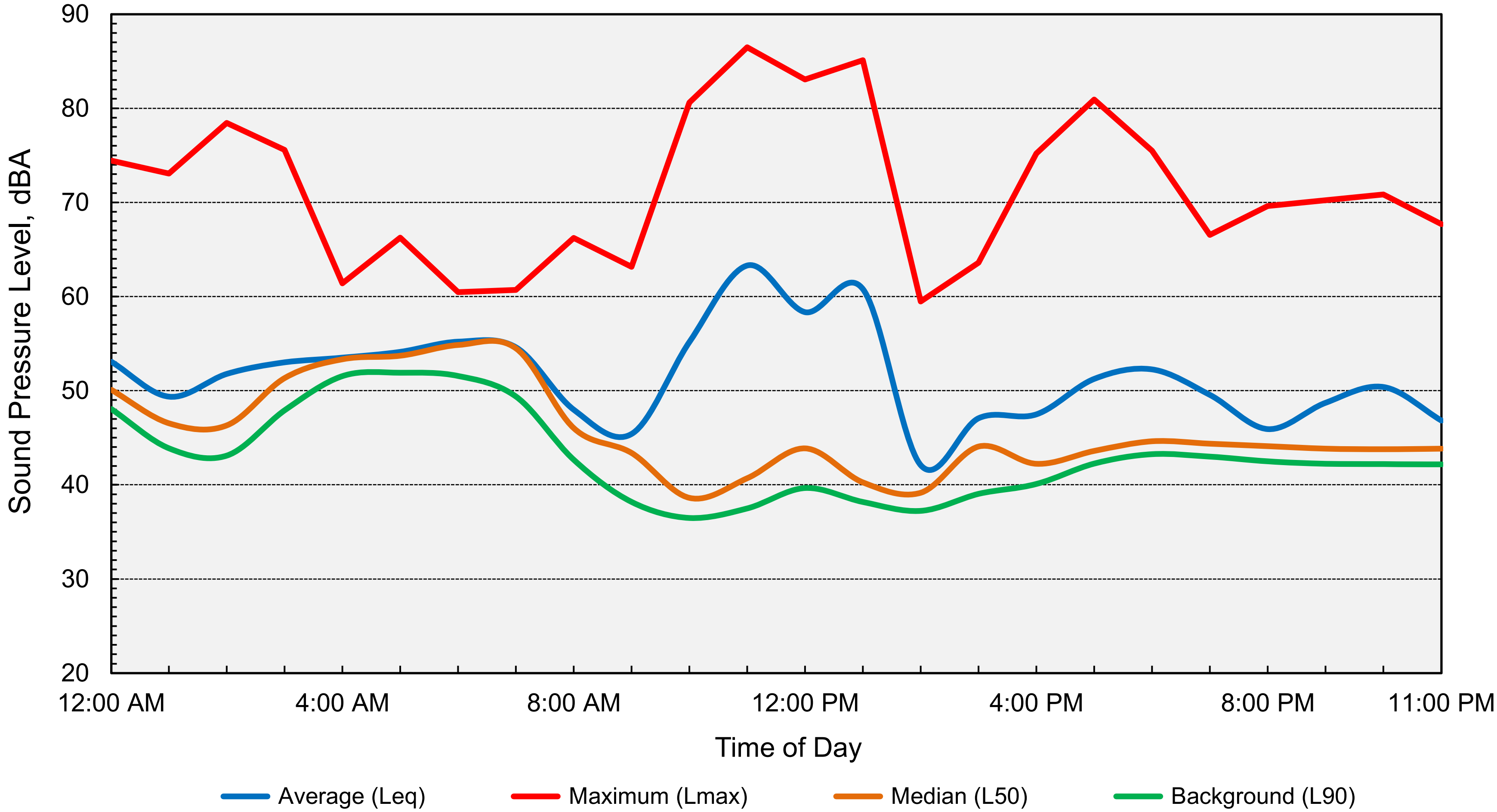
	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	56	41	50	55	42	50
Lmax (Maximum)	84	54	67	74	55	64
L50 (Median)	53	39	45	53	42	47
L90 (Background)	50	37	42	52	40	45

Computed DNL, dB	57
% Daytime Energy	62%
% Nighttime Energy	38%

GPS Coordinates	37°47'32.93"N 121°12'6.39"W

BOLLARD
Acoustical Consultants

Appendix E-1
Ambient Noise Monitoring Results - Site 1
DCT Spreckles Distribution Center - Manteca, California
Wednesday, November 11, 2020



Computed DNL = 60 dB

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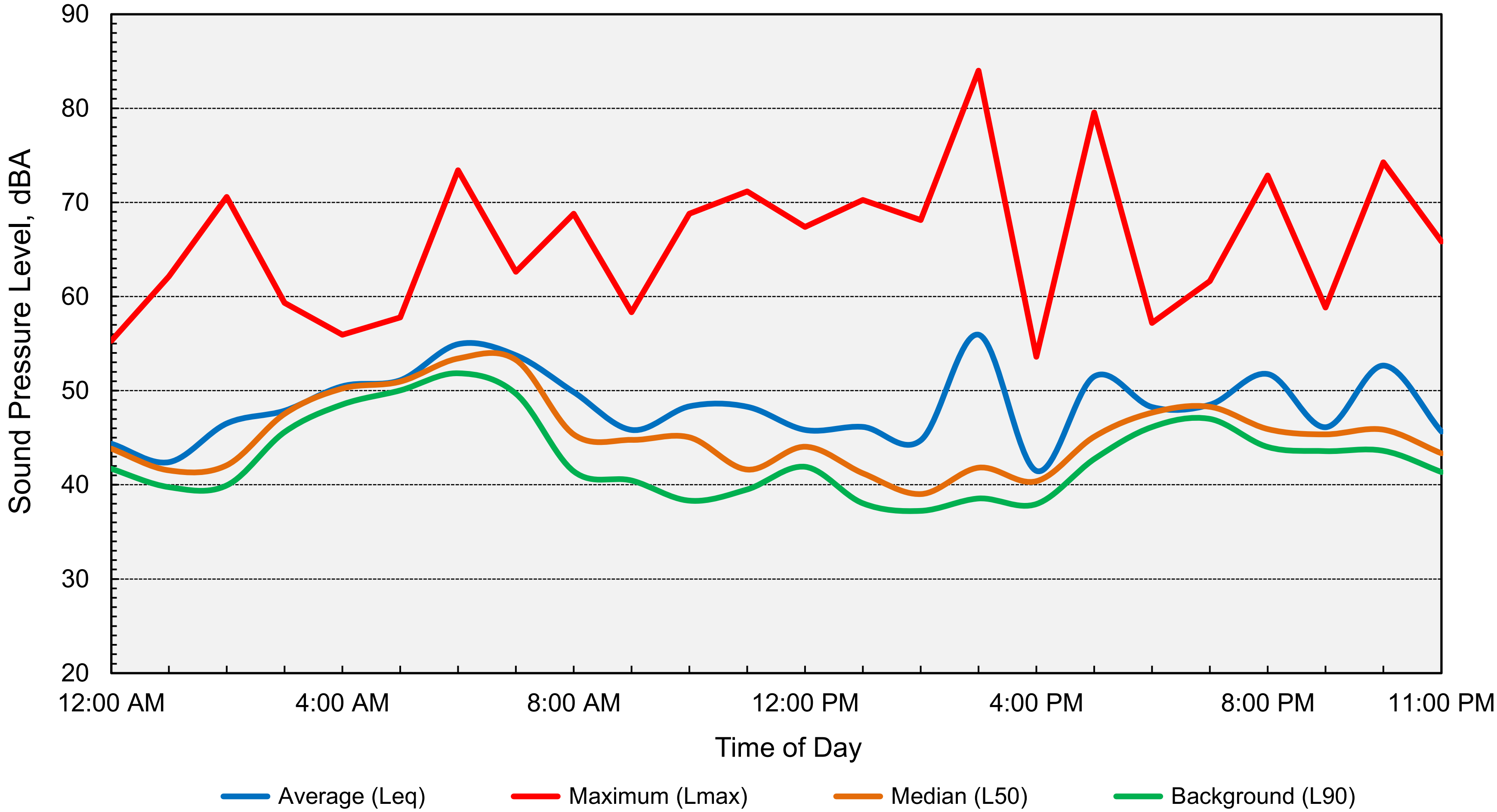
Appendix E-2
Ambient Noise Monitoring Results - Site 1
DCT Spreckles Distribution Center - Manteca, California
Thursday, November 12, 2020



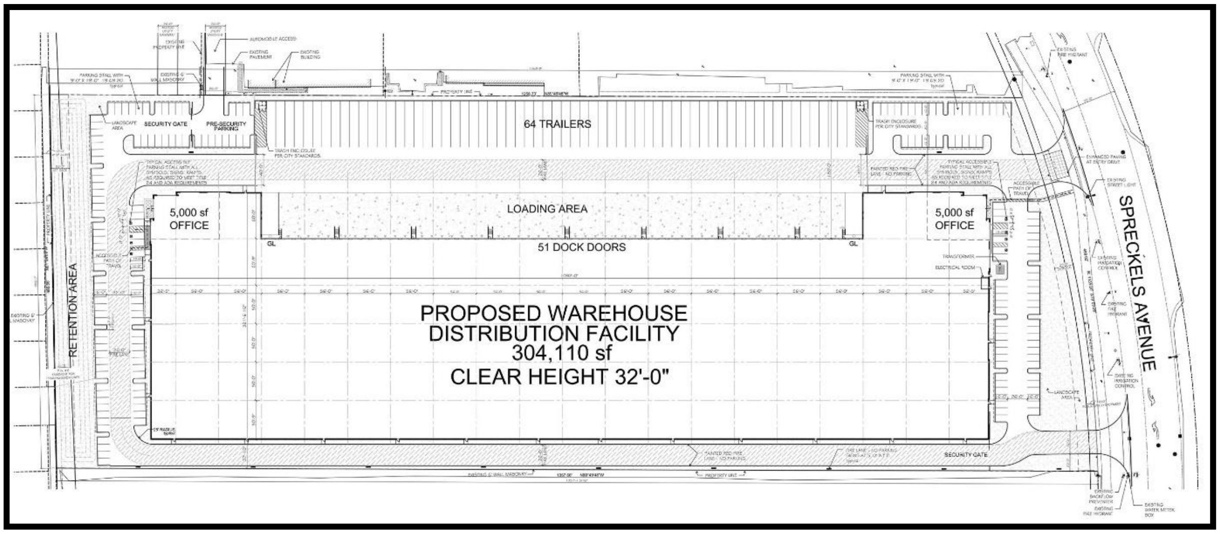
Computed DNL = 57 dB

BOLLARD
Acoustical Consultants

APPENDIX D

TRANSPORTATION IMPACT ANALYSIS

Spreckels Avenue Warehouse Distribution Facility Transportation Impact Analysis Report



Prepared for:
Raney Planning & Management, Inc.
City of Manteca

December 2020

RS17-3570

1. INTRODUCTION

This memorandum documents the transportation impact study (TIS) prepared for the proposed Spreckels Avenue Warehouse Distribution Facility project located in the City of Manteca. The project proposes to construct a 304,000 square foot industrial warehouse and distribution facility. Intersection operations, vehicle miles traveled, and project access were analyzed. This memorandum documents the methodologies, inputs, and results of the analysis.

STUDY INTERSECTIONS

The following study intersections were included in the analysis and are displayed on **Figure 1**:

<u>Intersection Operations Analysis</u>

1) Spreckels Avenue/E Yosemite Avenue/Cottage Avenue; and
2) Spreckels Avenue/Moffat Boulevard.

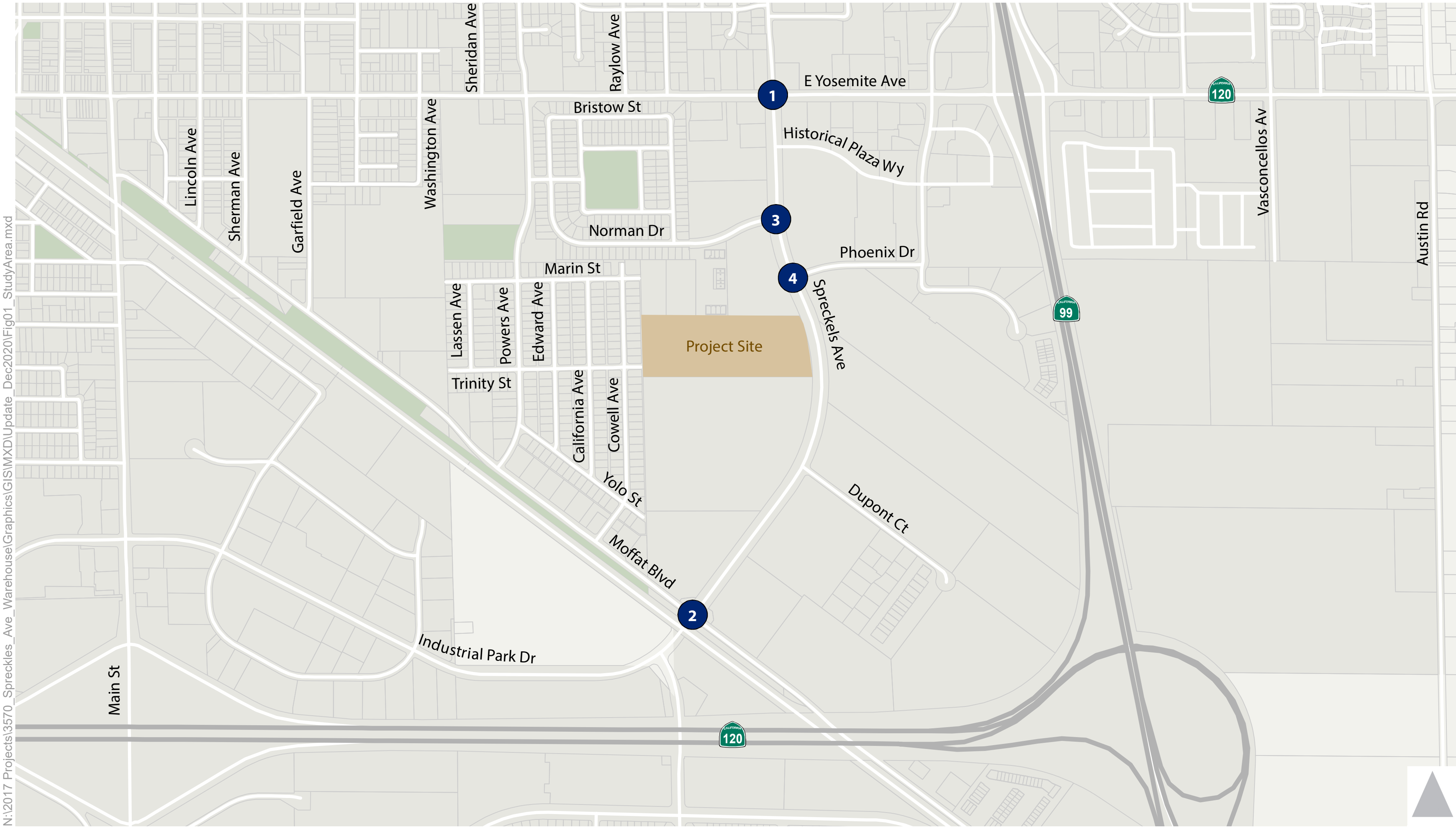
<u>Signal Warrant Analysis</u>

3) Spreckels Avenue/Norman Drive; and
4) Spreckels Avenue/Phoenix Drive.

TRAFFIC ANALYSIS SCENARIOS

The study intersections were evaluated for the following four scenarios:

- **Scenario 1: Existing Conditions** – Analyzes operations as they exist today.
- **Scenario 2: Existing Plus Project Conditions** – Analyzes existing operations with the addition of trips generated from the proposed project.
- **Scenario 3: Cumulative No Project Conditions** – Analyzes cumulative year (2042) volumes based on the City of Manteca / San Joaquin Council of Governments Travel Demand Forecasting (TDF) Model, assuming the project site remains in its current state.
- **Scenario 4: Cumulative Plus Project Conditions** – Analyzes cumulative year volumes with the addition of trips generated from the proposed project.



1 Study Intersection

Project Site

Figure 1

Study Area

2. SIGNIFICANCE CRITERIA AND ANALYSIS METHODOLOGY

This chapter describes the significance criteria used to evaluate project impacts and the methodology used to analyze the study intersections described above, to develop traffic forecasts for study intersections, and to complete the vehicle miles traveled analysis.

APPLICABLE POLICIES AND SIGNIFICANCE CRITERIA

Senate Bill 743 (SB 743)

Senate Bill (SB) 743 was signed into law in 2013 and is leading to substantial changes in the way transportation impact analyses are being prepared. Notably, it precludes the use of level of service (LOS) to identify significant transportation impacts in CEQA documents for land use projects, recommending instead that VMT be used as the preferred metric. On December 28, 2018, the CEQA Guidelines were amended to add Section 15064.3, Determining the Significance of Transportation Impacts, which states that generally, VMT is the most appropriate measure of transportation impacts. According to 15064.3(a), "Except as provided in subdivision (b)(2) (regarding roadway capacity), a project's effect on automobile delay shall not constitute a significant environmental impact." Beginning on July 1, 2020, the provisions of 15064.3 applied statewide.

To aid in SB 743 implementation, in December 2018 OPR released a Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory). The Technical Advisory provides advice and recommendations to CEQA lead agencies on how to implement the SB 743 changes. This includes technical recommendations regarding the assessment of VMT, thresholds of significance, VMT mitigation measures, and screening thresholds for certain land use projects. Lead agencies may consider and use these recommendations at their discretion and with the provision of substantial evidence to support alternative approaches.

The Technical Advisory identifies "screening thresholds" to quickly identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study. The Technical Advisory suggests that projects meeting one or more of the following criteria should be expected to have a less-than-significant impact on VMT.

- Small projects – projects consistent with a Sustainable Communities Strategy and local general plan that generate or attract fewer than 110 trips per day.
- Projects near major transit stops – certain projects (residential, retail, office, or a mix of these uses) proposed within ½ mile of an existing major transit stop or an existing stop along a high-quality transit corridor.
- Affordable residential development – a project consisting of a high percentage of affordable housing may be a basis to find a less-than-significant impact on VMT.
- Local-serving retail – local-serving retail development tends to shorten trips and reduce VMT. The Technical Advisory encourages lead agencies to decide when a project will likely be local-serving, but generally acknowledges that retail development including stores larger than 50,000 square feet might be considered regional-serving. The Technical Advisory suggests lead agencies analyze whether regional-serving retail would increase or decrease VMT (i.e., not presume a less-than-significant).

- Projects in low VMT areas – residential and office projects that incorporate similar features (i.e., density, mix of uses, transit accessibility) as existing development in areas with low VMT will tend to exhibit similarly low VMT.

The Technical Advisory also identifies recommended numeric VMT thresholds for residential, office, and retail projects, as described below.

- Residential development that would generate vehicle travel exceeding 15 percent below existing (baseline) residential VMT per capita may indicate a significant transportation impact. Existing VMT per capita may be measured as a regional VMT per capita or as city VMT per capita.

- Office projects that would generate vehicle travel exceeding 15 percent below existing regional VMT per employee may indicate a significant transportation impact.

- Retail projects (and other non-residential/non-office projects) that results in a net increase in total VMT may indicate a significant transportation impact.

- For mixed-use projects, the Technical Advisory suggests evaluating each component independently and applying the significance threshold for each project type included. Alternatively, the lead agency may consider only the project's dominant use.

Consistent with the above recommendations, VMT is used as the primary metric for transportation impacts for the proposed project. The Baseline Citywide VMT per employee for industrial land uses in Manteca was developed using the City of Manteca / SJCOG sub-area Travel Demand Forecasting (TDF) Model described in greater detail under "Travel Demand Forecasting". Multiple select zone analyses were used to obtain daily trips and travel distances for Industrial Transportation Analysis Zones (TAZs). The product of daily trips and travel distance for each TAZ was summed and then averaged to obtain the Baseline Citywide VMT per industrial employee estimate. The results of this analysis indicate that the Baseline Citywide VMT per industrial employee is 27.1.

Because the Technical Advisory does not explicitly include numeric VMT thresholds for industrial projects and the City of Manteca has not adopted specific VMT thresholds of significance for CEQA analysis, this study compares Cumulative Year project VMT per industrial employee to the Baseline Citywide industrial VMT per employee.

<u>Level of Service</u>

As previously noted, level of service (LOS) may no longer be used to identify significant transportation impacts in CEQA documents for land use projects. However, this analysis includes a LOS analysis to determine if the proposed project would result in unacceptable intersection operations per the City of Manteca standards. Policy C-P-2 of the 2023 General Plan strives for LOS D or better while LOS E or worse is considered unacceptable.

DATA COLLECTION

Intersection turning movement counts collected in January 2020 were used to analyze intersection operations at Intersection 1. Traffic conditions were clear and local schools were in session. Intersection turning movements counts used in the 2017 Spreckels Avenue Warehouse study were used to develop intersection turning movements at Intersection 2. A growth factor was applied to the 2017 counts to estimate 2019 weekday AM and PM peak hour conditions. Conditions were not estimated for 2020, as the current COVID-19 pandemic has resulted in significant changes to travel behavior and applying a growth factor to prior counts would likely result in an inaccurate representation of 2020 COVID-19 conditions.

Due to the COVID-19 pandemic, intersection turning movement counts at Intersections 3 and 4 were not collected. Instead, traffic count data was obtained from the big data vendor, StreetLight Data. StreetLight Data captures anonymized location records from smart phones and navigation devices in connected cars and trucks. Because StreetLight Data collects location records at all times of the day and year, whereas traditional data collection efforts often occur on a single typical weekday between the AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak periods, StreetLight Data provides an opportunity for a larger data set.

Mid-week (Tuesday through Thursday) data collected in September through October 2019 was used to develop intersection turning movement volumes at Intersections 3 and 4. Traffic volumes during the AM and PM peak hours were averaged to determine "Existing" AM and PM peak hour volumes. **Figure 2** displays the existing AM and PM peak hour traffic volumes, lane configurations, and traffic controls at the study intersections.

TRAVEL DEMAND FORECASTS

Using the City of Manteca / SJCOG sub-area Travel Demand Forecasting (TDF) Model, Cumulative No Project Year 2042 traffic volume forecasts were developed for the following two (2) existing study intersections:

1) Spreckels Avenue/E Yosemite Avenue/Cottage Avenue
2) Spreckels Avenue/Moffat Boulevard

The travel demand model incorporates the current RTP / Air Quality Model, build-out of the current City of Manteca General Plan, and General Plans for the surrounding communities of Lathrop, Ripon, San Joaquin County, and Stockton. The TDF Model also includes projects identified in the City's Public Facilities Improvement Plan (PFIP) and the Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS) Project List for:

- Mainline Highway Improvements (Table 6-1 from SJCOG RTP);
- Interchange Improvements (Table 6-1 from SJCOG RTP); and
- Regional Roadway Improvements (Table 6-3 from SJCOG RTP).

