INITIAL STUDY
AND MITIGATED NEGATIVE DECLARATION
789 OLD COUNTY ROAD PROJECT

PREPARED FOR:

City of San Carlos

PLANNING DIVISION
600 ELM STREET
SAN CARLOS, CA 94070

FEBRUARY 2025

Prepared By:

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INTRODUCTION TO THIS DOCUMENT

This document serves as the Initial Study and Mitigated Negative Declaration for the 789 Old County Road project ("project"). Full project application materials are available from the City of San Carlos Planning Division for review upon request (see contact info below).

Per California Environmental Quality Act (CEQA) Guidelines Section 15070, a Mitigated Negative Declaration can be prepared to meet the requirements of CEQA review when the Initial Study identifies potentially significant environmental effects, but revisions in the project and/or incorporation of mitigation measures agreed to by the applicant would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur and there is no substantial evidence in light of the whole record that the project as revised may have significant effect on the environment.

This document is organized into three sections as follows:

- **Introduction and Project Information.** This section introduces the document and presents the project description including location, setting, and specifics of the lead agency and contacts.
- **Mitigated Negative Declaration.** This section lists the impacts and mitigation measures identified in the Initial Study Checklist and proposes findings that would allow adoption of this document as the CEQA review document for the proposed project.
- **Initial Study Checklist.** This section discusses the CEQA environmental topics and checklist questions and identifies the potential for impacts and proposed mitigation measures to avoid these impacts.

CITY OF SAN CARLOS GENERAL PLAN

The project site is within the San Carlos General Plan: Envision 2030 planning area,[1] including the Focused General Plan and Zoning Update, for which an associated EIR was certified in January 2023 (State Clearinghouse Number 2021120442).[2] The Focused General Plan and Zoning Update EIR is hereby incorporated into this analysis by reference and are available in full at City of San Carlos Planning Division office located at 600 Elm Street in San Carlos and digitally upon request by contacting AdvancePlanning@cityofsancarlos.org or can be obtained online from the Governor's Office of Planning and Research at: https://ceqanet.opr.ca.gov/Project/2021120442.

Accordingly, this environmental analysis tiers off of the Focused General Plan Update EIR per CEQA Guidelines section 15152. Mitigation measures from the Focused General Plan Update EIR that are applicable to the proposed project are identified in this document with the mitigation title from that document prefaced with "GP-MM".

OTHER DOCUMENTS INCORPORATED BY REFERENCE

Pursuant to CEQA Guidelines section 15150, an environmental analysis may incorporate by reference all or portions of another document which is a matter of public record or is generally available to the

[1] City of San Carlos, San Carlos General Plan: Envision 2030, adopted October 12, 2009, available at https://www.cityofsancarlos.org/city_hall/departments_and_divisions/community_development/planning/plans_and_standards/general_plan.php

[2] City of San Carlos, Focused General Plan and Zoning Update and associated EIR (certified Jan 2023), available at https://www.sancarlos2040.org/documents.

public. Information from the documents that have been incorporated by reference has been briefly summarized in the appropriate sections of this document. The following materials that are included in the project files that are available for review at the Planning Division at 600 Elm Street and online at https://www.cityofsancarlos.org/business_detail_T10_R94.php are hereby incorporated by reference:

Project plans sets

BKF Engineering, December 22, 2022, Old County Road – Preliminary Sewer Memo

BKF Engineering, March 29, 2023, Old County Road – Preliminary Storm Drain Memo

EKI Environment and Water, Inc., July 2023, Water Supply Assessment for 789 Old County and 1026 Bransten Road

Mott MacDonald, September 21, 2023, 789 Old County Rd Development Sanitary Sewer Modelling and Analysis

Ramboll US Consulting, Inc, March 8, 2022, Phase I Environmental Site Assessment 1026 Bransten Road

Ramboll US Consulting, Inc, March 14, 2023, Phase II Investigation Report for 1026 Bransten Road

Ramboll US Consulting, Inc, March 14, 2023, Phase II Investigation Report for 789 Old County Road

Rockridge Geotechnical, July 2, 2024, Final Geotechnical Investigation (Revision 1) Proposed Life Science Building and Parking Structure 1026 Bransten Road

STANDARD CONDITIONS

There are regulations and policies applicable to the project that would be considered uniformly applied development policies or standards pursuant to CEQA Guidelines Section 15183.3(7), or "Standard Conditions". These Standard Conditions are incorporated into a project regardless of the project's environmental determination, and are therefore considered prior to determination of significance and are not considered mitigation under CEQA. Specifics of applicable Standard Conditions are presented in **Table 1** (page 14) and discussed under the relevant topic areas throughout this document.

PUBLIC REVIEW

This Initial Study will be circulated for a 30-day public review period. Comments may be submitted in writing by email or regular mail to the following address:

City of San Carlos
Planning Division
Lisa Costa Sanders, Principal Planner
600 Elm Street
San Carlos, CA 94070
Email: LCostaSanders@cityofsancarlos.org

PROJECT INFORMATION

All figures for the project information are included together on pages 7 through 10.

PROJECT ENTITLEMENTS

Development of the project would require the following approvals from the City of San Carlos: a Planned Development Rezoning, Planned Development Permit, Design Review Permit, Development Agreement, Lot Merger/Lot Line Adjustment (to be determined), Grading and Dirt Haul Certificate, and Transportation Demand Management Program.

The C/CAG Board has determined that the project is consistent with applicable airport/land use policies and criteria contained in the Comprehensive Airport Land Use Compatibility Plan for the San Carlos Airport.

The project is required to comply with Municipal Regional Permit requirements related to stormwater pollution prevention.

LEAD AGENCY

City of San Carlos
600 Elm Street
San Carlos, CA 94070

CONTACT PERSON

Lisa Costa Sanders, Principal Planner
City of San Carlos, Planning Division
600 Elm Street
San Carlos, CA 94070-3085
Telephone: 650.802.4207
Email: LcostaSanders@cityofsancarlos.org

PROJECT SPONSOR

Bransten Road Associates, LLC
Contact: Daniel Minkoff
6272 Virgo Road, Oakland, CA 94611
Phone: 1-415-730-2802
Email: dminkoff@minkoffgroup.com

PROJECT LOCATION AND EXISTING USES

The 3.4-acre project site (Assessor's Parcel Numbers 046-131-610 and -630), which includes addresses 1026 Bransten Road and 781 Old County Road, is located in the City of San Carlos, California. In addition to the main rectangular lot at the northeast corner of Bransten Road and Old County Road, the project site includes a narrow strip extending along the Bransten Road frontage, a former railroad spur that is currently providing access to neighboring sites and some open space. **Figure 1** shows the project location and **Figure 2** shows the project site and existing conditions.

The property at 1026 Bransten Road was most recently occupied by CEMEX, a cement and concrete manufacturing and distributing company, which ceased operations in Spring of 2024 during the preparation of this analysis, and all equipment was removed in June 2024. The property at 781 Old County Road is currently occupied by Morey Transport, a cargo truck company. The project site has been developed with one-story buildings, one- and two-story buildings made of shipping containers, two batch plants, one of which is inoperable, and paved areas, roadways and parking areas. The only landscaped areas are along the street frontage. There is a reclamation pond that collects the stormwater and process wastewater on the CEMEX property, and bins and piles of dry raw materials such as sand and rock. The narrow strip of land that continues along Bransten Road is a former railroad spur with grass and trees, as well as a paved easement for accessing the property adjacent to the project site from Bransten Road.

The project site is at an elevation of approximately 9 feet above mean sea level and is relatively flat, regionally sloping gently to the east. The nearest surface water body is Pulgas Creek, located approximately 0.3 miles southeast of the project site. The depth to groundwater is approximately 4 feet below ground surface and the groundwater flow direction is generally to the east-northeast.

GENERAL PLAN DESIGNATION / ZONING

General Plan Designation: Planned Industrial

Current Zoning: Heavy Industrial (IH)

Proposed Zoning: Planned Development (PD)

SURROUNDING LAND USES

The project site is located within the East Side Innovation District, in an area identified by the City as appropriate for biotech/life science development. The site is adjacent to warehouse and commercial uses to the northwest, warehouses to the northeast, and the future site of another office/ research & development project to the southeast, across Bransten Road. Road and elevated train corridors are adjacent to the project site to the southwest, providing a buffer of at least 250 feet to the development on the far side of El Camino Real, which includes primarily retail and commercial development, with residential development further west (over about 800 feet away from the proposed development).

The closest residential uses to the project are in the Greater East San Carlos neighborhood, which has single family homes located as close as approximately 400 feet to the northwest of the project site.

The San Carlos Airport is located approximately 1,700 feet to the northeast of the project.

PROJECT DESCRIPTION

Overview and Building Massing

The proposed project would involve the demolition of all existing structures and site improvements and the construction of two new office / research and development (R&D) buildings: a 4-story 146,983 gross square feet west building and a 5-story 179,665 gross square feet east building, with maximum heights of approximately 69 and 85 feet respectively, plus rooftop elements up to an additional 21 feet. The two buildings would share a connected ground floor lobby and amenity space, as well as outdoor terrace

space on different levels between the two buildings.[3] The main entrance would be located between the two buildings along Bransten Road. A detached 8-story above-ground parking garage is proposed on the east side of the project site. **Figure 3** shows the site plan. **Figure 4** shows the building elevations.

All ground level open space would be publicly accessible, including the main entry plaza off Bransten Road which also includes a grand stairway leading to multi-level terrace space above for tenants. The project site also includes a thin strip of land along Bransten Road between existing structures and the road. This portion of the site would be retained in its existing state and existing easement maintained for access to adjacent sites.

The applicant is targeting life science tenants. While specific tenants have not been identified at this time, this document assumes the highest potential impact in any given environmental topic area given the flexibility in the future mix of office and/or R&D. For example, peak hour trip generation would be highest for 100 percent office occupancy, so that assumption has been used for the analysis of transportation and all-R&D occupancy or a mix of the two types of uses would have trips and related impacts within that analyzed. Emissions would be highest from 100 percent R&D occupancy so that assumption has been used for the emissions analyses and all-office occupancy or a mix of the two types of uses would have emissions and related impacts within that analyzed.

The project would redevelop a site already provided with utilities and services. Utility connections would be made to existing lines in adjacent streets. Overhead electrical lines would be undergrounded along Old County Road from Bransten Road to Terminal Way. The project would incorporate stormwater retention elements suitable to meet applicable requirements (see Section 10: Hydrology and Water Quality for additional information). The project proposes to include natural gas connections and use as allowable under San Carlos Municipal Code Section 15.04.080 and 15.04.125 if granted an exception for scientific laboratories equipment and space conditioning systems.

Community Benefits

In conjunction with the project, the applicant has proposed to complete the Old County Road East Side Connect improvements for the 300 lineal feet from the northern border of the project site to Terminal Way. These improvements would include:

- Undergrounding electrical lines
- New sidewalks
- Street trees
- Street lights
- Green infrastructure

Access & Parking

The project site is accessible by automobile, train, and bus, and would include on-site facilities for pedestrians and bikes.

[3] The Gross Square Feet for the office/R&D use is presented here. For construction activities, full gross square feet of all structures is used instead. Total gross square feet of the office/R&D buildings plus parking garage is estimated at 552,569 gross square feet.

Rail: The project site is located within 0.25 miles walking distance south of the San Carlos Caltrain Station platforms. Caltrain is a regional rail corridor that provides connectivity between San Francisco and San Jose, with limited service to Gilroy during commute hours.

Bus: The project site is located approximately 650 feet from the El Camino Real/Arroyo Avenue SamTrans bus stop, serviced by routes ECR, 397, and 398.

Automobile/Truck: Project site access would be from two driveways on Bransten Road, as well as a loading dock entrance on Old County Road.

Bicycle and Pedestrian Access: Pedestrian and bicycle access is available from the Caltrain Station and downtown San Carlos. Downtown San Carlos is accessible through an undercrossing located at the Caltrain Station and by an undercrossing located near the corner of Commercial Street and Old County Road, approximately 530 feet away. The project would construct the portion of the planned Class IV Bikeway on the western side of Old County Road along the project frontage between Bransten Road and Terminal Way and transition to the Class III bike routes at the intersection with Terminal Way (see Section 17: Transportation for additional discussion of incremental bikeway improvements and safe transitions).

Approximately 694 parking spaces would serve the office/R&D tenants within the building at grade level. In addition, there would be 84 long term/20 short term bicycle parking spaces.

Construction

Project construction activities, including interior build-out, are anticipated to span approximately 2 years, with building occupation potentially occurring prior to the end of 2026.[4] The east building and west building would have staggered start times of approximately two months but would otherwise be built concurrently.

[4] If construction activities are initiated later or fully occupancy occurs later than analyzed in this report, impacts would be the same or lessened (due to increasing emissions controls) from those analyzed here.

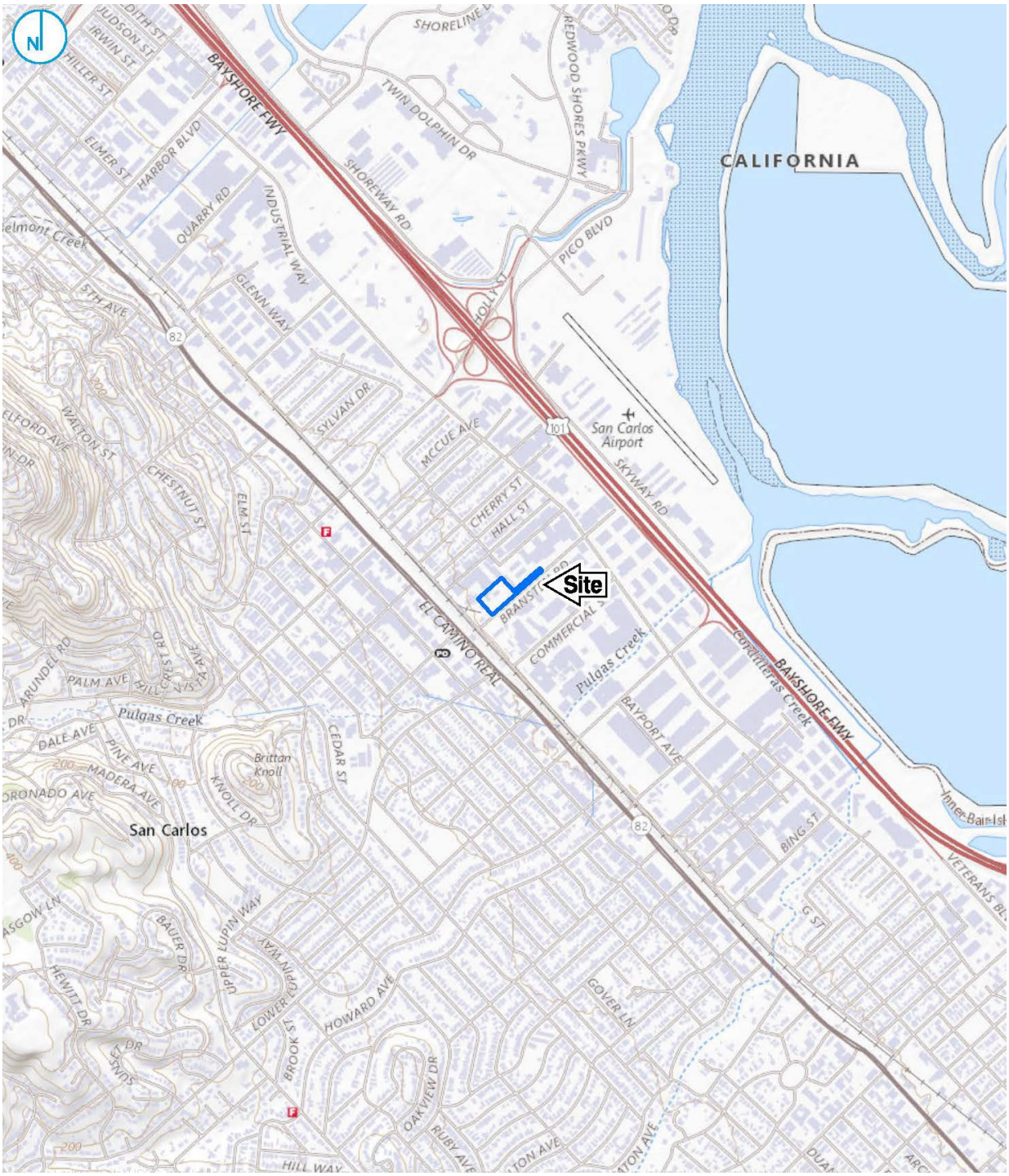

Figure 1: Project Location
Source: Ramboll 2023

Figure 2: Project Site and Existing Conditions
Source: Google Earth, modified to outline the project site

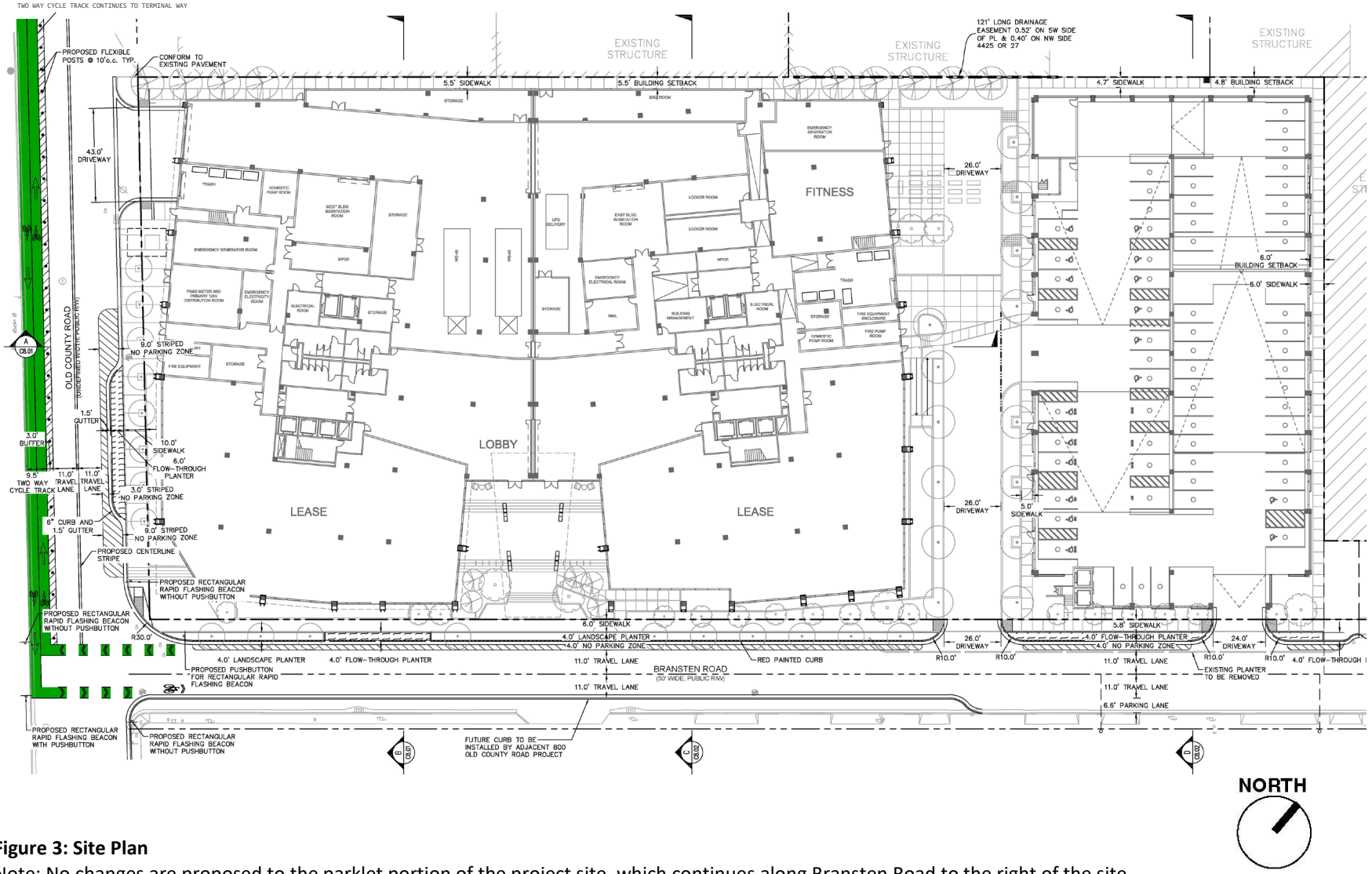

Figure 3: Site Plan

Note: No changes are proposed to the parklet portion of the project site, which continues along Bransten Road to the right of the site.

Source: Project Plan Set, dated July 16, 2024

Figure 4: Building Elevations
Source: Project Plan Set, July 16, 2024

MITIGATED NEGATIVE DECLARATION

PROJECT DESCRIPTION, LOCATION, AND SETTING

This Mitigated Negative Declaration has been prepared for the 789 Old County Road project. See the Introduction and Project Information section of this document for details of the project.

STANDARD CONDITIONS

There are regulations and policies applicable to the project that would be considered uniformly applied development policies or standards pursuant to CEQA Guidelines Section 15183(f)(7), or "Standard Conditions". These Standard Conditions are incorporated into a project regardless of the project's environmental determination and are therefore considered prior to determination of significance and are not considered mitigation under CEQA. The Standard Conditions in **Table 1** below would be applicable to the proposed project.

Table 1: Applicable Standard Conditions

Resource Area/Topic	Standard Condition
Aesthetics	**Exterior Materials.** Pursuant to San Carlos Municipal Code Chapter 18.29, the colors and materials of the structure and improvements shall be in substantial compliance with those presented and described within the application materials. Any changes determined to be significant as determined by the Community Development Director shall be reviewed and approved by the Planning Commission.
Aesthetics	**Exterior Lighting Plan.** Pursuant to San Carlos Municipal Code Chapter 18.29, a final exterior lighting plan with specifications in conformance with the approved plans is subject to review and approval by the Planning Division prior to Building Permit issuance.
Aesthetics	**Signage.** New signs are subject to compliance with San Carlos Municipal Code Chapter 18.22. No signs have yet been approved as part of this project. Any signs that are visible from U.S. Highway 101 shall require approval by the Planning Commission.
Biological Resources	**Compliance with Protected Tree Ordinance.** Pursuant to San Carlos Municipal Code Sections 18.18.070 and 18.41.020, the project proponent shall obtain a permit to remove any tree(s) protected under the City's Interim Protected Tree Ordinance, as determined by an arborist, and shall also prepare a tree protection plan that includes a map of the tree protection zone and is included in the construction drawings and bid package. Removed trees will be replaced in accordance with the ordinance at the discretion of the Community Development Director. If any removed trees are within the jurisdiction of California Department of Fish and Wildlife (CDFW), and CDFW issues a Lake and Streambed Agreement for the project, the tree replacement ratios shall comply with CDFW requirements.
Cultural and Tribal Cultural Resources	**Protection of Human Remains.** If human remains are unearthed during ground-disturbing activities, Section 7050.5(b) and (c) of the California Health and Safety code will be implemented. Section 7050.5(b) and (c) states:

Resource Area/Topic	Standard Condition
	(b) In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains. (c) If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission. [In which case Section 5097.98 of the California Public Resources Code would apply.]
Hydrology/ Water Quality	**Stormwater Control Plan.** A stormwater and drainage control plan shall be prepared and implemented in compliance with the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), Provision C.3 of the County's Municipal Regional Stormwater NPDES Permit and any other required provisions of the City of San Carlos Municipal Code. The plan shall specify best management practices for the control and prevention of stormwater pollution. The plan shall address both construction-phase and post-construction pollutant impacts from development. Construction-phase measures shall include: erosion control measures such as installing fiber rolls, silt fences, gravel bags, or other erosion control devices around and/or downslope of work areas and around storm drains prior to earthwork and before the onset of any anticipated storm events; monitoring and maintaining all erosion and sediment control devices; designating a location away from storm drains when refueling or maintaining equipment; scheduling grading and excavation during dry weather; and removing vegetation only when absolutely necessary. Post-construction drainage controls shall be specified to capture and treat stormwater onsite.
Geology and Soils	**Compliance with design-level Geotechnical Investigation and Structural Design Plans.** Consistent with plan check procedures for Building Permit consideration, proper foundation engineering and construction shall be performed in accordance with the recommendations of a Registered Geotechnical Engineer and a Licensed Professional Engineer. The structural

Resource Area/Topic	Standard Condition
	engineering design, with supporting Geotechnical Investigation, shall incorporate seismic parameters compliant with the California Building Code.
Noise	**Construction Noise.** Construction Activities shall comply with the City's noise ordinance (Chapter 9.30 of the San Carlo Municipal Code), which includes restriction of construction activities to the hours of 8:00 AM to 5:00 PM on weekdays, and 9:00 AM to 5:00 PM on Saturdays. Additionally, San Carlos General Plan Policy NOI-1.8 requires all phases of construction activity to utilize reasonable noise reduction measures to minimize the exposure of neighboring properties to excessive noise levels and comply with the City's noise ordinance. These noise reduction measures would include but are not limited to the following (or similarly effective) measures: • Utilize "quiet" models of air compressors and other stationary noise sources where such technology exists; • Equip all internal combustion engine-driven equipment with mufflers, which are in good condition and appropriate for the equipment; • Locate all stationary noise-generating equipment, such as air compressors and portable power generators, as far away as possible from adjacent land uses; • Locate staging areas and construction material areas as far away as possible from adjacent land uses; • Prohibit all unnecessary idling of internal combustion engines; • Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem are implemented. • Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction.
Transportation	**Transportation Demand Management (TDM).** Pursuant to Chapter 18.25 of the City of San Carlos Municipal Code and San Mateo County Congestion Management Program Land Use Implementation Policy (C/CAG TDM Policy), a Transportation Demand Management Plan shall be implemented for the life of the project as presented to and approved by the Planning Commission. The owner and/or future tenants shall be responsible for supplying Planning Staff with the contact information for the Designated TDM Contact person. A report documenting the TDM activities undertaken and their results shall be submitted to the Community Development Director annually at the responsibility of the applicant. The Director may impose reasonable changes to assure the program's objectives will be met. The owner and/or future tenants shall be responsible for ensuring that C/CAG TDM Policy requirements and monitoring and reporting are met. As new more efficient and effective TDM measures become available to reduce vehicle trips, these measures may be included or substituted to

Resource Area/Topic	Standard Condition
	maintain the trip reduction levels described in the Plan. Any such substitutions shall be to the satisfaction of the Community Development Director. Any changes determined to be substantive or inconsistent with the TDM Plan by the Community Development Director shall require review and approval by the Planning Commission. [Note that if a Transportation Management Association (TMA) is established in San Carlos that can serve the project site, it is expected that the property owner shall participate in the TMA as fulfillment of TDM requirements. The level of financial contribution of the participants in the TMA shall be based on an equitable measure such as square footage (or similar metric) as agreed upon by the participants and the City.]

POTENTIALLY SIGNIFICANT IMPACTS REQUIRING MITIGATION

The following is a list of potential project impacts and the mitigation measures recommended to reduce these impacts to a less than significant level. Refer to the Initial Study Checklist section of this document for a more detailed discussion.

Table 2: Project Impacts and Mitigation Measures

Impact	Mitigation Measure
Air Quality, Construction Emissions: Construction of the project would result in emissions and fugitive dust. While the project emissions would be below threshold levels, the Bay Area Air Quality Management District (BAAQMD) considers dust generated by grading and construction activities to be a significant impact associated with project development if uncontrolled and recommends implementation of construction management practices to reduce construction-related emissions and dust for all projects, regardless of comparison to their construction-period thresholds.	
	Mitigation Measure **Air-1: Basic Construction Management Practices.** The project applicant shall demonstrate proposed compliance with all applicable regulations and operating procedures prior to issuance of demolition, building or grading permits, including implementation of the following BAAQMD "Basic Construction Mitigation Measures". 1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. 2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered. 3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. 4. All vehicle speeds on unpaved roads shall be limited to 15 mph. 5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. 6. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.

	7. All trucks and equipment, including their tires, shall be washed off prior to leaving the site. 8. Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel. 9. Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.
Biological Resources, Nesting Birds: Trees in the vicinity of the project site could host the nests of common birds that are protected under the federal Migratory Bird Treaty Act and the California Fish and Wildlife Code, so the following mitigation would be applicable to prevent a "take" of these species under these regulations related to disturbance during nesting.	
	Mitigation Measure **Bio-1: Pre-Construction Nesting Bird Survey.** Initiation of construction activities during the avian nesting season (February 15 through September 15) shall be avoided to the extent feasible. If construction initiation during the nesting season cannot be avoided, pre-construction surveys for nesting birds protected by the Migratory Bird Treaty Act of 1918 and/or Fish and Game Code of California within 100 feet of a development site in the project area shall be conducted within 14 days prior to initiation of construction activities. If active nests are found, a 100-foot buffer area shall be established around the nest in which no construction activity takes place. The buffer width may be modified upon recommendations of a qualified biologist regarding the appropriate buffer in consideration of species, stage of nesting, location of the nest, and type of construction activity based upon published protocols and/or guidelines from the U.S. or California Fish and Wildlife Services (USFWS, CDFW) or through consultation with USFWS and/or CDFW. The biologist may also determine that construction activities can be allowed within a buffer area with monitoring by the biologist to and stoppage of work in that area if adverse effects to the nests are observed. The buffer shall be maintained until after the nestlings have fledged and left the nest. These surveys would remain valid as long as construction activity is consistently occurring in a given area and would be completed again if there is a lapse in construction activities of more than 14 consecutive days during the nesting season.
Cultural and Tribal Cultural Resources, Unknown Resources and Remains: There are no known cultural, tribal cultural, or paleontological resources at the site. However, given the moderate to high potential for unrecorded archeological resources and Native American resources and proposed disturbance of native soils which also have the potential to contain paleontological resources, Mitigation Measures Culture-1, Culture-2, and Culture-3 shall be implemented to address the potential for unexpected discovery of such resources, and GP-MM TRIB-1 would further direct the process in the event discovered resources were determined to be Native American.	
	Mitigation Measures **Culture-1: Further Site Assessment.** Prior to ground disturbance, a qualified consultant shall conduct further archival and field study research to determine the appropriate locations for cultural or tribal cultural resource (historic/archaeological/paleontological/Native American) monitoring during removal of asphalt or concrete, fill, vegetation, or structures. Field study may include, but is not

	limited to, hand auger sampling, shovel test units, or geoarchaeological analyses as well as other common methods used to identify the presence of buried archaeological resources. **Culture-2: Archaeological Sensitivity Training.** In anticipation of discovery of unknown archaeological resources during construction, Archaeological Sensitivity Training shall be carried out by a qualified archaeologist for all personnel who will engage in ground disturbing activities on the site. The training shall be conducted at the start of construction and prior to ground disturbance. The training shall include suitable photographic materials showing the kinds of artifacts and evidence of prehistoric archaeological sites likely to be found in the area, as well as written and verbal descriptions for archaeological resources and signs of potential archaeological discovery. The training shall also include written materials describing what to do in the event of a discovery, or suspected discovery of archaeological resource. **Culture-3: Protection of Accidentally Discovered Cultural Resources.** In the event that any previously undiscovered cultural resource (historic/ archaeological/paleontological/Native American) are uncovered during ground disturbing activities, all such activity shall cease until these resources have been evaluated by a qualified consultant and specific measures can be implemented to protect these resources in coordination with the City and in accordance with Sections 21083.2 and/or 21084.1 of the California Public Resources Code **GP-MM TRIB-1: Consider all Native American Archaeological Discoveries to be Significant Resources.** All Native American artifacts (tribal finds) shall be considered as a significant Tribal Cultural Resource, pursuant to PRC 21074 until the lead agency has enough evidence to make a determination of significance. The City shall coordinate with an archaeologist who meets the U.S. Secretary of the Interior's Professional Qualifications, as well as an appropriate tribe or tribes, as determined by the NAHC, to develop an appropriate treatment plan for the resources. The plan may include implementation of archaeological data recovery excavations to address treatment of the resource along with subsequent laboratory processing and analysis. An archaeological report shall be written detailing all archaeological finds and submitted to the City and the Northwest Information Center.
Hazardous Materials, Site Disturbance: The site is impacted by contamination from historic and adjacent uses at levels below the need for regulatory oversight, mostly due to the historic use of the site as a commercial fueling facility. The main contamination of concern is total petroleum hydrocarbons in the soil and groundwater. While the project does not propose subterranean levels, construction activities including demolition, site preparation, and utility trenching would be expected to disturb site soils. Irrespective of the presence of known contamination at a site, a Site Management Plan and health and safety measures, as outlined in Haz-1, would mitigate the potential impact from encountering hazardous materials during construction activities.	
	Mitigation Measure **Haz-1: Site Management Plan and Health and Safety Measures.** The applicants shall develop and implement a Site Mitigation Plan and relevant contractor health and safety measures to provide procedures and protocols during construction in the event of a new discovery of previously unknown impacts such as impacted soil, underground storage tanks, or other underground features during site disturbance.

Noise and Vibration, Construction Vibration: Because of the proximity of adjacent buildings, there is the possibility for vibrations from construction equipment to damage their structures, that would be mitigated through construction vibration reduction and monitoring as outlined in Noise-1.	
	Mitigation Measure **Noise-1: Construction Vibration Reduction and Monitoring.** Wherever feasible, operation of vibration inducing equipment shall be avoided within the distance to existing buildings specified below. Clam shovel drop – 18 feet (ft) Hydromill (slurry wall) in soil – 1 ft Hydromill (slurry wall) in rock – 2 ft Vibratory Roller – 19 ft Hoe Ram – 9 ft Large bulldozer – 9 ft Caisson drilling – 9 ft Loaded trucks – 8 ft Jackhammer – 4 ft Small bulldozer - <1 ft If this equipment must operate closer to existing buildings than specified above, a vibration monitoring plan shall be prepared, submitted to the City, and implemented to monitor construction vibration at the nearest structures, including at a minimum the following: • A list of all heavy construction equipment to be used for this project known to produce high vibration levels (e.g., tracked vehicles, vibratory compaction, jackhammers, hoe rams, clam shovel drop, and vibratory roller, etc.). • An indication of what efforts will be implemented for reducing vibration levels below the thresholds, such as location of equipment away from adjacent building as possible and use of alternative methods or equipment that would produce less vibration. • A designated contact responsible for registering and investigating claims of excessive vibration. The contact information of such person shall also be clearly posted on the construction site. Any damage to adjacent buildings shall be addressed by the applicant team. • Document conditions at all structures located within 20 feet of construction prior to, during, and after vibration-generating construction activities. Perform a photo survey, elevation survey, and crack monitoring survey prior to any construction activity, at the end of each phase of construction, and after project completion, and shall include internal and external crack monitoring in structures, settlement, and distress, and shall document the condition of foundations, walls and other structural elements in the interior and exterior of said structures. If vibration generated by project construction results in damage to adjoining structures, repairs shall be completed to restore structures to pre-construction conditions. Examples of efforts to minimize vibration could include use of a smaller vibratory roller, such as the Caterpillar model CP433E vibratory compactor, and use of alternative methods for breaking up existing pavement, such as a pavement grinder, instead of dropping heavy objects, when work must occur within 20 feet of the adjacent buildings.

LEAD AGENCY DETERMINATION

On the basis of this evaluation, it can be concluded that:

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

☒ Although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because mitigation measures to reduce these impacts will be required of the project. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ The proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

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

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

INITIAL STUDY CHECKLIST

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

Environmental factors that may be affected by the project are listed alphabetically below. Factors marked with an "X" (☒) were determined to be potentially affected by the project, involving at least one impact that is a potentially significant impact as indicated by the Checklist on the following pages. Unmarked factors (☐) were determined to be not significantly affected by the project, based on discussion provided in the Checklist, including the application of mitigation measures.

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

There are no impacts that would remain significant with implementation of the identified mitigation measures.

EVALUATION OF ENVIRONMENTAL EFFECTS

The Checklist portion of the Initial Study begins below, with explanations of each CEQA issue topic. Four outcomes are possible, as explained below.

1. A "no impact" response indicates that no action that would have an adverse effect on the environment would occur due to the project.

2. A "less than significant" response indicates that while there may be potential for an environmental impact, there are standard procedures or regulations in place, or other features of the project as proposed, which would limit the extent of this impact to a level of "less than significant."

3. Responses that indicate that the impact of the project would be "less than significant with mitigation" indicate that mitigation measures, identified in the subsequent discussion, will be required as a condition of project approval in order to effectively reduce potential project-related environmental effects to a level of "less than significant."

4. A "potentially significant impact" response indicates that further analysis is required to determine the extent of the potential impact and identify any appropriate mitigation. If any topics are indicated with a "potentially significant impact," these topics would need to be analyzed in an Environmental Impact Report.

1. AESTHETICS Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	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) 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 points.) 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?			☒	

Under CEQA Section 21099(d), "Aesthetic… impacts of a residential, mixed-use residential, or employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment."

Accordingly, aesthetics is no longer considered in determining if a project has the potential to result in significant environmental effects for projects that meet all three of the following criteria:

1. The project is in a transit priority area. CEQA Section 21099(a)(7) defines a "transit priority area" as an area within one-half mile of an existing or planned major transit stop. A "major transit stop" is defined in CEQA Section 21064.3 as a rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the AM and PM peak commute periods.

2. The project is on an infill site. CEQA Section 21099(a)(4) defines an "infill site" as either (1) a lot within an urban area that was previously developed; or (2) a vacant site where at least 75 percent of the site perimeter adjoins (or is separated by only an improved public right-of-way from) parcels that are developed with qualified urban uses.

3. The project is residential, mixed-use residential, or an employment center. CEQA Section 21099(a)(1) defines an "employment center" as a project situated on property zoned for commercial uses with a floor area ratio of no less than 0.75 and located within a transit priority area.

The proposed project meets all three of the above criteria because the project (1) is in a transit priority area due to the location of the El Camino Real transit corridor (a major transit stop) and San Carlos

Caltrain Station, both of which are within the one-half mile threshold distance from the project site; (2) is on an infill site that has been previously developed and is fully adjoined by urban uses and public rights-of-way within San Carlos; and (3) is an employment center with a projected floor area ratio (FAR) of 2.016. Thus, this section does not consider aesthetics, including the aesthetic impacts of light and glare, in determining the significance of project impacts under CEQA.

Nevertheless, the City recognizes that the public and decision makers may be interested in information about the aesthetic effects of a proposed project; therefore, the information contained in this section related to aesthetics, light, and glare is provided solely for informational purposes and is not used to determine the significance of environmental impacts pursuant to CEQA.

a) Scenic Vistas

The City has not officially designated any scenic vistas. However, San Carlos General Plan Land Use Element Policies LU-8.19 and LU-9.9 encourage development to minimize obstruction of scenic vistas from major public streets and open spaces, and design review pursuant to Sections 18.29.030 and 18.29.060 of the City's Municipal Code requires new development to respect existing public scenic vistas.

The project site and immediately surrounding areas are generally flat and do not afford substantial long-distance views across the site that could be considered scenic vistas. It is possible the project would change the character of some views from nearby commercial uses and could be visible in some mid-range views from the Greater East San Carlos neighborhood and views from more distant hillside residences, but these views would not qualify as scenic vistas or otherwise protected views nor are these uses from which views would necessarily be protected.

While the project proposes buildings that would be taller than the one- and two-story buildings currently at the site and would be visible from more locations, the project would not substantially interfere with any public scenic vistas.

As noted above, this topic is being discussed as an informational item only because the CEQA Guidelines have determined this type of project would not have a significant impact in this regard. This informational discussion is consistent with the statutory conclusion that the project impact would not be significant.

b) Scenic Highways

There is no designated or eligible State Scenic Highway in the vicinity of the project nor is the project site adjacent to any scenic roadway identified in the City's Focused General Plan Update EIR.[5, 6]

As noted above, this topic is being discussed as an informational item only because the CEQA Guidelines have determined this type of project would not have a significant impact in this regard. This informational discussion is consistent with the statutory conclusion that the project impact would not be significant.

[5] California Department of Transportation, State Scenic Highway Mapping System, http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/scenic_hwy.htm

[6] City of San Carlos, Focused General Plan Update EIR, October 2022, p. 4.1-3.

c) Visual Character

The project site is currently developed with industrial uses, is zoned and designated for commercial and industrial development, and is surrounded by other sites with industrial/commercial zoning and development.

While the project would increase the height of development at the site (from one- and two- story buildings to four- and five-stories with rooftop projections), increased height would not of itself be considered necessarily negative or a substantial degradation under CEQA.

The project site, as well as the adjacent properties on the north, south, and east sides, are all marked by the City as potential sites for new projects, and are being guided by the new East Side Innovation District Vision Plan. [7] The design review process required by Section 18.116.130 of the Zoning Code requires architectural review for all new development in San Carlos prior to the issuance of a building permit. This review process is intended to ensure that all new development is aesthetically appropriate in scale and design, and that new buildings maintain the character of the surrounding district. Policy LU-6.6 of the General Plan encourages new development on the East Side to feature high quality architecture that reinforces the character of the area. As detailed in **Standard Condition: Exterior Materials**, included in Table 1, any significant changes to colors or materials used on the exterior of the project from those included in the application materials must be reviewed and approved by the Planning Commission. Also as included in Table 1, **Standard Condition: Signage**, any proposed signage must comply with Municipal Code Chapter 18.22, along with approval by the Planning Commission if the signage is visible from U.S. Highway 101.

As noted above, this topic is being discussed as an informational item only because the CEQA Guidelines have determined this type of project would not have a significant impact in this regard. This informational discussion is consistent with the statutory conclusion that the project impact would not be significant. Additionally, the City would review the proposed design as part of the approval process, which can include considerations beyond those strictly environmental-focused.

d) Light and Glare

Sources of light and glare in the project vicinity include interior and exterior building lights and light from parking lots. Light and glare associated with vehicular traffic along major thoroughfares in the area also create sources of glare. The existing level and sources of light and glare are typical of those in a developed urban setting.

Redevelopment of the project site has the potential to create additional light or glare. The project application is required to include a lighting plan and photometric plan as detailed in **Standard Condition: Exterior Lighting Plan**, included in Table 1, that demonstrates that the project would meet the City's standards that limit the amount of light that can spill over to other properties through the use of downcast lighting fixtures. With adherence to applicable regulations and policies, the project would have a less than significant impact on light and glare in San Carlos.

The project would result in development and lighting treatments typical of the existing commercial and industrial urban settings and consistent with lighting standards to minimize lighting on adjacent

[7] City of San Carlos, East Side Innovation District Vision Plan, October 25, 2021, p. 6, available at https://www.cityofsancarlos.org/city_hall/departments_and_divisions/community_development/planning/plans_and_standards/east_side_innovation_district_vision_plan.php.

areas and would therefore not result in new sources of substantial adverse light or glare. As noted above, this topic is being discussed as an informational item only because the CEQA Guidelines have determined this type of project would not have a significant impact in this regard. This informational discussion is consistent with the statutory conclusion that the project impact would not be significant.

2. AGRICULTURE AND FORESTRY RESOURCES In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	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?				☒

a-e) Agriculture and Forestry Resources

The project site is located in a developed urban area near a highway. No part of the site is zoned for or currently being used for agricultural or forestry purposes or is subject to the Williamson Act. [8] There would be ***no impact*** to agricultural and forestry resources as a result of this project.

[8] City of San Carlos, Focused General Plan Update EIR, October 2022, p. 6-2.

3. AIR QUALITY Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?			☒	
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		☒		
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?			☒	

This section utilizes information from the Air Quality & Greenhouse Gas Assessment prepared for this analysis by Illingworth & Rodkin, Inc., and dated April 21, 2023, revised September 5, 2024, included in full as Attachment A.

a) Air Quality Plan

Projects within San Carlos are subject to the Bay Area Clean Air Plan, first adopted by the Bay Area Air Quality Management District (BAAQMD) (in association with the Metropolitan Transportation Commission and the Association of Bay Area Governments) in 1991 to meet state requirements and those of the Federal Clean Air Act. The plan is meant to demonstrate progress toward meeting the ozone standards, but also includes other elements related to particulate matter, toxic air contaminants, and greenhouse gases. The latest update to the plan, adopted in April 2017, is the Bay Area 2017 Clean Air Plan.

BAAQMD recommends analyzing a project's consistency with current air quality plan primary goals and control measures. The impact would be presumed significant if the project would conflict with or obstruct attainment of the primary goals or implementation of the control measures.

The primary goals of the Bay Area 2017 Clean Air Plan are:

- Attain all state and national air quality standards
- Eliminate disparities among Bay Area communities in cancer health risk from toxic air contaminants
- Reduce Bay Area greenhouse gas emissions 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050 (This standard is addressed in Section 8: Greenhouse Gas Emissions.)

The project would be required to comply with all applicable rules and regulations related to emissions and health risk and would not result in a new substantial source of emissions or toxic air contaminants (see items b-d below) or otherwise conflict with the primary goals of the 2017 Clean Air Plan.

The project would be consistent with all rules and regulations related to construction activities and the proposed development would meet current standards of energy and water efficiency (Energy Control Measure EN1 and Water Control Measure WR2) and recycling and green waste requirements (Waste Management Control Measures WA3 and WA4) and does not conflict with applicable control measures aimed at improving access/connectivity for bicycles and pedestrians (Transportation Control Measure TR9) or any other control measures. The project is considered urban infill, would be located near employment centers, and would be located near transit with regional connections.

The project, therefore, would be consistent with the Clean Air Plan and have a ***less than significant*** impact in this regard.

b) Air Quality Standards/Criteria Pollutants

Ambient air quality standards have been established by state and federal environmental agencies for specific air pollutants most pervasive in urban environments. These pollutants are referred to as criteria air pollutants because the standards established for them were developed to meet specific health and welfare criteria set forth in the enabling legislation and include ozone precursors including nitrogen oxides and reactive organic gasses (NOx and ROG), carbon monoxide (CO), and suspended particulate matter (PM_{10} and $PM_{2.5}$). The Bay Area is considered "attainment" for all of the national standards, with the exception of ozone. It is considered "nonattainment" for State standards for ozone and particulate matter.

The most recent, 2022 version of the BAAQMD Guidelines was issued in April 2023. The BAAQMD Guidelines present project-level thresholds of significance for criteria air pollutants for which the region is in non-attainment. While contribution from individual projects would not by themselves result in non-attainment status, these BAAQMD thresholds are the levels at which BAAQMD has determined that an individual project's contribution to the cumulative impact (non-attainment) is cumulatively considerable.[9]

Project-related air quality impacts fall into two categories: short-term impacts that would occur during construction of the project and long-term impacts due to project operation. BAAQMD's adopted thresholds are average daily emissions during construction or operation of 54 pounds per day or operational emissions of 10 tons per year of NOx, ROG or $PM_{2.5}$ and 82 pounds per day or 15 tons per year of PM_{10}.

Construction and operational emissions for the project were modeled using the California Emissions Estimator Model ("CalEEMod") version 2022.1.1. Project details were entered into the model including the proposed land uses, Transportation Demand Management (TDM) program trip reductions, Peninsula Clean Energy carbon intensity factors, demolition/earthwork volumes, and construction schedule. Model defaults were otherwise used. The CARB EMission FACtors 2021

[9] Bay Area Air Quality Management District, issued April 2023, 2022 California Environmental Quality Act Air Quality Guidelines, available at https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines.

(EMFAC2021) model was used to predict emissions from construction traffic, which includes worker travel, vendor trucks, and haul trucks. The CalEEMod inputs and results and EMFAC inputs are included in Attachment A.[10]

Construction Emissions

Construction of the project would involve demolition, site preparation, building erection, paving, and finishing and landscaping. Although these construction activities would be temporary, they would have the potential to cause both nuisance and health-related air quality impacts.

BAAQMD's adopted thresholds are average daily emissions during construction of 54 pounds per day of NOx, ROG or $PM_{2.5}$ and 82 pounds per day of PM_{10}.

The results from emissions modeling for construction are summarized in **Table 3** (and included in full in Attachment A).

Table 3: Regional Air Pollutant Emissions for Construction

Description	ROG	NOx	PM_{10}[1]	$PM_{2.5}$[1]
Average Daily Emissions (lbs/day)	8.25	26.58	0.93	0.86
BAAQMD Daily Thresholds (lbs/day)	54	54	82	54
Exceeds Threshold?	*No*	*No*	*No*	*No*

[1] Applies to exhaust emissions only

Source: Illingworth & Rodkin 2024, Table 3 in Attachment A.

Construction-period emissions levels are below BAAQMD thresholds presented in Table 3. However, BAAQMD considers dust generated by grading and construction activities to be a significant impact associated with project development if uncontrolled and recommends implementation of construction mitigation measures to reduce construction-related emissions and dust for all projects, regardless of comparison to their construction-period thresholds. These basic construction management practices are included in Mitigation Measure Air-1, below and would further reduce construction-period criteria pollutant impacts.

Mitigation Measure

Air-1: **Basic Construction Management Practices.** The project applicant shall demonstrate proposed compliance with all applicable regulations and operating procedures prior to issuance of demolition, building or grading permits, including implementation of the following BAAQMD "Basic Construction Mitigation Measures".

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

[10] Since completion of the original emissions analysis presented in this report, the size of the project has been reduced by approximately 14.5 to 17 percent (by office R&D floor area or total gross square feet) and the retail portion of the project is no longer being proposed. Construction and operational activities would be reduced by a similar amount and operational emission sources have not moved around the property by any significant amount. Any reanalysis of the project would result in the same or lower emissions than what is presented in this report. As a result, the original analysis is presented here, and the conclusions of the analysis remain valid.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
7. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
8. Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.
9. Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

With implementation of Mitigation Measure Air-1, the impact related to construction-period criteria pollutant impacts would be ***less than significant with mitigation***. Because construction-period emissions would not exceed applicable significance thresholds, additional construction mitigation measures would not be required to mitigate impacts.

Operational Emissions

Emissions from operation of the project could cumulatively contribute to air pollutant levels in the region. These air pollutants include ROG and NOx that affect ozone levels (and to some degree – particulate levels), PM_{10}, and $PM_{2.5}$.

BAAQMD's adopted thresholds are emissions during operations of 54 pounds per day or 10 tons per year of NOx, ROG or $PM_{2.5}$ and 82 pounds per day or 15 tons per year of PM_{10}. Emissions of air pollutants associated with the project were predicted using CalEEMod. This model predicts daily emissions associated with development projects by combining predicted daily traffic activity, including reductions for existing uses and the required TDM program (see Section 17: Transportation and Attachment E), associated with the different land use types, with emission factors from the State's mobile emission factor model (i.e., EMFAC2021). Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. The earliest full year of operation was modeled as 2027. Other sources of operational emissions include gas used for space conditioning systems, two stand-by emergency diesel generators, two cooling towers, water/wastewater use, and solid waste generation.

Daily and annual operational air emissions predicted with build-out of the proposed project are reported in **Table 4** and compared against BAAQMD thresholds.