The traffic forecasting adjustment procedure known as the "difference method" was used to develop Cumulative Year (2042) AM and PM Peak Hour traffic forecasts. For a given intersection, this forecasting procedure is calculated as follows for every movement at the study intersections:

Cumulative Year Forecast = Existing Volume + (Cumulative Year TDF Model – Base Year TDF Model)

The TDF Model was used to calculate growth along Spreckels Avenue based on anticipated future development. A growth factor was applied to Intersections 3 and 4 to develop Cumulative No Project volumes.

VMT ANALYSIS

The proposed project was added to the Cumulative Year TDF Model to develop the Cumulative Project VMT per industrial employee estimate. A select zone analysis was used to obtain project generated daily trips and travel distances. The product of daily trips and travel distance was summed to obtain the project VMT estimate.

INTERSECTION ANALYSIS

Intersections 1 and 2 were analyzed using procedures and methodologies contained in the *Highway Capacity Manual – 6th Edition* (Transportation Research Board, 2016). These methodologies were applied using Synchro 10 software which considers traffic volumes, lane configurations, signal timings, signal coordination, and other pertinent parameters of intersection operations. Intersections 3 and 4 were evaluated for consideration of installation of a traffic signal control using methodologies contained in the *California Manual on Uniform Traffic Control Devices, 2014 Edition, Revision 4* (MUTCD) (Caltrans, 2019).

<u>Level of Service Definition</u>

Intersections 1 and 2 were analyzed using the concept of Level of Service (LOS). LOS is a qualitative measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. In general, LOS A represents free-flow conditions with no congestion, and LOS F represents severe congestion and delay under stop-and-go conditions. For signalized intersections, LOS is based on the average delay experienced by all vehicles passing through the intersection. **Table 1** displays the delay range associated with each LOS category for signalized intersections.

Table 1: Intersection Level of Service (LOS) Criteria		
LOS	**Description for Signalized Intersections**	**Average Delay (Seconds/Vehicle) at Signalized Intersections**
A	Operations with very low delay occurring with favorable traffic signal progression and/or short cycle lengths.	< 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10.0 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 to 55.0
E	Operations with high delay values indicating poor progression, and long cycle lengths. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	> 55.0 to 80.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80.0

Note: LOS = level of service; V/C ratio = volume-to-capacity ratio
LOS at signalized intersections is based on average delay for all vehicles. lay.
Source: Transportation Research Board, 2016

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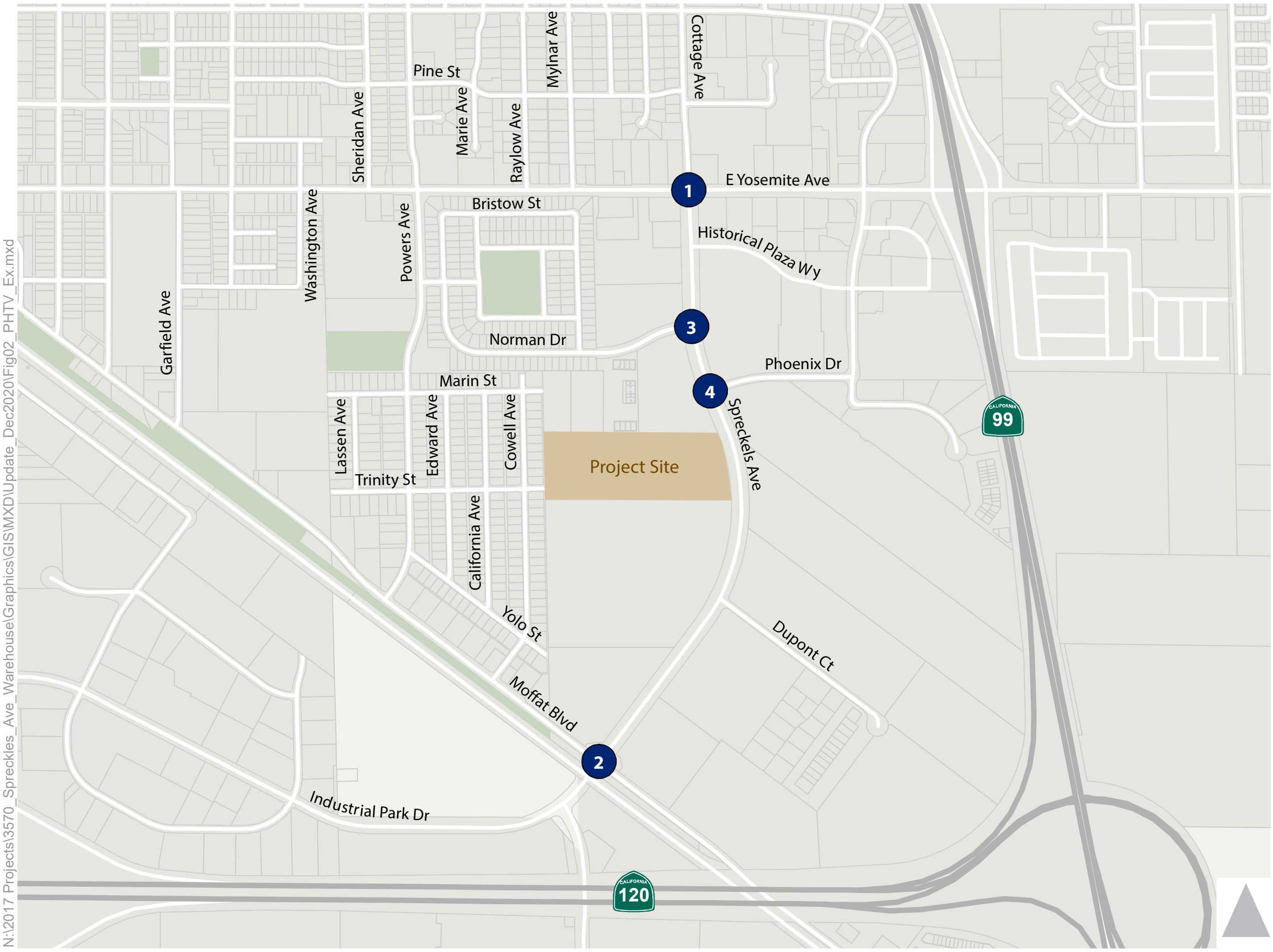
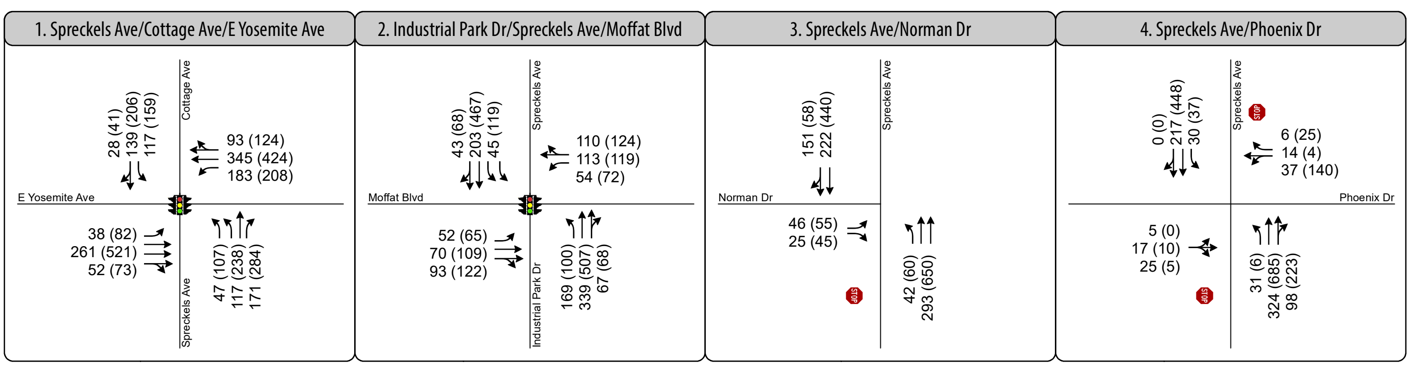




1 Study Intersection

Turn Lane

Traffic Signal

Project Site

AM (PM) Peak Hour Traffic Volume

STOP Stop Sign

Figure 2

Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions

Signal Warrant Analysis

Intersections 3 and 4 were evaluated for consideration of installation of a traffic control signal. This study applies the peak hour signal warrant (Warrant 3) contained in the *California Manual on Uniform Traffic Control Devices, 2014 Edition, Revision 4* (MUTCD) (Caltrans, 2019). It should be noted that the peak hour warrant is one of nine signal warrants identified in the MUTCD to assist traffic engineers in determining whether a traffic signal is justified. The MUTCD also states the peak hour warrant (Warrant 3) should be "applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time,". This study applies the peak hour warrant since the project is located in an industrial area and the traffic forecasting methodology is limited to developing traffic forecasts for the AM and PM peak hours (i.e., there is insufficient data on future traffic volumes to prepare an eight-hour or four-hour vehicle volume warrant). Furthermore, the peak hour warrant tends to be the most sensitive vehicle volume warrant (i.e., it is typically met before the eight-hour and four-hour vehicle volume warrant), which means the peak hour warrant may be satisfied when other vehicle volume warrants are not.

3. EXISTING CONDITIONS

This chapter presents the existing bicycle, pedestrian, and transit facilities as well as intersection operations under Existing Conditions.

EXISTING BICYCLE AND PEDESTRIAN FACILITIES

The City of Manteca Active Transportation Plan (adopted September 1, 2020) defines the following bicycle facility types:

Class I Bikeway: Bike Path

Bike paths, often referred to as shared-use paths or trails, are off-street facilities that provide exclusive use for non-motorized travel, including bicyclists and pedestrians. Bike paths have minimal cross flow with motorists and are typically located along landscaped corridors.

Class II Bikeway: Bike Lane

Class II bike lanes are on-street facilities that use striping, stencils, and signage to denote preferential or exclusive use by bicyclists. On-street bike lanes are located adjacent to motor vehicle traffic.

Class III Bikeway: Bike Route

Class III bike routes are streets with signage and optional pavement markings where bicyclists travel on the shoulder or share a lane with motor vehicles. Class III bike routes are utilized on low-speed and low-volume streets to connect bike lanes or paths along corridors that do not provide enough space for dedicated lanes.

Class III Bikeway: Bicycle Boulevard

Class III bicycle boulevards are similar to Class III bike routes, in that they are primarily utilized on low-speed and low-volume streets, and can close important gaps in the bicycle network where there may be insufficient space for dedicated lanes. Bicycle boulevards provide further enhancements to bike routes to encourage slow speeds and discourage non-local vehicle traffic via traffic diverters, chicanes, traffic circles, and/or speed tables.

Class IV Bikeway: Separated Bikeway

Class IV separated bikeways, commonly known as cycle tracks, are physically separated bicycle facilities that are distinct from the sidewalk and designed for exclusive use by bicyclists. They are located within the street right-of-way, but provide comfort similar to Class I bike paths.

Figure 3 presents the existing bicycle and pedestrian network in the study area. As displayed, Class I Multi-Use Paths are located on Spreckels Avenue between Moffat Boulevard and Yosemite Avenue and will provide pedestrian and bicycle connections between the project site and adjacent major roadways.

EXISTING TRANSIT FACILITIES

Manteca Transit operates a fixed-route and Dial-a-Ride bus service with stops throughout the City. Route 1 provides fixed route service to the study area. The nearest stop to the Proposed Project is located near the

Spreckels Avenue/Norman Drive intersection. In addition to Manteca Transit, the San Joaquin Regional Transportation District provides both weekday and weekend service to the City.

EXISTING INTERSECTION OPERATIONS

Table 2 displays the existing AM and PM peak hour operations at Intersections 1 and 2. Individual intersection peak hour and heavy vehicle information was used for the analysis. Technical calculations are displayed in **Attachment 1**.

Table 2: Intersection Operations – Existing Conditions

Intersection	Control Type	Peak Hour	Delay[1]	LOS [2]
1. Spreckels Avenue/ E Yosemite Avenue	Traffic Signal	AM PM	18 22	B C
2. Spreckels Avenue/ Moffat Boulevard	Traffic Signal	AM PM	24 29	C C

Note:
[1] For signalized intersections, intersection delay is reported in seconds of average delay for all approaches.
[2] LOS = level of service
Source: Fehr & Peers, 2020

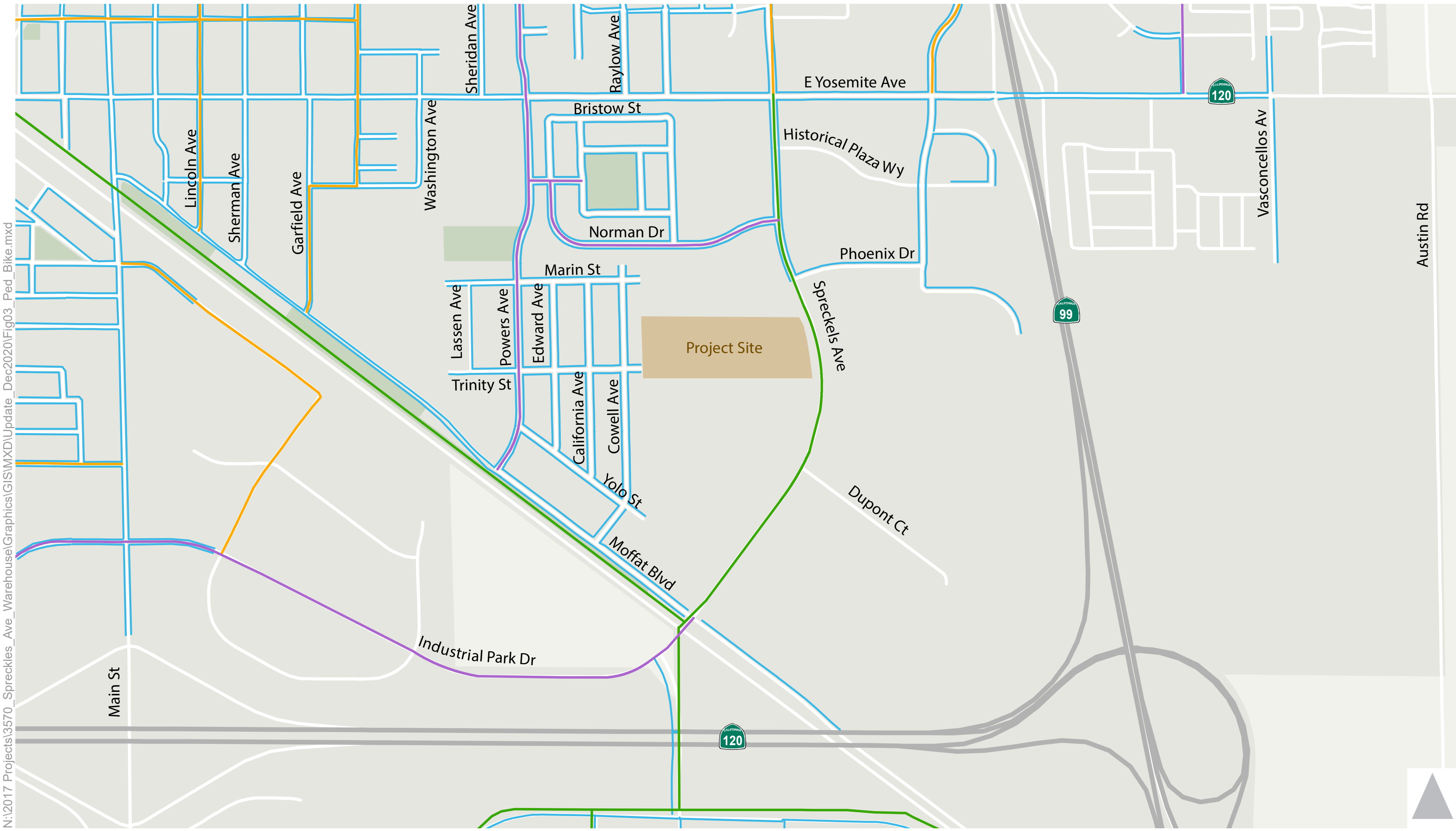
As displayed, all intersections operate acceptably during both AM and PM peak hours.

EXISTING SIGNAL WARRANT ANALYSIS

A peak hour signal warrant analysis was completed to determine if existing vehicle volumes at Intersection 3 or 4 satisfy the peak hour warrant for installation of a traffic control signal. Technical calculations are displayed in **Attachment 2**.

Based on the results of the analysis, peak hour vehicle volumes at Intersection 3 do not satisfy the warrant for installation of a traffic signal control under AM or PM peak hour conditions. Peak hour vehicle volumes at Intersection 4 do not satisfy the warrant for installation of a traffic signal control under AM peak hour conditions; however, they do satisfy the warrant for installation of a traffic control signal under PM peak hour conditions.

As previously noted, the peak hour signal warrant is one of nine signal warrants in the CA MUTCD; therefore, meeting one of the peak hour warrants does not solely determine the need for a traffic signal. Additionally, the Spreckels Avenue/Phoenix Drive intersection is not listed in the City of Manteca Public Facilities Implementation Plan Transportation Element (effective January 1, 2018). Therefore, because the intersection is not listed in the PFIP and volumes at the intersection only satisfy the warrant under PM peak hour conditions, it is recommended that traffic monitoring be completed and additional warrant analyses be conducted prior to the determination of the need for installation of a traffic signal at the intersection.



Bicycle Facilities
- Class I - Multi-Use Path
- Class II - Bicycle Lane
- Class III - Bicycle Route

Pedestrian Facilities
- Sidewalk

Project Site

Figure 3

Bicycle and Pedestrian Facilities

4. EXISTING PLUS PROJECT CONDITIONS

This chapter presents the results of the Existing Plus Project transportation impact analysis.

PROJECT TRIP GENERATION

Project trips were estimated using trip rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual 10th Edition Supplement (2020)*. The 10th Edition Supplement provides trip rates for multiple industrial land uses. Because a specific tenant has not yet been identified, a blended trip rate based on the potential land uses was used to calculated daily, AM and PM peak hour trips. The following ITE land use categories are applicable to the proposed project and were used to develop the blended rate.

- Industrial Park (ITE 130) – An industrial park contains a number of industrial or related facilities and is characterized by a mix of manufacturing, service, and warehouse facilities with a wide variation in the proportion of each type of use from one location to another. The Proposed Project is located within the Spreckels Park which contains a variety of industrial uses, therefore, this category was included.

- Warehousing (ITE 150) – A warehouse is primarily devoted to the storage of materials, but it may also include office and maintenance areas.

- High-Cube Transload and Short-Term Storage Warehouse (ITE 154) – A high-cube warehouse is a building that typically has at least 200,000 gross square feet of floor area, has a ceiling height of 24 feet or more, and is used primarily for the storage and/or consolidation of manufactured goods prior to their distribution to retail locations or other warehouses. Transload facilities have a primary function of consolidation and distribution of pallet loads for manufacturers, wholesalers, or retailers. Short-term facilities are high-efficiency distribution facilities used for movement of large volumes of freight with only short-term storage of products.

- High-Cube Fulfillment Center Warehouse (ITE 155) – A high-cube fulfillment center is similar to a high-cube transload or short-term storage warehouse but is different in that it is typically used for a significant storage function and direct distribution of ecommerce product to end users. These facilities typically handle smaller packages and quantities than other types of high-cube warehouses.

In addition to total vehicle trips, the 10th Edition Supplement provides heavy vehicle trip rates. Similar to the total vehicle trip generation, a blended trip generation rate for heavy vehicles was used. **Table 3** displays the trip generation for the Proposed Project.

Table 3: Project Trip Generation									
Land Use	Quantity	Trip Type	Daily	AM			PM		
				In	Out	Total	In	Out	Total
Warehouse (ITE 130, 150, 154, 155)	304.11 ksf	Passenger Cars	510	44	9	53	16	42	58
		Heavy Vehicles	123	4	4	8	3	4	7
		Total Vehicle Trips	**633**	**48**	**13**	**61**	**19**	**46**	**65**

Notes:
Trip Generation is based on a blended rate of trip rates published in *Trip Generation Manuel 10th Edition Supplement* (Institute of Transportation Engineers, 2020).
Source: Fehr & Peers, 2020

TRIP DISTRIBUTION

Project trips were distributed throughout the study area based on existing directional travel patterns, heavy vehicle percentages, and output from the City of Manteca Travel Demand Model. Trip distribution was developed for both passenger vehicles and heavy vehicles. **Figures 4 and 5** present the trip distribution. **Figure 6** displays the traffic volumes under Existing Plus Project Conditions.

EXISTING PLUS PROJECT INTERSECTION OPERATIONS

Table 4 displays the AM and PM peak hour operations at Intersections 1 and 2 under Existing Plus Project Conditions. Technical calculations are displayed in **Attachment 1**.