Table 4: Regional Air Pollutant Emissions for Operational Period[11]

Description	ROG	NOx	PM_{10}	$PM_{2.5}$
Project Annual Emissions (tons/year)	3.81	1.95	1.93	0.39
Existing Use Emissions (tons/year)	0.84	0.43	0.15	0.05
Net Total Operational Emissions (tons/year)	2.96	1.52	1.78	0.34
BAAQMD Thresholds (tons/year)	10	10	15	10
Exceeds Annual Threshold?	*No*	*No*	*No*	*No*
Project Net Daily Operational Emissions (lbs/day)	16.28	8.34	9.73	1.88
BAAQMD Thresholds (lbs/day)	54	54	82	54
Exceeds Daily Threshold?	*No*	*No*	*No*	*No*

Source: Illingworth & Rodkin, 2024, Table 4 in Attachment A.

As summarized in Table 4, project annual and daily emissions are below relevant significance thresholds established by BAAQMD for operational air pollutant emissions.

As vehicular emissions have improved over the years, carbon monoxide hotspots have become less of a concern. BAAQMD presents traffic-based criteria as screening criteria for carbon monoxide impacts, as follows.[12] The project would implement a TDM program per San Carlos Municipal Code to reduce project trips. The project is therefore consistent with the Congestion Management Plan (CMP) of the San Mateo City/County Association of Governments (C/CAG), which is the first threshold. The other two screening thresholds are whether the project would increase traffic volumes at affected intersections to more than 44,000 vehicles per hour or to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (such as a tunnel or underground parking garage). These hourly traffic volumes are very high and much higher than those in the vicinity. For example, El Camino Real is one of the highest volume roadways in the vicinity and is projected to carry approximately 31,000 vehicles *per day*. Spread over a day, that would be substantially fewer than 44,000 vehicles *per hour*. The project's parking garage would have expected parking for 694 vehicles, which is again substantially fewer than the threshold of 24,000 vehicles per hour. Therefore, conditions in and around the project would be well below screening levels and the project would not result in individually or cumulatively significant impacts from CO emissions.

The project is below significance thresholds established by BAAQMD and meets localized CO screening criteria. As a result, the project would have a ***less than significant*** impact on regional air quality during the operational period.

c) Sensitive Receptors

A toxic air contaminant (TAC) is defined by California law as an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present

[11] As footnoted above, due to the revisions to the project since the modeling and resultant lower number of trips, the emissions reported in this table are conservatively high but were not re-modeled at lower operational emissions numbers because they are already all below significance threshold levels. See Attachment A.

[12] Bay Area Air Quality Management District, issued April 2023, 2022 California Environmental Quality Act Air Quality Guidelines, p. 4-5, available at https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines.

or potential hazard to human health. In the Bay Area, a number of urban or industrialized communities exist where the exposure to TACs is relatively high compared to other communities. The project site is not within a BAAQMD-designated impacted or overburdened community.[13] BAAQMD's adopted thresholds for the purpose of assessing impacts of a proposed project on exposure of sensitive receptors to risks and hazards in an area that is not an identified impacted community are a project-specific cancer risk exceeding 10 in one million (or cumulative risk of 100 in one million), a non-cancer risk exceeding a Hazard Index of 1.0 (or a cumulative Hazard Index of 10.0), and/or the annual average $PM_{2.5}$ concentration exceeding 0.3 µg/m^3 (or 0.8 µg/m^3 cumulatively).

Certain population groups, such as children, the elderly, and people with health problems, can be particularly sensitive to air pollution. With respect to air pollutants, examples of sensitive receptors include health care facilities, retirement homes, school and playground facilities, and residential areas. The project itself is not considered a sensitive receptor. The closest sensitive receptors to the project site are the residences about 450 feet to the northwest, as well as The Children's Place Preschool and Little Learners Preschool, both located about 800 feet or more from the project site. Risks are reported for the maximally exposed individual, which is the sensitive receptor identified as the most impacted. Age sensitivity factors are applied to address increased risks depending on age.

A community health risk assessment was performed using the recommended Environmental Protection Agency dispersion model AERMOD to factor in receptor locations and meteorological conditions as included in full in Attachment A and summarized below.

Construction activity that uses traditional diesel-powered equipment results in the emission of diesel particulate matter including fine particulate matter, which is considered a TAC. The generation of these emissions would be temporary, confined to the construction-period, and are factored into the community risk prior to the operational period. Construction-period and operational risk are summarized in **Table 5**.

Operational emissions from the proposed emergency generators and cooling tower would also contribute to community risk. The project proposes to include two stand-by emergency diesel generators to power both buildings in the event of a power failure. Diesel emergency generators emit diesel particulate matter (DPM) and are subject to BAAQMD permitting. Other than under emergency conditions, emergency generators would be operated primarily for testing and maintenance purposes, which is typically less than 1 hour at a time and would be limited under BAAQMD permitting to a total of up to 50 hours per year. The project also proposes cooling towers on the roof of both buildings. A cooling tower is an air-conditioning system that uses water and air as heat exchangers to cool a building. Particulate matter emissions from such evaporative cooling can occur because emitted water droplets can contain dissolved solids that can become small particulate matter (i.e., PM_{10} and $PM_{2.5}$) emissions. The cooling towers are not powered by a diesel engine, so no DPM emissions would be produced.

The project site is currently operating as a ready-mix concrete manufacturing plant, which is a source of $PM_{2.5}$ emissions associated with the pulverization of raw material, kiln burning, clinker production and storage, and other processes at the facility. The results of modeling showed that the

[13] Bay Area Air Quality Management District, Impacted Communities Map and Overburdened Communities Map, available at: https://www.baaqmd.gov/about-air-quality/interactive-data-maps

existing CEMEX use exceeds the threshold for single-source production of annual $PM_{2.5}$, 0.67 µg/m^3 vs. the threshold of 0.3 µg/m^3 at the closest sensitive receptor.

Table 5: Construction and Operation Risk (Unmitigated)

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ (µg/m^3)	Hazard Index
Project Construction (Years 0-3)	6.39	0.14	0.01
Project Generator Operation (Years 3-30)	0.09	<0.01	<0.01
Project Cooling Towers (Years 3-30)	--	0.01	--
Total/Maximum Project Risk, Unmitigated	6.48	0.16	0.01
Existing Use (CEMEX)	0.36	0.67	0.01
Total/Maximum w/ Net Change, Unmitigated	6.21	-0.51	-0.01
BAAQMD Single-Source Threshold	10	0.3	1.0
Exceed Threshold?	No	No	No

Notes: Risks in this table are reported for the maximally exposed individual, factoring in age-sensitivity.

Source: Illingworth & Rodkin, 2024, Table 5 in Attachment A.

As summarized in Table 5, construction-period project health risks combined with operational period health risks to off-site sensitive receptors would not exceed project-specific threshold levels, and both annual $PM_{2.5}$ and the hazard index would be lower with the proposed project than the existing use.

While specific tenants have not yet been identified, this type of project is also likely to include research laboratories with fume hoods. Laboratory fume hoods would be required to employ appropriate exhaust systems to control any emission of air pollutants. Emissions of air pollutants or TACs are subject to BAAQMD permitting requirements that would require BAAQMD to apply all applicable rules and regulations to limit or control these emissions. Regulation 2, Rule 1: General Requirements, and Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants would apply to any potential emissions from these sources. BAAQMD's risk policy is to not issue a permit to any source that would cause a cancer risk of greater than 10 chances per million. Therefore, although the specifics of the laboratory and fume hood emissions is not quantifiable at this time, the quantities that would be emitted would by regulation remain below applicable threshold levels and the project-specific community health impact would be ***less than significant***.

Community health risk assessments typically also look at all substantial sources of TACs located within 1,000 feet of the project site (i.e., influence area). These sources can include railroads, freeways or highways, high-volume surface streets, and stationary sources permitted by BAAQMD.

The project vicinity includes three high volume roadways with average daily traffic (ADT) above 10,000 (El Camino Real, Industrial Road and Commercial Steet), Caltrain and freight rail, and an additional twelve stationary sources. Therefore, an additional cumulative community risk analysis is warranted. The cumulative cancer risk, hazard index, and annual $PM_{2.5}$ concentrations are summarized in **Table 6**.

Table 6: Cumulative Community Risk (Unmitigated)

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Total/Maximum Project Risk Net Change (Years 0-30)	6.21	-0.51	-0.01
Additional Cumulative Sources			
El Camino Real, ADT 31,212	1.49	0.08	<0.01
Industrial Road, ADT 14,788	0.16	0.01	<0.01
Commercial Street, ADT 13,467	0.18	0.01	<0.01
Caltrain and freight rail	59.64	0.11	-
Other stationary sources	2.64	<0.06	<0.09
All Cumulative Sources	70.32	-<0.24	<0.11
BAAQMD Cumulative Source Threshold	100	0.8	10.0
Exceed Threshold?	*No*	*No*	*No*

Note: Risks in this table are reported for the maximally exposed individual, factoring in age-sensitivity.

Source: Illingworth & Rodkin, 2024, Table 6 in Attachment A

As summarized in Table 6, the cumulative source thresholds for cancer risk, annual $PM_{2.5}$ concentration and hazard risks are not exceeded for the maximally exposed individual. It can also be noted that the largest single source cancer risk is Caltrain, which recently implemented electrification, subsequently lowering cumulative risk. The project's impact related to exposure of sensitive receptors would be ***less than significant***.

d) Other Emissions

Odors from construction activities are associated with construction equipment exhaust and the application of asphalt and architectural coatings. Odors emitted from construction activities would be temporary and not likely to be noticeable much beyond a project site's boundaries. The proposed office/R&D use is consistent with the type of development in the area and is not a use type considered by BAAQMD to be a source of substantial objectionable odors.[14] Therefore, the potential for objectionable odor impacts to adversely affect a substantial number of people is ***less than significant***.

[14] Bay Area Air Quality Management District, issued April 2023, 2022 California Environmental Quality Act Air Quality Guidelines, Table 5-4, available at https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines.

4. BIOLOGICAL RESOURCES Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	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 Game 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, or regulations, or by the California Department of Fish and Game 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 native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			☒	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				☒

a, b) Special Status Species and Habitat

The project site consists entirely of developed land and has been under industrial or commercial usage for many decades. It is situated within an urbanized area and is surrounded on all sides by commercial or transportation uses. As would be expected for a project in such conditions, the Focused General Plan Update EIR identified no biological habitat or occurrences of sensitive species on or adjacent to the project site.[15] As part of their research on the project site for the applicant, Ramboll US Consulting, Inc., requested an EDR NEPASearch Map Report, which reported occurrences of two endangered species within 1/8 -mile from the project site: the Santa Cruz

[15] City of San Carlos, Focused General Plan Update EIR, October 2022, Chapter 4.3: Biological Resources.

kangaroo rat and the San Francisco garter snake.[16] The Focused General Plan Update EIR does not list the kangaroo rat as a potential special-status species within the San Carlos city limits, and it also does not indicate any sensitive habitat areas near the project site. The project site and adjacent properties do not support the habitat for kangaroo rats, who burrow underground in sandy soils associated with grasslands or chaparral habitats,[17] nor garter snakes, who typically reside in densely vegetated ponds near exposed hillsides.[18]

The site and its vicinity have little or no habitat value and would not have a substantial adverse effect, either directly or through habitat modifications, on special status species, except for possibly migrating birds, as discussed below.

That being said, the federal Migratory Bird Treaty Act and Fish and Game Code of California protect special-status bird species year-round, as well as their eggs and nests during the nesting season. The list of migratory birds includes almost every native bird in the United States. On-site or adjacent trees could be used by protected birds. Construction activities could adversely affect nesting birds protected by the Migratory Bird Treaty Act and/or Fish and Game Code of California.

Mitigation Measure

Bio-1: **Pre-Construction Nesting Bird Survey.** Initiation of construction activities during the avian nesting season (February 15 through September 15) shall be avoided to the extent feasible. If construction initiation during the nesting season cannot be avoided, pre-construction surveys for nesting birds protected by the Migratory Bird Treaty Act of 1918 and/or Fish and Game Code of California within 100 feet of a development site in the project area shall be conducted within 14 days prior to initiation of construction activities. If active nests are found, a 100-foot buffer area shall be established around the nest in which no construction activity takes place. The buffer width may be modified upon recommendations of a qualified biologist regarding the appropriate buffer in consideration of species, stage of nesting, location of the nest, and type of construction activity based upon published protocols and/or guidelines from the U.S. or California Fish and Wildlife Services (USFWS, CDFW) or through consultation with USFWS and/or CDFW. The biologist may also determine that construction activities can be allowed within a buffer area with monitoring by the biologist to and stoppage of work in that area if adverse effects to the nests are observed. The buffer shall be maintained until after the nestlings have fledged and left the nest. These surveys would remain valid as long as construction activity is consistently occurring in a given area and would be completed again if there is a lapse in construction activities of more than 14 consecutive days during the nesting season.

With implementation of Mitigation Measure Bio-1, which requires avoidance of nesting season or a nesting survey and buffers from any nests as appropriate, the impact related to special-status and non-status bird species would be ***less than significant with mitigation***.

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[16] Ramboll US Consulting, Inc, Phase I Environmental Site Assessment 1026 Bransten Road, March 8, 2022, available as part of the project files.

[17] The Santa Cruz Mountains Bioregional Council, *Mammal Species at Risk* available at: http://www.scmbc.org/mammal-species/

[18] City of San Carlos, Focused General Plan Update EIR, October 2022, Chapter 4.3: Biological Resources.

c, d) Wetlands and Wildlife Corridors

The proposed project site is currently developed and does not contain wetland areas. It is an urban area that does not have the potential to be used as a significant wildlife corridor. The project has ***no impact*** on wetlands and wildlife corridors.

e) Local Policies and Ordinances

The project would have a significant environmental impact if it were to conflict with any local policies or ordinances protecting biological resources. San Carlos Municipal Code Sections 18.18.070 and 18.41.020 related to protected trees are applicable to the site, as detailed in **Standard Condition: Compliance with Protected Tree Ordinance**, included in Table 1.

The San Carlos Municipal Code sets forth regulations for "protected trees" which are defined as "heritage" or "significant" trees. Removal of any protected tree requires approval by the Community Development Director. In granting a tree removal permit, the Director may attach reasonable conditions to ensure compliance with the content and purpose of this chapter, such as, but not limited to, requiring replacement of trees removed with plantings acceptable to the Director.

There are currently 46 trees on the project site, with 20 qualifying as protected trees. 25 trees would be removed during demolition activities, including 1 tree that qualifies as protected under the City's Municipal Code, an Italian cypress (*Cupressus sempervirens*), and would require appropriate approval for removal. A total of 113 new trees are proposed to be planted on site as part of the proposed development, for a total of 134 trees.

The removal of the trees at the site would not intrinsically be considered an environmental impact because the trees proposed for removal are neither endangered nor special-status from a state and federal biological standpoint, and implementation of requirements in Standard Condition: Compliance with Protected Tree Ordinance would ensure consistency with applicable plans and policies. Therefore, the impacts related to local biological policy conflicts would be ***less than significant***.

f) Conservation Plans

There is no Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan that covers the project site. The project would result in ***no impact*** related to conflict with conservation plans.

5. CULTURAL RESOURCES Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Public Resources Section 15064.5?			☒	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Public Resources Section 15064.5?		☒		
c) Disturb any human remains, including those interred outside of formal cemeteries?			☒	

a) Historic Resources

A records search was performed by the Northwest Information Center (included in Attachment B), which indicated that the project site has no recorded historic buildings or structures listed with the historical registries consulted. This is consistent with the known history of the site, which indicates prior removal of older buildings (see Section 9: Hazards and Hazardous Materials), and the City of San Carlos Focused General Plan Update EIR, which did not list any historic resources or districts at or adjacent to this site.[19]

Therefore, the project would not remove or impact significant historic resources, and the impact on historic resources would be ***less than significant***.

b) Archaeological Resources

The project site has been previously developed and is predominantly covered by paving and structures.

There are only a few known archaeological sites in the city, located primarily near the banks of Cordilleras and Pulgas Creeks (located over 4,600 feet and 1,300 feet from the project site, respectively).[20] A records search of the Northwest Information Center (included in Attachment B) reported that prior to development the site was owned by Congressman T. G. Phelps, leading to a moderate potential for historic-period archeological resources to be found during ground disturbance. Moreover, due to the project site location and characteristics of the area, the potential for discovery of unrecorded Native American archaeological resources is considered moderate to high. Native American resources are discussed further in the Section 18: Tribal Cultural Resources.

[19] City of San Carlos, Focused General Plan Update EIR, October 2022, p. 4.4-2.

[20] City of San Carlos, Focused General Plan Update EIR, October 2022, p. 4.4-3.

Given the moderately high potential for unrecorded archeological resources and Native American resources, Mitigation Measures Culture-1, Culture-2, and Culture-3 shall be implemented.

Mitigation Measures

Culture-1: **Further Site Assessment.** Prior to ground disturbance, a qualified consultant shall conduct further archival and field study research to determine the appropriate locations for cultural or tribal cultural resource (historic / archaeological / paleontological / Native American) monitoring during removal of asphalt or concrete, fill, vegetation, or structures. Field study may include, but is not limited to, hand auger sampling, shovel test units, or geoarchaeological analyses as well as other common methods used to identify the presence of buried archaeological resources.

Culture-2: **Archaeological Sensitivity Training.** In anticipation of discovery of unknown archaeological resources during construction, Archaeological Sensitivity Training shall be carried out by a qualified archaeologist for all personnel who will engage in ground disturbing activities on the site. The training shall be conducted at the start of construction and prior to ground disturbance.

The training shall include suitable photographic materials showing the kinds of artifacts and evidence of prehistoric archaeological sites likely to be found in the area, as well as written and verbal descriptions for archaeological resources and signs of potential archaeological discovery. The training shall also include written materials describing what to do in the event of a discovery, or suspected discovery of archaeological resource.

Culture-3: **Protection of Accidentally Discovered Cultural Resources.** In the event that any previously undiscovered cultural resource (historic/archaeological/ paleontological/Native American) are uncovered during ground disturbing activities, all such activity shall cease until these resources have been evaluated by a qualified consultant and specific measures can be implemented to protect these resources in coordination with the City and in accordance with Sections 21083.2 and/or 21084.1 of the California Public Resources Code.

Implementation of requirements in Mitigation Measures Culture-1, Culture-2, and Culture-3 would reduce the impacts associated with possible disturbance of unidentified cultural resources at the project site to a level of ***less than significant with mitigation***.

c) Human Remains

There are no known human remains that would be disturbed by the proposed project. If human remains are found during construction activities at the project site, they would be handled according to relevant regulations as detailed in **Standard Condition: Protection of Human Remains**, included in Table 1. Therefore, the impacts related to human remains would be ***less than significant***.

6. ENERGY Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	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?			☒	

a, b) Energy

The threshold of significance related to energy use is whether the project would result in wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct state or local plans for renewable energy or energy efficiency.

The project would include short-term demolition and construction activities that would consume energy, primarily in the form of diesel fuel (e.g., mobile construction equipment), gasoline (e.g., vehicle trips by construction workers), and electricity (e.g., power tools). Energy would also be used for conveyance of water used in dust control, transportation and disposal of construction waste, and energy used in production and transport of construction materials.

During operation, energy demand from the project would include fuel consumed by employee and delivery vehicles, and electricity consumed by the proposed structures, including lighting, research equipment, water conveyance, and air conditioning. Natural gas may be used in laboratories and heating.

Energy usage for the project was calculated based on energy usage and vehicle miles travelled information from the emissions modeling and is included in full in Attachment C.[21] **Table 7** shows a summary of the project's estimated total construction energy consumption and annual operational energy consumption.

As summarized in **Table 7**, project construction would require what equates to 35,469 MMBtu[22] of energy use. The project would implement construction management practices per Mitigation Measure Air-1 (see Section 3: Air Quality). While focused on emissions and dust reduction, the construction management practices would also reduce energy consumption through anti-idling

[21] Since completion of the original analysis presented in this report, the size of the project has been reduced by approximately 14.5 to 17 percent (for office/R&D floor area or gross square footage) and the retail portion of the project and underground parking is no longer being proposed. Construction and operational activities would be reduced by a similar amount. Any reanalysis of the project would result in the same or lower energy use than what is presented in this report. As a result, the original analysis is presented here, and the conclusions of the analysis remain valid.

[22] MMBtu stands for Metric Million British Thermal Unit. For comparison purposes in this analysis, all forms of energy usage have been converted to MMBtu even though different types of energy would originally be measured in different units. See the energy Calculations in Attachment C for additional details.

measures and proper maintenance of equipment. The project would comply with the 2022 requirements of the California Green Building Standards Code (CALGreen) to divert a minimum of 65 percent of construction and demolition debris. Therefore, the project would not involve the inefficient, wasteful, and unnecessary use of energy during construction, and the project's construction energy consumption.

Table 7: Construction and Operational Energy Usage

Source	Energy Consumption	
	Amount and Units	**Converted to MMBtu**
Construction Energy Use (Total)		
Construction Worker Vehicle Trips (Gasoline)	49,387 gallons	5,422 MMBtu
Construction Equipment and Vendor/Hauling Trips (Diesel)	218,712 gallons	30,407 MMBtu
Total Construction Energy Use		***35,469 MMBtu***
Operational Vehicle Fuel Use (Gross Annual)		
Gasoline	389,201 gallons	42,729 MMBtu
Diesel	54,309 gallons	7,461 MMBtu
Operational Built Environment (Gross Annual)		
Electricity	7.56 GWh	25,781 MMBtu
Natural Gas Usage	8,290,419 kBtu	8,290 MMBtu
Total Gross Annual Operational Energy Use		***84,261 MMBtu***

Note: The energy use reported in this table is gross operational energy use for the proposed project with no reduction to account for operational energy use of existing uses.

Source: Energy Calculations included as Attachment C

When subtracting existing operational fuel and built environment energy use from the project totals above, the total net increase in annual operational energy use would be 70,023 MMBtu (see Attachment C for additional detail).

As detailed in Section 17: Transportation, with implementation of the required TDM program, the project would result in lower levels of vehicle travel relative to regional averages and would help meet regional efforts to reduce vehicle travel and therefore related vehicular consumption of fuel energy.

As detailed in Section 3: Air Quality and Section 8: Greenhouse Gas Emissions, the project is also consistent with regional and local climate actions plans. The project incorporates energy and energy-related efficiency measures meeting all applicable requirements, including water and waste efficiency. The project would be required to comply with all standards of the City's Reach Code, Title 24 of the California Code of Regulations, and CALGreen, as applicable, aimed at the incorporation of energy-conserving design and construction.

While representing a change from the former uses at the site, the project is consistent with the type of development in the area and allowed under the land use designation and zoning.

Therefore, although the project would increase energy consumption, it would not result in a significant impact related to energy consumption in a wasteful, inefficient, or unnecessary manner or otherwise conflict with energy plans and the impact in this regard would be ***less than significant***.

7. GEOLOGY AND SOILS Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	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 or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42)				☒
ii) Strong seismic ground shaking?			☒	
iii) Seismic-related ground failure, including liquefaction?			☒	
iv) Landslides?				☒
b) Result in substantial soil erosion or the loss of topsoil?			☒	
c) Be located on a geologic unit 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 18-1-B 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 waste water disposal systems where sewers are not available for the disposal of waste water?				☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		☒		

This section utilizes information from the Final Geotechnical Investigation prepared for the applicant by Rockridge Geotechnical, dated July 2, 2024, which is incorporated into this document by reference and is available as part of the project application materials.

a, c, d) <u>Geologic Hazards</u>

There are no faults traces across the site and therefore, fault rupture hazard is not a significant impact. However, the San Francisco Bay Area is a seismically active region, and the site is likely to encounter strong to very strong seismic ground shaking during the lifetime of the project.

Landslides are downward and outward movements of slope-forming materials such as rock, soil, and artificial fill. Landslides occur on some of the upper hilly slopes, more commonly in the western

area of the city. There are no hillsides near the project site and therefore there would be no impact resulting from landslides.

The project site is underlain with at least 94 feet of alluvial deposit consisting of generally clay and silty clay interbedded with layers of sand and silty sand. The clay layers are generally stiff to hard, and the granular layers are mostly dense to very dense. On the southeastern edge of the property is some artificial fill consisting of generally silty sand, sandy silt, clay and silty clay. Given the characteristics of the soils, the site was concluded to have the following characteristics:

- high expansion potential to wetting and drying cycles
- high potential for liquefaction that could result in total settlement of ½ inch or less over most of the site, with one area showing a potential for up to an inch of settlement, with negligible potential for liquefaction-induced settlement
- negligible potential for lateral spreading to affect the site
- very low potential for significant differential seismic settlement affecting the proposed structures
- moderately compressible soil that could result in a static settlement of 2 inches below the buildings due to weight

The geotechnical analysis concluded that the potential geological hazards can be addressed through appropriate design and construction, which would occur as part of the standard design-level geotechnical recommendations and structural plans as specified in **Standard Conditions: Compliance with design-level Geotechnical Investigation and Structural Design Plans**, as included in Table 1. The Geotechnical Investigation concluded that project buildings should be built on mat foundations or spread footings supported by columns that bottom at least 30 feet below the existing ground surface.

Standard design-level geotechnical recommendations and structural plans as specified in Standard Condition: Compliance with design-level Geotechnical Investigation and Structural Design Plans would address potential geological hazards and the project impact would be ***less than significant***.

b) Soil Erosion

The project would be subject to a National Pollution Discharge Elimination System (NPDES) permit from the Regional Water Quality Control Board (RWQCB). The construction contractors would be required to prepare a Stormwater Pollution Prevention Plan (SWPPP) and an Erosion Control Plan. The SWPPP must describe the site, the project, erosion and sediment controls, runoff water quality monitoring, means of waste disposal, control of post-construction sediment and erosion control measures, maintenance responsibilities, and management controls. All construction activities would be required to comply with Chapters 18 and 33 and Appendix J of the City Building Code, which regulate the construction of foundations and retaining walls, and grading activities, including drainage and erosion control. Soil erosion after construction would be controlled by implementation of approved landscape and irrigation plans. With required implementation of a SWPPP and Erosion Control Plan to prevent erosion, sedimentation, and loss of topsoil during and following construction, the soil erosion impacts of the project would be ***less than significant.***

e) Septic Tanks

The project would not include the use of septic tanks and associated disposal facilities. Therefore, the project would have ***no impact*** in this regard.

f) Unique Geologic Feature or Paleontological Resource

The site is generally flat and currently developed and there are no unique geologic features at the site. There are no known paleontological resources associated with the project site.[23] Construction of the project involves ground disturbance and if unknown paleontological resources are encountered, there is the potential for a significant impact.

Mitigation Measures Culture-1 through Culture-3 would reduce the potential impact related to unknown paleontological resources.

With compliance with the protection procedures specified in Mitigation Measures Culture-1 through Culture-3, if any previously-unknown paleontological resources are discovered, these would be handled appropriately and the impact with respect to paleontological resources would be ***less than significant with mitigation.***

[23] University of California Museum of Paleontology (UCMP) Online Database. UCMP specimen search portal, https://ucmpdb.berkeley.edu/ (accessed February 2023)

8. GREENHOUSE GAS EMISSIONS Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	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 gases?			☒	

This section utilizes information from the Air Quality & Greenhouse Gas Assessment prepared for this analysis by Illingworth & Rodkin, Inc. and dated April 21, 2023, revised September 5, 2024, included in full as Attachment A.

a) Greenhouse Gas Emissions

BAAQMD determined that greenhouse gas (GHG) emissions and global climate change represent cumulative impacts. Construction and operation of the proposed project would be additional sources of GHG emissions, primarily through consumption of fuel for transportation and energy usage on an ongoing basis.

State Assembly Bill 32 (AB 32) required California state and local governments to reduce greenhouse gas emissions to 1990 levels by 2020. State Senate Bill 32 was subsequently adopted to require that there be a further reduction in GHG emissions to 40% below the 1990 levels by 2030.

In April 2022, BAAQMD issued new GHG emissions thresholds to address 2030 reduction targets, revising the quantified threshold to a checklist of compliance, requiring consistency with either criterion A or B to make a determination that the impact would be less than significant as follows:

A. Projects must include, at a minimum, the following project design elements:

1. Buildings
    a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
    b. The project will not result in any wasteful, inefficient, or unnecessary electrical usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
2. Transportation
    a. Achieve compliance with electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.
    b. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the

recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:

i. Residential projects: 15 percent below the existing VMT per capita

ii. Office projects: 15 percent below the existing VMT per employee

iii. Retail projects: no net increase in existing VMT

B. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

On September 27, 2021, the San Carlos City Council adopted a new Climate Mitigation and Adaptation Plan (CMAP) to reduce GHG emissions. The CMAP aims to reduce emissions 40% by 2030 and 80% by 2050 relative to 1990 levels. This CMAP is an update to the 2009 Climate Action Plan (2009 CAP) that provides updated information, an expanded set of GHG reduction strategies, climate adaptation strategies and a planning horizon out to 2050. The City of San Carlos Climate Mitigation and Adaptation Plan Consistency Checklist for New Development was updated to reflect the new goals. The applicant's responses are included in **Table 8**.

Table 8: Applicant Responses to San Carlos CMAP Requirements

Climate Mitigation and Adaptation Plan Measure	Project Compliance
CMAP Strategy 5. Building Codes. (Required) Advance electrification through local amendments to the California Building Code.	*Is the project an all-electric design? If not, under what exception is the project allowed gas? Please note that an exception for scientific laboratories requires a third party cost effectiveness study.* ☐Yes ☒ No The project will submit an exception per the published methodology to determine the cost effectiveness for scientific laboratories to allow gas for space conditioning systems.
CMAP Strategy 6. Solar Power. (Required) Continue to support and increase participation in rooftop and onsite solar energy systems in the community and at City facilities.	*Does the project include a photovoltaic solar system as required by the City's reach code?* ☐Yes ☐ No ☒ As required The project will comply with requirements, which may not result in inclusion of PV: The project will make space provisions for future PV and battery storage if needed based on tenant type and use. If the building's tenants are 80% Office and 20% Laboratory space, then Title 24 will require the available roof area with solar access (unshaded area) to include PV. Additionally, energy storage equivalent to 41% of the PV energy production will need to be provided. If the building space is 21%

	or greater laboratory space, then the Title 24 requirement for onside renewables and energy storage will not apply to this building. The California Energy Code does not include laboratory type buildings in the list of program types that trigger the onsite renewable and energy storage requirements.
CMAP Strategy 17. Vehicle Miles Traveled. (Required) Reduce community-wide transportation-related emissions per resident and employee, with an emphasis on reductions from existing and new development in the city's core commercial, office, and industrial area, including development on the east side.	*Will the project have a TDM program that meets the 20% reduction in trip generation rates when compared to standard ITE trip generation rates?* ☒Yes ☐ No The TDM program will comply with these requirements.
CMAP Strategy 18. Electric Vehicles. (Required) Support residents and business owners to transition to electric and plug-in hybrid vehicles.	*Does the project comply with the City's EV charging requirements in the reach code?* ☒Yes ☐ No 20% of total parking spaces will be EV installed or ready, exceeds 20% required to comply with the 2022 CalGreen Code. There will be 97 Level 1 EV Ready spaces (14% of spaces as required by San Carlos Reach Code). There will be 42 Level 2 EV installed spaces (6% of spaces, meets 6% required by San Carlos Reach Code).
CMAP Strategy 27. Construction and Demolition Waste. (Required) Increase the amount of waste recycled during construction and demolition of buildings.	*Will the project comply with the required diversion rates of construction and demolition waste?* ☒Yes ☐ No The project will comply with 2022 CalGreen Code construction and demolition waste diversion requirement (minimum 65%) and LEED credits.
CMAP Strategy 28. Composting and Recycling. (Required) Partner with RethinkWaste to expand commercial and multi-family residential recycling and composting programs.	*Does the project include facilities for collecting recycling and composting?* ☒Yes ☐ No The applicant has coordinated with Recology and will provide trash, recycling and composting facilities.
CMAP Strategy 32. Water-wise Landscaping. (Required) Promote drought tolerant and firewise landscaping.	*Does the project's landscape include native and drought-resistant plants to the maximum extent feasible?* ☒Yes ☐ No The landscape will comply.

CMAP Strategy 37. Heat Island Effect. (Required) Minimize the urban heat island effect.	*Will at least fifty percent of the project's paved parking areas be shaded or of light colored material?* ☒Yes ☐ No All but the top level of the parking garage would be shaded by the levels above. Project will comply with LEED Heat Island Reduction credits.
CMAP Strategy 7. Peninsula Clean Energy ECO100. (Voluntary) Continue to support and promote PCE as the community's official electricity provider with a goal to provide 100% carbon-free renewable energy by 2025.	*Will the project enroll in PCE as its energy provider?* ☐Yes ☒ No The project is not enrolling in PCE as its energy provider at this time, as the project is a core and shell project without known tenants.
CMAP Strategy 11. Transit Oriented Development. (Voluntary) Encourage development of mixed-use projects, higher-density housing, and job growth within the General Plan's recognized Transit-Oriented Development (TOD) corridor (Planning Areas 1, 2, and 3) while being mindful of surrounding uses.	*Is the project located in the Transit-Oriented Development (TOD) corridor? If yes, how does the project improve the mobility of people and vehicles along and across the corridor through safety considerations such as separated sidewalks and bike lanes or traffic calming measures?* ☒Yes ☐ No The project is located in Planning Area 2 within the East Side Innovation District. Old County Road is identified as a north-south bicycle priority route. The proposed project improvements on Old County Road will include installation of the Class 4 bike-way. The proposed sidewalks on Old County Road are 10' wide to facilitate safe pedestrian movement between the project site and the San Carlos Multi-modal transit/Caltrain station.
CMAP Strategy 12. Active Transportation. (Voluntary) Prioritize bicycling and walking as safe, practical, and attractive travel options citywide, as directed by the Bicycle and Pedestrian Master Plan.	*Will the project provide upgrades to active transportation infrastructure consistent with the Bicycle and Pedestrian Master Plan?* ☒Yes ☐ No The project will provide upgrades to active transportation infrastructure consistent with the Bicycle and Pedestrian Master Plan as mentioned above.
CMAP Strategy 25. Carbon Offset. (Voluntary) Explore local and regional opportunities to offset carbon emissions that cannot be reduced to zero.	*Will the project be investing in carbon offsets?* ☒Yes ☐ No The project is evaluating the following carbon-emission reduction measures:

	1. Perform Life Cycle Assessment to evaluate carbon impacts of the project and opportunities to reduce both operational and embodied carbon emission. 2. Operational Carbon: Adopt Transportation Demand Management plan measures to encourage employees using public transit and bikes for commute. 3. Embodied Carbon: Reduce amount of cement (a high-carbon, energy-intensive material) in concrete mix design. 4. Embodied Carbon: Recycle on-site concrete demolition debris and construction waste.

Source: Applicant submission to San Carlos Planning Division

As detailed above, the project would conform with relevant goals and strategies of the San Carlos CMAP, fulfilling criterion B of BAAQMD's recommended thresholds, and the project would therefore have a ***less than significant*** impact with respect to Greenhouse Gas Emissions.

b) Greenhouse Gas Reduction Plans

See Section: 3 Air Quality for an analysis of the project's consistency with the regional Clean Air Plan. Additionally with respect to GHG emissions, the Clean Air Plan includes the goal to reduce Bay Area GHG emissions 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050. This is consistent with the target reductions intended to be met by the BAAQMD thresholds and City's CMAP. As demonstrated under criterion a) above, the project would be consistent with BAAQMD thresholds and the City's CMAP and would therefore be consistent with the GHG emissions reduction goal of the Clean Air Plan.

Therefore, the project would have ***no impact*** with respect to consistency with GHG reduction plans.

9. HAZARDS AND HAZARDOUS MATERIALS Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	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 release of hazardous materials into the environment?		☒		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?		☒		
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?			☒	
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 a significant risk of loss, injury or death involving wildland fires?				☒

This section utilizes information from the following reports that were prepared for the applicant by Ramboll US Consulting, Inc., and are available as part of the project application materials:

- Phase I Environmental Site Assessment for 1026 Bransten Road, dated March 8, 2022
- Phase II Investigation Report for 1026 Bransten Road, dated March 14, 2023
- Phase II Investigation Report for 789 Old County Road, dated March 14, 2023

a) Routine Use of Hazardous Materials

It is likely that equipment used at the site during construction activities could utilize substances considered by regulatory bodies as hazardous, such as diesel fuel and gasoline. However, all construction activities would be required to conform with Title 49 of the Code of Federal Regulations, US Department of Transportation, State of California, and local laws, ordinances, and procedures.

While specific tenants have not yet been identified, any commercial uses would involve household hazardous waste such as cleaners. R&D laboratories additionally are likely to handle materials considered to be biological hazards and/or chemical hazards. The San Mateo County Environmental Health Division enforces regulations pertaining to safe handling and proper storage of hazardous materials to prevent or reduce the potential for injury to health and the environment. Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace. The California Division of Occupational Safety and Health Administration is responsible for developing and enforcing workplace safety standards and ensuring worker safety in the handling and use of hazardous materials. Future tenants of this proposed project would be required to follow any City regulations on Biosafety levels and activities.

With compliance with applicable regulations, project construction and operations are not anticipated to create a significant hazard to the public or environment through the routine transport, use or disposal of hazardous materials (***less than significant***).

b, d) Hazardous Materials Site and Accidental Release

The project site is listed on the State Water Resources Control Board's Geotracker website under both 1026 Bransten Road and 789 Old County Road addresses as being past LUST (leaking underground storage tank) cleanup sites.

Past uses of the 789 Old County Road property (also listed as 781 Old County Road) include paint warehouses and facility, a plywood warehouse, upholstery and mattress manufacturing, a furniture store and a roofing company. Since 2010 the site has been occupied by the current tenant, Morey Transport. Current use includes two above ground storage tanks and three trailers used for chemical and hazardous waste storage. A concrete pad area is used for vehicle maintenance. Semi-trailer trucks are parked on the site. An inactive rail spur is present.

Past uses of the 1026 Bransten Road property include use for auto repair, a metal warehouse, and fuel storage. A railroad line traversed the southwestern portion of the site in the 1940s. From the early 1950s until 2016 the site remained in the same configuration, paved with 4 buildings, batch plants and conveyors for concrete and cement manufacturing. The buildings were removed sometime around 2016. Current use by Cemex includes an above ground fuel storage tank and 7 above ground chemical storage tanks. Several cement trucks and other machinery are kept on the paved site.

1026 Bransten Road - A 7,500-gallon underground storage tank (UST) used to store gasoline was removed in 1997, and a 6,000-gallon diesel UST was removed in 1998. Impacted soil was removed with both tanks, and approximately 4,000 gallons of potentially impacted groundwater was removed in 1997. Chemicals of concern were identified as total petroleum hydrocarbons, as both gasoline and diesel, and benzene, toluene, ethylbenzene, and xylenes. Additional investigations were performed between 1999 and 2013, including the installation of monitoring wells in 2000. The property received a Case Closure notice from the San Mateo County Environmental Health Department (SMCEHD) Groundwater Protection Program on September 18, 2014. The GeoTracker database shows the property as a completed and closed LUST cleanup site as of September 2014. The current site occupant, CEMEX Construction Materials, is listed in the Storm Water Multiple Application Report and Tracking System (SMARTS) and the California Environmental Reporting System (CERS) for being a chemical storage facility and hazardous waste generator, and for performing required stormwater sampling and monitoring. The site is completely paved, and no surface runoff leaves the site, enters the municipal storm drains, or infiltrates the ground surface,

but is instead directed into the reclamation pond on site. San Carlos/Redwood City Fire Department records indicate the following hazardous materials may be stored on site: acetylene, argon, truck cleaner, diesel, helium, propane, nitrogen, phosphoric acid, antifreeze, and oil. A 1,300-gallon spill of a cement additive in 2013 was reported. The spill was contained to paved areas and the process pond.

789 Old County Road – A 1,500-gallon UST used to store gasoline was removed in 2001, and a 500-gallon diesel UST was removed in 2010. The diesel tank was not considered a leaking UST. The gasoline tank impacted soil and groundwater on the site. Additional investigations were performed between 2001 and 2014, including the installation of monitoring wells in 2005. The property received a Case Closure notice from SMCEHD on January 8, 2015 based on anticipated continuing natural attenuation of residual contaminants left in place, which included total petroleum hydrocarbons as diesel and gasoline above Environmental Screening Levels for commercial/industrial land use. The GeoTracker database shows the property as a completed and closed LUST cleanup site as of September 2014.

Adjoining and nearby properties – The project site is surrounded by properties with historical and current industrial and commercial uses. None of the sites were determined to be a current concern for cross-contamination to the project site.

- 779 Old County Road: The property is a closed LUST site, with soil and groundwater contamination. Impacted soil was excavated. At the time of closure in 2008, all groundwater contamination was found to be below laboratory detection limits with the exception of total petroleum hydrocarbons as gasoline. It is possible that some of the impacted groundwater has migrated to the project site, but likely at levels below current screening criteria.

- 803 Old County Road: The property is a closed UST site, and contained contaminated groundwater. Recovery methods were used to successfully remove some of the contamination. Current groundwater contamination at the site has been determined to be from an off-property source with a plume that does not reach the project site.

- 1008 Bransten Road: The property is a closed LUST site with soil and groundwater contamination. Groundwater contaminants have since been determined to be at or below laboratory detection limits. Impacted soil was excavated. The site is downgradient from the project site.

- 956 Bransten Road: The property is a closed LUST site with soil contamination that is considered resolved. Remaining volatile organic compounds found in the groundwater at the site has been determined to be potentially from an off-property source. The site is downgradient from the project site.

- 977 and 977A Bransten Road: The property has an active status listing on the EnviroStor database and currently operates as a lubricating oil packaging facility. Contamination of soil and shallow groundwater was reported. Impacted soil was excavated and monitoring wells were installed. Semi-annual groundwater monitoring is ongoing, and a Corrective Measures Study was being prepared as of September 2021. The site is downgradient of the project site, and the plume of contaminated groundwater has not been found to include the project site.

- 1007 Bransten Road: The property has an active status listing on the LUST and CPS-SLIC (Cleanup Program Sites - Spills, Leaks, Investigation and Cleanup) databases for impacts to soil and

groundwater related to historical uses of metal machining operations and storage and handling of hazardous materials. Remediation measures are ongoing. The site is downgradient of the project site.

- 672 Laurel Street: The property is listed on the LUST and CPS-SLIC databases for soil vapor impacts discovered in 2018. Investigation is ongoing under regulatory oversight. Groundwater impacts were found to be at or close to environmental screening levels.

- 833 Old County Road: The property is listed on the CPS-SLIC database for soil and groundwater contamination. While investigations to determine the offsite and downgradient impacts have not been completed, the site is cross-gradient from the project site and does not appear to be a substantial concern.

Current Investigations at the Project Site

Due to the known potential for contamination at the site, various tests of the groundwater and soils have been performed at the site over the years, with the following conclusions:

- **Soils**: Analysis of soil samples did not find any analyzed constituents above the commercial screening criteria.

- **Groundwater**: Elevated concentrations of several volatile organic compounds were found. Total petroleum hydrocarbons were either not found or at levels below applicable screening criteria, except for one sampling location close to the former UST location on the 789 Old County Road property, which was above tap water criteria. As the groundwater is not being used for tap water and the detected level is lower than the reported level at the time of regulatory closure, it does not present a substantial risk to workers under the proposed project conditions. Both tetrachloroethylene (PCE) and trichloroethylene (TCE) concentrations were above the environmental screening levels based on potential vapor intrusion concerns. The source of the PCE and TCE in the groundwater has not been identified but is likely offsite. There is no recorded historical use of chlorinated volatile organic compounds on the project site, though unrecorded spills or releases before stringent regulations cannot be ruled out.

- **Soil Vapors**: Soil vapor sampling did not identify chemical vapors above the level of concern for the intended project site use.

The site is impacted by contamination from historic and adjacent uses at levels below the need for regulatory oversight, mostly due to the historic use of the site as a commercial fueling facility. While the project does not propose subterranean levels, construction activities including demolition, site preparation, and utility trenching would be expected to disturb site soils. Irrespective of the presence of known contamination at a site, a Site Management Plan and health and safety measures, as outlined in Haz-1 below, would mitigate the potential impact from encountering hazardous materials during construction activities.

Mitigation Measure

Haz-1: **Site Management Plan and Health and Safety Measures.** The applicant shall develop and implement a Site Mitigation Plan and relevant contractor health and safety measures to provide procedures and protocols during construction in the event of a new discovery of previously unknown impacts such as impacted soil, underground storage tanks, or other underground features during site disturbance.

Implementation of Mitigation Measure Haz-1 would reduce the effects of potential hazardous materials at the site to ***less than significant with mitigation***.

c) Hazardous Materials Near Schools

No school is located within one-quarter mile of the project site. Therefore, the project would have ***no impact*** with respect to hazardous materials near schools.

e) Airport Hazards

The closest airport is the San Carlos Airport, approximately 0.45 miles from the project site. According to the Airport Land Use Compatibility Plan (ALUCP), the project site is within the Airport Influence Area (Area B). The site is not within a primary flight path but is within the traffic pattern zone. Office and R&D uses are identified as compatible uses in this zone. The ALUCP also establishes an "airspace protection surface" identifying the building heights in differing locations that would require additional consideration for airport safety concerns. At the project site, the airspace protection surface is at 155+ feet above mean sea level.[24] Factoring in the height of the site, the highest rooftop elements would reach maximum heights of approximately 128 feet above mean sea level, which would be below the height of the airspace protection surface.[25] The project has been determined to be in conformance with the ALUCP by the C/CAG Board. There are no other airports, either public or private, within the vicinity of the project. The project would have a ***less than significant impact*** related to airport hazards.

f) Emergency Response Plan

The project would not include any changes to existing public roadways that provide emergency access to the site or surrounding area. The proposed project would be designed to comply with the California Fire Code and the City Fire Marshal's code requirements that require on site access for emergency vehicles, a standard condition for any new project approval.

No substantial obstruction in public rights-of-way has been proposed with the project's construction activities. However, any construction activities can result in temporary intermittent roadway obstructions, but these would be handled through standard procedures with the City to ensure adequate clearance is maintained.

Therefore, with compliance with applicable regulations and standard procedures, the impact with respect to impairment or interference with an Emergency Response or Evacuation Plan would be ***less than significant***.

g) Wildland Fire

The project site is located in an urbanized area removed from areas typically subject to wildland fire.[26] Therefore, the project would have ***no impact*** related to wildland fire.

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[24] City/County Association of Governments of San Mateo County, Adopted October 2015, *Comprehensive Airport Land Use Compatibility Plan for the Environs of San Carlos Airport*, Exhibits 4-3 and 4-4 and p. 4-26.

[25] This measurement is different than the official "building height", which is measured from ground level (not sea level) as reported in the Project Description

[26] City of San Carlos, Focused General Plan Update EIR, October 2022, Chapter 4.8 Hazards and Hazardous Materials.

10. HYDROLOGY AND WATER QUALITY Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	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 off-site; 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			☒	
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?			☒	

a) Water Quality and Discharge

Water quality is regulated by both State and Federal agencies under the authority of the Clean Water Act (CWA). Projects that have the potential to degrade water quality are subject to the regulations of those agencies. Operational activities may involve common urban pollutants such as surface litter, oil, gasoline, grease, paint, fertilizers, pesticides, and herbicides. Construction activities involving soils disturbances have the potential to result in increased erosion and sedimentation to surface waters, and could produce contaminated storm water runoff, a major contributor to the degradation of water quality.

The proposed project is located in an industrially zoned area and would include a net reduction of impervious surfaces with new landscaped areas. The project site plan reduces the amount of impervious surface and includes a plan for stormwater retention on-site in compliance with regulations. During construction, the City would require the project to develop and implement best management practices (BMPs) to control erosion associated with construction such as watering the exposed soil, and permanent features to treat stormwater runoff. The impervious surface coverage is reduced to 81% (from 98% coverage) with the addition of landscaped areas in compliance with Section 18.07.040 of the San Carlos Municipal Code.

Stormwater runoff water quality is regulated by the NPDES Program (established through the CWA). The NPDES program objective is to control and reduce pollutants to water bodies from surface water discharges. Locally, the program is administered by the RWQCB. Compliance with the NPDES Permit is mandated by State and Federal statutes and regulations. The City of San Carlos participates in San Mateo's Stormwater Management Plan, which outlines maintenance activities to be undertaken by cities; targets industrial and illicit discharge; describes public information about stormwater; provides guidance to cities for construction permits; and establishes monitoring programs to measure the success of the other portions of the plan. Compliance with the NPDES Permit is mandated by State and Federal statutes and regulations. The municipalities in San Mateo County have to require post-construction stormwater controls as part of their obligations under Provision C.3 of the countywide municipal stormwater NPDES permit, which is similar to other municipal stormwater permits in the Bay Area. Any new construction would be subject to Provision C.3, which requires pollutant removal treatment systems, operation and maintenance of treatment measures, and a limitation on increase of peak stormwater runoff discharge rates. The project applicant must prepare and implement a Stormwater Control Plan, as detailed in **Standard Condition: Stormwater Control Plan**, included in Table 1, containing treatment and source control measures that meet the "maximum extent practicable" standard as specified in the NPDES permit and the SMCWPPP C.3 Guidebook. The project applicant must also prepare a Stormwater Facility Operation and Maintenance Plan and execute agreements to ensure the stormwater treatment and flow-control facilities are maintained in perpetuity.

The existing project site is comprised of almost entirely impervious surfaces that drain to the existing storm drain facilities via curb drains. The proposed project would add stormwater control elements to treat the runoff, including flow-through planters lined with underdrain and a self-treating area, and would include water efficient landscaping. Details of the on-site stormwater system will be finalized through compliance with C.3 requirements. The project would also add off-site stormwater control elements along Old County Road from the northern project boundary to Terminal Way.

Through compliance with post-construction requirements in Standard Condition: Stormwater Control Plan related to implementation of the NPDES permit C.3 requirements, including project preparation and implementation of a Stormwater Control Plan and Stormwater Facility Operation and Maintenance Plan, the long-term volume of water and water quality impacts from project operation would be ***less than significant*** and the project would comply with applicable water quality control regulations.

b) Groundwater Recharge and Supplies

The groundwater at the site is not used by this or other projects as a water supply. Additionally, the project would comply with stormwater drainage requirements (see item (a) above). The project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge and would have a ***less than significant*** impact related to groundwater.

c) Drainage Pattern Alteration

The discussion under this topic utilizes information from the Preliminary Storm Drain Memo prepared for the applicant by BKF Engineering, dated March 29, 2023, available as part of the project application materials.

As discussed under item (a), the site is currently fully developed, and runoff drains to the City's storm drainage system. The project would add stormwater control elements to treat the runoff and

would include water efficient landscaping. Details of the on-site stormwater system will be finalized through compliance with C.3 requirements.