Table 4: Intersection Operations – Existing Plus Project Conditions						
Intersection	Control Type	Peak Hour	Existing Conditions		Existing Plus Project Conditions	
			Delay[1]	LOS [2]	Delay[1]	LOS [2]
1. Spreckels Avenue/ E Yosemite Avenue	Traffic Signal	AM PM	18 22	B C	18 22	B C
2. Spreckels Avenue/ Moffat Boulevard	Traffic Signal	AM PM	24 29	C C	25 30	C C

Note:
[1] For signalized intersections, intersection delay is reported in seconds of average delay for all approaches.
[2] LOS = level of service
Source: Fehr & Peers, 2020

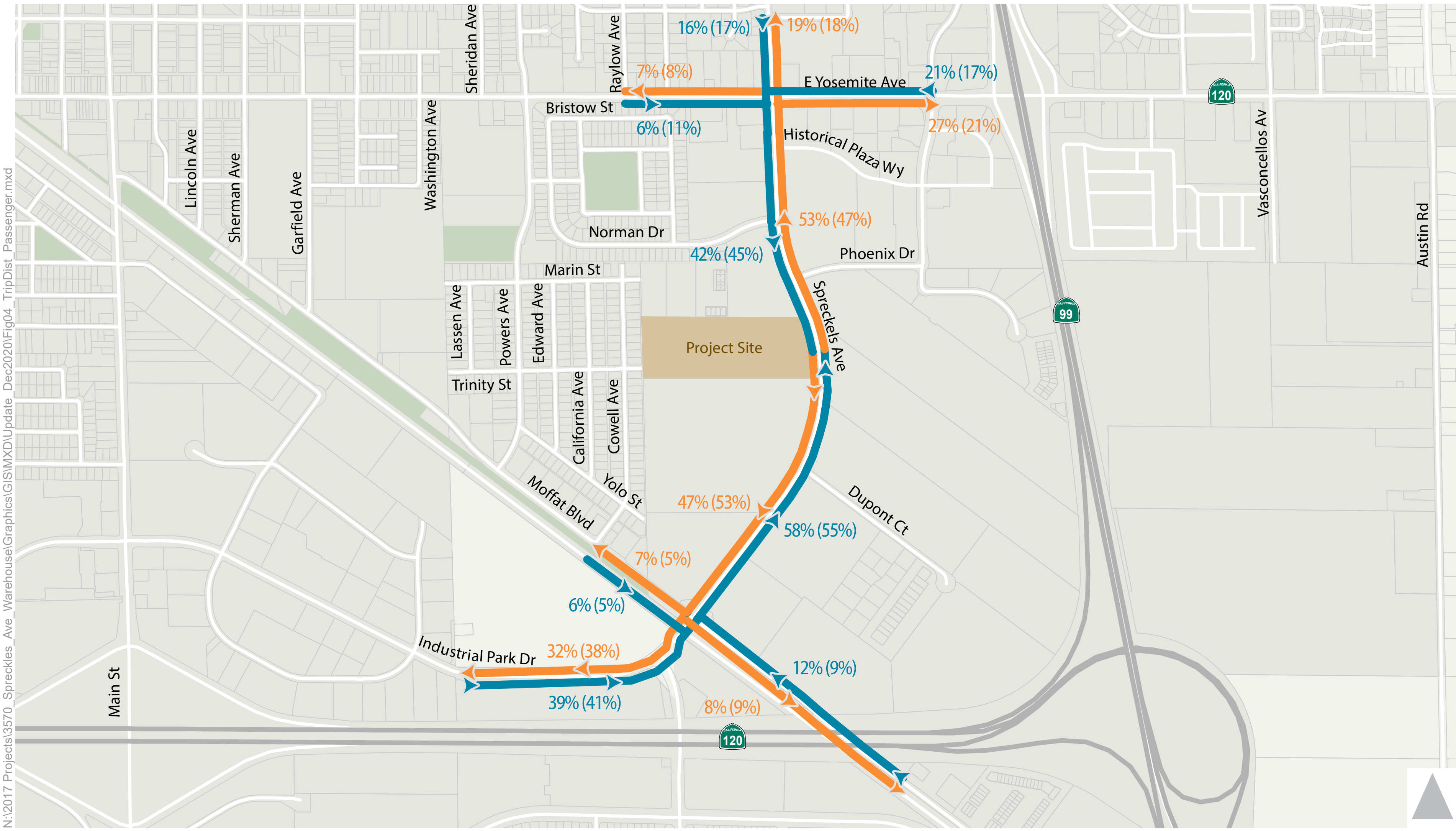
As displayed, all intersections will operate acceptably during both AM and PM peak hours.

EXISTING PLUS PROJECT SIGNAL WARRANT ANALYSIS

A peak hour signal warrant analysis was completed to determine if Existing Plus Project vehicle volumes at Intersection 3 or 4 satisfy the peak hour warrant for installation of a traffic control signal. Technical calculations are displayed in **Attachment 2**.

Based on the results of the analysis, peak hour vehicle volumes at Intersection 3 do not satisfy the warrant for installation of a traffic signal control under AM or PM peak hour conditions. Consistent with the results of the Existing Conditions analysis, peak hour vehicle volumes at Intersection 4 do not satisfy the warrant for installation of a traffic signal control under AM peak hour conditions; however, they do satisfy the warrant for installation of a traffic control signal under PM peak hour conditions.

It is recommended that traffic monitoring be completed prior to issuance of a building permit and after occupancy and additional warrant analyses be conducted. Because the intersection is not currently listed in the PFIP, if it is determined that a traffic signal is necessary, the project may be required to either pay for the traffic signal and be reimbursed for the cost of installation minus their fair share contribution or the intersection could be added to the PFIP and the project would be responsible for paying the updated PFIP fair share contribution fee.



Inbound
Project Site
Outbound

AM% (PM%) Trip Distribution Percentage

Figure 4

Project Trip Distribution

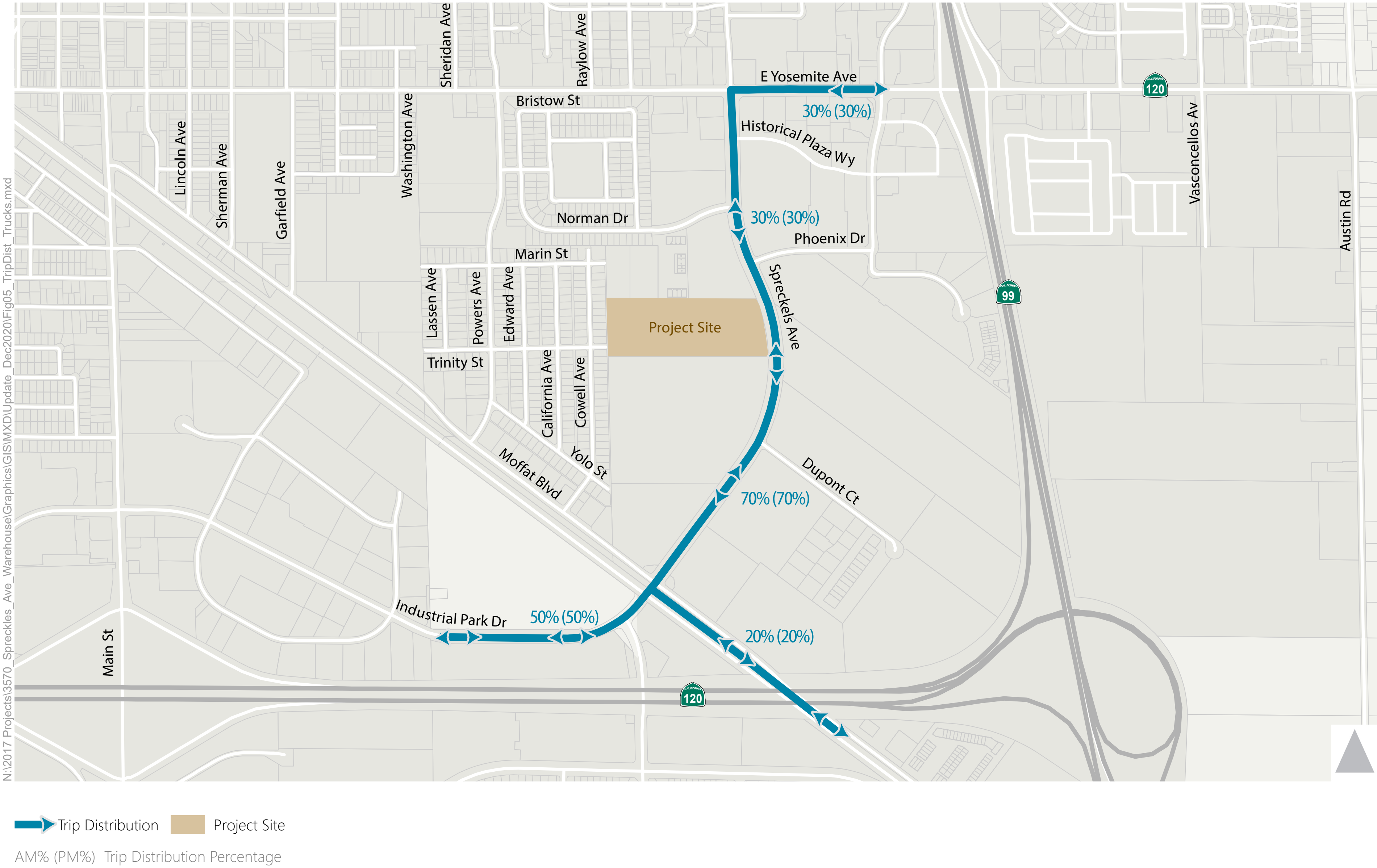


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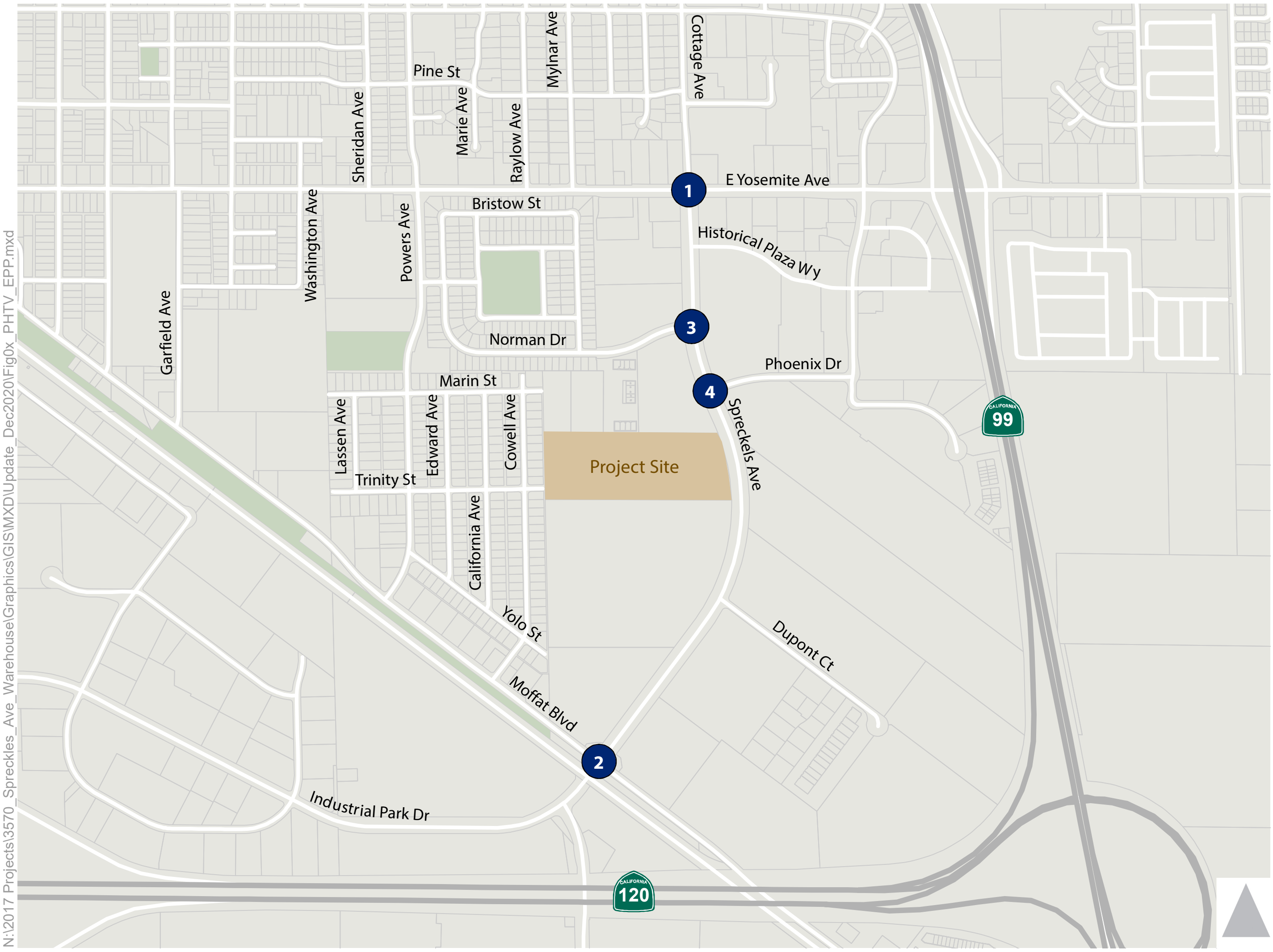
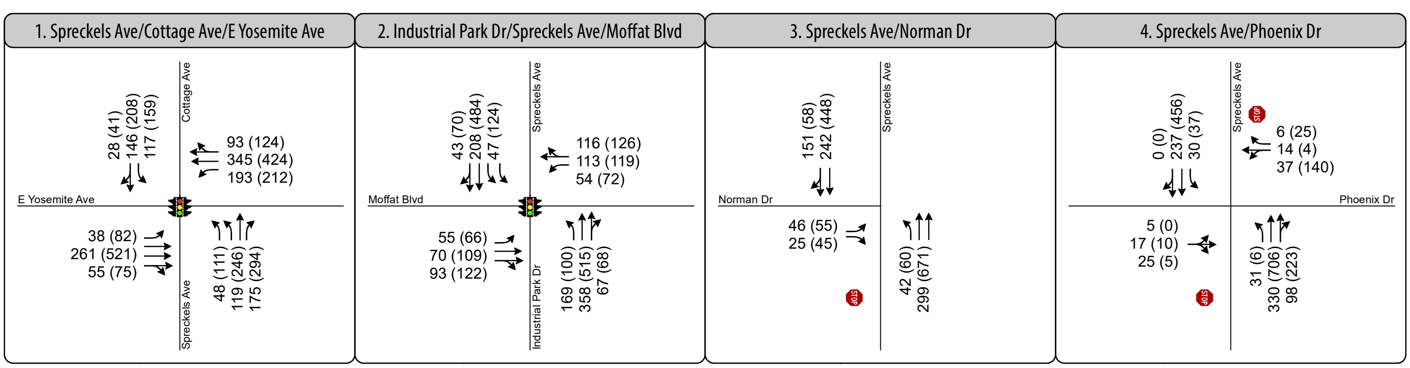
Figure 5

Project Trip Distribution - Heavy Vehicles





1 Study Intersection
Turn Lane
Traffic Signal
Project Site
AM (PM) Peak Hour Traffic Volume
STOP Stop Sign

Figure 6

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions

5. CUMULATIVE CONDITIONS ANALYSIS

This chapter analyzes the impacts of the project under Cumulative Conditions. The analysis reflects long-term development in the City of Manteca and other nearby jurisdictions using a version of the SJCOG TDF model previously described.

CUMULATIVE YEAR INTERSECTION OPERATIONS

The TDF model was used to develop Cumulative No Project forecasts, which are displayed on **Figure 7**. Project trips were added to the Cumulative No Project forecasts consistent with the trip distribution previously described to develop Cumulative Plus Project Conditions. Cumulative Plus Project forecasts are displayed on **Figure 8**.

There are no planned improvements at the study intersections, therefore, cumulative year intersection geometry remains the same as under Existing Conditions. **Table 5** displays the AM and PM peak hour operations at Intersections 1 and 2 under Cumulative No Project and Cumulative Plus Project Conditions. Technical calculations are displayed in **Attachment 1**.

Table 5: Intersection Operations – Cumulative Conditions

Intersection	Control Type	Peak Hour	Cumulative No Project Conditions		Cumulative Plus Project Conditions	
			Delay[1]	LOS [2]	Delay[1]	LOS [2]
1. Spreckels Avenue/ E Yosemite Avenue	Traffic Signal	AM PM	24 32	C C	24 33	C C
2. Spreckels Avenue/ Moffat Boulevard	Traffic Signal	AM PM	40 50	D D	42 53	D D

Note:
[1] For signalized intersections, intersection delay is reported in seconds of average delay for all approaches.
[2] LOS = level of service
Source: Fehr & Peers, 2020

As displayed, all intersections will operate acceptably under AM and PM peak hour conditions with and without the Proposed Project.

CUMULATIVE YEAR SIGNAL WARRANT ANALYSIS

A peak hour signal warrant analysis was completed to determine if Cumulative No Project or Cumulative Plus Project vehicle volumes at Intersection 3 or 4 satisfy the peak hour warrant for installation of a traffic control signal. Technical calculations are displayed in **Attachment 2**.

Based on the results of the analysis for both Cumulative No Project and Cumulative Plus Project conditions, peak hour vehicle volumes at Intersection 3 do not satisfy the warrant for installation of a traffic signal control under AM or PM peak hour conditions. Consistent with the results of the Existing and Existing Plus Project analysis, peak hour vehicle volumes at Intersection 4 do not satisfy the warrant for installation of a traffic signal control under AM peak hour conditions; however, they do satisfy the warrant for installation of a traffic control signal under PM peak hour conditions.

It is recommended that traffic monitoring be completed prior to issuance of a building permit and after occupancy and additional warrant analyses be conducted. Because the intersection is not currently listed in the PFIP, if it is determined that a traffic signal is necessary, the project may be required to either pay for the traffic signal and be reimbursed for the cost of installation minus their fair share contribution or the intersection could be added to the PFIP and the project would be responsible for paying the updated PFIP fair share contribution fee.

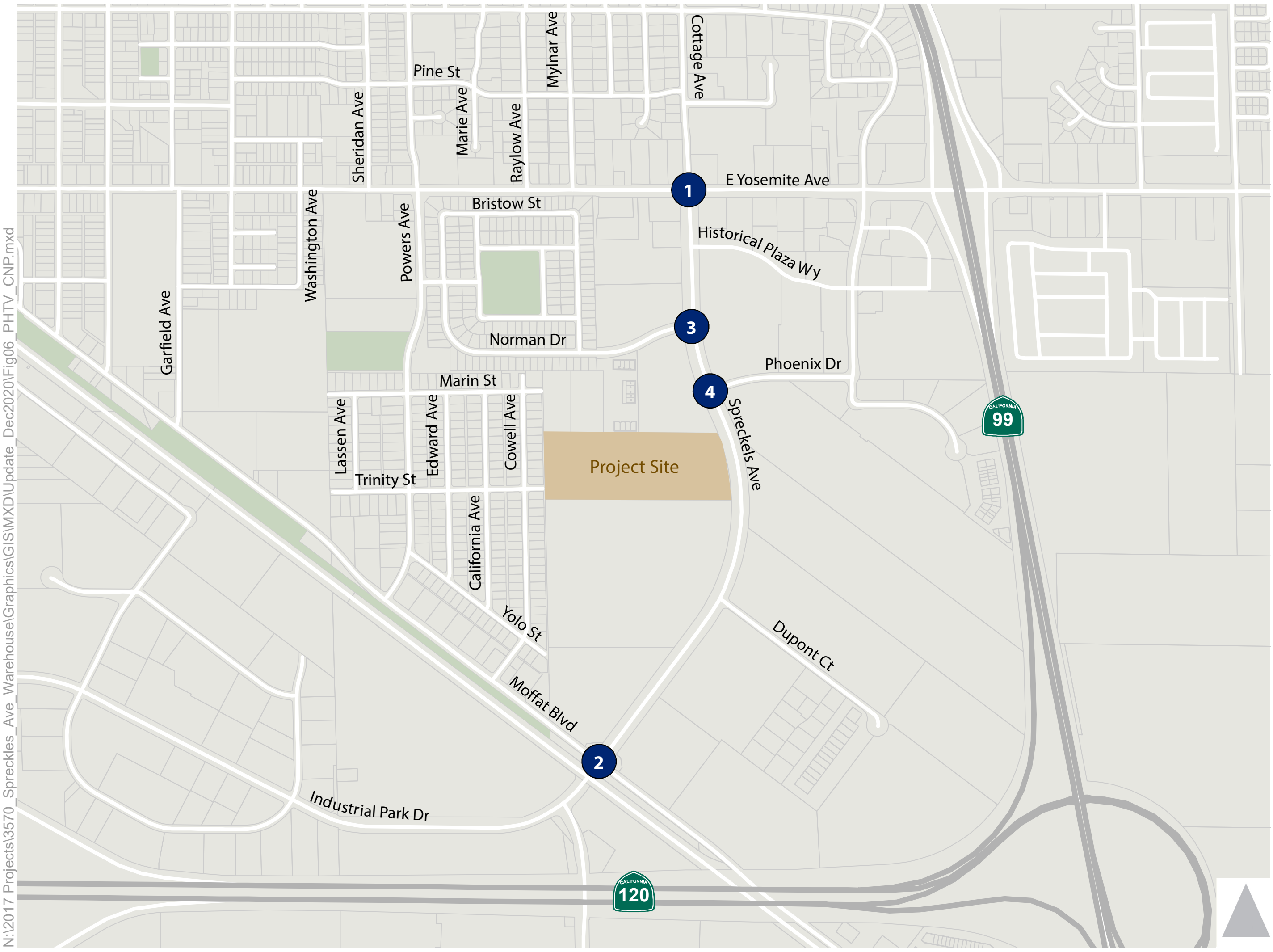
CUMULATIVE YEAR VMT ESTIMATE

The Proposed Project does not qualify as a small project for screening purposes and therefore, VMT is used as the primary metric for significant transportation impacts. **Table 6** presents the modeled Baseline Citywide VMT per industrial employee and the Cumulative Project VMT per industrial employee. As previously noted, the City of Manteca travel demand model that was derived from the SJCOG Regional Travel Demand Model was used to calculate Baseline Citywide and Cumulative Project VMT.

Table 6: Project Vehicle Miles Traveled Analysis

Scenario	VMT Per Industrial Employee	VMT Reduction Per Industrial Employee	Percentage Reduction Per Industrial Employee
Baseline Citywide	27.1		
Cumulative Project VMT	23.6	-3.5	-12.9%
Source: City of Manteca Travel Demand Model - Fehr & Peers, 2020			

As displayed, the Proposed Project will generate an average of 23.6 VMT per industrial employee, which is 3.5 less VMT per industrial employee when compared to the Baseline Citywide VMT per industrial employee. This represents a 12.9% decrease. Therefore, construction of the Proposed Project will improve the jobs to housing balance in the City of Manteca and provide an overall benefit to reducing VMT per employee, fuel consumption and greenhouse gas emissions; this is a **less than significant** transportation impact.