Local storm drain capacity was modeled for a 10 year storm event and a 100 year storm event under project conditions and concluded that the existing storm drain system has the capacity to accommodate stormwater from a 10 year storm event, and would not contribute to additional downstream flooding during a 100 year storm event.

Through compliance with applicable regulations, as detailed in **Standard Condition: Stormwater Control Plan**, included in Table 1, the runoff from the site would be reduced from that existing and would not cause erosion, siltation, or flooding. Project impacts related to alteration of drainage patterns would be ***less than significant***.

d) Inundation

The project is not located within a Federal Emergency Management Agency (FEMA) Flood Zone and is therefore not considered to be subject to a substantial risk of flooding.[27] The project site is not located within an area subject to inundation in the event of a failure of any dam.[28] The project site is not located in an area that is protected by levees.

A tsunami or seiche originating in the Pacific Ocean would lose much of its energy passing through San Francisco Bay. Areas most likely to be inundated are those at or below sea level and within 1½ miles of the shoreline. The site is approximately 2¾ miles inland from the San Francisco Bay shoreline. The site elevation is also more than 66 inches above mean sea level, which is the projected potential sea-level rise by 2100.[29] Relatedly, the site is mapped by the State of California Tsunami Hazard Area Map as not being within an inundation area.[30] Additionally, the site is not located proximate to a hillside that could generate mudflow.

Therefore, the potential for inundation due to tsunami, seiche, dam or levee failure, sea level rise, or mudflow would be ***less than significant***.

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[27] Federal Emergency Management Agency (FEMA), effective 4/5/2019, Flood Insurance Rate Map (FIRM), Map Number 06081C0169G, available at https://www.fema.gov/flood-maps.

[28] City of San Carlos, Focused General Plan Update EIR, October 2022, p. 4.9-3.

[29] California Department of Water Resources, California Climate Science and Data for Water Resources Management, June 2015, available at https://h8b186.p3cdn2.secureserver.net/wp-content/uploads/2017/06/CA_Climate_Science_and_Data_Final_Release_June_2015.pdf.

[30] California Emergency Management Agency, San Mateo County Tsunami Hazard Areas, available at http://www.conservation.ca.gov/cgs/ Tsunami/maps/san/mateo.

11. LAND USE AND PLANNING Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	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?			☒	

a) Physical Division of a Community

The project involves redevelopment of a currently-developed site and does not involve any physical changes that would have the potential to divide an established community (***no impact***).

b) Conflict with Land Use Plan

An environmental impact could occur when a project conflicts with a policy or regulation intended to avoid or reduce an environmental impact. The following discussion does not replace or preclude a consistency assessment for project approval considerations, which take into account more than potential impacts to the environment.

The site is currently zoned Heavy Industrial (IH), under which R&D use is explicitly allowed and office use is allowed with a conditional use permit. The applicant is proposing approval under a Planned Development (PD) rezone, which would define development standards including intensity, height, setbacks, etc.

The potential for the project, including the requested rezoning, to result in environmental impacts have been individually considered in all topic areas in this document and would not result in any significant impacts following mitigation. Therefore, the project would not conflict with a land use plan, policy, or regulation in a way that would result in a significant environmental impact and would have a ***less than significant*** impact with regard to land use plan conflicts.

12. MINERAL RESOURCES Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	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?				☒

a, b) Mineral Resources

San Carlos, including the project site, contains no known mineral resources.[31] The project would have ***no impact*** with regard to mineral resources.

[31] City of San Carlos, Focused General Plan Update EIR, October 2022, p. 6-2.

13. NOISE Would the project result in:	Potentially Significant Impact	Less Than Significant With Mitigation	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?			☒	

This section utilizes information from the Noise and Vibration Assessment prepared for this analysis by Illingworth & Rodkin, Inc. and dated May 10, 2023, updated February 16, 2024, included in full as Attachment D.

a) Excessive Noise

Construction Noise

Standard construction practices and hours would be followed, consistent with City regulations. Construction equipment that generates excessive noise, such as pile drivers and blasting equipment, are not expected to be used in this project. For a conservative analysis, the acoustical analysis estimated the worst-case hourly average noise level at nearby receptors, which was calculated from combining all equipment likely to be used in each phase. **Table 9** shows the calculated hourly noise levels in energy average of sound (dBA L_{eq}) at the closest receptors in each direction, as well as the closest residences.

Table 9: Estimated Construction Noise Levels at Nearby Land Uses

Phase of Construction	Calculated Hourly Average Noise Levels, dBA Leq				
	Adjoining NW Warehouse & Commercial (125 ft)	Adjoining NE Warehouse (285 ft)	SE Future Office/R&D (175 ft)	SW Commercial (560 ft)	Nearest Residences (540 ft)
Demolition	79	71	76	66	66
Site Preparation	80	73	77	67	67
Grading	80	73	77	67	68
Building - Exterior	78	71	75	65	65
Building – Interior/ Architectural Coating	66	59	63	53	53
Paving	79	71	76	66	66

Notes: The approximate distances shown in the table are from the center of the nearest project building to the receiving property lines.
These noise levels represent all equipment per phase operating simultaneously, so would be conservatively high.
Source: Illingworth & Rodkin, 2023, Table 11 in Attachment D.

As summarized in Table 9, the noise level at the closest commercial building would range from 66-80 dBA Leq, and at the nearest residence would range from 53 to 68 dBA Leq. While the City of San Carlos does not establish thresholds for construction noise, the Federal Trade Administration identifies noise limits thresholds in their Transit Noise and Vibration Impact Assessment Manual. The estimates in Table 9 are below the exterior threshold of 80 dBA Leq or the 90 dBA Leq threshold at the office and commercial land uses surrounding the project. As detailed in **Standard Condition: Construction Noise**, included in Table 1, the San Carlos Noise Ordinance (Chapter 9.30 of the Municipal Code) restricts construction activities to the hours of 8:00 AM to 5:00 PM on weekdays, 9:00 AM to 5:00 PM on Saturdays. All construction on the project would be conducted within the allowable hours. Additionally, San Carlos General Plan Policy NOI-1.8 requires all phases of construction activity to utilize reasonable noise reduction measures to minimize the exposure of neighboring properties to excessive noise levels and comply with the City's noise ordinance. These noise reduction measures would include but are not limited to the following (or similarly effective) measures:

- Utilize "quiet" models of air compressors and other stationary noise sources where such technology exists;
- Equip all internal combustion engine-driven equipment with mufflers, which are in good condition and appropriate for the equipment;
- Locate all stationary noise-generating equipment, such as air compressors and portable power generators, as far away as possible from adjacent land uses;
- Locate staging areas and construction material areas as far away as possible from adjacent land uses;
- Prohibit all unnecessary idling of internal combustion engines;
- Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause

of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem are implemented.

- Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction.

With compliance with standard City conditions related to construction activities and noise, the impacts from noise generated by construction of the project would be ***less than significant***.

Operational Noise

Operation of an office/R&D use does not typically produce substantial levels of noise. Sources of noise caused by the operation of the project include increased traffic, mechanical equipment, and truck loading and unloading. Action NOI-1.4 of the San Carlos General Plan defines potential significant noise impacts that would be applicable to the project as follows:

- if the proposed project causes the Ldn at noise sensitive uses to increase by 3 decibels (dBA) or more and exceed the "normally acceptable" levels of 60 dBA for single family receptors or 65 dBA for multi-family receptors, or

- causes the day-night average sound level (Ldn) at noise-sensitive receptors to increase by 5 dBA or more while remaining "normally acceptable."

The Noise and Vibration Assessment calculated the increase in noise from the additional vehicle traffic related to the proposed project and compared it to the existing traffic noise volume along segments of nearby streets, and found for all segments that the additional project traffic would cause an increase of 1 dBA Ldn or less, except for the segment of Montgomery Street to San Carlos Avenue along Industrial Road, which would see an increase of 2 dBA Ldn. These increases are below the San Carlos thresholds for noise impacts as shown above.

The Noise and Vibration Assessment also calculated the potential increase in noise for on-site operational sources, including the parking garage, loading docks, and mechanical equipment. Parking garage noise sources and rooftop mechanical equipment would potentially increase existing average ambient noise levels at the existing warehouse/commercial uses adjoining the site to the northwest and the existing warehouse to the northeast. However, thresholds established in the City's General Plan and Municipal Code would not be exceeded from operations at the project site. On-site operational noise would not be measurable at the closest residences. The project proposes industry-standard mechanical equipment shielding that would serve to further reduce equipment noise.

The impacts from noise generated by operation of the project would be ***less than significant***.

b) <u>Groundborne Vibration</u>

Operation of an office/R&D use would not produce substantial levels of off-site vibration.

Typically, the most groundborne vibration would be caused by construction equipment during demolition and grading. Vibratory rollers, clam shovel drops, caisson drills, large bulldozers and loaded trucks carrying soil would produce the most vibrations. Construction vibration was evaluated to determine if it would result in building damage or annoyance at residential areas.

Proposed construction activities do not include vibration-generation with the potential to impact the closest residential uses at over 450 feet away.

For structural damage to engineered concrete and masonry buildings like the adjacent structures, the California Department of Transportation recommends a vibration limit of 0.3 inches per second (in/sec) peak particle velocity (PPV). The project would result in a potentially significant vibration impact if it were to result in groundborne vibration levels exceeding 0.3 in/sec PPV at the adjacent commercial buildings, as that is the vibration level considered to have the potential to cause damage to such structures.

The Vibration Assessment projected that construction-related vibration levels at nearby commercial buildings could exceed the damage threshold of 0.3 in/sec PPV enough to potentially cause cosmetic damage to adjacent structures. Cosmetic damage might include hairline cracking in plaster, the opening of old cracks, the loosening of paint or the dislodging of loose objects. The following mitigation measure would reduce the risk of cosmetic damage to nearby structures due to construction vibration.

Mitigation Measure

Noise-1: **Construction Vibration Reduction and Monitoring.** Wherever feasible, operation of vibration inducing equipment shall be avoided within the distance to existing buildings specified below.

Clam shovel drop – 18 feet (ft)
Hydromill (slurry wall) in soil – 1 ft
Hydromill (slurry wall) in rock – 2 ft
Vibratory Roller – 19 ft
Hoe Ram – 9 ft
Large bulldozer – 9 ft
Caisson drilling – 9 ft
Loaded trucks – 8 ft
Jackhammer – 4 ft
Small bulldozer - <1 ft

If this equipment must operate closer to existing buildings than specified above, a vibration monitoring plan shall be prepared, submitted to the City, and implemented to monitor construction vibration at the nearest structures, including at a minimum the following:

- A list of all heavy construction equipment to be used for this project known to produce high vibration levels (e.g., tracked vehicles, vibratory compaction, jackhammers, hoe rams, clam shovel drop, and vibratory roller, etc.).
- An indication of what efforts will be implemented for reducing vibration levels below the thresholds, such as location of equipment away from adjacent building as possible and use of alternative methods or equipment that would produce less vibration.
- A designated contact responsible for registering and investigating claims of excessive vibration. The contact information of such person shall also be clearly posted on the construction site. Any damage to adjacent buildings shall be addressed by the applicant team.

- Document conditions at all structures located within 20 feet of construction prior to, during, and after vibration-generating construction activities. Perform a photo survey, elevation survey, and crack monitoring survey prior to any construction activity, at the end of each phase of construction, and after project completion, and shall include internal and external crack monitoring in structures, settlement, and distress, and shall document the condition of foundations, walls and other structural elements in the interior and exterior of said structures. If vibration generated by project construction results in damage to adjoining structures, repairs shall be completed to restore structures to pre-construction conditions.

Examples of efforts to minimize vibration could include use of a smaller vibratory roller, such as the Caterpillar model CP433E vibratory compactor, and use of alternative methods for breaking up existing pavement, such as a pavement grinder, instead of dropping heavy objects, when work must occur within 20 feet of the adjacent buildings.

With implementation of Mitigation Measure Noise-1, which requires setbacks for high vibration-generating construction work or vibration monitoring to minimize the potential for construction-period cosmetic vibration damage to adjacent buildings, the impact from groundborne vibrations during construction would be ***less than significant with mitigation***.

c) Airport Noise

The closest airport to the project site is the San Carlos Airport, approximately 0.45 miles to the northeast. The project site is within the boundary of the Airport Land Use Compatibility Plan but is not within the area substantially impacted by airplane flyover noise (expected to be 60 dBA or less).[32] The San Francisco International Airport is located about 9 miles from the project site, so the project is well outside of the 65 dBA CNEL/L_{dn} noise contour. Impacts related to excessive aircraft noise exposure would be ***less than significant***.

[32] City/County Association of Governments of San Mateo County, Adopted October 2015, Comprehensive Airport Land Use Compatibility Plan for the Environs of San Carlos Airport, Exhibit 4.1.

14. POPULATION AND HOUSING Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	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 (for example, through extension of roads or other infrastructure)?			☒	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				☒

a) Substantial Population Growth

While neither housing nor population are directly created as a result of this project, employment opportunities can indirectly increase population and the demand for housing.

Plan Bay Area 2050 is the current regional long-range plan charting the course for the future of the nine-county San Francisco Bay Area. Plan Bay Area 2050 focuses on four key issues — the economy, the environment, housing, and transportation. Plan Bay Area 2050 estimates a total addition of 1,403,000 total jobs to the Bay Area between 2015 and 2050.[33]

The recently adopted San Carlos General Plan Housing Element 2023-2031, utilizing population data from the California Department of Finance and projections from Plan Bay Area, estimated that the population of San Carlos would grow from 31,145 people in 2020 to an estimated 33,915 people by 2030 and 35,250 people by 2040. The Housing Element 2023-2031 did not present specific job projections, but noted the following trends: San Carlos' job opportunities have changed significantly since 2002 due to a large decline in manufacturing jobs and a rapid increase in professional & managerial service jobs (which would include office/R&D jobs). The city's jobs to household ratio is similar to the county and Bay area (1.57 in San Carlos, 1.59 in San Mateo County, and 1.47 in the Bay Area) and the unemployment rate is slightly lower (4.9 percent in San Carlos compared to 5.9 percent in the county and 6.6 percent in the Bay area). The San Carlos Focused General Plan Update EIR concluded the impact related to the long range planned population growth would be less than significant.[34, 35]

[33] Metropolitan Transportation Commission and Executive Board of the Association of Bay Area Governments, *Final Plan Bay Area 2050*, October 21, 2021, available at https://www.planbayarea.org/finalplan2050, p. 112.

[34] City of San Carlos, San Carlos 2023-2031 Housing Element, part of the Focused General Plan and Zoning Update, adopted January 23, 2023.

[35] City of San Carlos, Focused General Plan Update EIR, October 2022.

In October 2021, the City of San Carlos adopted the East Side Innovation District Vision Plan to shape the development of the east side of the city as the area moves from industrial usage to a denser research and development/life sciences usage. The project site is included in this area.[36]

Prior to full programming of a building, employee estimations are commonly made based on square footage per employee. For projects in the area, this is generally calculated at 300/800 square feet per employee for office/R&D at a ratio of 30%/70%. Using this calculation, the proposed project would have up to approximately 867 employees, which would increase jobs in the City and region incrementally. The location of an employment center near local and regional transit (see Section 17: Transportation) would be consistent with Plan Bay Area 2050 goals to reduce vehicle travel while meeting area demand for growth.

The project does not propose to expand infrastructure capacity to new areas or increase existing capacity in such a way to induce unplanned growth.

Therefore, the proposed project represents a small portion of the job growth identified for the area consistent with area planning, so resultant potential for population growth would not be substantial and unplanned, and the project would have a ***less than significant*** impact related to population growth.

b) Displacement of Housing or People

There is currently no housing or people at the site that would be displaced by the project. The project would have ***no impact*** related to displacement of housing or people.

[36] City of San Carlos, East Side Innovation District Vision Plan, October 25, 2021, p. 6, available at https://www.cityofsancarlos.org/city_hall/departments_and_divisions/community_development/planning/plans_and_standards/east_side_innovation_district_vision_plan.php.

15. 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 following public services?	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Fire protection			☒	
b) Police protection			☒	
c) Schools			☒	
d) Parks			☒	
e) Other public facilities			☒	

a-e) Public Services

The proposed project is located on a developed site within San Carlos that is already served by public services. The project would not directly add population, and office/R&D use would not be anticipated to substantially increase utilization of public services, such that new or physically altered facilities would be required. The minimal increases in demand for services expected with the worker population and potential indirect population growth (see Section 14: Population and Housing), would be offset through payment of development fees and annual taxes, a portion of which go toward ongoing provision of and improvements to public services. Therefore, the project's impact on public services would be ***less than significant***.

16. RECREATION Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) 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) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.			☒	

a-b) Recreation

As an office/R&D project, the proposed project would not construct or substantially increase the use of public recreational facilities. Ground floor open space plazas would be publicly accessible and additional on-site open space would be provided for employees in terraces between the two buildings. The use of public recreational facilities would not be anticipated to increase substantially due to project employees such that physical deterioration would occur, or construction or expansion would be necessary. Therefore, the impact related to recreation would be ***less than significant***.

17. TRANSPORTATION Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	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) Would the project 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)?			☒	
d) Result in inadequate emergency services?			☒	

This section utilizes information from the CEQA Transportation Analysis prepared for this analysis by W-Trans, dated February 11, 2025, and included in full as Attachment E.

a) Circulation System Plans and Facilities

The Transportation Analysis assessed pedestrian, bicycle, and transit access and circulation and consistency with applicable regulations.

Pedestrians and Bicyclists: Sidewalks and crosswalks are provided on most streets in the immediate vicinity of the proposed project. Sidewalks exist along both sides of Industrial Road, as well as Old County Road, except for the segment south of Montgomery Street where there is only sidewalk on the east side. Currently, only intermittent sidewalks are available on Bransten Road. A tunnel provides access for pedestrians and cyclists from Old County Road to El Camino, under the above-grade Caltrain tracks.

Bicycle access to the proposed project site is currently available as Class II bike lanes on Industrial Road and both Class II bike lanes and a Class III bike route on Old County Road. Bicyclists ride in the street and/or on sidewalks for all other streets in the project vicinity. A number of improvements to bicycle lanes around the project site are anticipated under the *City of San Carlos Bicycle and Pedestrian Master Plan*, 2020.

Acceptable completion of these planned sidewalks and bikeways would improve the pedestrian and bicycle facilities already present in the study area.

Transit: Existing transit service to the study area is provided by Caltrain, and San Mateo County Transit District (SamTrans). The project site is located approximately 0.3 miles from the Caltrain station, and 0.2 miles from bus stops offering service from Route 397 (San Francisco to Palo Alto), Route 398 (San Francisco to Redwood City), Route 295 (Hillsdale to Redwood City), and Route ECR

(Daly City CART station to Palo Alto). As a project close to transit stops, the project is expected to generate trips via transit services. According to state CEQA guidelines, the addition of new transit riders should not be treated as an adverse impact because such development also improves regional flow by adding less vehicle travel onto the regional network.

Local Residential Streets: The City is working separately with local residents of the East San Carlos Neighborhood who are concerned about cut through traffic on their local streets. Based on analysis of the project trip generation, TDM program reduction, trip distribution pattern and likely paths of travel, the number of cars from this project estimated to use local streets to travel between Old County Road and Industrial Road does not exceed the standards set by the City of San Carlos Neighborhood Traffic Management Program for a local street, and therefore does not qualify as a significant impact under CEQA.

Overall Circulation: Pedestrian, bicycle, and transit facilities would be adequate to serve the proposed project, based on the existing and proposed network of pedestrian, bicycle and transit facilities within the study area. Tenants of the site could use this connected network of facilities to access nearby amenities such as the San Carlos Caltrain Station and the downtown district of San Carlos. See discussion under topic b below related to planned bikeway improvements along Old County Road. The project would be close to transit stops and is expected to generate trips via transit services. The addition of project-generated demand is generally expected to incrementally increase the use of transit within the study area. The project would not impact transit facilities since the additional transit trips would be spread out during the day, and also over several SamTrans bus lines and Caltrain rail service. The project is consistent with the City's General Plan, Bicycle and Pedestrian Master Plan and the East Side Innovation District Vision Plan. Additionally, the project would not conflict with any current programs, plans, ordinances, or policies addressing the circulation system. Therefore, the project would be consistent with applicable circulation system roadway planning and policies and would have a ***less than significant*** impact on the circulation system.

b) Vehicle Circulation and Congestion

Senate Bill (SB) 743 changed CEQA transportation impact analysis significance criteria to eliminate auto delay, level of service (LOS), and similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts under CEQA. The changes in CEQA Guidelines to implement SB 743 present VMT as an appropriate measure of transportation impacts.

This discussion is a summary of the data, analysis, and conclusions in the complete Transportation Analysis, included in full as Attachment E.

Because the project site is currently occupied by commercial uses, the trip generation of those businesses was estimated and deducted from the trip generation of the proposed project. The proposed project would fit under both "Research and Development Center" and "General Office Building" land uses listed in the current *Trip Generation Manual.*[37] For a conservative analysis, and to be consistent with other recently analyzed Life Sciences office projects in San Carlos, the higher daily trip generation rate for "Research and Development Center" and the peak hour trip generation rates for "General Office Building" were applied to approximate the number of vehicle trips generated by the proposed project based on the proposed square footage. The number of employees was estimated using an occupancy of approximately one employee per 300/800 square feet of office/R&D space at a ratio of 30%/70%, giving an estimate of 867 employees. Prior to

[37] Institute of Transportation Engineers, Trip Generation Manual, 11th Edition, 2021.

implementation of a TDM program (see below), the proposed project would be expected to generate an average of 3,295 net new trips daily, with 452 new trips during the AM peak hour and 428 new trips during the PM peak hour.

Consistent with both the California Office of Planning and Research's (OPR) publication *Transportation Impacts (SB 743) CEQA Guidelines Update and Technical Advisory* (2018) and the City of San Carlos' *Transportation Significance Criteria Implementing Vehicle Miles Traveled* (2020), a proposed project exceeding a level of 15 percent below existing regional VMT per employee may indicate a significant transportation impact. Under OPR's publication, as well as CEQA Guidelines Section 15064.3(b)(1), "generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact." The project is located within 0.5 miles of the El Camino Real transit corridor (a high-quality transit corridor). However, under the City's policies, as an office project, the VMT should be analyzed for potential impact. The C/CAG-VTA Bi-County Model was used to determine the VMT per service population baseline for the planning area, based on the "existing" year of 2019, to be 17.0 miles per day. Using a threshold of 15 percent below existing VMT, the significance threshold for the City of San Carlos would be 14.5 miles per day per employee. (See Attachment E for additional detail.)

A TDM program is required for the proposed project to meet the City of San Carlos' development guidelines, as detailed in **Standard Conditions: Transportation Demand Management**, included in Table 1, which would further reduce traffic generated by the project and contribute to use of alternate modes discussed above. The TDM program must be completed and approved by the City prior to the first certificate of occupancy for the project, outlining the required 20% reduction in trips, program and service measures, planning and design measures, monitoring, reporting, and assurance of success of the plan and an estimated 20% reduction in VMT was assumed for this analysis, consistent with agency guidance (see Attachment E for additional detail).

Based on preliminary documents provided by the applicant, proposed TDM measures would include a private or public shuttle service, marketing and management strategies, on-site amenities, incentive programs, and other items.

The proposed TDM measures were evaluated using the California Emissions Estimator Model (CalEEMod, version 2016.3.1). CalEEMod is a land use emissions model used to quantify potential emissions impacts associated with a variety of land use projects. The model quantifies direct emissions, including vehicle use, and indirect emissions, including energy and water use. The model was developed for California Air Pollution Control Officers Association (CAPCOA) and incorporates the mitigation measures outlined in Quantifying Greenhouse Gas Mitigation Measures, CAPCOA 2010. CalEEMod estimates vehicle travel as a function of land use and geographic location using ITE standard trip generation rates and trip length data collected from various jurisdictions around the State of California. Using this data, the CalEEMod model can determine the number of Vehicle Miles Traveled (VMT) for a given development.

The underlying CAPCOA methodology limits VMT reductions based on the development's location. The proposed project site is in a suburban center area of San Carlos, where the overall maximum reduction allowed by the CAPCOA methodology is 20 percent, which is consistent City requirements. Therefore, the anticipated reduction was calculated per the above methodology, then limited to 20 percent.

The estimated project VMT per service population was calculated and compared against the significance threshold, with and without the reduced rate with implementation of a TDM program, as summarized in **Table 10**.

Table 10: Project Vehicle Miles Traveled

Daily Trips	Baseline VMT Rate	Significance Threshold (15% Below Baseline)	Project VMT Rate (with no TDM)	Project VMT Rate (with TDM)
Employment-based VMT per Service Population	17.0	14.5	15.2	12.2

Note: VMT Rate is measured in VMT per Service Population; Project VMT Rate (with TDM) is 15.2 less 20% (approximately equal to the required 20% TDM plan trip reduction) = 12.2
Source: W-Trans CEQA Transportation Analysis, 2025, Table 4 in Attachment E.

It is noted that a Transportation Management Association (TMA) may be established in San Carlos in the future. Successful implementation of an area wide TMA program may result in greater vehicle trip reductions when compared to an individual project-specific TDM program. As a condition of approval, the project applicant would likely be required to participate in any future TMA in the East Side Innovation District (ESID).

The project, including implementation of a TDM program (required in Standard Condition: Transportation Demand Management) that reduces the project VMT to 14.5 VMT per service population (15 percent below the Countywide average of 17.0) or less, would have a ***less than significant*** VMT impact.

c) Design Hazards

Site Access and Sight Distance

The Transportation Analysis evaluated the sight distance at both project driveways and the proximity of the accesses to adjacent intersections. Vehicles would access the project site from two driveways on Bransten Road, with full access at each driveway.

Sight distance at both driveways and for drivers looking to turn left into either of the project driveways was found to be more than adequate compared to criteria in the *Highway Design Manual* published by Caltrans.

Pedestrian and Bicycle Facilities

The project plans show the following proposed changes to the existing pedestrian and bicycle network. New facilities are required to be designed and constructed to current City standards to accommodate both pedestrians and bicyclists.

- Demolition and reconstruction of the sidewalks along the project frontage along Bransten Road and along Old County Road from Bransten Road to Terminal Way. This would include ADA-compliant curb ramps and improved sidewalks.

- Construction of the portion of the planned Class IV Bikeway on the western side of Old County Road along the project frontage between Bransten Road and Terminal Way.

- Establishment of a bicycle crosswalk spanning Old County Road at the intersection of Old County Road/Terminal Way that connects the planned Class IV Bikeway on the west side of Old County Road with the east side of Old County Road and Terminal Way. The crosswalk would be equipped with a Rectangular Rapid Flashing Beacon (RRFB) intended to raise awareness of the presence of users within the crosswalk to motorists when activated.

The bicycle facilities along Old County Road are being incrementally improved consistent with the *City of San Carlos Bicycle and Pedestrian Master Plan*. However, because the planned Class IV Bikeway includes both directions of bicycle traffic together on the western side of the road, safe transitions to existing opposite-side bicycle facilities must be included in incremental improvement plans.

Construction of the Class IV Bikeway along Old County Road between Bransten Road and Terminal Way and transition to Class III bike routes at Terminal Way is part of this project and is a required element of the Conditions of Approval. Completion of this portion of the bikeway would also contribute to the overall goals of the City of San Carlos Bicycle and Pedestrian Master Plan which indicate a Class IV Bikeway is planned along Old County Road.

Design Hazards Conclusions

Sight lines would be adequate at each of the proposed project vehicle access points and new pedestrian facilities would be designed to meet applicable safety parameters. With the incremental completion of the project's proposed Old County Road bikeway improvements, the project impacts with respect to design hazards or incompatible uses would be ***less than significant***.

d) Emergency Access

All driveways and internal circulation would be designed and constructed to meet current City standards, ensuring adequate emergency access. While project-generated traffic would be added to area roadways, all roadway users must yield the right-of-way to emergency vehicles and would not substantially impact access for emergency vehicles. The project would have a ***less than significant*** impact on emergency access.

18. TRIBAL CULTURAL RESOURCES Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) 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: i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or ii) 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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		☒		

a) Tribal Cultural Resources

A record search of the Native American Heritage Commission Sacred Lands File was completed for the project and indicated there are no known sacred lands present in the vicinity of the site (included in Attachment B). While no tribes have requested consultation for project in this area, notice was sent to listed tribes on February 23, 2023, per recommendation of the Native American Heritage Commission. No requests for consultation were received.

The records search performed by the Northwest Information Center (included in Attachment B) indicated that there is a moderate to high potential for the inadvertent discovery of previously unrecorded Native American resources based on the characteristics of the site and history of the region.

Mitigation Measures Culture-1, Culture-2, and **Culture-3** would require appropriate monitoring and proper handling of any discoveries and would also reduce the potential impact related to unknown tribal cultural resources.

The EIR for the City's Focused General Plan Update evaluated the potential of future development to impact tribal cultural resources. A mitigation measure was included in the EIR, intended to ensure that any discovered tribal cultural resources would be handled appropriately, resulting in less than significant impacts. This project would implement the relevant General Plan EIR mitigation measure (indicated as "GP-MM") requiring all discovered tribal cultural resources to be treated as significant until determined to be otherwise.

GP-MM TRIB-1: Consider all Native American Archaeological Discoveries to be Significant Resources. All Native American artifacts (tribal finds) shall be considered as a significant Tribal Cultural Resource, pursuant to PRC 21074 until the lead agency has enough evidence to make a determination of significance. The City shall coordinate with an archaeologist who meets the U.S. Secretary of the Interior's Professional Qualifications, as well as an appropriate tribe or tribes, as determined by the NAHC, to develop an appropriate treatment plan for the resources. The plan may include implementation of archaeological data recovery excavations to address treatment of the resource along with subsequent laboratory processing and analysis. An archaeological report shall be written detailing all archaeological finds and submitted to the City and the Northwest Information Center.

Compliance with the protection procedures specified in Mitigation Measures Culture-1, Culture-2, Culture-3, and GP-MM TRIB-1 and Standard Condition: Protection of Human Remains would require that if any previously-unknown tribal cultural resources and/or human remains are discovered, these would be handled appropriately and the impact of the project would be ***less than significant with mitigation***.

19. UTILITIES AND SERVICE SYSTEMS Would the project	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, or 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?			☒	

a, d-e) Utilities

The project would result in redevelopment of a site already provided with utilities and services. Utility connections would be made to lines in adjacent streets that are either already existing or would be upgraded through coordination with the nearby 841 Old County Road project. Certified professionals have prepared utility plans for the project, which are reviewed by City staff, and utility providers would provide will-serve letters prior to issuance of construction permits. No capacity concerns have been raised that are not being addressed by the planned improvements. The project would comply with the City's requirements for waste and recycling. Therefore, while the project would be denser than what is existing on the site and could have a greater demand for utilities and generation of wastewater and solid waste, this would be served by existing facilities and existing regulations and processes would ensure the lines and connections to the site are appropriately sized. The impact on utilities and service systems would be ***less than significant***.

b) Water Supply

The discussion under this topic utilizes information from the Water Supply Assessment (WSA) prepared for the applicant pursuant to Senate Bill 610 by EKI Environment & Water, Inc., dated July 2023, which incorporates a letter of formal approval by Cal Water and which is available as part of the project application materials.

The purpose of a WSA is to evaluate whether a water provider has sufficient water supply to meet the current and planned water demands within its service area, including the demands associated with the proposed project, during normal and dry hydrologic years over a 20-year time horizon. Cal Water's Bear Gulch, Mid-Peninsula, and South San Francisco Districts share one contractual allocation of supply (referred to as their Individual Supply Guarantee or ISG) from the City and County of San Francisco's Regional Water System, and thus Cal Water manages the supplies for all three Districts collectively. Cal Water's ISG for the three Peninsula Districts is 39,993 acre-feet per year. The Region Water System has historically met demand in its service area in all year types. Future water availability is constrained by hydrology, physical facilities, and the institutional parameters that allocate the water supply of the Tuolumne River. In addition, statewide regulations and other factors can impact the system reliability. For example, the adoption of the Water Quality Control Plan for the San Francisco/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) is anticipated to reduce reliability during drought years in the future. The Cal Water Mid-Peninsula District Water Shortage Contingency Plan and Development Offset Program (discussed below) are being implemented to address future supply reliability.

If the "worst-case" supply scenario under the Bay-Delta Plan Amendment is implemented, shortfalls of up to 53% are projected during drought years. To address these future dry-year shortfalls, Cal Water would enact its Water Shortage Contingency Plan, which includes Mandatory Staged Restrictions of Water Use. The overall reduction goals in the Water Shortage Contingency Plan are established for six drought stages and address water demand reductions over 50%. The Water Shortage Contingency Plans for all three Peninsula Districts were revised as part of the 2020 Urban Water Management Plan (UWMP) update process and include detailed information about how drought risks are evaluated by Cal Water on an annual basis to determine the potential need for reductions.

In July 2021, Cal Water began preparation of a Development Offset Program for its three Peninsula Districts. The purpose of the Development Offset Program is to ensure that overall customer demand for water does not exceed available current or future supply under a range of hydrologic conditions, and to ensure the availability of water for residential, commercial, and other purposes for future water use in the three Peninsula Districts. As approved by the California Public Utilities Commission, the Development Offset Program will require any new residential, commercial, or industrial development within any of the three Peninsula Districts that is projected to increase demand by more than 50 acre-feet per year to pay a special facilities fee, referred to as a developer offset fee, consisting of a fee of $15,400 per acre-feet of net demand increase.

The WSA prepared for this project utilized the historic water usage at the site (average of 7.9 acre-feet per year) and water usage estimation methodology per Cal Water preferences to project that the average annual net increase in water demand for the proposed project would total 41 acre-feet per year.[38] This total includes all indoor and outdoor water usage. It also considered the cumulative demand of this project plus expected future development at 841 Old County Road, which has an annual water demand of 46 acre-feet per year. Future demand from the Alexandria Center for Life Sciences project was not included in the cumulative demand of the three Peninsula District, as it

[38] Since completion of the WSA, the floor area of the project has been reduced by approximately 14.5 and the retail portion of the project is no longer being proposed. These project changes since the WSA would result in a water demand less than that analyzed in the WSA and presented here, which remains below the 50 AFY trigger to require participation in the Development Offset Program (see below) and would not change conclusions in this analysis.

must offset its demands through the Development Offset Program, which is used to fund accelerated water supply projects and expanded customer conservation programs.

This WSA concluded that the three Peninsula Districts' contractual ISG allocation of 39,993 acre-feet per year is sufficient to meet projected future demands with the proposed project having a minimal impact of less than 50 acre-feet per year. Future demands of the three Peninsula Districts, inclusive of the proposed project, are projected to reach, at most, 87% of Cal Water's contractual ISG allocation in normal hydrologic years. The shortfalls that are currently projected during dry years will be addressed through planned implementation of the Mid-Peninsula District Water Shortage Contingency Plan and Development Offset Program. Because the water demand estimated for the project is less than 50 acre-feet per year, this project is not required to contribute to the Development Offset Program. Therefore, because the WSA prepared in collaboration with Cal Water determined that there would be adequate water supply, the project impact related to water supply would be ***less than significant***.

The project would also implement relevant water efficiency standards. The City of San Carlos has adopted green building standards and water efficient landscaping ordinances consistent with previous versions of the CalGreen building standards and the California Model Water Efficient Landscape Ordinance (MWELO). As part of state requirements, all new developments must comply with these efficiency standards. As such, the project development is expected to implement a number of water-efficient features, including, but not limited to:

- Use of low-flow lavatory faucets, kitchen faucets, toilets, and urinals in accordance with CalGreen Code; and
- Inclusion of low-water use landscaping and high-efficiency irrigation systems to minimize outdoor water use in accordance with MWELO.

c) Wastewater

The discussion under this topic utilizes information from the Preliminary Sewer Memo prepared for the applicant by BKF Engineering, dated December 22, 2022, and the Sanitary Sewer Modeling and Analysis prepared for the applicant by Mott MacDonald, dated September 21, 2023, both of which are available as part of the project application materials. [39]

The estimated wastewater flow was calculated from the proposed project as well as the other properties on Bransten Road, which all flow into an existing 8-inch sewer main under Bransten Road. Both of the new buildings would have one sewer lateral each that connects to the main. These calculations were used to model local conditions under future cumulative conditions including other proposed development in the area, and concluded that the proposed 8-inch laterals for the project buildings and the existing 8-inch main under Bransten Road would support the addition of the project's wastewater to the existing and cumulative volumes. The project would have a ***less than significant*** impact.

[39] Since completion of these documents, the floor area of the project has been reduced by approximately 14.5 percent and the retail portion of the project is no longer being proposed. These project changes would result in sewer demand less than that analyzed in these documents and presented here and would not change conclusions in this analysis.

20. 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	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?				☒

a-d) Wildfire Risk and Emergency Response

The project site is within the developed urban area of San Carlos, which is not located in a very high fire hazard severity zone.[40, 41] The proposed project would have ***no impact*** related to wildfire.

[40] California Department of Forestry and Fire Protection. 2007. San Mateo County Fire Hazard Severity Zones in State Responsibility Area. Available: https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/.

[41] Department of Forestry and Fire Protection Fire and Resource Assessment Program, *San Mateo County Very High Fire Hazard Severity Zones*, November 24, 2008, available at: https://osfm.fire.ca.gov/media/6800/fhszl_map41.pdf.

21. MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant With Mitigation	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?		☒		

a) Environmental Quality

With the implementation of Mitigation Measures Bio-1 to protect nesting birds during construction and Culture-1 through Culture-3 and GP-MM Trib-1 to address the potential discovery of currently unknown cultural, tribal cultural, or paleontological resources at the site, the project would not 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, or threaten to eliminate a plant or animal community. The project would not impact rare or endangered wildlife species or eliminate important examples of the major periods of California history or prehistory. Therefore, the potential adverse effects on environmental quality would be ***less than significant with mitigation***.

b) Cumulative Impacts

The project would not result in adverse impacts that are individually limited but cumulatively considerable, including effects for which project-level mitigation were identified to reduce impacts to less than significant levels. All potential effects of the project were assessed in the context of area development, including specifically assessment of emissions impacts analyzed against cumulative thresholds per the Air District recommendations. Project-specific impacts would be less than significant with implementation of mitigation measures identified in this document, including Mitigation Measure Air-1 to address construction period dust and emissions, and Haz-1 to manage potentially contaminated soil, and would not result in contribution of considerable levels to

cumulative impacts. Therefore, the potential cumulative impacts would be ***less than significant with mitigation***.

c) Adverse Effects on Human Beings

The project would not result in substantial adverse effects on human beings, either directly or indirectly. Mitigation Measures Air-1, Haz-1, and Noise-1 would minimize the potential for safety impacts related to construction-period emissions, appropriate techniques for safety during site disturbance, and vibration levels from construction equipment. Therefore, the potential adverse effects on human beings would be ***less than significant with mitigation***.

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City of San Carlos

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AIR QUALITY AND GREENHOUSE GAS ASSESSMENT

ATTACHMENT A

to the
789 Old County Road Project Initial Study / Mitigated Negative Declaration

789 OLD COUNTY ROAD AIR QUALITY & GREENHOUSE GAS ASSESSMENT

San Carlos, California

April 21, 2023
Revised September 5, 2024

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Introduction

The purpose of this report is to address air quality, community health risk, and greenhouse gas (GHG) impacts associated with the proposed office/research and development/life science project located at 789 Old County Road and 1026 Branston Road in San Carlos, California. The air quality and GHG impacts from this project would be associated with demolition of the existing land uses, construction of the new buildings and infrastructure, and operation of the project. Air pollutants and GHG emissions associated with construction and operation of the project were predicted using appropriate computer models. In addition, the potential project health risk impacts (includes construction and operation) and the impact of existing toxic air contaminant (TAC) sources affecting the nearby sensitive receptors were evaluated. The analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

Project Description[2]

The existing project site is split between two parcels that are currently used by a cement and concrete manufacturing and distributing company, and a cargo truck company. The sites have been developed with one story buildings, one- and two-story buildings made of shopping containers, two batch plants, and paved areas, parking areas, and roadways. The site also includes a narrow strip of land along Branston Road that contains grass and trees as well as a paved easement.

The project proposes to demolish the existing uses on the adjacent sites to construct two new office/research & development (R&D) buildings. The four-story building located on the west side of the site and the six-story building located on the east of the site would share a connected ground floor lobby and parking, two levels of underground parking with a total of 835 parking spaces, and the second-floor office R&D area, totaling a combined 349,066 square feet (sf). The building's main entrance would be located between the two buildings and would include a 2,305-sf retail space. The retail space would be leased as a café, coffee, or grab-and-go food venue. The thin strip of land along Bransten Road would be turned into a small parklet. The project would include two emergency diesel generators located on the ground floor in the east and west buildings and cooling towers atop each building. The exact usage of the proposed buildings is currently unknown, but the applicant is targeting life science tenants. Construction was modeled to begin in March 2024 and be completed by November 2026. Construction schedules can change and these modeling assumptions are intended to represent a reasonable worst-case from an emissions standpoint (earliest and fastest/most activity at one time). A later construction start or slower/phased completion would not result in worsened impact conclusions.

Air Quality Setting

The project is located in San Mateo County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and federal level. The Bay

[1] Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017.

[2] Since completion of the original analysis presented in this report, the size of the project has been reduced by approximately 14.5 percent and the retail portion of the project is no longer being proposed. Construction and operational activities would be reduced by a similar amount and operational emission sources have not moved around the property by any significant amount. Any reanalysis of the project would result in lower emissions than what is presented in this report. As a result, the original analysis is presented herein, and the conclusions of the analysis remain valid.

Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$).

Air Pollutants of Concern

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO_X). These precursor pollutants react under certain meteorological conditions to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ozone levels. The highest ozone levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone levels aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

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

Toxic Air Contaminants

Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality often because they cause cancer. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs. Health risks from TACs are estimated using the Office of Environmental Health Hazard Assessment (OEHHA) risk assessment guidelines, which were published in February of 2015.[3] See *Attachment 1* for a detailed description of the health risk modeling methodology used in this assessment.

[3] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. The closest sensitive receptors to the site are the residents in the single-family housing northwest of the project site. There are also children located at the Children's Place Preschool and Little Learners Preschool southwest of the site. The project will not introduce new sensitive (i.e., residential) receptors.

Regulatory Setting

Federal Regulations

The United States Environmental Protection Agency (EPA) sets nationwide emission standards for mobile sources, which include on-road (highway) motor vehicles such trucks, buses, and automobiles, and non-road (off-road) vehicles and equipment used in construction, agricultural, industrial, and mining activities (such as bulldozers and loaders). The EPA sets nationwide fuel standards, however California also has the ability to set motor vehicle emission standards and standards for fuel, as long as they are the same or more stringent than the nationwide standards.

In the past decade the EPA has established a number of emission standards for on- and non-road heavy-duty diesel engines used in trucks and other equipment. This was done in part because diesel engines are a significant source of NO_X and particulate matter (PM_{10} and $PM_{2.5}$) and because the EPA has identified DPM as a probable carcinogen. Implementation of the heavy-duty diesel on-road vehicle standards and the non-road diesel engine standards are estimated to reduce particulate matter and NO_X emissions from diesel engines up to 95 percent in 2030 when the heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards.[4]

In concert with the diesel engine emission standards, the EPA has also substantially reduced the amount of sulfur allowed in diesel fuels. The sulfur contained in diesel fuel is a significant contributor to the formation of particulate matter in diesel-fueled engine exhaust. Current standards have reduced the amount of sulfur allowed by 97 percent for highway diesel fuel (from 500 parts per million by weight [ppmw] to 15 ppmw), and by 99 percent for off-highway diesel fuel (from about 3,000 ppmw to 15 ppmw). The low sulfur highway fuel (15 ppmw sulfur), also called ultra-low sulfur diesel (ULSD), is currently required for use by all vehicles in the U.S.

[4] USEPA, 2000. *Regulatory Announcement, Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements*. EPA420-F-00-057. December.

All of the above federal diesel engine and diesel fuel requirements have been adopted by California, in some cases with modifications making the requirements more stringent or the implementation dates sooner.

State Regulations

To address the issue of diesel emissions in the state, CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.[5] In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, a significant component of the plan involves application of emission control strategies to existing diesel vehicles and equipment. Many of the measures of the Diesel Risk Reduction Plan have been approved and adopted, including the federal on-road and non-road diesel engine emission standards for new engines, as well as adoption of regulations for low sulfur fuel in California.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. CARB regulations require on-road diesel trucks to be retrofitted with particulate matter controls or replaced to meet 2010 or later engine standards that have much lower DPM and $PM_{2.5}$ emissions. This regulation will substantially reduce these emissions between 2013 and 2023. While new trucks and buses will meet strict federal standards, this measure is intended to accelerate the rate at which the fleet either turns over so there are more cleaner vehicles on the road or is retrofitted to meet similar standards. With this regulation, older, more polluting trucks would be removed from the roads sooner.

CARB has also adopted and implemented regulations to reduce DPM and NO_X emissions from in-use (existing) and new off-road heavy-duty diesel vehicles (e.g., loaders, tractors, bulldozers, backhoes, off-highway trucks, etc.). The regulations apply to diesel-powered off-road vehicles with engines 25 horsepower (hp) or greater. The regulations are intended to reduce particulate matter and NO_X exhaust emissions by requiring owners to turn over their fleet (replace older equipment with newer equipment) or retrofit existing equipment in order to achieve specified fleet-averaged emission rates. Implementation of this regulation, in conjunction with stringent federal off-road equipment engine emission limits for new vehicles, will significantly reduce emissions of DPM and NO_X.

Bay Area Air Quality Management District (BAAQMD)

BAAQMD has jurisdiction over an approximately 5,600-square mile area, commonly referred to as the San Francisco Bay Area (Bay Area). The District's boundary encompasses the nine San Francisco Bay Area counties, including Alameda County, Contra Costa County, Marin County, San Francisco County, San Mateo County, Santa Clara County, Napa County, southwestern Solano County and southern Sonoma County.

[5] California Air Resources Board, 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. October.

BAAQMD is the lead agency in developing plans to address attainment and maintenance of the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). The District also has permit authority over most types of stationary equipment utilized for the proposed project. The BAAQMD is responsible for permitting and inspection of stationary sources; enforcement of regulations, including setting fees, levying fines, and enforcement actions; and ensuring that public nuisances are minimized.

BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area.[6] The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program is being implemented in three phases that includes an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TAC, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses will be used to focus emission reduction measures in areas with high TAC exposures and high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area. Overburdened communities are areas located (i) within a census tract identified by the California Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0 implemented by OEHHA, as having an overall CalEnviroScreen score at or above the 70th percentile, or (ii) within 1,000 feet of any such census tract.[7] The BAAQMD has identified six communities as impacted: Concord, Richmond/San Pablo, Western Alameda County, San José, Redwood City/East Palo Alto, and Eastern San Francisco. The project site is not within a designated CARE area and not within a BAAQMD overburdened area as identified by BAAQMD's Overburdened Areas Map[8].

The BAAQMD *California Environmental Quality Act (CEQA) Air Quality Guidelines*[9] were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for TACs, odors, and GHG emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of their *CEQA Guidelines*. In May 2011, the updated BAAQMD *CEQA Air Quality Guidelines* were amended to include a risk and hazards threshold for new receptors and modify procedures for assessing impacts related to risk and hazard impacts.

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[6] See BAAQMD: https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program , accessed 2/18/2021.
[7] See BAAQMD: https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-2-permits/2021-amendments/documents/20210722_01_appendixd_mapsofoverburdenedcommunities-pdf.pdf?la=en , accessed 11/23/2021.
[8] See BAAQMD: https://www.baaqmd.gov/about-air-quality/interactive-data-maps
[9] Bay Area Air Quality Management District, 2011. *CEQA Air Quality Guidelines*. May. (Updated May 2017)

BAAQMD Rules and Regulations

Combustion equipment associated with the proposed project that includes new diesel engines to power generators and cooling towers that would establish new sources of particulate matter and gaseous emissions. Emissions would primarily result from the testing of the emergency backup generators and operation of the cooling towers. Certain emission sources would be subject to BAAQMD Regulations and Rules. The District's rules and regulations that may apply to the project include:

- Regulation 2 – Permits
  - Rule 2-1: General Requirements
  - Rule 2-2: New Source Review
  - Rule 2-5: New Source Review of Toxic Air Contaminants
- Regulation 6 – Particulate Matter and Visible Emissions
  - Rule 6-2: Commercial Cooking Equipment
  - Rule 6-3: Wood-Burning Devices
  - Rule 6-7: Odorous Substances
- Regulation 9 – Inorganic Gaseous Pollutants
  - Rule 9-1: Sulfur Dioxide
  - Rule 9-7: Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, And Process Heaters
  - Rule 9-8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines

Permits

Rule 2-1-301 requires that any person installing, modifying, or replacing any equipment, the use of which may reduce or control the emission of air contaminants, shall first obtain an Authority to Construct (ATC).

Rule 2-1-302 requires that written authorization from the BAAQMD in the form of a Permit to Operate (PTO) be secured before any such equipment is used or operated.

Rule 2-1 lists sources that are exempt from permitting.

New Source Review

Rule 2-2, New Source Review (NSR), applies to all new and modified sources or facilities that are subject to the requirements of Rule 2-1-301. The purpose of the rule is to provide for review of such sources and to provide mechanisms by which no net increase in emissions will result.

Rule 2-2-301 requires that an applicant for an ATC or PTO apply Best Available Control Technology (BACT) to any new or modified source that results in an increase in emissions and has emissions of precursor organic compounds, non-precursor organic compounds, NOx, SO_2, PM_{10}, or CO of 10.0 pounds or more per highest day. Based on the estimated emissions from the proposed project, BACT will be required for NOx emissions from the diesel-fueled generator engines.

Rule 2-5 applies to new and modified sources of TAC emissions. BAAQMD evaluates the TAC emissions in order to evaluate potential public exposure and health risk, to mitigate potentially significant health risks resulting from these exposures, and to provide net health risk benefits by improving the level of control when existing sources are modified or replaced. Toxics BACT (or TBACT) is applied to any new or modified source of TACs where the source risk is a cancer risk greater than 1.0 in one million and/or a chronic hazard index greater than 0.20. Permits are not issued for any new or modified source that has risks or net project risks that exceed a cancer risk of 10.0 in one million or a chronic or acute hazard index of 1.0.

Stationary Diesel Airborne Toxic Control Measure

The BAAQMD administers the CARB's Airborne Toxic Control Measure (ACTM) for Stationary Diesel engines (section 93115, title 17 CA Code of Regulations). The project's stationary sources will be new stationary emergency stationary emergency standby diesel engines larger than 50 hp. These limits vary based on maximum engine power. All engines are limited to PM emission rates of 0.15 g/hp-hour, regardless of size. This ACTM limits engine operation 50 hours per year for routine testing and maintenance.