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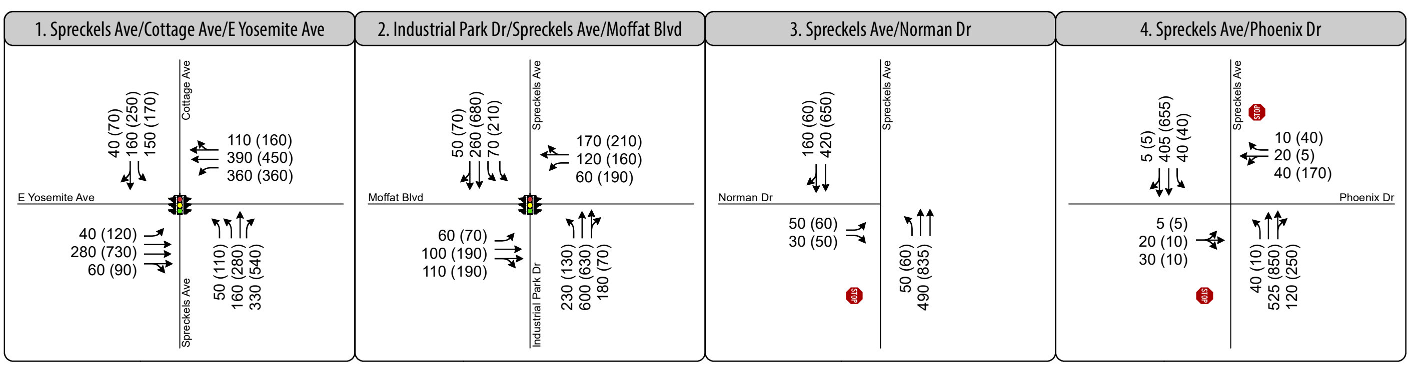


1 Study Intersection

Turn Lane

Traffic Signal

Project Site

AM (PM) Peak Hour Traffic Volume

Stop Sign

Figure 7

Peak Hour Traffic Volumes and Lane Configurations - Cumulative No Project Conditions

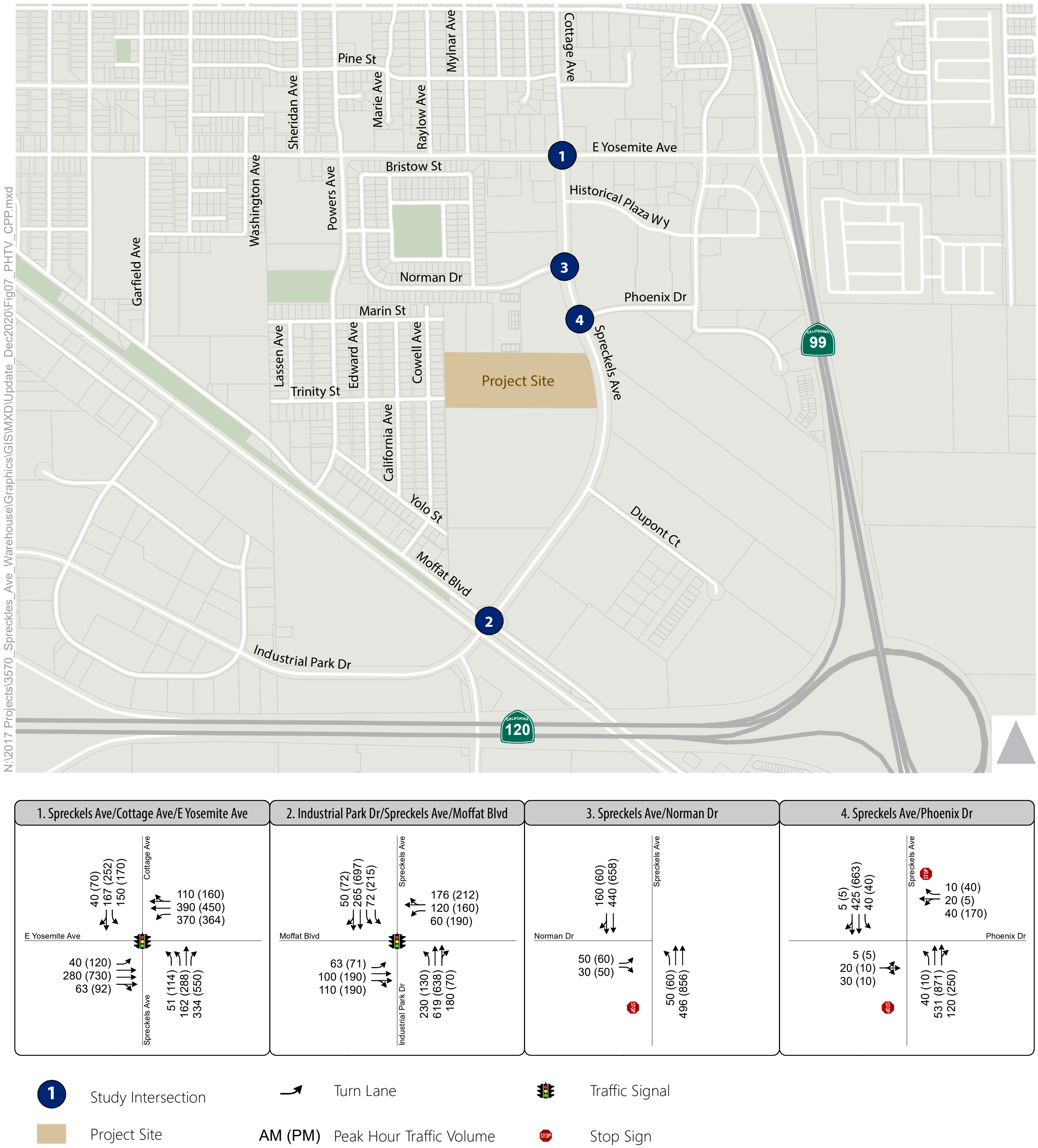


Figure 8

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project Conditions

6. PARKING AND ON-SITE CIRCULATION EVALUATION

This section describes the results of the parking and on-site circulation evaluation.

EVALUATION OF PROJECT DRIVEWAYS AND ON-SITE CIRCULATION

The project proposes two full access driveways on Spreckels Avenue. The proposed northern driveway is approximately 41' wide and the proposed southern driveway is approximately 30' wide. Based on anticipated volumes and the existing two-way left turn lane on Spreckels Avenue, the project is not anticipated to generate a queue that could result in substantial impacts to traffic on Spreckels Avenue.

A swept path analysis was completed using AutoTURN software and the project site plan to evaluate on-site circulation using a STAA Standard Design Vehicle. **Figure 9** displays the results of the swept path analysis, which shows that sufficient width is provided for large truck turning radii onto and within the project site.

PARKING EVALUATION

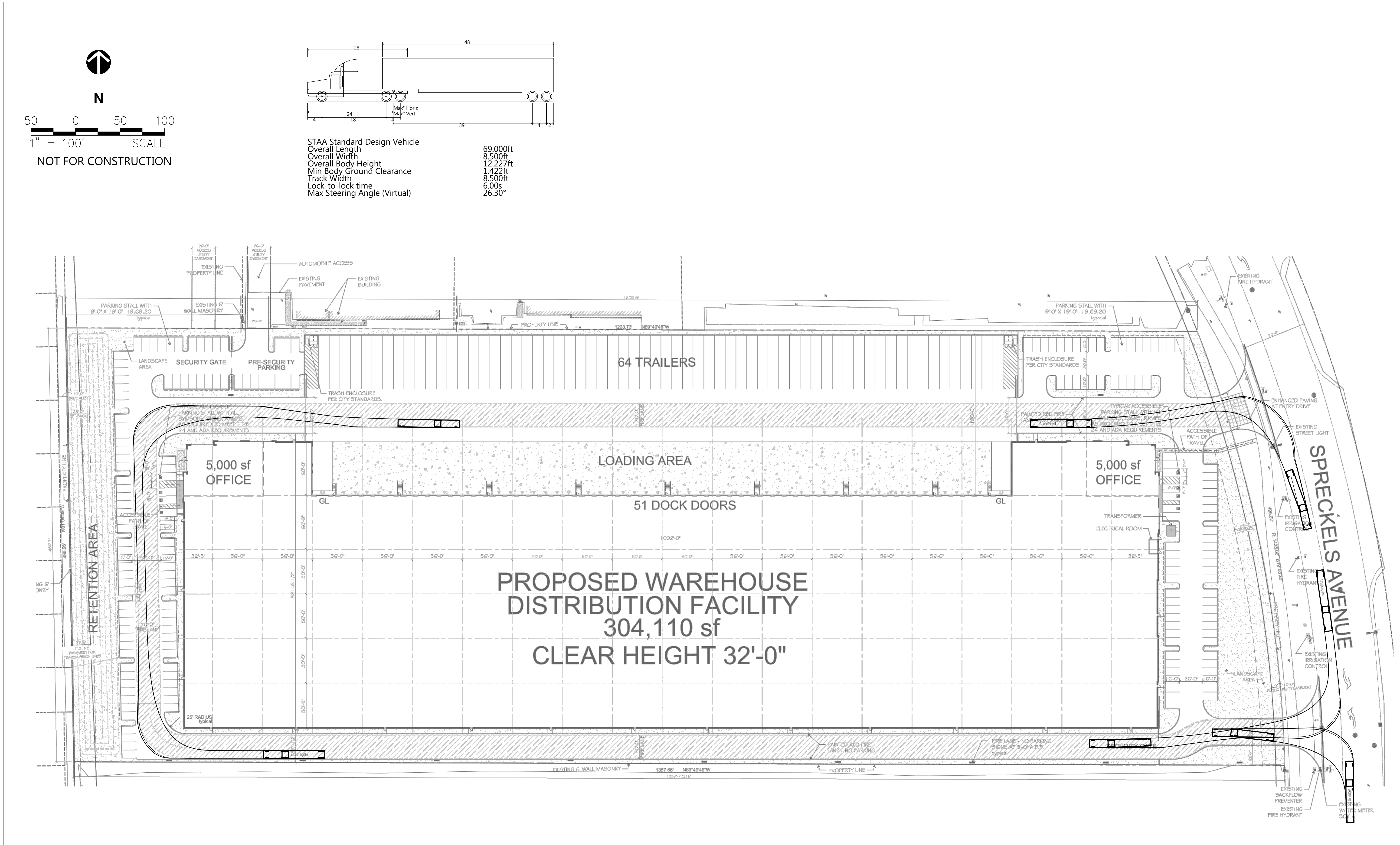
The City of Manteca Zoning Code requires .5 parking spaces per 1,000 square feet of warehousing and 4 parking spaces per 1,000 square feet of office space, requiring a total of 187 parking spaces for the proposed project. The site plan prepared by DCT Industrial dated February 17, 2017 indicates a total of 190 parking spaces will be provided; therefore, the project complies with the City parking standards.

BICYCLE PARKING EVALUATION

The City of Manteca Zoning Code requires a minimum of seven bicycle parking spaces for projects with 100 to 199 vehicular parking spaces. The project site plan does not currently identify bicycle parking spaces; therefore, it is recommended that the site plan be updated to include seven bicycle parking spaces to promote active transportation uses.

TRANSPORTATION DEMAND MANAGEMENT PLAN

If the project is anticipated to employ 100 or more full-time equivalent employees, the project should establish a transportation demand management plan (TDM plan) consistent with San Joaquin Valley Air Pollution Control District requirements.



FEHR & PEERS

Aug 16, 2017
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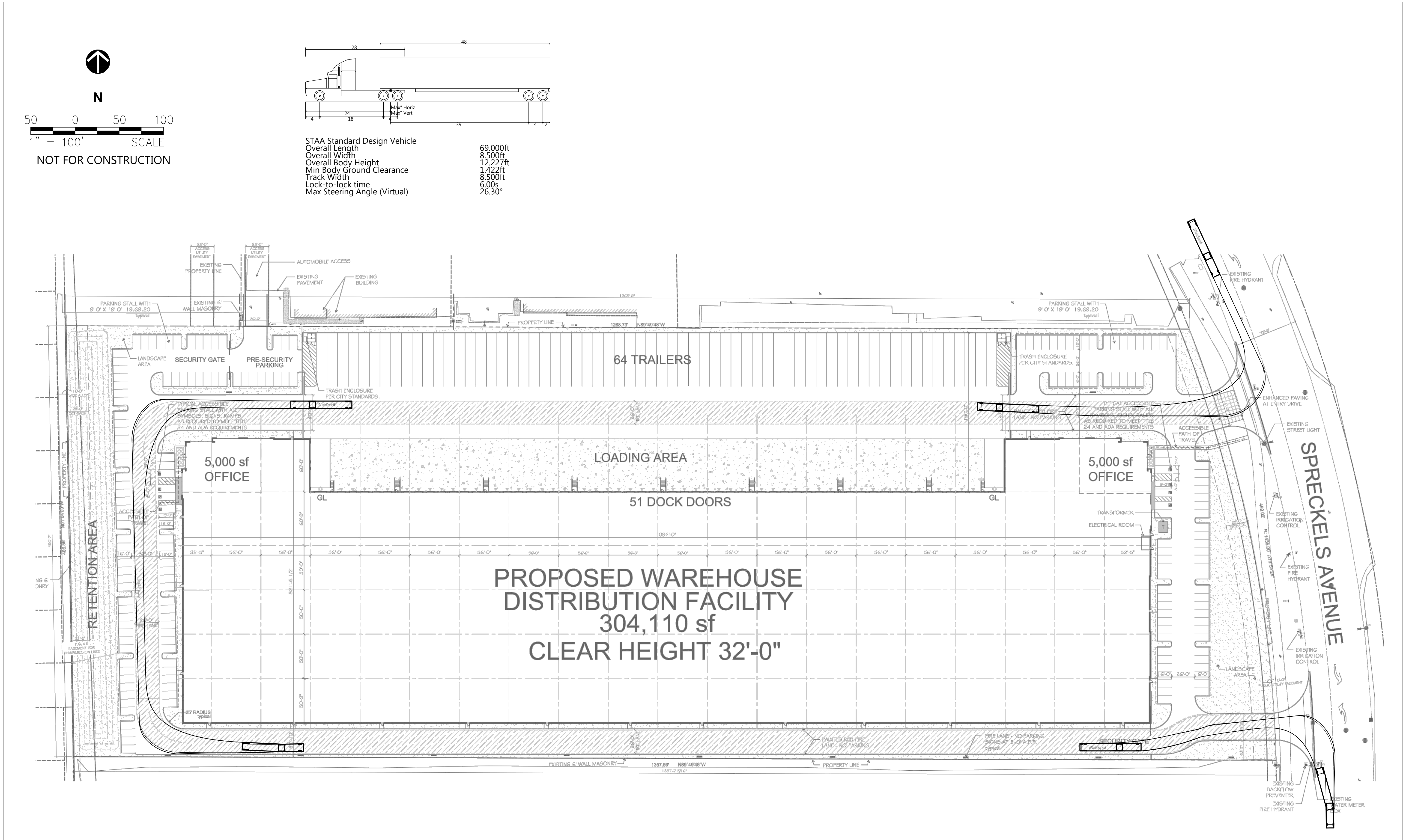
STAA TRUCK - CLOCKWISE

Figure 9A



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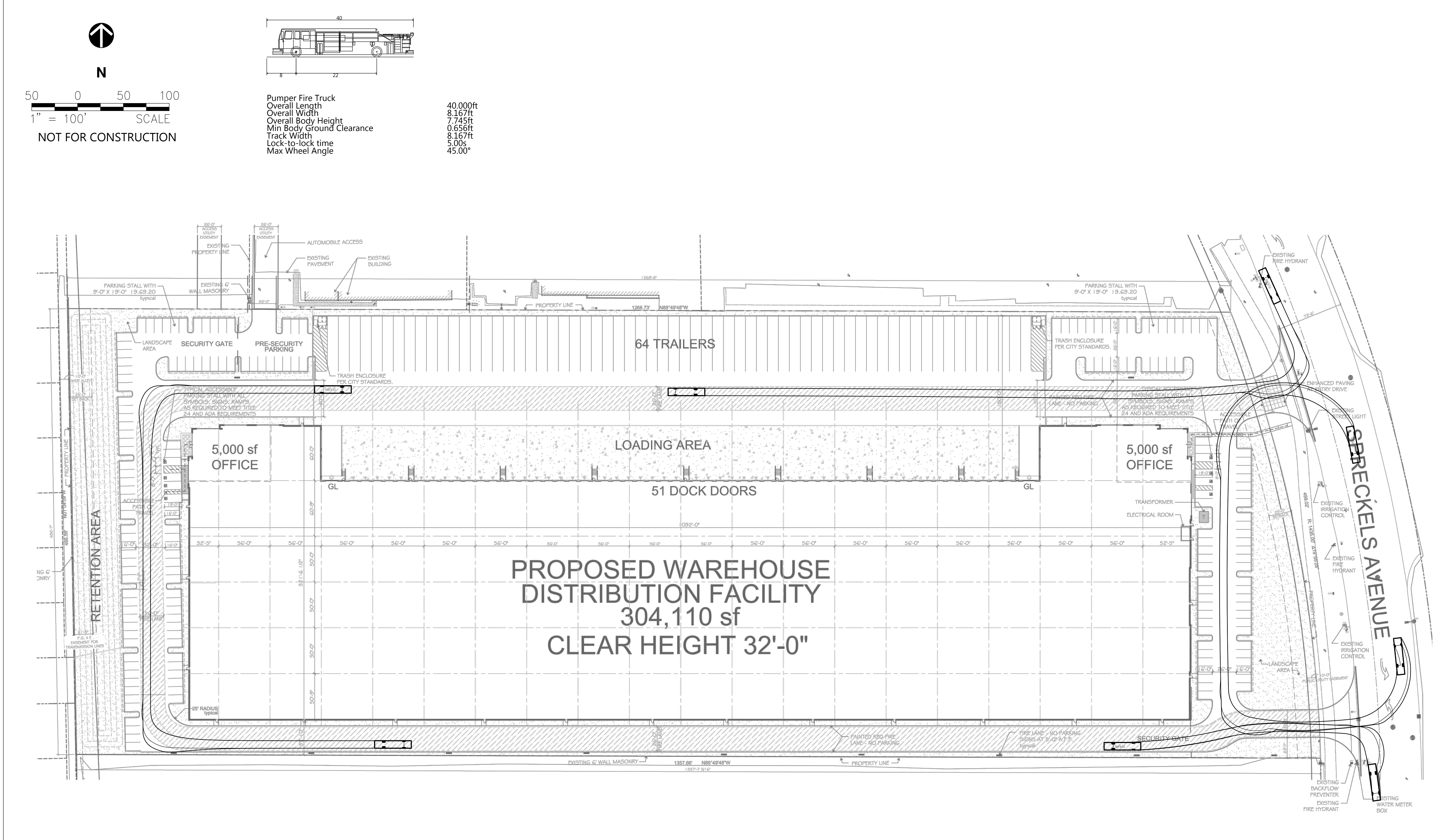
STAA TRUCK - COUNTERCLOCKWISE

Figure 9B



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FIRE PUMPER TRUCK

Figure 9C

ATTACHMENT 1: INTERSECTION LEVEL OF SERVICE CALCULATIONS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	261	52	183	345	93	47	117	171	117	139	28
Future Volume (veh/h)	38	261	52	183	345	93	47	117	171	117	139	28
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		0.97	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1811	1811	1841	1841	1841	1767	1767	1767	1870	1870	1870
Adj Flow Rate, veh/h	47	322	45	226	426	101	58	144	52	144	172	31
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, %	6	6	6	4	4	4	9	9	9	2	2	2
Cap, veh/h	67	1111	151	296	1070	251	146	223	186	194	294	53
Arrive On Green	0.04	0.25	0.25	0.17	0.38	0.38	0.04	0.13	0.13	0.11	0.19	0.19
Sat Flow, veh/h	1725	4390	596	1753	2792	655	3264	1767	1470	1781	1541	278
Grp Volume(v), veh/h	47	239	128	226	265	262	58	144	52	144	0	203
Grp Sat Flow(s),veh/h/ln	1725	1648	1691	1753	1749	1699	1632	1767	1470	1781	0	1819
Q Serve(g_s), s	1.3	2.8	2.9	5.9	5.3	5.4	0.8	3.7	1.0	3.8	0.0	4.9
Cycle Q Clear(g_c), s	1.3	2.8	2.9	5.9	5.3	5.4	0.8	3.7	1.0	3.8	0.0	4.9
Prop In Lane	1.00		0.35	1.00		0.39	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	67	834	428	296	670	651	146	223	186	194	0	347
V/C Ratio(X)	0.70	0.29	0.30	0.76	0.40	0.40	0.40	0.64	0.28	0.74	0.00	0.59
Avail Cap(c_a), veh/h	1218	3559	1825	1238	1888	1834	2304	1247	1037	1258	0	1284
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	22.9	14.5	14.5	19.1	10.8	10.8	22.4	20.0	7.2	20.8	0.0	17.8
Incr Delay (d2), s/veh	12.6	0.4	0.8	4.1	0.8	0.9	1.7	1.2	0.3	5.5	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	0.7	0.9	1.0	2.4	1.8	1.7	0.3	1.5	0.5	1.6	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.5	14.9	15.4	23.2	11.6	11.7	24.1	21.2	7.5	26.3	0.0	18.3
LnGrp LOS	D	B	B	C	B	B	C	C	A	C	A	B
Approach Vol, veh/h		414			753			254			347	
Approach Delay, s/veh		17.4			15.1			19.1			21.6	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	16.7	6.2	13.2	5.9	23.0	9.2	10.1
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	34.0	52.0	34.0	34.0	34.0	52.0	34.0	34.0
Max Q Clear Time (g_c+I1), s	7.9	4.9	2.8	6.9	3.3	7.4	5.8	5.7
Green Ext Time (p_c), s	0.6	4.9	0.2	0.7	0.1	7.2	0.4	0.6

Intersection Summary			
HCM 6th Ctrl Delay			17.5
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	70	93	54	113	110	169	339	67	45	203	43
Future Volume (veh/h)	52	70	93	54	113	110	169	339	67	45	203	43
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		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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1683	1683	1870	1870	1683	1683	1683	1870	1683	1870
Adj Flow Rate, veh/h	66	89	29	68	143	130	214	429	66	57	257	44
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	593	185	86	205	186	438	758	116	612	483	81
Arrive On Green	0.05	0.22	0.23	0.05	0.23	0.23	0.27	0.27	0.27	0.18	0.18	0.18
Sat Flow, veh/h	1781	2665	833	1603	902	820	1603	2775	424	3456	2727	459
Grp Volume(v), veh/h	66	58	60	68	0	273	214	246	249	57	149	152
Grp Sat Flow(s),veh/h/ln	1781	1777	1721	1603	0	1723	1603	1599	1600	1728	1599	1587
Q Serve(g_s), s	2.2	1.6	1.7	2.5	0.0	8.8	6.7	8.0	8.1	0.8	5.1	5.3
Cycle Q Clear(g_c), s	2.2	1.6	1.7	2.5	0.0	8.8	6.7	8.0	8.1	0.8	5.1	5.3
Prop In Lane	1.00		0.48	1.00		0.48	1.00		0.27	1.00		0.29
Lane Grp Cap(c), veh/h	87	395	383	86	0	391	438	437	437	612	283	281
V/C Ratio(X)	0.76	0.15	0.16	0.79	0.00	0.70	0.49	0.56	0.57	0.09	0.53	0.54
Avail Cap(c_a), veh/h	1153	1180	1142	1038	0	1144	1064	1062	1062	2295	1062	1054
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	28.3	18.8	18.8	28.2	0.0	21.4	18.4	18.8	18.9	20.7	22.5	22.6
Incr Delay (d2), s/veh	14.9	0.3	0.4	17.8	0.0	4.3	1.3	1.8	1.9	0.1	2.6	2.8
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	1.2	0.6	0.6	1.3	0.0	3.5	2.4	2.8	2.9	0.3	1.9	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.2	19.2	19.1	46.0	0.0	25.7	19.7	20.6	20.7	20.8	25.1	25.3
LnGrp LOS	D	B	B	D	A	C	B	C	C	C	C	C
Approach Vol, veh/h		184			341			709			358	
Approach Delay, s/veh		27.8			29.8			20.4			24.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		20.5	6.4	18.2		15.1	6.1	18.5				
Change Period (Y+Rc), s		4.1	* 3.2	4.8		4.4	* 3.2	4.8				
Max Green Setting (Gmax), s		40.0	* 39	40.0		40.0	* 39	40.0				
Max Q Clear Time (g_c+I1), s		10.1	4.5	3.7		7.3	4.2	10.8				
Green Ext Time (p_c), s		6.3	0.2	1.1		3.3	0.2	2.9				