Offsets

Rule 2-2-302 require that offsets be provided for a new or modified source that emits more than 10 tons per year of NOx or precursor organic compounds. It is not expected that emissions of any pollutant will exceed the offset thresholds.

Prohibitory Rules

Regulation 6 pertains to particulate matter and visible emissions. Although the engines will be fueled with diesel, they will be modern, low emission engines. Thus, the engines are expected to comply with Regulation 6.

Rule 6-3 applies to emissions from wood-burning devices. Effective November 1, 2016, no person or builder shall install a wood-burning device in a new building construction.

Rule 9-1 applies to sulfur dioxide. The engines will use ultra-low sulfur diesel fuel (less than 15 ppm sulfur) and will not be a significant source of sulfur dioxide emissions and are expected to comply with the requirements of Rule 9-1.

Rule 9-7 limits the emissions of NOx CO from industrial, institutional and commercial boilers, steam generators and process heaters. This regulation typically applies to boilers with a heat rating of 2 million British Thermal Units (BTU) per hour

Rule 9-8 prescribes NOx and CO emission limits for stationary internal combustion engines. Since the proposed engines will be used with emergency standby generators, Regulation 9-8-110 exempts the engines from the requirements of this Rule, except for the recordkeeping requirements (9-8-530) and limitations on hours of operation for reliability-related operation (maintenance and testing). The engines will not operate more than 50 hours per year, which will satisfy the requirements of 9-8-111.

BACT for Diesel Generator Engines

Since the generators will be used exclusively for emergency use during involuntary loss of power, the BACT levels listed for IC compression engines in the BAAQMD BACT Guidelines would apply. These are provided for two separate size ranges of diesel engines:

I.C. Engine – Compression Ignition >50hp and <1.000hp: BAAQMD applies BACT 2 emission limits based on the ATCM for stationary emergency standby diesel engines larger than 50 brake-horsepower (BHP). NOx emission factor limit is subject to the CARB ACTM that ranges from 3.0 to 3.5 grams per horsepower hour (g/hp-hr). The PM (PM10 or PM2.5) limit is 0.15 g/hp-hr per CARB's ACTM.

I.C. Engine – Compression Ignition >999hp: BAAQMD applies specific BACT emission limits for stationary emergency standby diesel engines equal or larger than 1,000 brake-horsepower (BHP). NOx emission factor limit is subject to the CARB ACTM that ranges from 0.5 g/hp-hr. The PM (PM10 or PM2.5) limit is 0.02 g/hp-hr. POC (i.e., ROG) limits are 0.14 g/hp-hr.

City of San Carlos 2030 General Plan

The San Carlos 2030 General Plan's Environmental Management Element includes policies and actions to reduce exposure of the City's sensitive population to exposure of air pollution, toxic air contaminants, and GHG emissions. The following policies and actions are applicable to the proposed project:

Policies

Policy EM-6.1: Support and comply with the BAAQMD, State and federal standards and policies that improve air quality in the Bay Area.

Policy EM-6.2: Support and encourage commercial uses to adopt environmentally friendly technologies and reduce the release of pollutants.

Policy EM-6.3: Support the reduction of emissions of particulates from wood burning appliances, construction activity, automobiles, trucks and other sources.

Policy EM-6.6: BAAQMD recommended measures to reduce PM_{10} and exhaust emissions associated with construction shall be applied to new development in San Carlos.

Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA and these significance thresholds were contained in the District's 2011 CEQA Air Quality Guidelines. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. The thresholds were challenged through a series of court challenges and were mostly upheld. BAAQMD updated its thresholds in the CEQA Air Quality Guidelines in 2017 and again in 2022

(GHG thresholds only). The latest BAAQMD significance thresholds, which were used in this analysis and are summarized in Table 1. Impacts above the threshold are considered potentially significant.

Table 1. BAAQMD CEQA Air Quality Significance Thresholds

Criteria Air Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Health Risks and Hazards	**Single Sources Within 1,000-foot Zone of Influence**	**Combined Sources (Cumulative from all sources within 1000-foot zone of influence)**	
Excess Cancer Risk	10 per one million	100 per one million	
Hazard Index	1.0	10.0	
Incremental annual $PM_{2.5}$	0.3 µg/m^3	0.8 µg/m^3	
Greenhouse Gas Emissions			
Land Use Projects – (Must Include A or B)	A. Projects must include, at a minimum, the following project design elements: 1. Buildings a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development). b. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines. 2. Transportation a. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA: i. Residential projects: 15 percent below the existing VMT per capita ii. Office projects: 15 percent below the existing VMT per employee iii. Retail projects: no net increase in existing VMT b. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2. B. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).		

Note: ROG = reactive organic gases, NOx = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less. GHG = greenhouse gases.

AIR QUALITY IMPACTS AND MITIGATION MEASURES

Impact AIR-1: Conflict with or obstruct implementation of the applicable air quality plan?

BAAQMD is the regional agency responsible for overseeing compliance with State and federal laws, regulations, and programs within the San Francisco Bay Area Air Basin (SFBAAB). BAAQMD, with assistance from the Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC), prepares and implements specific plans to meet the applicable laws, regulations, and programs. The most recent and comprehensive of which is the *Bay Area 2017 Clean Air Plan*.[10] The primary goals of the Clean Air Plan are to attain air quality standards, reduce population exposure and protect public health, and reduce GHG emissions and protect the climate. The BAAQMD has also developed CEQA guidelines to assist lead agencies in evaluating the significance of air quality and GHG impacts. In formulating compliance strategies, BAAQMD relies on the planned land uses identified in local general plans. Land use planning affects vehicle travel, which, in turn, affects region-wide emissions of air pollutants and GHGs.

Conclusion AIR-1

The 2017 Clean Air Plan, adopted by BAAQMD in April 2017, includes control measures that are intended to reduce air pollutant emissions in the Bay Area either directly or indirectly. General plans must show consistency with the control measures listed within the Clean Air Plan. However, at the project-level, there are no consistency measures or thresholds. Despite this, the proposed project would not conflict with the latest Clean Air planning efforts since 1) the project would have construction and operational emissions below the BAAQMD thresholds (see Impact 2 below) and 2) the project would be considered urban infill, 3) the project would be located near residential and employment centers, and 4) the project would be located near transit with regional connections.

Impact AIR-2: 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?

The Bay Area is considered a non-attainment area for ground-level O_3 and $PM_{2.5}$ under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for PM_{10} under the California Clean Air Act, but not the federal act. The area has attained both State and Federal ambient air quality standards for carbon monoxide. As part of an effort to attain and maintain ambient air quality standards for O_3, $PM_{2.5}$ and PM_{10}, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for O_3 precursor pollutants (ROG and NOx), PM_{10}, and $PM_{2.5}$ and apply to both construction period and operational period impacts.

[10] Bay Area Air Quality Management District (BAAQMD), 2017. *Final 2017 Clean Air Plan.*

Construction Period Emissions

The California Emissions Estimator Model (CalEEMod) Online Version 2022.1.1 was used to estimate emissions from on-site construction activity, construction vehicle trips, and evaporative emissions. The project land use types and size, and anticipated construction schedule were input to CalEEMod. The CalEEMod model output along with construction inputs are included in *Attachment 2*.

CalEEMod Inputs

Land Uses

The proposed project land uses were entered into CalEEMod as described in Table 2.

Table 2. Summary of Project Land Use Inputs[11]

Project Land Uses	Size	Units	Square Feet	Acreage
Strip Mall	2.00	1,000-sf	2,305	3.4
Research & Development	349	1,000-sf	349,066	
Enclosed Parking with Elevator	835	Parking Space	38,679	
City Park	1.00	Acre	-	

Construction Inputs

CalEEMod computes annual emissions for construction that are based on the project type, size, and acreage. The model provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. The construction build-out scenario including equipment list and schedule, were based on information generated using CalEEMod defaults for a project of this type and size and a provided preliminary schedule that was reviewed by the project applicant.

The CalEEMod default construction equipment worksheets included the schedule for each phase of construction (included in *Attachment 2*). Within each construction phase, the quantity of equipment to be used along with the average use hours per day and total number of workdays were based on CalEEMod defaults. The construction schedule assumed that the earliest possible start date would be March 2024 and would be built out over a period of approximately 32 months, or 690 construction workdays. The earliest year of full operation was assumed to be 2027.

Construction Traffic Emissions

Construction would produce traffic in the form of worker trips and truck traffic. The traffic-related emissions are based on worker and vendor trip estimates produced by CalEEMod and haul trips

[11] Since completion of the original analysis presented in this report, the size of the project has been reduced by approximately 14.5 percent and the retail portion of the project is no longer being proposed. Construction and operational activities would be reduced by a similar amount and operational emission sources have not moved around the property by any significant amount. Any reanalysis of the project would result in lower emissions than what is presented in this report. As a result, the original analysis is presented herein, and the conclusions of the analysis remain valid.

that were computed based on the estimate of demolition material to be exported, soil material imported and/or exported to the site, and the estimate of concrete and asphalt truck trips. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. The total trips for those were computed by multiplying the daily trip rate by the number of days in that phase. Haul trips for demolition and grading were estimated from the provided demolition and grading volumes and assuming each truck could carry 10 tons per load. The applicant provided a soil export volume of 107,200 cubic yards (cy). The number of concrete and asphalt total round haul trips were estimated based on information provided by the applicant. provided for the project and converted to daily one-way trips, assuming two trips per delivery. These values are shown in the project construction equipment worksheets included in *Attachment 2.*

Conclusion AIR-2.1

Average daily emissions were annualized for each year of construction by dividing the annual construction emissions and dividing those emissions by the number of active workdays during that year. Table 3 shows the annualized average daily construction emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust during construction of the project. As indicated in Table 3, predicted annualized project construction emissions would not exceed the BAAQMD significance thresholds.

Table 3. Construction Period Emissions[1]

Year	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Construction Emissions Per Year (Tons)				
2024	0.48	5.34	0.19	0.17
2025	0.55	1.78	0.06	0.06
2026	1.83	2.05	0.07	0.07
Average Daily Construction Emissions (pounds/day)				
Construction Period Average	8.25	26.58	0.93	0.86
BAAQMD Thresholds (pounds per day)	*54* lbs./day	*54* lbs./day	*82* lbs./day	*54* lbs./day
Exceed Threshold?	No	No	No	No

Note: [1] Since completion of the original analysis presented in this report, the size of the project has been reduced by approximately 7 percent and the retail portion of the project is no longer being proposed. Construction and operational activities would be reduced by a similar amount and operational emission sources have not moved around the property by any significant amount. Any reanalysis of the project would result in lower emissions than what is presented in this report. As a result, the original analysis is presented herein, and the conclusions of the analysis remain valid.

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less-than-significant if best management practices are implemented to reduce these emissions. *Mitigation Measure AQ-1 would implement BAAQMD-recommended best management practices*.

Mitigation Measure AQ-1: **Include measures to control dust and exhaust during construction.**

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. Additional measures are identified to reduce construction equipment exhaust emissions. The contractor shall implement the following best management practices that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

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

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

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

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

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

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

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

Effectiveness of Mitigation Measure AQ-1

The measures above are consistent with BAAQMD-recommended basic control measures for reducing fugitive particulate matter that are contained in the BAAQMD CEQA Air Quality Guidelines.

Operational Period Emissions

Operational air emissions from the project would be generated primarily from autos driven by future employees and project stationary equipment. Evaporative emissions from architectural coatings and maintenance products (classified as consumer products) are typical emissions from these types of uses. CalEEMod was used to estimate emissions from operation of the proposed project.

CalEEMod Inputs

Land Uses

The project operational land uses were entered into CalEEMod as described above for the construction period modeling.

Model Year

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. The earliest full year of operation would be 2027 if construction begins in 2024. Emissions associated with build-out later than 2027 would be lower.

Traffic Information[12]

CalEEMod allows the user to enter specific vehicle trip generation rates. Therefore, the project-specific daily trip generation rate provided by the traffic consultant was entered into the model.[13] To be conservative, the traffic consultant used the higher daily trip generation rate from the Research & Development land use and the peak hour trip generation rates for General Office Building to approximate the number of vehicle trips by the proposed project. The project was predicted to produce 5,625 daily trips. When considering the 228 existing use trips and an internal capture reduction applied in the traffic analysis, the project would result in 4,796 net new daily trips. The daily trip generation was calculated using the size of the project land uses and the adjusted total automobile trips per land use. The Saturday and Sunday trip rates were adjusted by multiplying the ratio of the CalEEMod default rates for Saturday and Sunday trips to the default weekday rate with the project-specific daily weekday trip rate. The default trip types and lengths specified by CalEEMod were used.

[12] As footnoted above, the retail component of the project no longer exists. As a result, the net trip generation by the project would reduce to 3,741 trips from 4,796 trips (W-Trans, *789 Old County Road Project Memorandum of Transportation Analysis Assumptions*, DRAFT February 9, 2024). This would result in lower emissions than what is presented in this report as this report continues to show the original, more conservative operational analysis. .

[13] W-Trans, *789 Old County Road Project Memorandum of Transportation Analysis Assumptions*, DRAFT March 15, 2023.

Energy

The City of San Carlos has banned natural gas from new construction.[14] As a result, the energy intensity factor for natural gas in CalEEMod was set to zero for the strip mall land use and added to the electricity intensity factor. The project applicant has requested an exemption for the R&D land use to allow gas for space conditioning systems. GHG emissions modeling includes those indirect emissions from electricity consumption. [15] The PG&E CalEEMod default intensity factors for GHG pollutants were used for the analysis, as the applicant specified that this is a core and shell project and the tenants are unknown at this time, so therefore it has not been enrolled in Peninsula Clean Energy. PG&E has a default rate of 203.98 pounds of CO_2 per megawatt of electricity produced, which is based on PG&E's 2019 emissions rate.

Project Generators

The project proposes to include two stand-by emergency diesel generators located on the ground floor in the east and west buildings to power the building in the event of a power failure. In the east building, the generator would be located along the eastern side of the building. In the west building, the generator would be located near the northwest corner of the building. The standby generators will provide to 1,500- and 2,000-kilowatts (kW) each and be powered by 2,011- and 2,681-horsepower (hp) diesel engines. The generators would be tested periodically and power the buildings in the event of a power failure. For modeling purposes, it was assumed that the generators would be operated primarily for testing and maintenance purposes. CARB and BAAQMD requirements limit these engine operations to 50 hours each per year of non-emergency operation. During testing periods, the engine would typically be run for less than one hour. The engine would be required to meet CARB and EPA emission standards and consume commercially available California low-sulfur diesel fuel. Additionally, the generator would have to meet BAAQMD BACT requirements for IC Engine-Compression Ignition: Stationary Emergency, non-Agricultural, non-direct drive fire pump sources. These include emission limits similar to U.S. EPA Tier 4 standards for engines larger than 1,000-hp. The generator emissions were modeled assuming Tier 4 engines using CalEEMod.

Project Cooling Towers

The project would include two cooling towers to be located on the top of each building for a total of four cooling towers. Based on information provided by the applicant, each cooling tower would have a water flow rate of 3,000 gallons per minute (GPM), using public water with a total dissolved solids (TDS) of 96 parts per million (ppm), and a mist eliminator efficiency of 0.001 percent. Details of the cooling tower PM emissions calculations are provided in *Attachment 3*.

Other Inputs

Default model assumptions for emissions associated with solid waste generation use were applied to the project. Water/wastewater use was estimated to be 100 percent aerobic conditions to

[14] City of San Carlos Local Building Energy Standards, Reach Code, URL: https://www.cityofsancarlos.org/Home/ShowDocument?id=6531

[15] *City of San Carlos Climate Mitigation and Adaptation Plan Consistency Checklist for New Development*, May 20, 2022

represent City wastewater treatment plant conditions since the project site would not send wastewater to septic tanks or facultative lagoons.

Existing Uses

The existing site consists of an estimated 134,000-sf Cement Plant & Trucking Company. A land use type of General Heavy Industry was used in the existing CalEEMod run. Based on the traffic consultant's project-specific trip generation rates for the existing land uses, the existing conditions at the site account for 228 daily trips. A CalEEMod run for existing land uses was developed for this project.

Conclusion AIR-2.2

Annual emissions were predicted using CalEEMod and daily emissions were estimated assuming 365 days of operation. Table 4 shows average daily construction emissions of ROG, NO_X, total PM_{10}, and total $PM_{2.5}$ during operation of the project. The operational period emissions would not exceed the BAAQMD significance thresholds.

Table 4. Operational Period Emissions[1]

Scenario	ROG	NOx	PM_{10}	$PM_{2.5}$
2027 Annual Project Operational Emissions (*tons/year*)	3.81	1.95	1.91	0.38
Project Cooling Tower Emissions (*tons/year)*	-	-	0.02	0.01
2023 Existing Use Operational Emissions (*tons/year*)	0.84	0.43	0.15	0.05
Net Total Operating Emissions	2.96	1.52	1.78	0.34
BAAQMD Thresholds (tons /year)	*10 tons*	*10 tons*	*15 tons*	*10 tons*
Exceed Threshold?	*No*	*No*	*No*	*No*
2027 Net Daily Project Operational Emissions (*pounds/day*)[2]	16.28	8.34	9.73	1.88
BAAQMD Thresholds (pounds/day)	*54* lbs.	*54* lbs.	*82* lbs.	*54* lbs.
Exceed Threshold?	*No*	*No*	*No*	*No*

Notes:
[1] Since completion of the original analysis presented in this report, the size of the project has been reduced by approximately 7 percent and the retail portion of the project is no longer being proposed. Construction and operational activities would be reduced by a similar amount and operational emission sources have not moved around the property by any significant amount. Any reanalysis of the project would result in lower emissions than what is presented in this report. As a result, the original analysis is presented herein, and the conclusions of the analysis remain valid.
[2] Assumes 365-day operation.

Impact AIR-3: Expose sensitive receptors to substantial pollutant concentrations?

Project impacts related to increased health risk can occur either by introducing a new source of TACs with the potential to adversely affect existing sensitive receptors in the project vicinity or by significantly exacerbating existing cumulative TAC impacts. This project would introduce new sources of TACs during construction (i.e., on-site construction and truck hauling emissions) and operation (i.e., stationary and mobile sources).

Project construction activity would generate dust and equipment exhaust that would affect nearby sensitive receptors. The project would include the installation of two stand-by generators powered by a diesel engine, cooling towers, and traffic consisting of mostly light-duty gasoline-powered vehicles, which would produce TAC and air pollutant emissions.

Project impacts to existing sensitive receptors were addressed for temporary construction activities and long-term operational conditions. There are also multiple sources of existing TACs and localized air pollutants in the vicinity of the project. The impact of the existing sources of TAC was also assessed in terms of the cumulative risk which includes the project contribution.

Health Risk Methodology

Health risk impacts were addressed by predicting increased cancer risk, the increase in annual $PM_{2.5}$ concentrations and computing the Hazard Index (HI) for non-cancer health risks. The risk impacts from the project are the combination of risk from construction and operation sources. These sources include on-site construction activity, construction truck hauling, project generator and cooling tower use, and increased traffic from the project. To evaluate the increased cancer risks from the project, a 30-year exposure period was used, per BAAQMD guidance,[16] with the sensitive receptors being exposed to both project construction and operation emissions during this timeframe.

The project increased cancer risk is computed by summing the project construction cancer risk and operation cancer risk contribution. Unlike the increased maximum cancer risk, the annual $PM_{2.5}$ concentration, and HI values are not additive but based on an annual maximum risk for the entirety of the project. The project maximally exposed individual (MEI) is identified as the sensitive receptor that is most impacted by the project's construction and operation.

The methodology for computing health risks impacts is contained in *Attachment 1*. This involved the calculation of TAC and $PM_{2.5}$ emissions, dispersion modeling of these emissions, and computations of cancer risk and non-cancer health effects.

Modeled Sensitive Receptors

Receptors for this assessment included locations where sensitive populations would be present for extended periods of time (i.e., chronic exposures). This includes the nearby existing residences northwest of the project site as shown in Figure 1. Residential receptors are assumed to include all receptor groups (i.e., third trimester, infants, children, and adults) with almost continuous exposure to project emissions. Health risks were also computed for child receptors at the preschools.

Health Risks from Project Construction

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust air pollutant emissions (i.e., DPM) would not be considered to contribute substantially to existing or projected air quality violations. Construction exhaust emissions may still pose health risks for sensitive receptors such as surrounding residents. The

[16] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

primary health risk impacts associated with construction emissions are cancer risk and exposure to $PM_{2.5}$. DPM poses both a potential health and nuisance impact to nearby receptors. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and $PM_{2.5}$.[17] This assessment included dispersion modeling to predict the offsite concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

Construction Emissions

The CalEEMod model provided total annual PM_{10} exhaust emissions (assumed to be all DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles, with total emissions from all construction stages of 0.28 tons (560 pounds). The on-road emissions are a result of haul truck travel during demolition and grading activities, worker travel, and vendor deliveries during construction. A trip length of one mile was used to represent vehicle travel while at or near the construction site. Fugitive $PM_{2.5}$ dust emissions were calculated by CalEEMod as 0.48 tons (966 pounds) for the overall construction period.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict concentrations of DPM and $PM_{2.5}$ concentrations at sensitive receptors (i.e., residences, preschools) in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[18] Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions.

Construction Sources

Combustion equipment DPM exhaust emissions were modeled as an array of point sources to reflect construction equipment and trucks operating at the site. These sources included nine-foot release heights (construction equipment exhaust stack height) that were placed at 23 feet (7 meter) intervals throughout the construction site. This resulted in 298 individual point sources being used to represent mobile equipment DPM exhaust emissions in the construction area. The total DPM emissions were divided into each of the point sources that were spread throughout the project construction site. In addition, the following stack parameters were used for each point source: stack diameter of 2.5 inches, an exhaust temperature of 918˚F, and an exit velocity of 309 feet per second. Since these are point sources, plume rise is calculated by the AERMOD dispersion model. Emissions from vehicle travel on- and off-site were also distributed among the point sources throughout the site. The locations of the point sources used for the modeling are identified in Figure 1.

For modeling fugitive $PM_{2.5}$ emissions, a near-ground level release height of 7 feet (2 meters) was used for the area source. Fugitive dust emissions at construction sites come from a variety of

[17] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.
[18] Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May.

sources, including truck and equipment travel, grading activities, truck loading (with loaders) and unloading (rear or bottom dumping), loaders and excavators moving and transferring soil and other materials, etc. All of these activities result in fugitive dust emissions at various heights at the point(s) of generation. Once generated, the dust plume will tend to rise as it moves downwind across the site and exit the site at a higher elevation than when it was generated. For all these reasons, a 7-foot release height was used as the average release height across the construction site. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources.

AERMOD Inputs and Meteorological Data

The modeling used a five-year meteorological data set (2011-2015) from the San Carlos Airport prepared for use with the AERMOD model by the BAAQMD. Construction emissions were modeled as occurring daily between 8:00 a.m. to 5:00 p.m., when the majority of construction activity would occur. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2024-2026 periods were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptor locations. Receptor heights of 5 feet (1.5 meters), 15 feet (4.5 meters), and 25 feet (7.6 meters) were used to represent the breathing heights on the first, second, and third floors of sensitive receptors in the nearby residences.[19] A receptor height of 3 feet (1 meter) was used to represent breathing height of children at the preschools.

Summary of Construction Health Risk Impacts

The increased cancer risk calculations were based on applying the BAAQMD recommended age sensitivity factors to the TAC concentrations, as described in *Attachment 1*. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. Third trimester, infant, child, and adult exposures were assumed to occur at all residences during the entire construction period, while child exposures were assumed to occur at the preschools.

Non-cancer health hazards and maximum $PM_{2.5}$ concentrations were also calculated and identified. The maximum modeled annual $PM_{2.5}$ concentration was calculated based on combined exhaust and fugitive concentrations. The maximum computed HI values was based on the ratio of the maximum DPM concentration modeled and the chronic inhalation refence exposure level of 5 $\mu g/m^3$.

The maximum modeled annual DPM and $PM_{2.5}$ concentrations were identified at nearby sensitive receptors to find the MEI. Results of this assessment indicated that the MEI most affected by construction was located on the first floor (5 feet above ground) of the single-family residence to the northwest of the project. The location of the MEI and nearby sensitive receptors are shown in Figure 1. Table 5 lists the health risks from construction at the location of the residential MEI. *Attachment 3* to this report includes the emission calculations used for the construction modeling and the cancer risk calculations.

[19] Bay Area Air Quality Management District, 2012, Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0. May. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en

Additionally, modeling was conducted to predict the cancer risks, non-cancer health hazards, and maximum $PM_{2.5}$ concentrations associated with construction activities at the nearby preschools. The maximum increased cancer risks were adjusted using child exposure parameters. The uncontrolled cancer risk, $PM_{2.5}$ concentration, and HI at the nearby preschools do not exceed their respective BAAQMD single-source significance thresholds, as shown in Table 5. Children at both preschools would not have exposure to the project's operational generators. Both preschools admit children from ages 2 through 5. By the time construction would end, the children present at each preschool would have graduated and be elsewhere. Therefore, those children would have no exposure to the operation of the project generators or cooling towers, only project construction. Project construction impacts would encompass the worst impacts at each daycare. Project construction health risks at the most impacted preschool receptor are shown in Table 5.

Health Risks from Project Operation

Operation of the project would have long-term emissions from mobile sources (i.e., traffic) and stationary sources (i.e., generators, cooling towers). While these emissions would not be as intensive at or near the site as construction activity, they would contribute to long-term effects to sensitive receptors.