Intersection Summary			
HCM 6th Ctrl Delay			24.2
HCM 6th LOS			C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	521	73	208	424	124	107	238	284	159	206	41
Future Volume (veh/h)	82	521	73	208	424	124	107	238	284	159	206	41
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		0.97	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	85	543	65	217	442	115	111	248	85	166	215	39
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	1	1	1
Cap, veh/h	113	1279	151	277	1019	263	204	333	278	218	373	68
Arrive On Green	0.06	0.27	0.27	0.16	0.37	0.37	0.06	0.18	0.18	0.12	0.24	0.24
Sat Flow, veh/h	1795	4656	549	1781	2777	715	3456	1870	1559	1795	1552	282
Grp Volume(v), veh/h	85	398	210	217	281	276	111	248	85	166	0	254
Grp Sat Flow(s),veh/h/ln	1795	1716	1775	1781	1777	1715	1728	1870	1559	1795	0	1834
Q Serve(g_s), s	2.8	5.8	5.9	7.2	7.3	7.4	1.9	7.7	1.9	5.5	0.0	7.5
Cycle Q Clear(g_c), s	2.8	5.8	5.9	7.2	7.3	7.4	1.9	7.7	1.9	5.5	0.0	7.5
Prop In Lane	1.00		0.31	1.00		0.42	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	113	942	487	277	652	630	204	333	278	218	0	441
V/C Ratio(X)	0.75	0.42	0.43	0.78	0.43	0.44	0.54	0.74	0.31	0.76	0.00	0.58
Avail Cap(c_a), veh/h	999	2920	1510	991	1512	1460	1923	1041	867	999	0	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	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	28.1	18.2	18.2	24.8	14.5	14.6	27.9	23.8	9.3	26.0	0.0	20.4
Incr Delay (d2), s/veh	9.5	0.6	1.3	4.8	1.0	1.0	2.2	1.2	0.2	5.4	0.0	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	1.4	2.2	2.4	3.1	2.7	2.7	0.8	3.3	1.0	2.4	0.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.7	18.8	19.5	29.6	15.5	15.6	30.2	25.0	9.5	31.4	0.0	20.9
LnGrp LOS	D	B	B	C	B	B	C	C	A	C	A	C
Approach Vol, veh/h		693			774			444			420	
Approach Delay, s/veh		21.3			19.5			23.3			25.0	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	21.3	7.6	18.7	7.9	26.9	11.4	14.9
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	34.0	52.0	34.0	34.0	34.0	52.0	34.0	34.0
Max Q Clear Time (g_c+I1), s	9.2	7.9	3.9	9.5	4.8	9.4	7.5	9.7
Green Ext Time (p_c), s	0.6	8.6	0.3	0.8	0.2	7.6	0.4	1.1

Intersection Summary	
HCM 6th Ctrl Delay	21.8
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	109	122	72	119	124	100	507	68	119	467	68
Future Volume (veh/h)	65	109	122	72	119	124	100	507	68	119	467	68
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		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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1683	1683	1870	1841	1683	1683	1683	1870	1683	1870
Adj Flow Rate, veh/h	68	115	27	76	125	109	105	534	66	125	492	65
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	4	2	2	2	2	2	2
Cap, veh/h	91	516	118	98	174	152	445	794	98	920	754	99
Arrive On Green	0.05	0.18	0.19	0.06	0.19	0.19	0.28	0.28	0.28	0.27	0.27	0.27
Sat Flow, veh/h	1781	2874	656	1603	920	803	1603	2861	352	3456	2833	373
Grp Volume(v), veh/h	68	70	72	76	0	234	105	298	302	125	277	280
Grp Sat Flow(s),veh/h/ln	1781	1777	1752	1603	0	1723	1603	1599	1614	1728	1599	1607
Q Serve(g_s), s	2.9	2.6	2.7	3.6	0.0	9.7	3.9	12.6	12.7	2.1	11.7	11.8
Cycle Q Clear(g_c), s	2.9	2.6	2.7	3.6	0.0	9.7	3.9	12.6	12.7	2.1	11.7	11.8
Prop In Lane	1.00		0.37	1.00		0.47	1.00		0.22	1.00		0.23
Lane Grp Cap(c), veh/h	91	319	314	98	0	326	445	444	448	920	426	428
V/C Ratio(X)	0.75	0.22	0.23	0.78	0.00	0.72	0.24	0.67	0.68	0.14	0.65	0.66
Avail Cap(c_a), veh/h	910	931	918	819	0	903	840	838	846	1810	838	842
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	35.8	26.8	26.7	35.3	0.0	29.0	21.3	24.5	24.5	21.3	24.9	24.9
Incr Delay (d2), s/veh	13.9	0.7	0.7	14.8	0.0	5.6	0.4	2.8	2.8	0.1	2.9	2.9
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	1.5	1.1	1.1	1.7	0.0	4.2	1.4	4.8	4.9	0.8	4.4	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.7	27.4	27.4	50.1	0.0	34.7	21.8	27.3	27.3	21.4	27.7	27.8
LnGrp LOS	D	C	C	D	A	C	C	C	C	C	C	C
Approach Vol, veh/h		210			310			705			682	
Approach Delay, s/veh		34.6			38.5			26.5			26.6	
Approach LOS		C			D			C			C	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		25.3	7.8	18.5		24.7	7.1	19.3
Change Period (Y+Rc), s		4.1	* 3.2	4.8		4.4	* 3.2	4.8
Max Green Setting (Gmax), s		40.0	* 39	40.0		40.0	* 39	40.0
Max Q Clear Time (g_c+I1), s		14.7	5.6	4.7		13.8	4.9	11.7
Green Ext Time (p_c), s		6.5	0.2	1.4		6.5	0.2	2.4

Intersection Summary	
HCM 6th Ctrl Delay	29.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	261	55	193	345	93	48	119	175	117	146	28
Future Volume (veh/h)	38	261	55	193	345	93	48	119	175	117	146	28
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		0.97	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1811	1811	1841	1841	1841	1767	1767	1767	1870	1870	1870
Adj Flow Rate, veh/h	47	322	47	238	426	101	59	147	52	144	180	31
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, %	6	6	6	4	4	4	9	9	9	2	2	2
Cap, veh/h	67	1088	154	310	1081	254	147	226	188	194	298	51
Arrive On Green	0.04	0.25	0.25	0.18	0.39	0.39	0.05	0.13	0.13	0.11	0.19	0.19
Sat Flow, veh/h	1725	4364	618	1753	2792	655	3264	1767	1470	1781	1554	268
Grp Volume(v), veh/h	47	241	128	238	265	262	59	147	52	144	0	211
Grp Sat Flow(s),veh/h/ln	1725	1648	1686	1753	1749	1699	1632	1767	1470	1781	0	1821
Q Serve(g_s), s	1.3	2.9	3.0	6.3	5.4	5.5	0.9	3.9	1.0	3.8	0.0	5.2
Cycle Q Clear(g_c), s	1.3	2.9	3.0	6.3	5.4	5.5	0.9	3.9	1.0	3.8	0.0	5.2
Prop In Lane	1.00		0.37	1.00		0.39	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	67	821	420	310	677	658	147	226	188	194	0	349
V/C Ratio(X)	0.71	0.29	0.30	0.77	0.39	0.40	0.40	0.65	0.28	0.74	0.00	0.60
Avail Cap(c_a), veh/h	1198	3502	1791	1218	1858	1805	2268	1227	1021	1238	0	1265
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	23.3	14.9	14.9	19.2	10.8	10.9	22.7	20.3	7.2	21.1	0.0	18.1
Incr Delay (d2), s/veh	12.8	0.4	0.9	4.0	0.8	0.8	1.8	1.2	0.3	5.5	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	0.7	1.0	1.1	2.6	1.8	1.8	0.3	1.5	0.5	1.7	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.1	15.3	15.8	23.2	11.6	11.7	24.5	21.5	7.5	26.7	0.0	18.7
LnGrp LOS	D	B	B	C	B	B	C	C	A	C	A	B
Approach Vol, veh/h		416			765			258			355	
Approach Delay, s/veh		17.8			15.2			19.3			21.9	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	16.7	6.2	13.4	5.9	23.5	9.3	10.3
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	34.0	52.0	34.0	34.0	34.0	52.0	34.0	34.0
Max Q Clear Time (g_c+I1), s	8.3	5.0	2.9	7.2	3.3	7.5	5.8	5.9
Green Ext Time (p_c), s	0.7	4.9	0.2	0.7	0.1	7.2	0.4	0.6

Intersection Summary			
HCM 6th Ctrl Delay			17.7
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	70	93	54	113	116	169	358	67	47	208	43
Future Volume (veh/h)	55	70	93	54	113	116	169	358	67	47	208	43
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		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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1683	1683	1870	1870	1683	1683	1683	1870	1683	1870
Adj Flow Rate, veh/h	70	89	29	68	143	127	214	453	77	59	263	44
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	589	184	86	203	180	455	775	131	612	485	80
Arrive On Green	0.05	0.22	0.22	0.05	0.22	0.22	0.28	0.28	0.28	0.18	0.18	0.18
Sat Flow, veh/h	1781	2665	833	1603	913	811	1603	2731	461	3456	2737	451
Grp Volume(v), veh/h	70	58	60	68	0	270	214	264	266	59	152	155
Grp Sat Flow(s),veh/h/ln	1781	1777	1721	1603	0	1724	1603	1599	1593	1728	1599	1589
Q Serve(g_s), s	2.4	1.6	1.8	2.6	0.0	9.0	6.9	8.8	9.0	0.9	5.4	5.6
Cycle Q Clear(g_c), s	2.4	1.6	1.8	2.6	0.0	9.0	6.9	8.8	9.0	0.9	5.4	5.6
Prop In Lane	1.00		0.48	1.00		0.47	1.00		0.29	1.00		0.28
Lane Grp Cap(c), veh/h	93	393	380	86	0	383	455	454	452	612	283	282
V/C Ratio(X)	0.75	0.15	0.16	0.79	0.00	0.70	0.47	0.58	0.59	0.10	0.54	0.55
Avail Cap(c_a), veh/h	1114	1139	1103	1002	0	1106	1028	1026	1021	2216	1026	1019
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	29.2	19.6	19.6	29.2	0.0	22.4	18.5	19.2	19.2	21.5	23.3	23.4
Incr Delay (d2), s/veh	13.7	0.3	0.4	17.6	0.0	4.6	1.2	1.9	1.9	0.1	2.7	2.9
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	1.3	0.6	0.7	1.3	0.0	3.7	2.4	3.2	3.2	0.3	2.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.9	19.9	20.0	46.8	0.0	26.9	19.7	21.0	21.1	21.6	26.0	26.3
LnGrp LOS	D	B	B	D	A	C	B	C	C	C	C	C
Approach Vol, veh/h		188			338			744			366	
Approach Delay, s/veh		28.5			30.9			20.7			25.4	
Approach LOS		C			C			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		21.8	6.5	18.6		15.5	6.5	18.7				
Change Period (Y+Rc), s		4.1	* 3.2	4.8		4.4	* 3.2	4.8				
Max Green Setting (Gmax), s		40.0	* 39	40.0		40.0	* 39	40.0				
Max Q Clear Time (g_c+I1), s		11.0	4.6	3.8		7.6	4.4	11.0				
Green Ext Time (p_c), s		6.7	0.2	1.1		3.4	0.2	2.9				
Intersection Summary												
HCM 6th Ctrl Delay			24.7									
HCM 6th LOS			C									
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	521	75	212	424	124	111	246	294	159	208	41
Future Volume (veh/h)	82	521	75	212	424	124	111	246	294	159	208	41
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		0.97	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	85	543	67	221	442	115	116	256	88	166	217	39
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	1	1	1
Cap, veh/h	113	1267	154	281	1021	263	211	340	284	218	377	68
Arrive On Green	0.06	0.27	0.27	0.16	0.37	0.37	0.06	0.18	0.18	0.12	0.24	0.24
Sat Flow, veh/h	1795	4639	564	1781	2777	715	3456	1870	1559	1795	1555	279
Grp Volume(v), veh/h	85	399	211	221	281	276	116	256	88	166	0	256
Grp Sat Flow(s),veh/h/ln	1795	1716	1772	1781	1777	1715	1728	1870	1559	1795	0	1834
Q Serve(g_s), s	2.9	5.9	6.1	7.4	7.4	7.5	2.0	8.1	2.0	5.6	0.0	7.6
Cycle Q Clear(g_c), s	2.9	5.9	6.1	7.4	7.4	7.5	2.0	8.1	2.0	5.6	0.0	7.6
Prop In Lane	1.00		0.32	1.00		0.42	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	113	937	484	281	653	631	211	340	284	218	0	444
V/C Ratio(X)	0.75	0.43	0.44	0.79	0.43	0.44	0.55	0.75	0.31	0.76	0.00	0.58
Avail Cap(c_a), veh/h	984	2875	1484	976	1489	1437	1893	1025	854	984	0	1005
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	28.6	18.6	18.6	25.1	14.7	14.8	28.3	24.1	9.3	26.4	0.0	20.7
Incr Delay (d2), s/veh	9.5	0.7	1.3	4.9	1.0	1.0	2.2	1.3	0.2	5.4	0.0	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	1.5	2.2	2.4	3.3	2.8	2.7	0.9	3.4	1.0	2.5	0.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.1	19.2	19.9	30.0	15.7	15.8	30.5	25.3	9.5	31.8	0.0	21.2
LnGrp LOS	D	B	B	C	B	B	C	C	A	C	A	C
Approach Vol, veh/h		695			778			460			422	
Approach Delay, s/veh		21.7			19.8			23.6			25.4	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	21.4	7.8	19.0	7.9	27.3	11.5	15.3
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	34.0	52.0	34.0	34.0	34.0	52.0	34.0	34.0
Max Q Clear Time (g_c+I1), s	9.4	8.1	4.0	9.6	4.9	9.5	7.6	10.1
Green Ext Time (p_c), s	0.6	8.7	0.4	0.8	0.2	7.6	0.4	1.1

Intersection Summary	
HCM 6th Ctrl Delay	22.1
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	109	122	72	119	126	100	515	68	124	484	70
Future Volume (veh/h)	66	109	122	72	119	126	100	515	68	124	484	70
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		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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1683	1683	1870	1841	1683	1683	1683	1870	1683	1870
Adj Flow Rate, veh/h	69	115	27	76	125	111	105	542	66	131	509	68
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	4	2	2	2	2	2	2
Cap, veh/h	92	517	118	98	173	153	445	795	97	938	768	102
Arrive On Green	0.05	0.18	0.18	0.06	0.19	0.19	0.28	0.28	0.28	0.27	0.27	0.27
Sat Flow, veh/h	1781	2874	656	1603	912	810	1603	2867	348	3456	2829	376
Grp Volume(v), veh/h	69	70	72	76	0	236	105	302	306	131	287	290
Grp Sat Flow(s),veh/h/ln	1781	1777	1752	1603	0	1722	1603	1599	1615	1728	1599	1606
Q Serve(g_s), s	3.0	2.6	2.8	3.7	0.0	10.1	4.0	13.2	13.3	2.3	12.5	12.6
Cycle Q Clear(g_c), s	3.0	2.6	2.8	3.7	0.0	10.1	4.0	13.2	13.3	2.3	12.5	12.6
Prop In Lane	1.00		0.37	1.00		0.47	1.00		0.22	1.00		0.23
Lane Grp Cap(c), veh/h	92	320	316	98	0	326	445	444	448	938	434	436
V/C Ratio(X)	0.75	0.22	0.23	0.78	0.00	0.72	0.24	0.68	0.68	0.14	0.66	0.67
Avail Cap(c_a), veh/h	885	905	893	796	0	877	817	815	823	1760	815	818
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	36.7	27.5	27.5	36.4	0.0	29.9	21.9	25.3	25.3	21.7	25.4	25.4
Incr Delay (d2), s/veh	13.7	0.7	0.7	14.8	0.0	5.8	0.4	2.9	2.9	0.1	2.9	3.0
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	1.6	1.1	1.1	1.7	0.0	4.4	1.5	5.1	5.1	0.9	4.7	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.4	28.1	28.2	51.1	0.0	35.7	22.4	28.2	28.2	21.8	28.3	28.4
LnGrp LOS	D	C	C	D	A	D	C	C	C	C	C	C
Approach Vol, veh/h		211			312			713			708	
Approach Delay, s/veh		35.5			39.5			27.3			27.2	
Approach LOS		D			D			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.9	8.0	18.9		25.7	7.3	19.7				
Change Period (Y+Rc), s		4.1	* 3.2	4.8		4.4	* 3.2	4.8				
Max Green Setting (Gmax), s		40.0	* 39	40.0		40.0	* 39	40.0				
Max Q Clear Time (g_c+I1), s		15.3	5.7	4.8		14.6	5.0	12.1				
Green Ext Time (p_c), s		6.5	0.2	1.4		6.7	0.2	2.4				

Intersection Summary			
HCM 6th Ctrl Delay			30.1
HCM 6th LOS			C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	280	60	360	390	110	50	160	330	150	160	40
Future Volume (veh/h)	40	280	60	360	390	110	50	160	330	150	160	40
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		0.97	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1811	1811	1841	1841	1841	1767	1767	1767	1870	1870	1870
Adj Flow Rate, veh/h	49	346	54	444	481	120	62	198	87	185	198	44
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, %	6	6	6	4	4	4	9	9	9	2	2	2
Cap, veh/h	61	789	119	510	1209	299	132	267	223	236	360	80
Arrive On Green	0.04	0.18	0.18	0.29	0.44	0.44	0.04	0.15	0.15	0.13	0.24	0.24
Sat Flow, veh/h	1725	4319	654	1753	2759	683	3264	1767	1471	1781	1481	329
Grp Volume(v), veh/h	49	262	138	444	304	297	62	198	87	185	0	242
Grp Sat Flow(s),veh/h/ln	1725	1648	1677	1753	1749	1694	1632	1767	1471	1781	0	1810
Q Serve(g_s), s	1.9	4.8	5.0	16.3	8.0	8.1	1.3	7.3	1.9	6.8	0.0	7.9
Cycle Q Clear(g_c), s	1.9	4.8	5.0	16.3	8.0	8.1	1.3	7.3	1.9	6.8	0.0	7.9
Prop In Lane	1.00		0.39	1.00		0.40	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	61	602	306	510	766	742	132	267	223	236	0	440
V/C Ratio(X)	0.80	0.43	0.45	0.87	0.40	0.40	0.47	0.74	0.39	0.79	0.00	0.55
Avail Cap(c_a), veh/h	254	1939	987	1496	2263	2193	336	754	628	707	0	1305
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	32.5	24.7	24.8	22.9	13.0	13.0	31.9	27.6	7.0	28.6	0.0	22.5
Incr Delay (d2), s/veh	20.6	1.1	2.2	4.7	0.7	0.7	2.6	1.5	0.4	5.7	0.0	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	1.1	1.8	2.0	6.8	2.9	2.9	0.5	3.0	1.2	3.1	0.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.2	25.7	27.0	27.6	13.7	13.8	34.4	29.1	7.4	34.3	0.0	22.9
LnGrp LOS	D	C	C	C	B	B	C	C	A	C	A	C
Approach Vol, veh/h		449			1045			347			427	
Approach Delay, s/veh		29.1			19.6			24.6			27.8	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.8	16.9	6.8	20.5	6.4	34.3	13.0	14.3
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	58.0	40.0	7.0	49.0	10.0	88.0	27.0	29.0
Max Q Clear Time (g_c+I1), s	18.3	7.0	3.3	9.9	3.9	10.1	8.8	9.3
Green Ext Time (p_c), s	1.4	5.0	0.0	0.9	0.0	8.9	0.4	0.8

Intersection Summary			
HCM 6th Ctrl Delay			23.8
HCM 6th LOS			C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	100	110	60	120	170	230	600	180	70	260	50
Future Volume (veh/h)	60	100	110	60	120	170	230	600	180	70	260	50
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		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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1683	1683	1870	1870	1683	1683	1683	1870	1683	1870
Adj Flow Rate, veh/h	76	127	35	76	152	185	291	759	214	89	329	54
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	100	652	174	97	184	223	619	947	267	572	454	74
Arrive On Green	0.06	0.23	0.24	0.06	0.24	0.24	0.39	0.39	0.39	0.17	0.17	0.17
Sat Flow, veh/h	1781	2774	740	1603	768	934	1603	2455	692	3456	2744	445
Grp Volume(v), veh/h	76	80	82	76	0	337	291	494	479	89	190	193
Grp Sat Flow(s),veh/h/ln	1781	1777	1737	1603	0	1702	1603	1599	1548	1728	1599	1590
Q Serve(g_s), s	4.5	3.9	4.1	5.0	0.0	20.2	14.7	29.6	29.6	2.4	12.1	12.4
Cycle Q Clear(g_c), s	4.5	3.9	4.1	5.0	0.0	20.2	14.7	29.6	29.6	2.4	12.1	12.4
Prop In Lane	1.00		0.43	1.00		0.55	1.00		0.45	1.00		0.28
Lane Grp Cap(c), veh/h	100	417	408	97	0	407	619	617	597	572	265	263
V/C Ratio(X)	0.76	0.19	0.20	0.78	0.00	0.83	0.47	0.80	0.80	0.16	0.72	0.73
Avail Cap(c_a), veh/h	584	710	694	574	0	731	728	727	703	918	425	422
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	50.1	33.0	33.0	49.9	0.0	38.8	24.8	29.4	29.4	38.5	42.5	42.7
Incr Delay (d2), s/veh	13.1	0.4	0.5	15.1	0.0	8.1	0.9	6.4	6.6	0.2	6.1	6.6
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	2.3	1.7	1.7	2.4	0.0	9.0	5.6	12.0	11.6	1.0	5.1	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.2	33.4	33.4	65.0	0.0	46.9	25.7	35.8	36.0	38.7	48.7	49.3
LnGrp LOS	E	C	C	E	A	D	C	D	D	D	D	D
Approach Vol, veh/h		238			413			1264			472	
Approach Delay, s/veh		42.9			50.3			33.5			47.0	
Approach LOS		D			D			C			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		45.6	9.7	30.1		22.2	9.3	30.5				
Change Period (Y+Rc), s		4.1	* 3.2	4.8		4.4	* 3.2	4.8				
Max Green Setting (Gmax), s		48.9	* 39	43.0		28.6	* 35	46.2				
Max Q Clear Time (g_c+I1), s		31.6	7.0	6.1		14.4	6.5	22.2				
Green Ext Time (p_c), s		9.9	0.2	1.6		3.3	0.2	3.5				
Intersection Summary												
HCM 6th Ctrl Delay			40.0									
HCM 6th LOS			D									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	730	90	360	450	160	110	280	540	170	250	70
Future Volume (veh/h)	120	730	90	360	450	160	110	280	540	170	250	70
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		0.97	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	125	760	86	375	469	147	115	292	167	177	260	66
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	1	1	1
Cap, veh/h	158	1314	148	422	1136	353	181	350	292	216	370	94
Arrive On Green	0.09	0.28	0.28	0.24	0.43	0.43	0.05	0.19	0.19	0.12	0.26	0.26
Sat Flow, veh/h	1795	4684	526	1781	2648	823	3456	1870	1559	1795	1450	368
Grp Volume(v), veh/h	125	555	291	375	313	303	115	292	167	177	0	326
Grp Sat Flow(s),veh/h/ln	1795	1716	1779	1781	1777	1693	1728	1870	1559	1795	0	1818
Q Serve(g_s), s	6.4	13.1	13.2	19.2	11.5	11.7	3.1	14.2	5.5	9.1	0.0	15.3
Cycle Q Clear(g_c), s	6.4	13.1	13.2	19.2	11.5	11.7	3.1	14.2	5.5	9.1	0.0	15.3
Prop In Lane	1.00		0.30	1.00		0.49	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	158	963	499	422	763	727	181	350	292	216	0	464
V/C Ratio(X)	0.79	0.58	0.58	0.89	0.41	0.42	0.63	0.83	0.57	0.82	0.00	0.70
Avail Cap(c_a), veh/h	381	1602	831	908	1358	1294	367	735	612	476	0	1003
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	42.1	29.1	29.1	34.8	18.6	18.7	43.8	36.9	12.7	40.4	0.0	31.9
Incr Delay (d2), s/veh	8.4	1.2	2.3	6.5	0.8	0.8	3.7	2.0	0.7	7.5	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	5.4	5.8	8.8	4.7	4.5	1.4	6.6	3.3	4.3	0.0	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.5	30.3	31.4	41.3	19.4	19.5	47.4	38.9	13.4	48.0	0.0	32.6
LnGrp LOS	D	C	C	D	B	B	D	D	B	D	A	C
Approach Vol, veh/h		971			991			574			503	
Approach Delay, s/veh		33.2			27.7			33.2			38.0	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.3	30.9	8.9	28.0	12.3	44.9	15.3	21.6
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	48.0	44.0	10.0	52.0	20.0	72.0	25.0	37.0
Max Q Clear Time (g_c+I1), s	21.2	15.2	5.1	17.3	8.4	13.7	11.1	16.2
Green Ext Time (p_c), s	1.1	11.2	0.1	1.2	0.2	9.1	0.4	1.4

Intersection Summary			
HCM 6th Ctrl Delay			32.2
HCM 6th LOS			C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	190	190	190	160	210	130	630	70	210	680	70
Future Volume (veh/h)	70	190	190	190	160	210	130	630	70	210	680	70
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		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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1683	1683	1870	1841	1683	1683	1683	1870	1683	1870
Adj Flow Rate, veh/h	74	200	94	200	168	196	137	663	69	221	716	69
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	4	2	2	2	2	2	2
Cap, veh/h	98	385	174	236	199	233	428	780	81	923	785	76
Arrive On Green	0.06	0.16	0.17	0.15	0.25	0.25	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1781	2378	1076	1603	786	917	1603	2920	303	3456	2941	283
Grp Volume(v), veh/h	74	147	147	200	0	364	137	363	369	221	389	396
Grp Sat Flow(s),veh/h/ln	1781	1777	1677	1603	0	1703	1603	1599	1624	1728	1599	1625
Q Serve(g_s), s	4.3	8.0	8.4	12.8	0.0	21.3	7.2	22.6	22.7	5.3	24.8	24.8
Cycle Q Clear(g_c), s	4.3	8.0	8.4	12.8	0.0	21.3	7.2	22.6	22.7	5.3	24.8	24.8
Prop In Lane	1.00		0.64	1.00		0.54	1.00		0.19	1.00		0.17
Lane Grp Cap(c), veh/h	98	288	272	236	0	432	428	427	434	923	427	434
V/C Ratio(X)	0.75	0.51	0.54	0.85	0.00	0.84	0.32	0.85	0.85	0.24	0.91	0.91
Avail Cap(c_a), veh/h	1013	857	809	744	0	643	471	470	477	940	435	442
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	49.0	40.3	40.3	43.7	0.0	37.2	30.9	36.5	36.6	30.2	37.3	37.3
Incr Delay (d2), s/veh	13.0	2.7	3.2	9.7	0.0	9.7	0.7	13.8	13.8	0.2	23.6	23.5
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	2.2	3.6	3.6	5.5	0.0	9.6	2.8	10.2	10.4	2.2	12.1	12.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.9	43.0	43.5	53.4	0.0	47.0	31.6	50.4	50.4	30.4	60.9	60.9
LnGrp LOS	E	D	D	D	A	D	C	D	D	C	E	E
Approach Vol, veh/h		368			564			869			1006	
Approach Delay, s/veh		47.0			49.2			47.4			54.2	
Approach LOS		D			D			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		32.2	18.7	21.8		32.5	9.0	31.5				
Change Period (Y+Rc), s		4.1	* 3.2	4.8		4.4	* 3.2	4.8				
Max Green Setting (Gmax), s		30.9	* 49	50.7		28.6	* 60	39.7				
Max Q Clear Time (g_c+I1), s		24.7	14.8	10.4		26.8	6.3	23.3				
Green Ext Time (p_c), s		3.4	0.7	3.2		1.2	0.3	3.3				

Intersection Summary		
HCM 6th Ctrl Delay		50.2
HCM 6th LOS		D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	280	63	370	390	110	51	162	334	150	167	40
Future Volume (veh/h)	40	280	63	370	390	110	51	162	334	150	167	40
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		0.97	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1811	1811	1841	1841	1841	1767	1767	1767	1870	1870	1870
Adj Flow Rate, veh/h	49	346	56	457	481	120	63	200	89	185	206	44
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, %	6	6	6	4	4	4	9	9	9	2	2	2
Cap, veh/h	61	779	122	522	1225	303	132	268	223	235	363	78
Arrive On Green	0.04	0.18	0.18	0.30	0.44	0.44	0.04	0.15	0.15	0.13	0.24	0.24
Sat Flow, veh/h	1725	4295	674	1753	2759	683	3264	1767	1471	1781	1493	319
Grp Volume(v), veh/h	49	263	139	457	304	297	63	200	89	185	0	250
Grp Sat Flow(s),veh/h/ln	1725	1648	1673	1753	1749	1694	1632	1767	1471	1781	0	1812
Q Serve(g_s), s	2.0	4.9	5.2	17.2	8.1	8.2	1.3	7.5	1.9	7.0	0.0	8.4
Cycle Q Clear(g_c), s	2.0	4.9	5.2	17.2	8.1	8.2	1.3	7.5	1.9	7.0	0.0	8.4
Prop In Lane	1.00		0.40	1.00		0.40	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	61	598	303	522	776	752	132	268	223	235	0	441
V/C Ratio(X)	0.81	0.44	0.46	0.88	0.39	0.40	0.48	0.75	0.40	0.79	0.00	0.57
Avail Cap(c_a), veh/h	248	1896	962	1462	2213	2144	329	737	614	692	0	1277
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	33.3	25.3	25.4	23.2	13.0	13.0	32.6	28.2	7.0	29.2	0.0	23.1
Incr Delay (d2), s/veh	21.5	1.1	2.3	4.8	0.7	0.7	2.7	1.6	0.4	5.8	0.0	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	1.1	1.9	2.1	7.2	2.9	2.9	0.6	3.2	1.3	3.1	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.8	26.4	27.7	28.0	13.7	13.8	35.3	29.8	7.4	35.0	0.0	23.5
LnGrp LOS	D	C	C	C	B	B	D	C	A	D	A	C
Approach Vol, veh/h		451			1058			352			435	
Approach Delay, s/veh		29.9			19.9			25.1			28.4	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.7	17.1	6.8	20.9	6.4	35.4	13.2	14.5
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	58.0	40.0	7.0	49.0	10.0	88.0	27.0	29.0
Max Q Clear Time (g_c+I1), s	19.2	7.2	3.3	10.4	4.0	10.2	9.0	9.5
Green Ext Time (p_c), s	1.5	5.1	0.0	0.9	0.0	8.9	0.4	0.8

Intersection Summary	
HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	100	110	60	120	176	230	619	180	72	265	50
Future Volume (veh/h)	63	100	110	60	120	176	230	619	180	72	265	50
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		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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1683	1683	1870	1870	1683	1683	1683	1870	1683	1870
Adj Flow Rate, veh/h	80	127	35	76	152	193	291	784	215	91	335	54
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	105	669	178	97	182	231	618	953	261	571	455	72
Arrive On Green	0.06	0.24	0.25	0.06	0.24	0.24	0.39	0.39	0.39	0.17	0.17	0.17
Sat Flow, veh/h	1781	2774	740	1603	749	951	1603	2472	678	3456	2752	438
Grp Volume(v), veh/h	80	80	82	76	0	345	291	507	492	91	193	196
Grp Sat Flow(s),veh/h/ln	1781	1777	1737	1603	0	1699	1603	1599	1550	1728	1599	1591
Q Serve(g_s), s	4.9	4.0	4.2	5.2	0.0	21.6	15.2	31.9	31.9	2.5	12.8	13.1
Cycle Q Clear(g_c), s	4.9	4.0	4.2	5.2	0.0	21.6	15.2	31.9	31.9	2.5	12.8	13.1
Prop In Lane	1.00		0.43	1.00		0.56	1.00		0.44	1.00		0.28
Lane Grp Cap(c), veh/h	105	428	419	97	0	412	618	617	598	571	264	263
V/C Ratio(X)	0.76	0.19	0.20	0.78	0.00	0.84	0.47	0.82	0.82	0.16	0.73	0.75
Avail Cap(c_a), veh/h	563	684	668	552	0	702	701	700	678	884	409	407
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	51.8	33.7	33.7	51.8	0.0	40.2	25.8	30.9	30.9	40.0	44.3	44.4
Incr Delay (d2), s/veh	12.8	0.4	0.4	15.3	0.0	8.5	0.9	7.9	8.1	0.2	6.5	7.0
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	2.5	1.7	1.8	2.5	0.0	9.6	5.8	13.2	12.8	1.1	5.4	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.6	34.1	34.1	67.1	0.0	48.7	26.7	38.8	39.0	40.2	50.8	51.4
LnGrp LOS	E	C	C	E	A	D	C	D	D	D	D	D
Approach Vol, veh/h		242			421			1290			480	
Approach Delay, s/veh		44.2			52.0			36.1			49.0	
Approach LOS		D			D			D			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		47.2	10.0	31.7		22.9	9.8	31.9				
Change Period (Y+Rc), s		4.1	* 3.2	4.8		4.4	* 3.2	4.8				
Max Green Setting (Gmax), s		48.9	* 39	43.0		28.6	* 35	46.2				
Max Q Clear Time (g_c+I1), s		33.9	7.2	6.2		15.1	6.9	23.6				
Green Ext Time (p_c), s		9.2	0.2	1.6		3.3	0.2	3.6				
Intersection Summary												
HCM 6th Ctrl Delay			42.2									
HCM 6th LOS			D									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	730	92	364	450	160	114	288	550	170	252	70
Future Volume (veh/h)	120	730	92	364	450	160	114	288	550	170	252	70
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		0.97	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	125	760	87	379	469	147	119	300	171	177	262	67
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	2	2	2	2	2	2	1	1	1
Cap, veh/h	158	1302	148	425	1136	353	185	357	298	215	372	95
Arrive On Green	0.09	0.28	0.28	0.24	0.43	0.43	0.05	0.19	0.19	0.12	0.26	0.26
Sat Flow, veh/h	1795	4678	532	1781	2648	823	3456	1870	1559	1795	1447	370
Grp Volume(v), veh/h	125	556	291	379	313	303	119	300	171	177	0	329
Grp Sat Flow(s),veh/h/ln	1795	1716	1778	1781	1777	1693	1728	1870	1559	1795	0	1818
Q Serve(g_s), s	6.5	13.4	13.5	19.7	11.7	11.9	3.2	14.8	5.8	9.2	0.0	15.7
Cycle Q Clear(g_c), s	6.5	13.4	13.5	19.7	11.7	11.9	3.2	14.8	5.8	9.2	0.0	15.7
Prop In Lane	1.00		0.30	1.00		0.49	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	158	955	495	425	762	726	185	357	298	215	0	468
V/C Ratio(X)	0.79	0.58	0.59	0.89	0.41	0.42	0.64	0.84	0.57	0.82	0.00	0.70
Avail Cap(c_a), veh/h	374	1574	816	892	1334	1272	360	722	602	468	0	986
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	42.9	29.8	29.9	35.3	19.0	19.0	44.5	37.4	12.8	41.2	0.0	32.3
Incr Delay (d2), s/veh	8.5	1.2	2.4	6.6	0.8	0.8	3.7	2.1	0.7	7.6	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	5.5	5.9	9.1	4.8	4.6	1.5	6.9	3.5	4.4	0.0	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.4	31.0	32.2	41.9	19.7	19.8	48.2	39.4	13.4	48.8	0.0	33.0
LnGrp LOS	D	C	C	D	B	B	D	D	B	D	A	C
Approach Vol, veh/h		972			995			590			506	
Approach Delay, s/veh		34.0			28.2			33.7			38.5	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.9	31.2	9.1	28.7	12.4	45.6	15.5	22.3
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	48.0	44.0	10.0	52.0	20.0	72.0	25.0	37.0
Max Q Clear Time (g_c+I1), s	21.7	15.5	5.2	17.7	8.5	13.9	11.2	16.8
Green Ext Time (p_c), s	1.2	11.2	0.1	1.2	0.2	9.1	0.4	1.4

Intersection Summary	
HCM 6th Ctrl Delay	32.8
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	190	190	190	160	212	130	638	70	215	697	72
Future Volume (veh/h)	71	190	190	190	160	212	130	638	70	215	697	72
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		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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1683	1683	1870	1841	1683	1683	1683	1870	1683	1870
Adj Flow Rate, veh/h	75	200	88	200	168	199	137	672	69	226	734	72
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	4	2	2	2	2	2	2
Cap, veh/h	100	398	169	235	199	235	428	781	80	923	784	77
Arrive On Green	0.06	0.16	0.17	0.15	0.25	0.25	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1781	2431	1031	1603	779	923	1603	2924	300	3456	2935	288
Grp Volume(v), veh/h	75	144	144	200	0	367	137	367	374	226	400	406
Grp Sat Flow(s),veh/h/ln	1781	1777	1685	1603	0	1702	1603	1599	1625	1728	1599	1624
Q Serve(g_s), s	4.4	7.9	8.3	13.0	0.0	21.8	7.3	23.3	23.3	5.5	26.0	26.0
Cycle Q Clear(g_c), s	4.4	7.9	8.3	13.0	0.0	21.8	7.3	23.3	23.3	5.5	26.0	26.0
Prop In Lane	1.00		0.61	1.00		0.54	1.00		0.18	1.00		0.18
Lane Grp Cap(c), veh/h	100	291	276	235	0	434	428	427	434	923	427	434
V/C Ratio(X)	0.75	0.50	0.52	0.85	0.00	0.85	0.32	0.86	0.86	0.24	0.94	0.94
Avail Cap(c_a), veh/h	1000	846	802	734	0	634	465	464	471	928	429	436
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	49.6	40.5	40.6	44.3	0.0	37.7	31.3	37.1	37.1	30.6	38.1	38.1
Incr Delay (d2), s/veh	12.9	2.5	2.9	9.8	0.0	10.2	0.7	15.1	15.1	0.2	28.3	28.2
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	2.3	3.5	3.5	5.6	0.0	9.9	2.9	10.6	10.8	2.2	13.1	13.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.4	43.0	43.5	54.1	0.0	47.9	31.9	52.2	52.2	30.8	66.4	66.3
LnGrp LOS	E	D	D	D	A	D	C	D	D	C	E	E
Approach Vol, veh/h		363			567			878			1032	
Approach Delay, s/veh		47.2			50.1			49.1			58.6	
Approach LOS		D			D			D			E	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		32.6	18.8	22.3		32.9	9.2	31.9				
Change Period (Y+Rc), s		4.1	* 3.2	4.8		4.4	* 3.2	4.8				
Max Green Setting (Gmax), s		30.9	* 49	50.7		28.6	* 60	39.7				
Max Q Clear Time (g_c+I1), s		25.3	15.0	10.3		28.0	6.4	23.8				
Green Ext Time (p_c), s		3.1	0.7	3.1		0.4	0.3	3.2				

Intersection Summary		
HCM 6th Ctrl Delay		52.5
HCM 6th LOS		D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

ATTACHMENT 2: SIGNAL WARRANT ANALYSIS TECHNICAL CALCULATIONS

FEHR PEERS

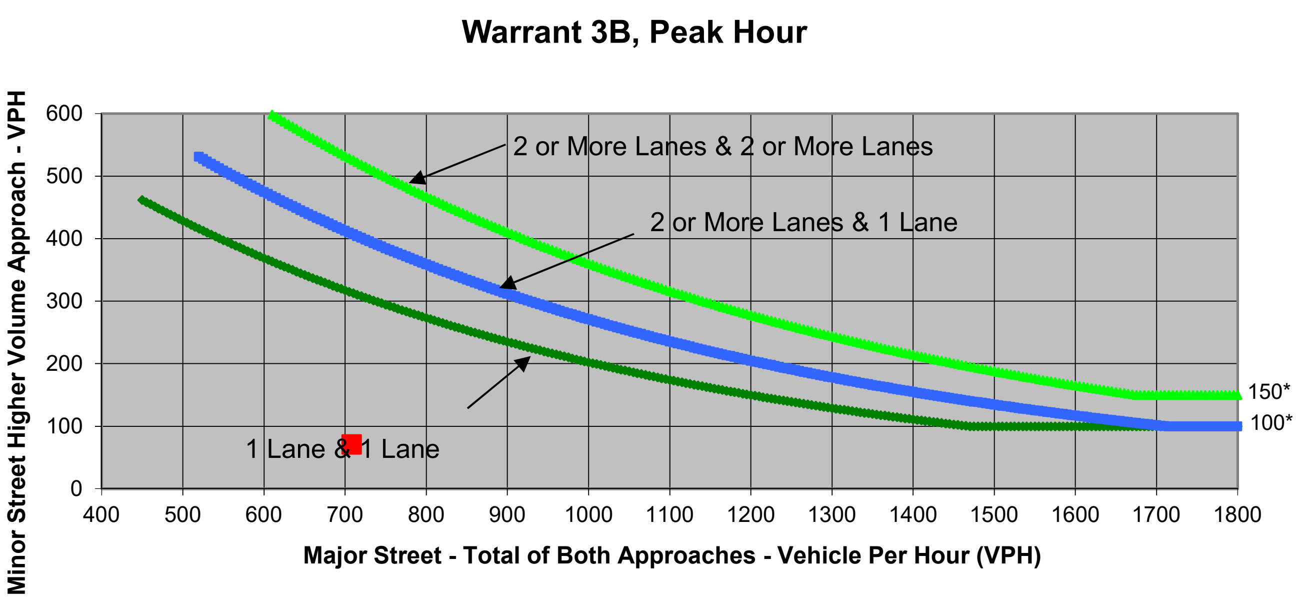
Major Street	Spreckels Avenue		Project	Spreckels Avenue Warehouse
Minor Street	Norman Drive		Scenario	Existing Conditions
			Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	42	0	46	0
Through	293	222	0	0
Right	0	151	25	0
Total	335	373	71	0

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Spreckels Avenue	Minor Street Norman Drive	Warrant Met
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**708**	**71**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Major Street	Spreckels Avenue		Project	Spreckels Avenue Warehouse
Minor Street	Norman Drive		Scenario	Existing Conditions
			Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	42	0	46	0
Through	293	222	0	0
Right	0	151	25	0
Total	335	373	71	0

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	12
Approach with Worst Case Delay	EB
Total Vehicles on Approach	71

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing Conditions	**0.2**	**71**	**779**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

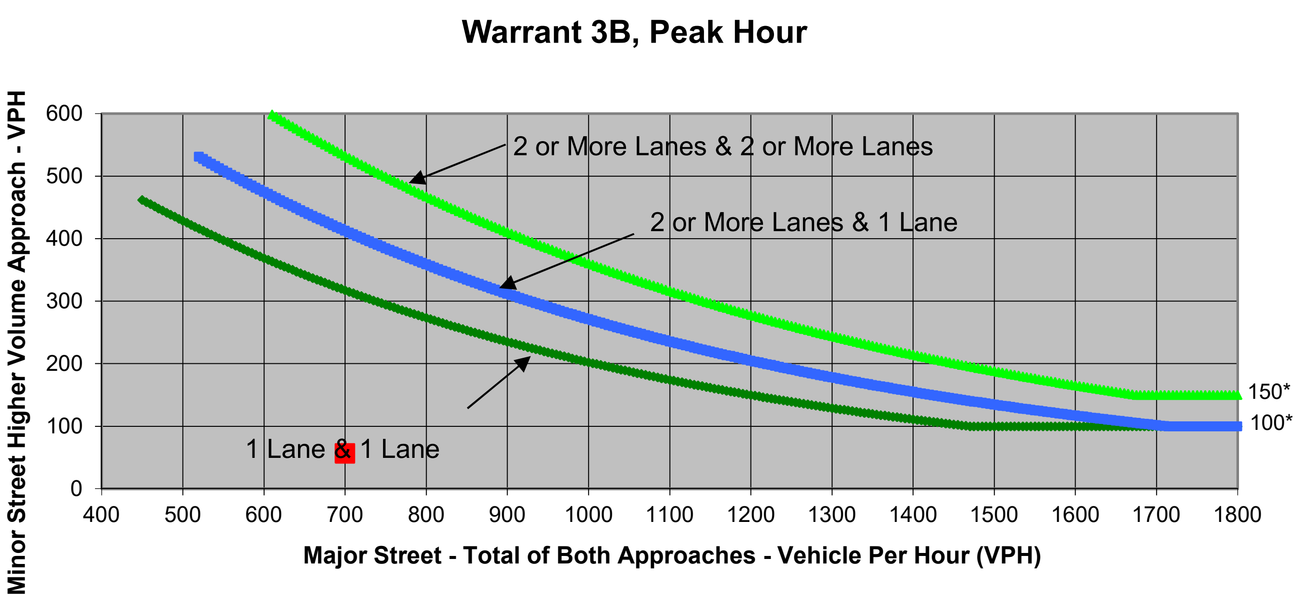
Major Street	Spreckels Avenue		Project	Spreckels Avenue Warehouse
Minor Street	Phoenix Dr		Scenario	Existing Conditions
			Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	31	30	5	37
Through	324	217	17	14
Right	98	0	25	6
Total	453	247	47	57

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Spreckels Avenue	Minor Street Phoenix Dr	Warrant Met
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**700**	**57**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Major Street	Spreckels Avenue	Project	Spreckels Avenue Warehouse
Minor Street	Phoenix Dr	Scenario	Existing Conditions
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	31	30	5	37
Through	324	217	17	14
Right	98	0	25	6
Total	453	247	47	57

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	14
Approach with Worst Case Delay	WB
Total Vehicles on Approach	57

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Existing Conditions	**0.2**	**57**	**804**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

Major Street	Spreckels Avenue		Project	Spreckels Avenue Warehouse
Minor Street	Norman Drive		Scenario	Existing Conditions
			Peak Hour	PM

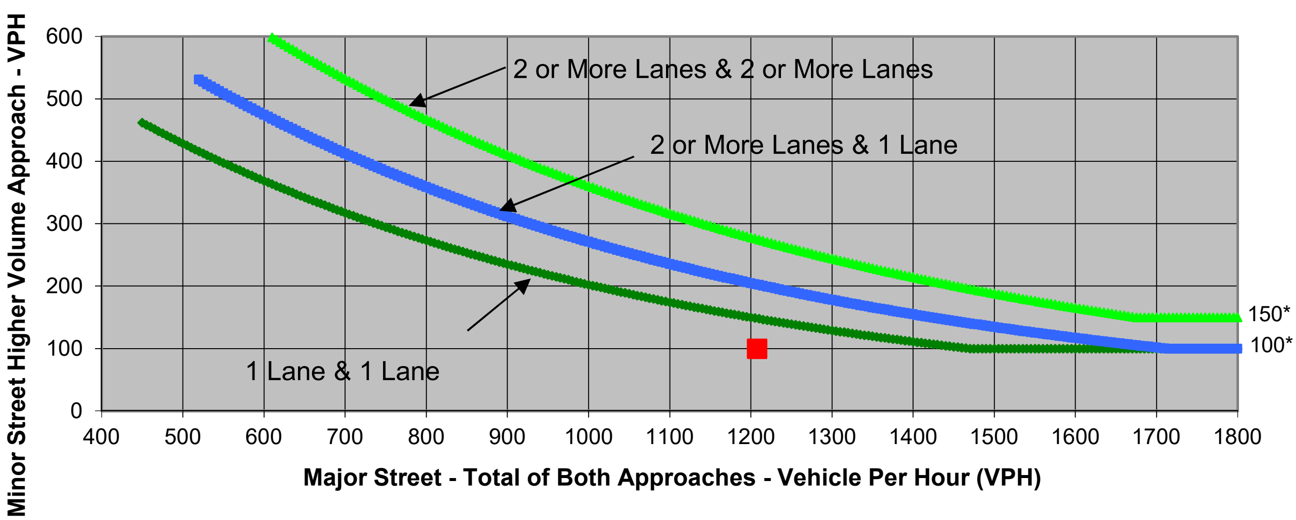
Turn Movement Volumes

	NB	SB	EB	WB
Left	60	0	55	0
Through	650	440	0	0
Right	0	58	45	0
Total	710	498	100	0

Major Street Direction

x	North/South
	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Spreckels Avenue	Minor Street Norman Drive	Warrant Met
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,208**	**100**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

			Project	Spreckels Avenue Warehouse
Major Street	Spreckels Avenue		Scenario	Existing Conditions
Minor Street	Norman Drive		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	60	0	55	0
Through	650	440	0	0
Right	0	58	45	0
Total	710	498	100	0

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	16
Approach with Worst Case Delay	EB
Total Vehicles on Approach	100

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing Conditions	**0.4**	**100**	**1,308**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

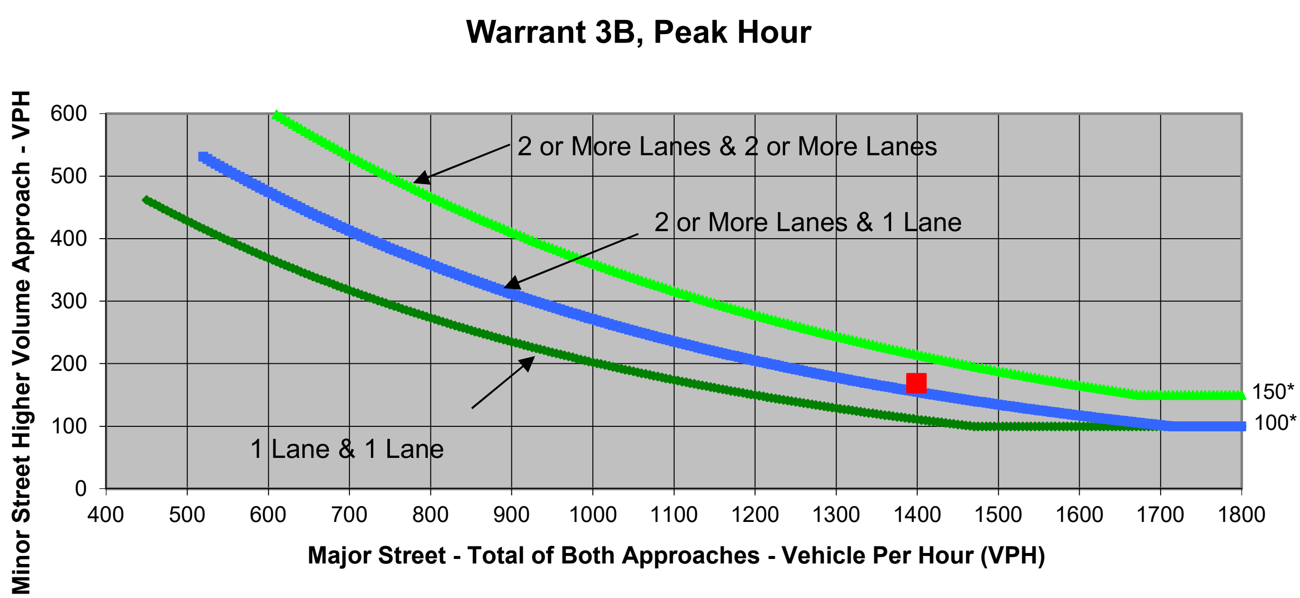
Major Street	Spreckels Avenue		Project	Spreckels Avenue Warehouse
Minor Street	Phoenix Dr		Scenario	Existing Conditions
			Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	37	0	140
Through	685	448	10	4
Right	223	0	5	25
Total	914	485	15	169

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Spreckels Avenue	Minor Street Phoenix Dr	Warrant Met
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,399**	**169**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

		Project	Spreckels Avenue Warehouse
Major Street	Spreckels Avenue	Scenario	Existing Conditions
Minor Street	Phoenix Dr	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	37	0	140
Through	685	448	10	4
Right	223	0	5	25
Total	914	485	15	169

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	35
Approach with Worst Case Delay	WB
Total Vehicles on Approach	169

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Existing Conditions	**1.6**	**169**	**1,583**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

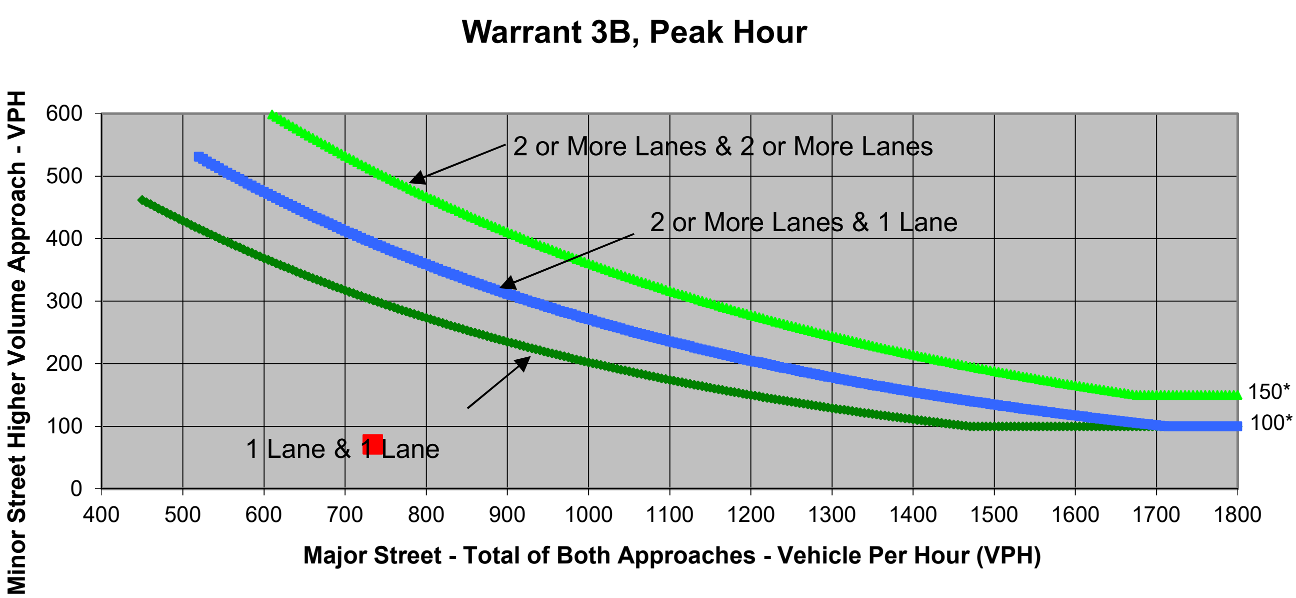
		Project	Spreckels Avenue Warehouse
Major Street	Spreckels Avenue	Scenario	EPP
Minor Street	Norman Drive	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	42	0	46	0
Through	299	242	0	0
Right	0	151	25	0
Total	341	393	71	0

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Spreckels Avenue	Minor Street Norman Drive	Warrant Met
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**734**	**71**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street	Spreckels Avenue	Project	Spreckels Avenue Warehouse
Minor Street	Norman Drive	Scenario	EPP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	42	0	46	0
Through	299	242	0	0
Right	0	151	25	0
Total	341	393	71	0

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	12
Approach with Worst Case Delay	EB
Total Vehicles on Approach	71

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
EPP	**0.2**	**71**	**805**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

Major Street	Spreckels Avenue
Minor Street	Phoenix Dr

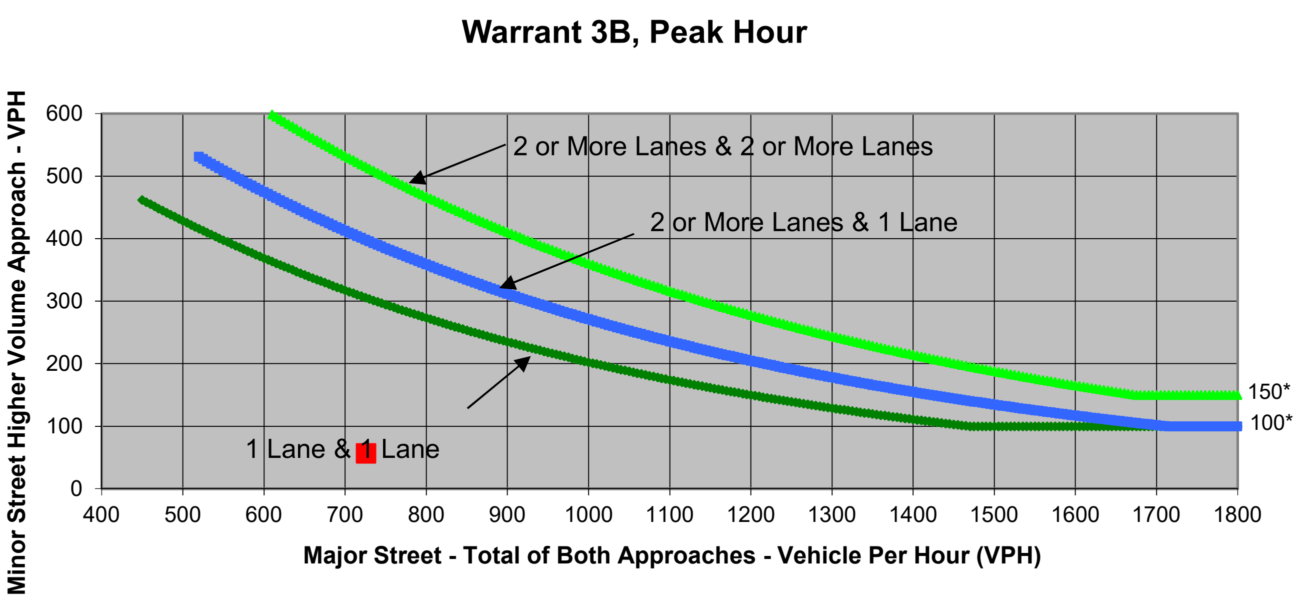
Project	Spreckels Avenue Warehouse
Scenario	EPP
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	31	30	5	37
Through	330	237	17	14
Right	98	0	25	6
Total	459	267	47	57

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Spreckels Avenue	Minor Street Phoenix Dr	Warrant Met
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**726**	**57**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Spreckels Avenue		Project	Spreckels Avenue Warehouse
Minor Street	Phoenix Dr		Scenario	EPP
			Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	31	30	5	37
Through	330	237	17	14
Right	98	0	25	6
Total	459	267	47	57

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	14
Approach with Worst Case Delay	WB
Total Vehicles on Approach	57

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
EPP	**0.2**	**57**	**830**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

Major Street	Spreckels Avenue
Minor Street	Norman Drive

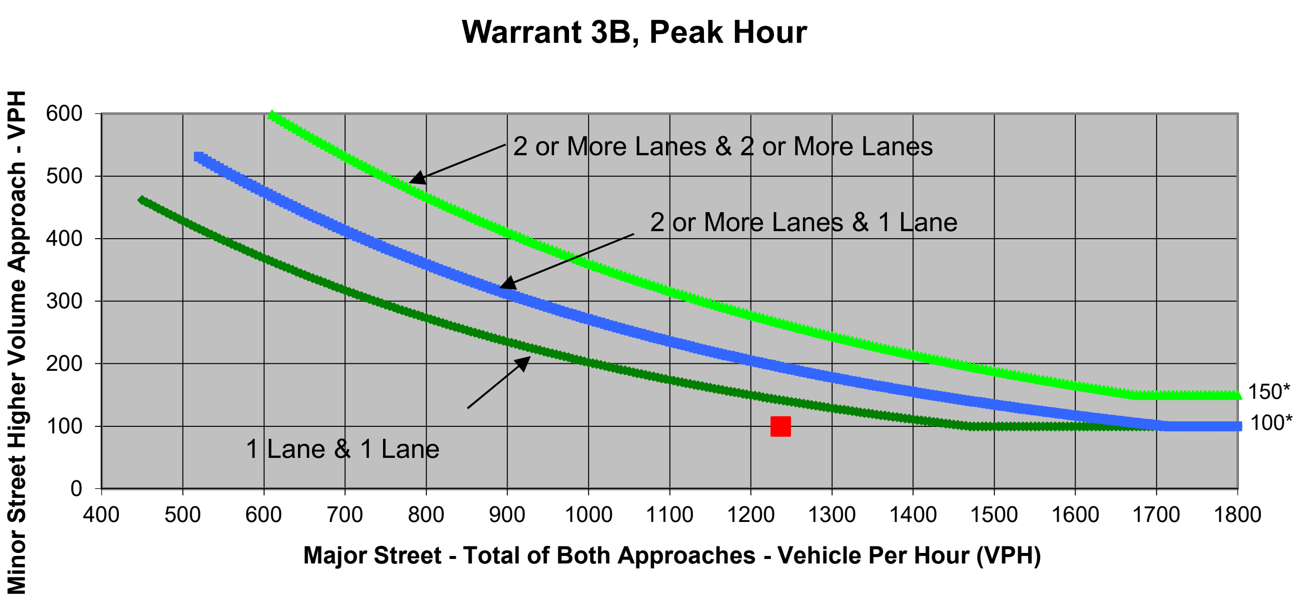
Project	Spreckels Avenue Warehouse
Scenario	EPP
Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	60	0	55	0
Through	671	448	0	0
Right	0	58	45	0
Total	731	506	100	0

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Spreckels Avenue	Minor Street Norman Drive	Warrant Met
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,237**	**100**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Major Street	Spreckels Avenue		Project	Spreckels Avenue Warehouse
Minor Street	Norman Drive		Scenario	EPP
			Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	60	0	55	0
Through	671	448	0	0
Right	0	58	45	0
Total	731	506	100	0

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	16
Approach with Worst Case Delay	EB
Total Vehicles on Approach	100

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
EPP	**0.4**	**100**	**1,337**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

Major Street	Spreckels Avenue	Project	Spreckels Avenue Warehouse
Minor Street	Phoenix Dr	Scenario	EPP
		Peak Hour	PM

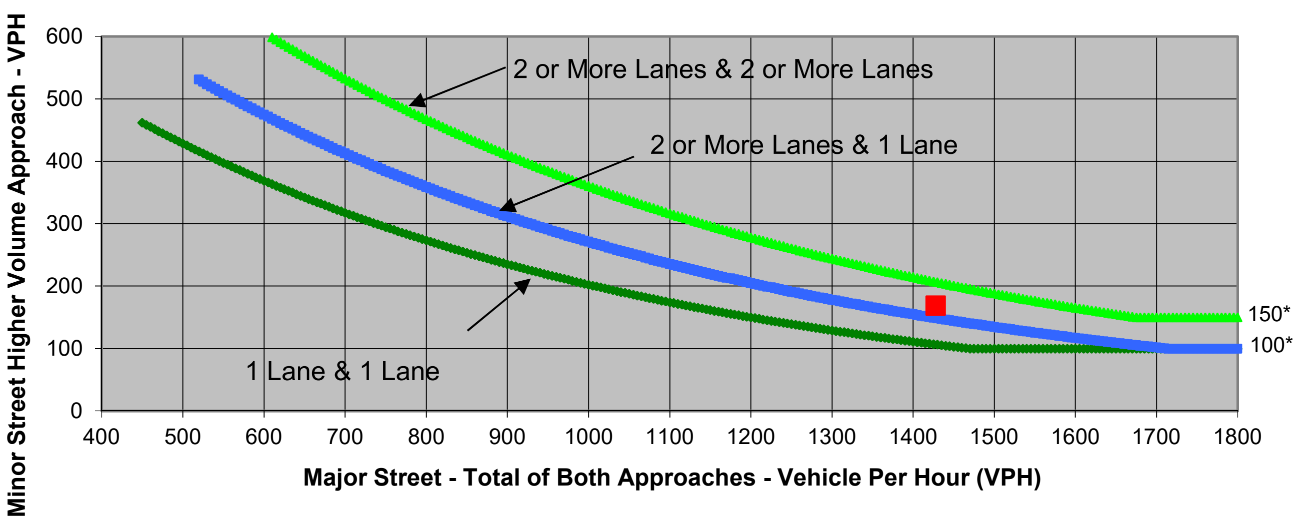
Turn Movement Volumes

	NB	SB	EB	WB
Left	6	37	0	140
Through	706	456	10	4
Right	223	0	5	25
Total	935	493	15	169

Major Street Direction

x	North/South
	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Spreckels Avenue	Minor Street Phoenix Dr	Warrant Met
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,428**	**169**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Spreckels Avenue	Project	Spreckels Avenue Warehouse
Minor Street	Phoenix Dr	Scenario	EPP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	6	37	0	140
Through	706	456	10	4
Right	223	0	5	25
Total	935	493	15	169

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	36
Approach with Worst Case Delay	WB
Total Vehicles on Approach	169

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
EPP	**1.7**	**169**	**1,612**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

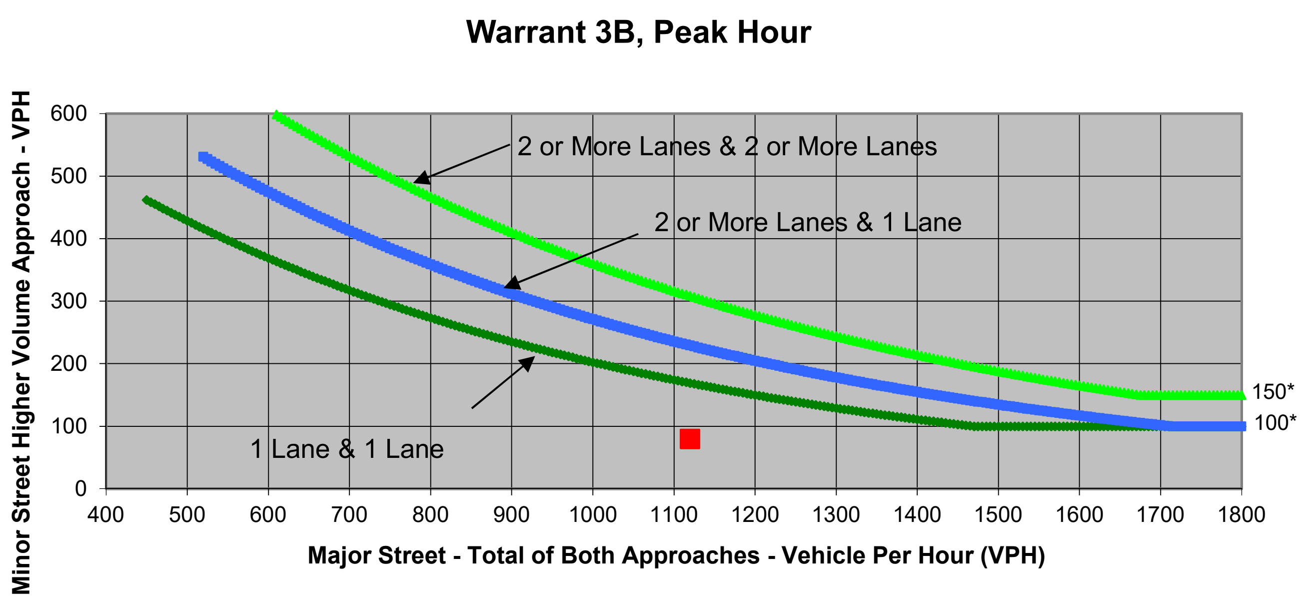
			Project	Spreckels Avenue Warehouse
Major Street	Spreckels Avenue		Scenario	CNP
Minor Street	Norman Drive		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	50	0	50	0
Through	490	420	0	0
Right	0	160	30	0
Total	540	580	80	0

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Spreckels Avenue	Minor Street Norman Drive	Warrant Met
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,120**	**80**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

			Project	Spreckels Avenue Warehouse
Major Street	Spreckels Avenue		Scenario	CNP
Minor Street	Norman Drive		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	50	0	50	0
Through	490	420	0	0
Right	0	160	30	0
Total	540	580	80	0

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	15
Approach with Worst Case Delay	EB
Total Vehicles on Approach	80

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
CNP	**0.3**	**80**	**1,200**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

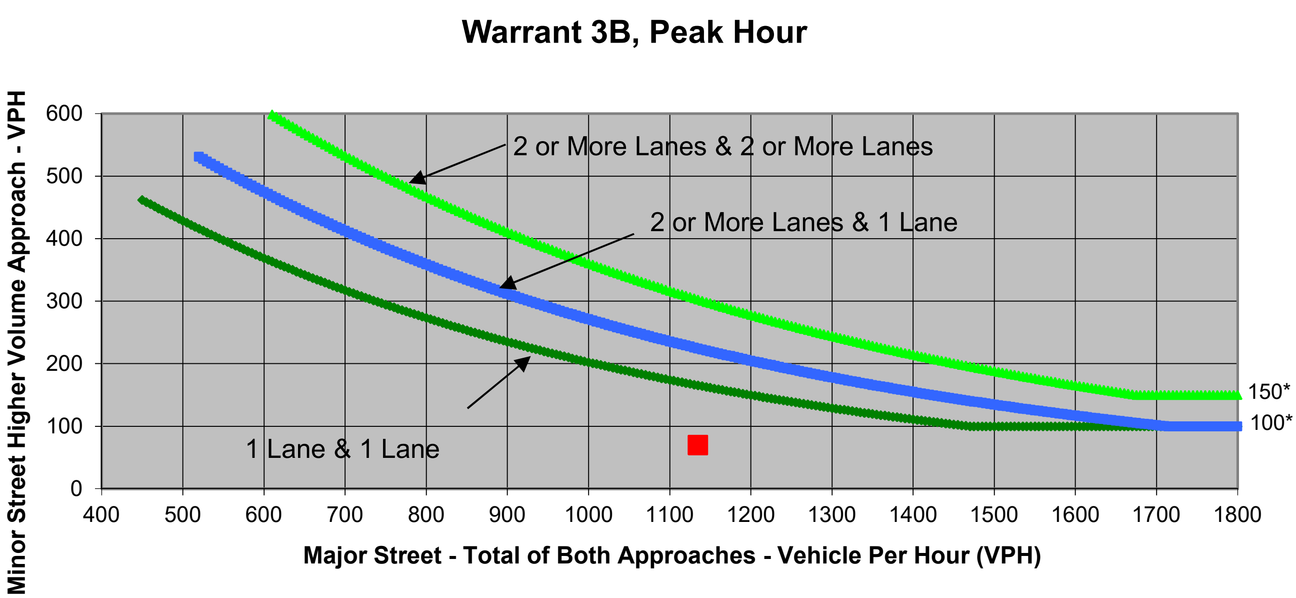
		Project	Spreckels Avenue Warehouse
Major Street	Spreckels Avenue	Scenario	CNP
Minor Street	Phoenix Dr	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	40	40	5	40
Through	525	405	20	20
Right	120	5	30	10
Total	685	450	55	70

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Spreckels Avenue	Minor Street Phoenix Dr	Warrant Met
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,135**	**70**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Spreckels Avenue	Project	Spreckels Avenue Warehouse
Minor Street	Phoenix Dr	Scenario	CNP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	40	40	5	40
Through	525	405	20	20
Right	120	5	30	10
Total	685	450	55	70

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	22
Approach with Worst Case Delay	EB
Total Vehicles on Approach	55

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
CNP	**0.3**	**70**	**1,260**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

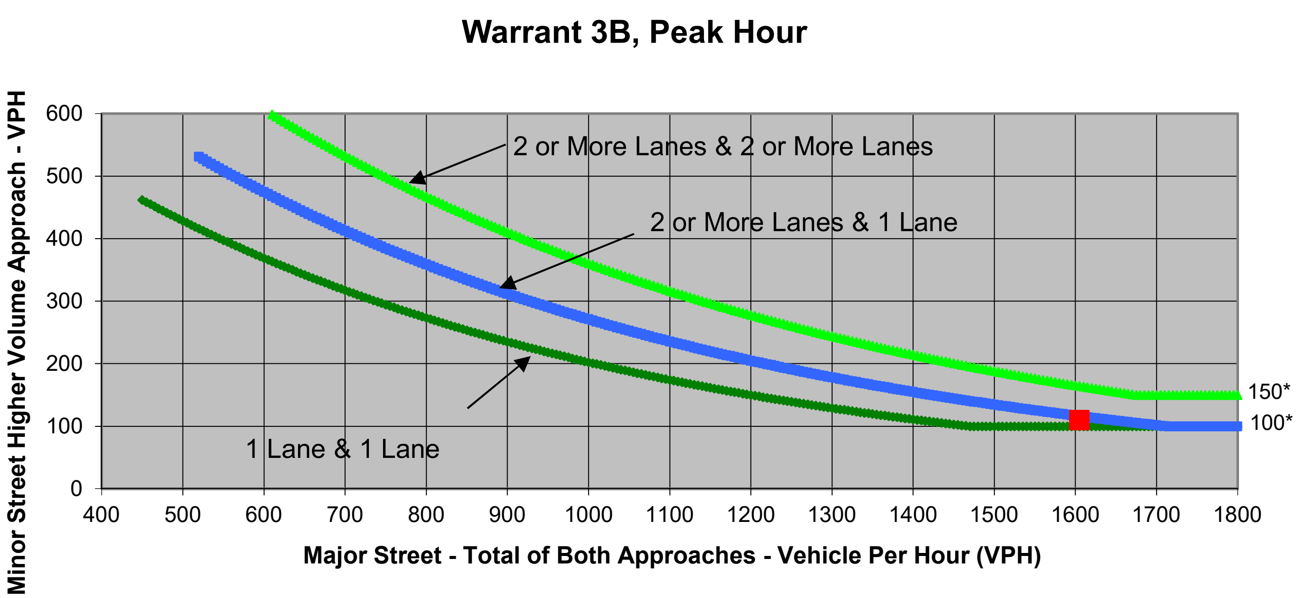
		Project	Spreckels Avenue Warehouse
Major Street	Spreckels Avenue	Scenario	CNP
Minor Street	Norman Drive	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	60	0	60	0
Through	835	650	0	0
Right	0	60	50	0
Total	895	710	110	0

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Spreckels Avenue	Minor Street Norman Drive	Warrant Met
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,605**	**110**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Major Street	Spreckels Avenue	Project	Spreckels Avenue Warehouse
Minor Street	Norman Drive	Scenario	CNP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	60	0	60	0
Through	835	650	0	0
Right	0	60	50	0
Total	895	710	110	0

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	20
Approach with Worst Case Delay	EB
Total Vehicles on Approach	110

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
CNP	**0.6**	**110**	**1,715**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

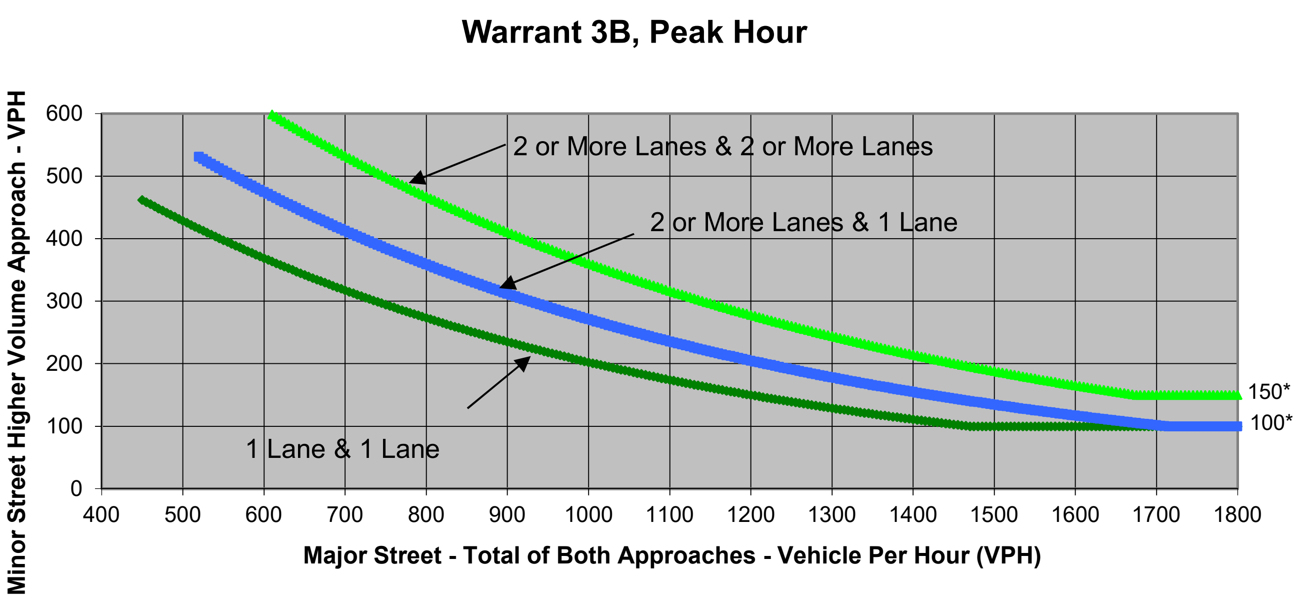
Major Street	Spreckels Avenue	Project	Spreckels Avenue Warehouse
Minor Street	Phoenix Dr	Scenario	CNP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	10	40	5	170
Through	850	655	10	5
Right	250	5	10	40
Total	1,110	700	25	215

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Spreckels Avenue	Minor Street Phoenix Dr	Warrant Met
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,810**	**215**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street	Spreckels Avenue	Project	Spreckels Avenue Warehouse
Minor Street	Phoenix Dr	Scenario	CNP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	10	40	5	170
Through	850	655	10	5
Right	250	5	10	40
Total	1,110	700	25	215

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	99
Approach with Worst Case Delay	WB
Total Vehicles on Approach	215

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
CNP	**5.9**	**215**	**2,050**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met		**YES**	

FEHR & PEERS

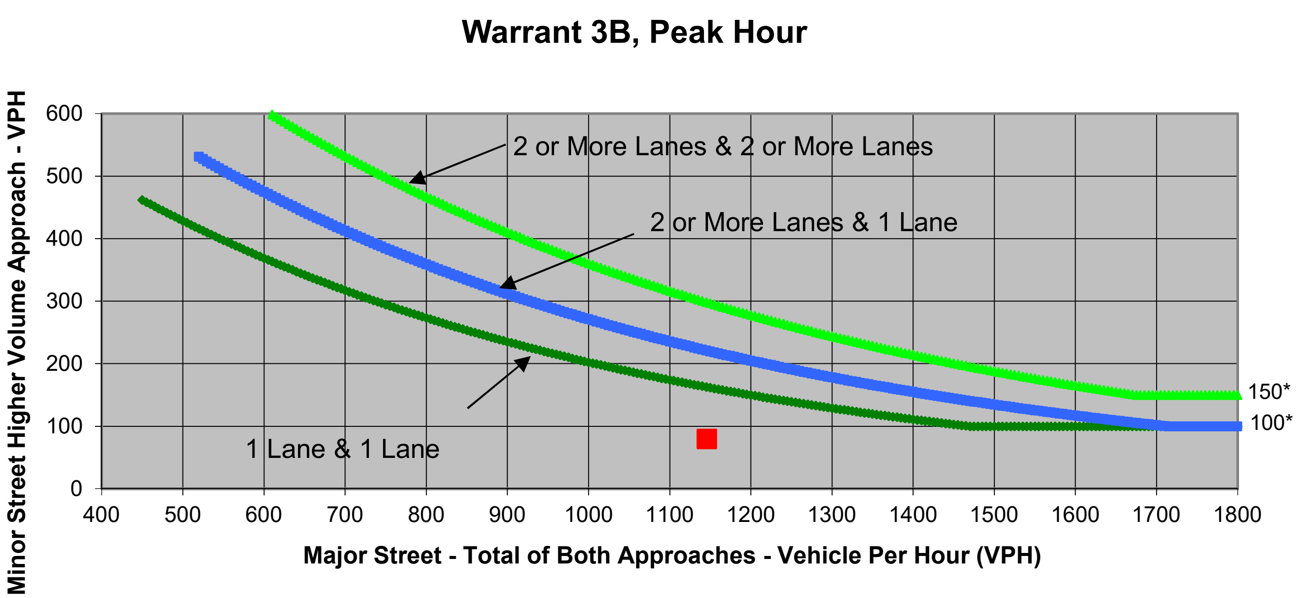
			Project	Spreckels Avenue Warehouse
Major Street	Spreckels Avenue		Scenario	CPP
Minor Street	Norman Drive		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	50	0	50	0
Through	496	440	0	0
Right	0	160	30	0
Total	546	600	80	0

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Spreckels Avenue	Minor Street Norman Drive	Warrant Met
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,146**	**80**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Major Street	Spreckels Avenue	Project	Spreckels Avenue Warehouse
Minor Street	Norman Drive	Scenario	CPP
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	50	0	50	0
Through	496	440	0	0
Right	0	160	30	0
Total	546	600	80	0

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	15
Approach with Worst Case Delay	EB
Total Vehicles on Approach	80

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
CPP	**0.3**	**80**	**1,226**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

Major Street	Spreckels Avenue
Minor Street	Phoenix Dr

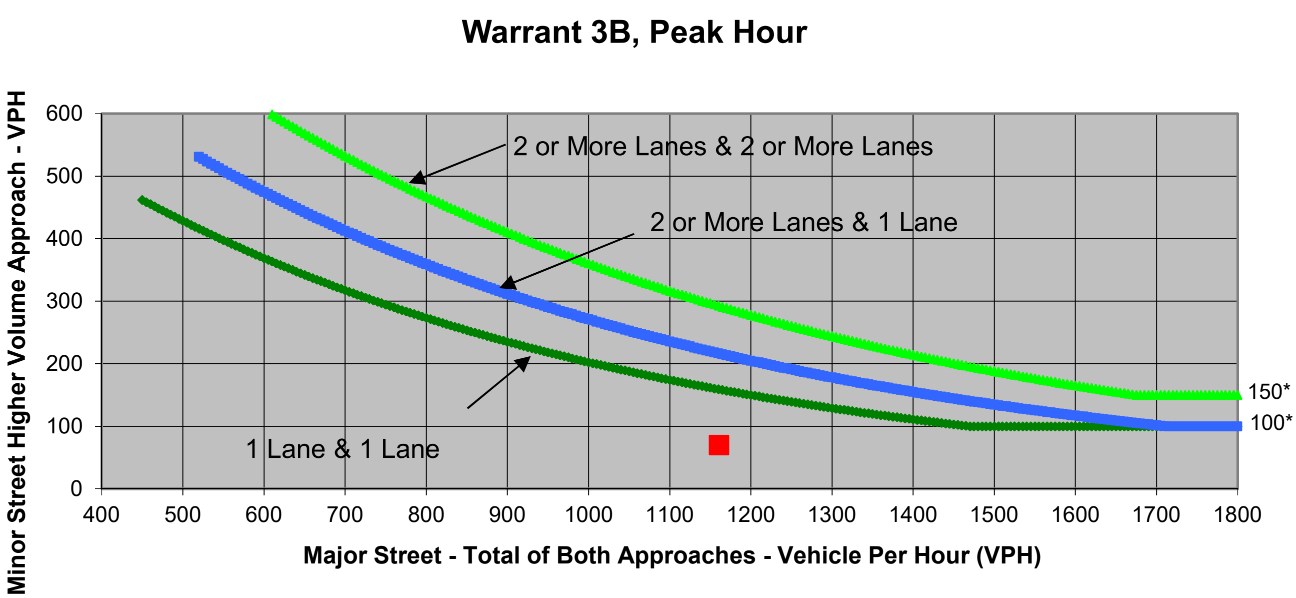
Project	Spreckels Avenue Warehouse
Scenario	CPP
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	40	40	5	40
Through	531	425	20	20
Right	120	5	30	10
Total	691	470	55	70

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Spreckels Avenue	Minor Street Phoenix Dr	Warrant Met
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,161**	**70**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Spreckels Avenue		Project	Spreckels Avenue Warehouse
Minor Street	Phoenix Dr		Scenario	CPP
			Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	40	40	5	40
Through	531	425	20	20
Right	120	5	30	10
Total	691	470	55	70

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	23
Approach with Worst Case Delay	EB
Total Vehicles on Approach	55

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
CPP	**0.4**	**70**	**1,286**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

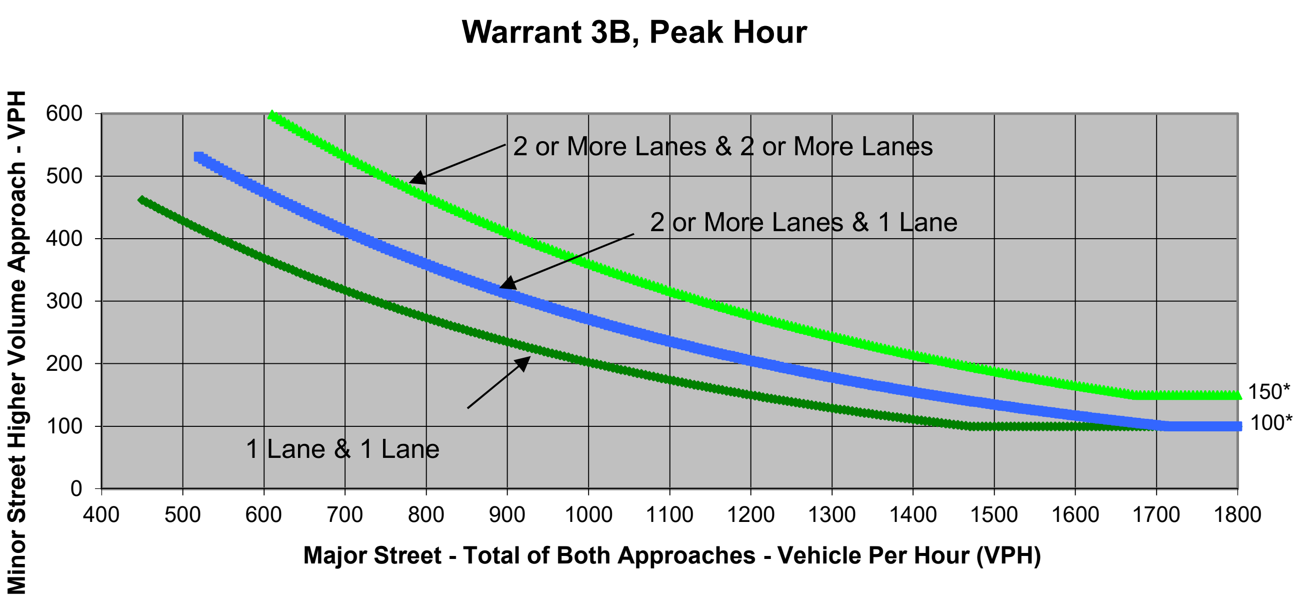
Major Street	Spreckels Avenue	Project	Spreckels Avenue Warehouse
Minor Street	Norman Drive	Scenario	CPP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	10	40	5	170
Through	871	663	10	5
Right	250	5	10	40
Total	1,131	708	25	215

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Spreckels Avenue	Minor Street Norman Drive	Warrant Met
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,839**	**215**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Spreckels Avenue	Project	Spreckels Avenue Warehouse
Minor Street	Norman Drive	Scenario	CPP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	10	40	5	170
Through	871	663	10	5
Right	250	5	10	40
Total	1,131	708	25	215

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	107
Approach with Worst Case Delay	WB
Total Vehicles on Approach	215

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
CPP	**6.4**	**215**	**2,079**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR & PEERS

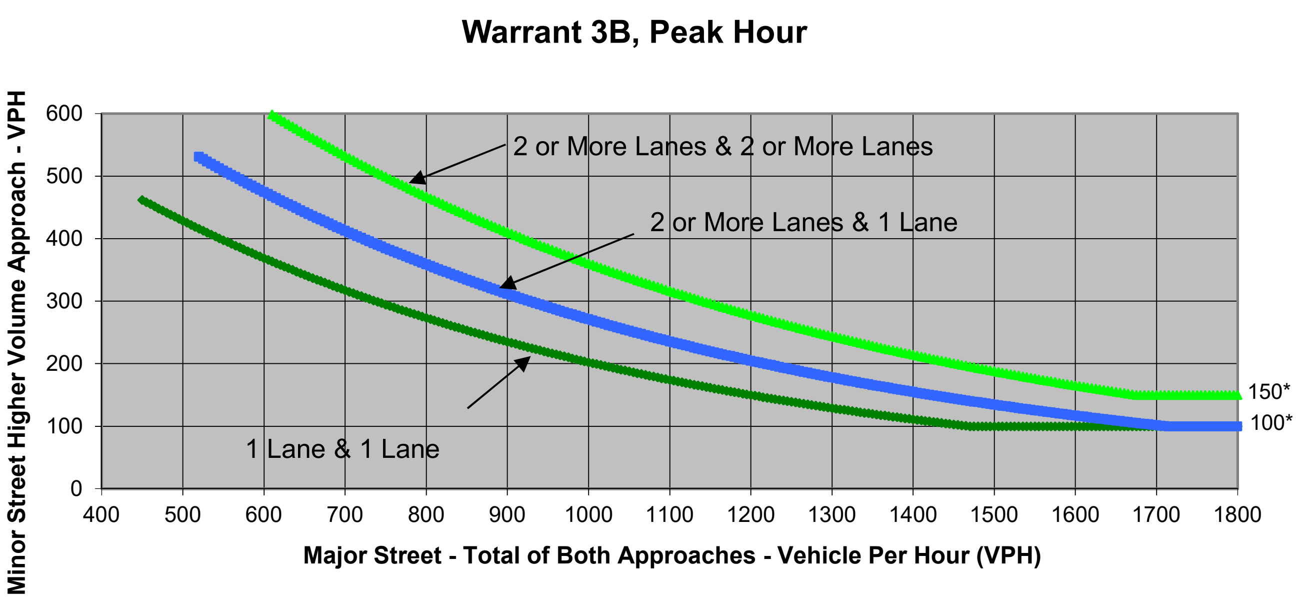
			Project	Spreckels Avenue Warehouse
Major Street	Spreckels Avenue		Scenario	CPP
Minor Street	Phoenix Dr		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	10	30	0	10
Through	2,250	510	0	0
Right	30	0	0	40
Total	2,290	540	0	50

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Spreckels Avenue	Minor Street Phoenix Dr	Warrant Met
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**2,830**	**50**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street	Spreckels Avenue	Project	Spreckels Avenue Warehouse
Minor Street	Phoenix Dr	Scenario	CPP
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	10	30	0	10
Through	2,250	510	0	0
Right	30	0	0	40
Total	2,290	540	0	50

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	89.3
Approach with Worst Case Delay	WB
Total Vehicles on Approach	50

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
CPP	**1.2**	**50**	**2,880**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		