Project Traffic[20]

Diesel powered vehicles are the primary concern with local traffic-generated TAC impacts. This project would generate a net of 4,796 daily trips[21] with a majority of the trips being from light-duty gasoline-powered vehicles (i.e., passenger cars). The project is not anticipated to generate large amounts of truck trips that would involve diesel vehicles. Per BAAQMD recommended risks and methodology, a road with less than 10,000 total vehicle per day is considered a low-impact source of TACs and do not need to be considered in the CEQA analysis.[22] In addition, projects with the potential to cause or contribute to increased cancer risk from traffic include those that attract high numbers of diesel-powered on road trucks or use off-road diesel equipment on site, such as a distribution center, a quarry, or a manufacturing facility, may potentially expose existing or future planned receptors to substantial cancer risk levels and/or health hazards. This is not a project of concern for non-BAAQMD permitted mobile sources. Emissions from project traffic are considered negligible and not included within this analysis.

Project Stand-By Diesel Generators

The project proposes to include two stand-by emergency diesel generators located on the ground floor in the east and west buildings to power the building in the event of a power failure. In the east building, the generator would be located along the eastern side of the building. In the west

[20] As footnoted above, the retail component of the project no longer exists. As a result, the net trip generation by the project would reduce to 3,741 trips from 4,796 trips (W-Trans, *789 Old County Road Project Memorandum of Transportation Analysis Assumptions*, DRAFT February 9, 2024). This would result is lower emissions than what is presented in this report as this report continues to show the original, more conservative operational analysis..

[21] W-Trans, *789 Old County Road Project Memorandum of Transportation Analysis Assumptions*, DRAFT March 15, 2023.

[22] Bay Area Air Quality Management District, 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en

building, the generator would be located near the northwest corner of the building. The standby generators will be up to 1,500- and 2,000-kW powered by a 2,010.72- and 2,680.97-hp engine. The generators would be tested periodically and power the buildings in the event of a power failure. For modeling purposes, it was assumed that the generators would be operated primarily for testing and maintenance purposes. CARB and BAAQMD requirements limit these engine operations to 50 hours each per year of non-emergency operation. During testing periods, the engine would typically be run for less than one hour. The engine would be required to meet CARB and EPA emission standards and consume commercially available California low-sulfur diesel fuel. Additionally, the generators would have to meet BAAQMD BACT requirements for IC Engine-Compression Ignition: Stationary Emergency, non-Agricultural, non-direct drive fire pump sources. Based on the size of the proposed generators, these include emission limits similar to U.S. EPA Tier 4 engines. The emissions from the operation of the generators were calculated using the CalEEMod model.

These diesel engines would be subject to CARB's Stationary Diesel Airborne Toxics Control Measure (ATCM) and require permits from the BAAQMD, since they will be equipped with an engine larger than 50-HP. BACT requirements would apply to these generators that would limit DPM emissions. As part of the BAAQMD permit requirements for toxics screening analysis, the engine emissions will have to meet Best Available Control Technology for Toxics (BACT) and pass the toxic risk screening level of less than ten in a million. The risk assessment would be prepared by BAAQMD. Depending on results, BAAQMD would set limits for DPM emissions (e.g., more restricted engine operation periods). Sources of air pollutant emissions complying with all applicable BAAQMD regulations generally will not be considered to have a significant air quality health risk impact.

To obtain an estimate of potential cancer risks and $PM_{2.5}$ impacts from operation of the emergency generators, the U.S. EPA AERMOD dispersion model was used to calculate the maximum annual DPM concentration at off-site sensitive receptor locations (nearby residences). The same receptors and breathing heights used in the construction dispersion modeling were used for the generator model. Additionally, the same BAAQMD San Carlos Airport meteorological data was used. Stack parameters (stack height, exhaust flow rate, and exhaust gas temperature) for modeling the generator were based on BAAQMD default parameters for emergency generators.[23] Annual average DPM and $PM_{2.5}$ concentrations were modeled assuming that generator operation could occur at any time of the day (24 hours per day, 365 days per year).

To calculate the increased cancer risk from the generators at the MEI, the cancer risks were also adjusted for exposure duration to account for the MEI being exposed to construction for the first three years of the 30-year period. The exposure duration was adjusted for 27 years of exposure. Table 5 lists the health risks from stand-by diesel generators at the location of residential MEI. The emissions and health risk calculations for the proposed generators are included in *Attachment 3*.

Project Cooling Towers

[23] The San Francisco Community Risk Reduction Plan: Technical Support Document, BAAQMD, San Francisco Dept. of Public Health, and San Francisco Planning Dept., December 2012

The project would include two cooling towers on the roof of each building for a total of four cooling towers. Particulate matter emissions from evaporative cooling can occur and are a result of evaporation of liquid water entrained in the discharge air stream and carried out of the tower as "drift" droplets that contain dissolved solids in the water. Drift droplets that evaporate can produce small particulate matter (i.e., PM_{10} and $PM_{2.5}$) emissions. These emissions are generated when the drift droplets evaporate and leave the particulate matter formed by crystallization of dissolved solids. The cooling towers are not a source of combustion emissions that may contain TACs.

For the health risk assessment, the $PM_{2.5}$ emissions from evaporative cooling were calculated based on a worst-case assumptions including use of evaporative cooling for 100 percent of the time, a water flow rate of 3,000 gallons per minute (gpm), use of 0.001 percent drift eliminators, a total dissolved solids (TDS) concentration of 96 parts per million (ppm) in the recirculating water.[24] Based on a calculated total drift rate, recirculating water TDS concentration of 96 ppm, and PM fractions based on SCAQMD,[25] the $PM_{2.5}$ emissions were calculated as 0.003 tons per year per cooling tower.

To obtain an estimate of potential $PM_{2.5}$ concentrations from operation of the cooling towers, the U.S. EPA AERMOD dispersion model was used to calculate the annual $PM_{2.5}$ concentration at off-site sensitive receptor locations. The same receptors, breathing heights, and BAAQMD San Carlos Airport meteorological data used in the construction dispersion modeling were used for the cooling tower models. Volume source parameters for modeling the cooling tower were based on project-specific cooling tower parameters (i.e., length of side, release height, emission rate (flow rate, TDS, mist eliminator efficiency)). Annual $PM_{2.5}$ concentrations were modeled assuming that cooling tower would operate at any time of the day (24 hours per day, 365 days per year).

The annual $PM_{2.5}$ concentration were based on an annual maximum risk. Table 5 lists the community risks from cooling towers at the location of the residential MEI. The particulate matter emissions for the proposed cooling towers are included in *Attachment 3*.

Laboratories – Fume Hoods

This type of project may include research and manufacturing type laboratories. Since a specific user or type of lab use is not known at this time, it is not possible to predict whether there would be any TAC emissions and, if so, the quantities that would be emitted. Typically, laboratory uses have fume hoods and would employ appropriate exhaust systems to control any emission of air pollutants. Emissions of air pollutants or TACs are subject to BAAQMD permitting requirements that would require the District to apply all applicable rules and regulations to limit or control these emissions. Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants would apply to any potential emissions from these sources. The District's risk policy is to not issue a permit to any source that would cause a cancer risk of greater than 10 chances per million.

Summary of Project-Related Health Risks at the Offsite Project MEI

[24] Recirculating water flow rate and maximum TDS concentration based on City of San Carlos 2021 Water Quality Report TDS Range Max. URL: https://www.calwater.com/ccrs/bay-sc-2021/

[25] South Coast AQMD, *Final-Methodology to Calculate Particulate Matter (PM) 2.5 and PM2.5 Significance Thresholds, Appendix A*. October 2006. Web: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/particulate-matter-(pm)-2.5-significance-thresholds-and-calculation-methodology/final_pm2_5methodology.pdf

The total risk impacts from a project are the combination of construction and operation sources. These sources include on-site construction activity and the project stationary sources (generators, cooling towers). The project impact is computed by adding the construction cancer risk for an infant to the increased cancer risk for the project operational conditions for the generators at the MEI over a 30-year period. The project MEI is identified as the sensitive receptor that is most impacted by the project's construction and operation.

For this project, the sensitive receptor identified in Figure 1 as the construction MEI is also the project MEI. At this location, the MEI would be exposed to 3 years of construction cancer risks and 27 years of operational cancer risks. The cancer risks from construction and operation of the project were added together. Unlike the increased maximum cancer risk, the annual $PM_{2.5}$ concentration and HI risks are not additive but based on an annual maximum risk for the entirety of the project.

The project site is currently operating as a ready-mix concrete manufacturing plant, CEMEX Construction Materials Pacific, LLC, that is permitted to operate as Plant #2939. Concrete plants are a source of $PM_{2.5}$ emissions associated with the pulverization of raw material, kiln burning, clinker production and storage, and other processes at the facility. Fugitive $PM_{2.5}$ emissions was modeled as an area source with a near-ground level release height of 7 feet (2 meters). The emission rate for the area source was based on the size of the parcel the CEMEX plant is located on, and the $PM_{2.5}$ emissions reported in 2019 to CEIDARS. It was assumed that the emissions generated by the CEMEX plant would be distributed evenly over the entire area source. Once generated, the dust plume will tend to rise as it moves downwind across the site and exit the site at a higher elevation than when it was generated. For this reason, a 7-foot release height was used as the average release height across the CEMEX site. The results of the model showed that the existing CEMEX use exceeds the threshold for single-source production of annual $PM_{2.5}$, 0.67 $\mu g/m^3$ vs. the threshold of 0.3 $\mu g/m^3$ at the MEI.

Project risk impacts are shown in Table 5. The unmitigated maximum cancer risks, annual $PM_{2.5}$ concentration, and Hazard Index from project construction and operational activities at the residential project MEI location would not exceed the single-source significance thresholds. In addition, the unmitigated cancer risk, $PM_{2.5}$ concentration, and HI at the nearby preschools do not exceed their respective significance thresholds.

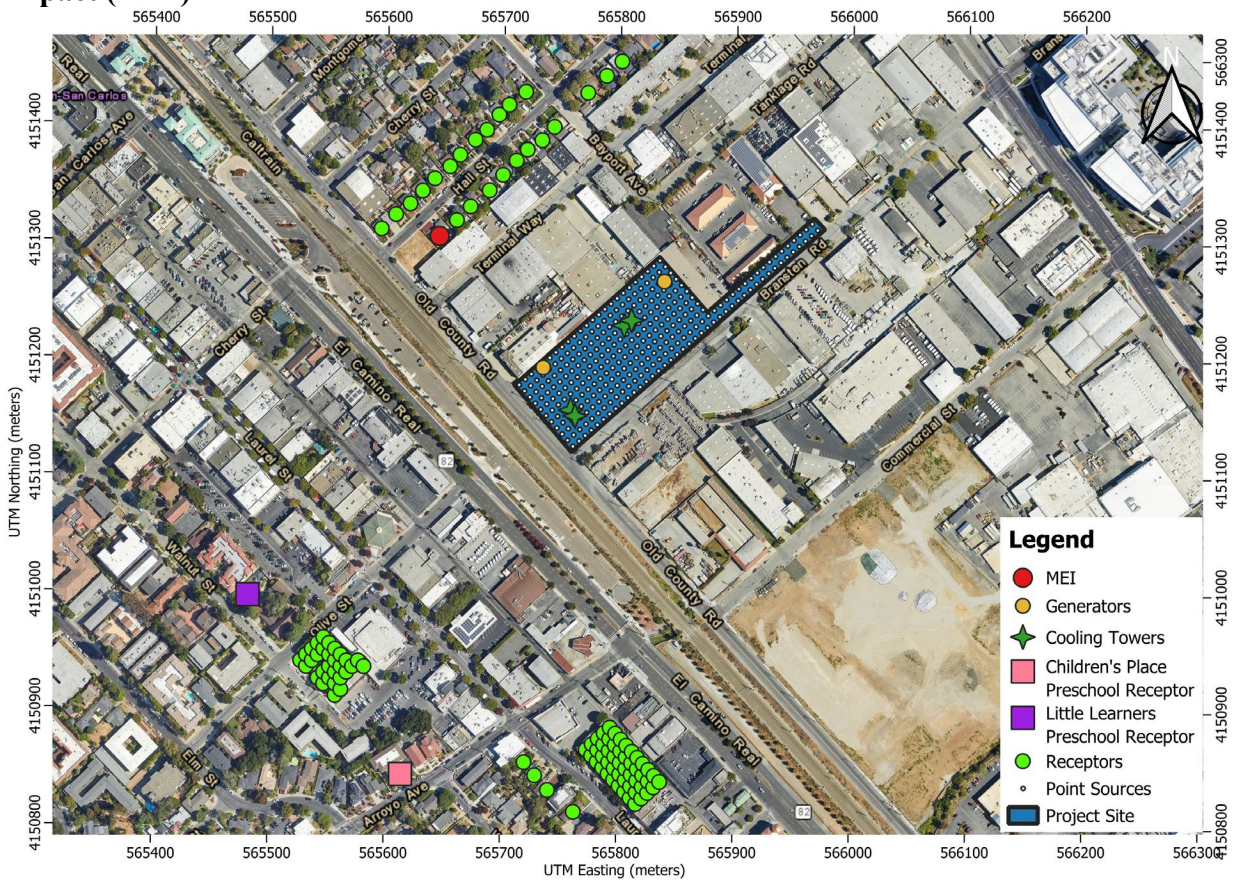
Table 5. Construction and Operation Risk Impacts at the Off-Site Project MEI[1]

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project MEI				
Project Construction (Years 0 – 3)	Unmitigated	6.39 (infant)	0.14	0.01
Project Generator Operation (Years 3 – 30)		0.09 (child)	<0.01	<0.01
Project Cooling Tower (Years 3 – 30)		-	0.01	-
Total/Maximum Project Impact (Years 0 – 30)	Unmitigated	6.48 (infant)	0.14	0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*
Existing Use and Net Operational Change				
CEMEX Construction Materials Pacific, LLC (operational)		0.36	0.67	0.01
Net Operational Change		-0.27	-<0.65	-<0.01

Total/Maximum w/ Net Change	Unmitigated	6.21 (infant)	-0.51	-0.01
Most Affected Preschool – Little Learners Daycare				
Project Construction	Unmitigated	1.44	0.06	<0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*

Note: [1] Since completion of the original analysis presented in this report, the size of the project has been reduced by approximately 14.5 percent and the retail portion of the project is no longer being proposed. Construction and operational activities would be reduced by a similar amount and operational emission sources have not moved around the property by any significant amount. Any reanalysis of the project would result in lower emissions than what is presented in this report. As a result, the original analysis is presented herein, and the conclusions of the analysis remain valid.

Figure 1. Location of Project Construction Site, DPM Point Sources, Project Generators, Project Cooling Towers, Off-Site Sensitive Receptors, and Maximum TAC Impact (MEI)

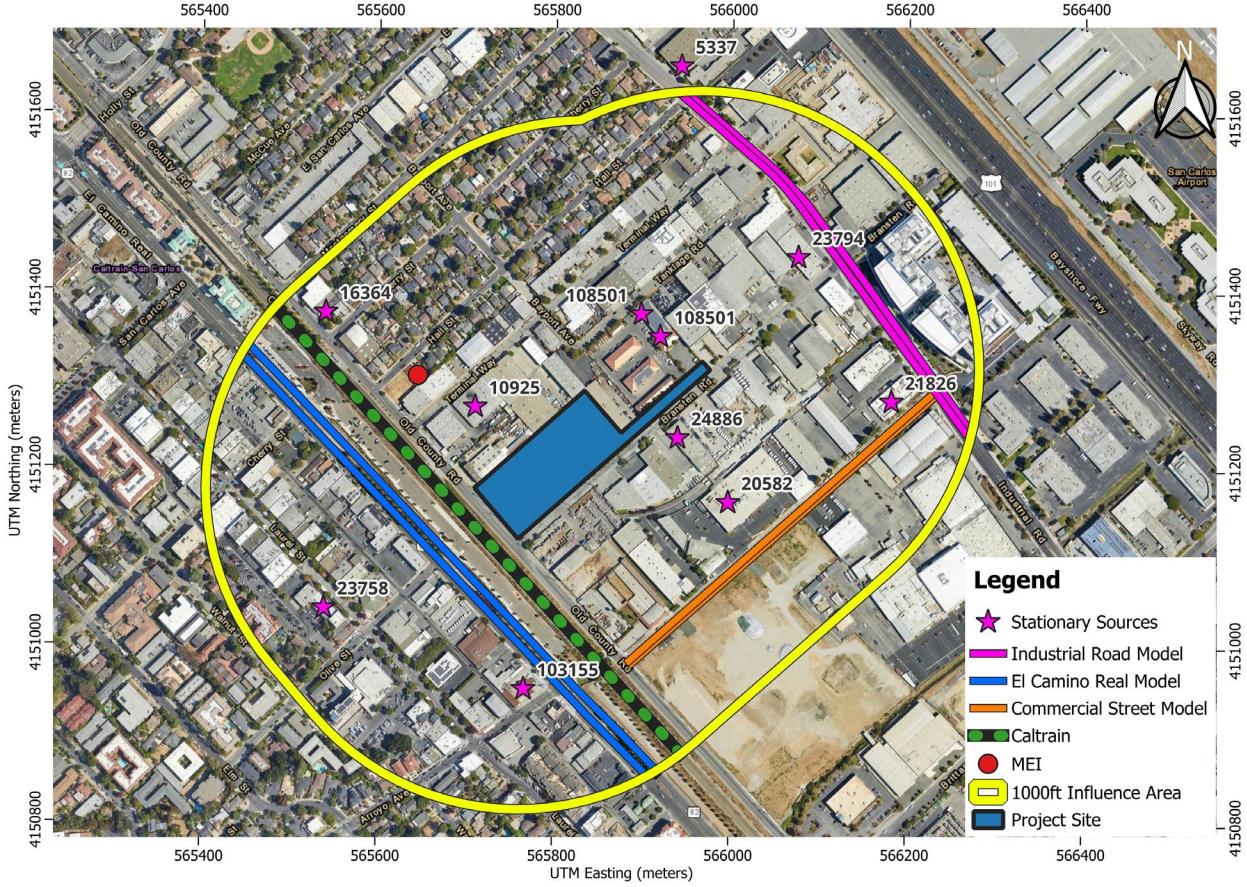


Cumulative Health Risks of all TAC Sources at the Off-Site Project MEI

Community health risk assessments typically look at all substantial sources of TACs that can affect sensitive receptors that are located within 1,000 feet of a project site (i.e., influence area). These sources include freeways or highways, rail lines, busy surface streets, and stationary sources identified by BAAQMD.

A review of the project area indicates that traffic on El Camino Real, Industrial Road, and Commercial Street would exceed 10,000 vehicles per day. Other nearby streets would have less than 10,000 vehicles per day. Caltrain rail lines are located near the project site. A review of BAAQMD's stationary source map website identified twelve stationary sources with the potential to affect the project MEI. Figure 2 shows the location of the sources affecting the MEI. Health risk impacts from these sources upon the MEI reported in Table 6. Details of the modeling and health risk calculations are included in *Attachment 4.*

Figure 2. Project Site, Project MEI, and Nearby TAC and $PM_{2.5}$ Sources



Local Roadways – El Camino Real, Industrial Road, Commercial Street

A refined analysis of potential health impacts from vehicle traffic on El Camino Real, Industrial Road, and Commercial Street was conducted. The refined analysis involved predicting emissions for the traffic volume and mix of vehicle types on the roadway near the project site and using an atmospheric dispersion model to predict exposure to TACs. The associated cancer risks are then computed based on the modeled exposures. *Attachment 1* includes a description of how community risk impacts, including cancer risk are computed.

Traffic Emissions

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ emissions for traffic on each roadway using the latest version of CARB's EMFAC emissions model (EMFAC2021).[26] EMFAC2021 includes the latest data on California's car and truck fleets and travel activity. EMFAC2021 produces emissions rates for either specific vehicle categories or aggregate rates emissions rates using county-wide vehicle populations. However, the rates produced are only for criteria pollutants, not TACs or DPM. Therefore, CT-EMFAC2017 was also used to aid in the development of TAC emissions rates used in the analysis.

[26] EMFAC2017 became available for use in March 2018 and approved by the EPA in August 2019. EMFAC2021 has not yet been approved by U.S. EPA at the time this report was prepared.

CT-EMFAC2017 is the Caltrans version of the CARB's EMFAC2017 emissions model and provides emission factors for mobile source criteria pollutants and TACs, including DPM, based on specific truck fractions input by the user. CT-EMFAC2017 uses the fraction of Non-Truck vehicles and trucks (i.e., Truck 1 and Truck 2) to develop aggregate emissions factors for each of 15 speed bins. The truck percentage from non-state highways in San Mateo County (3.13 percent) [27] was input into CT-EMFAC2017 to develop emissions factors.

Next, the ratio of DPM to $PM_{2.5}$ produced by CT-EMFAC2017 was used to derive a DPM emissions rate using EMFAC2021 rates for each speed needed. Emission processes modeled for the analysis include idle emissions and running exhaust for $PM_{2.5}$, DPM, and TOG. Fugitive $PM_{2.5}$ emissions were also estimated using the road dust emissions factors provided by CT-EMFAC2017 and the tire wear and brake wear emissions rates provided by EMFAC2021. Inputs to the emissions models (both EMFAC2021 and CT-EMFAC2017) include region (i.e., San Mateo County), type of road (i.e., Major/Collector), year of analysis (i.e., 2024), and season (i.e., annual).

To estimate TAC and $PM_{2.5}$ emissions over the 30-year exposure period used for calculating the increased cancer risks for sensitive receptors at the offsite receptors, the EMFAC2021 and CT-EMFAC2017 models were used to develop vehicle emission factors for the year 2024. Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by EMFAC2021 and CT-EMFAC2017. Year 2024 emissions were conservatively assumed as being representative of future conditions over the time period that cancer risks are evaluated since, as discussed above, overall vehicle emissions, and in particular diesel truck emissions, will decrease in the future.

The ADT for El Camino Real, Industrial Road, and Commercial Street was based on 2040 average daily traffic volume plus project traffic volumes provided by the project's traffic data.[28] The calculated ADT on El Camino Real was 31,212 vehicles, Industrial Road was 14,788 vehicles, and on Commercial Street was 13,467 vehicles. Average hourly traffic distributions for San Mateo County roadways were developed using the EMFAC model,[29] which were then applied to the ADT volumes to obtain estimated hourly traffic volumes and emissions for the roadway. For all hours of the day, the average speed of 35 mph on El Camino Real and Industrial Road and 30 mph on Commercial Street was assumed for all vehicles based on posted speed limit signs.

Hourly emissions rates were developed for DPM, organic TACs, and $PM_{2.5}$ along the applicable segments of each roadway within 1,000 feet of the project site. TAC and $PM_{2.5}$ concentrations at the project MEI location were developed using these emissions rates with an air quality dispersion model (AERMOD). Maximum increased lifetime cancer risks and maximum annual $PM_{2.5}$ concentrations for the construction MEIs receptor were then computed using modeled TAC and

[27] Bay Area Air Quality Management District, 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en

[28] WTRANS, File: ADT Table – 789 Old County San Carlos.xlsx

[29] The Burden output from EMFAC2007, a previous version of CARB's EMFAC model, was used for this since the current web-based version of EMFAC2021 does not include Burden type output with hour by hour traffic volume information.

$PM_{2.5}$ concentrations and BAAQMD methods and exposure parameters described in *Attachment 1*.

Roadway Dispersion Modeling

Dispersion modeling of TAC and $PM_{2.5}$ emissions was conducted using the U.S. EPA AERMOD dispersion model, which is recommended by the BAAQMD for this type of analysis.[30] TAC and $PM_{2.5}$ emissions from each roadway within about 1,000 feet of the project site were evaluated with the model. Emissions from vehicle traffic travel were modeled in AERMOD using a series of volume sources along a line (line volume sources), with line segments used to represent opposing travel lanes on each roadway. The same meteorological data and off-site sensitive receptors used in the previous project dispersion modeling were used in the roadway modeling. Other inputs to the model included road geometry, hourly traffic emissions, and receptor locations and heights. Annual TAC and $PM_{2.5}$ concentrations for 2024 from traffic on each roadway were calculated using the model. Concentrations were calculated at the project MEI with receptor heights of 5 feet (1.5 meters) to represent the breathing heights on the first floor of the nearby residences. Health risk impacts from the roadway sources upon the MEI are reported in Table 6 and calculations are included in *Attachment 4*.

Railways – Caltrain

The project MEI is located near the Caltrain railway. Railway health risk screening data provided by BAAQMD was incorporated into this analysis which does not incorporate the Caltrain electrification project. BAAQMD developed raster files with cancer risk and $PM_{2.5}$ values for all highways/freeways, roadways (ADT > 30,000), and rail lines within the Bay Area. These raster files were used to screen the Caltrain railway risks and hazards upon the project site. The risk values shown in the raster files were modeled using AERMOD and a 20x20-meter emissions grid. The raster file uses EMFAC2014 data for fleet mix and include the OEHHA 2015 factor. Note that the cancer risk value is not adjusted for age sensitivity or exposure duration. It is conservatively higher than adjusted cancer risk values. Refined modeling of the railway would have resulted in even lower risk values.

The railway screening level impacts are listed in Table 6 and included in *Attachment 4*. Note that the cancer risk value is not adjusted for age sensitivity or exposure duration. It is conservatively higher than adjusted cancer risk values. Refined modeling of the railway would have resulted in even lower risk values. Note that BAAQMD has found that non-cancer hazards were found to be minimal, so an HI value is not included.

Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Permitted Stationary Sources 2020* geographic information system (GIS) map website.[31] This mapping tool identifies the location of nearby stationary sources and their estimated risk and

[30] BAAQMD. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May 2012
[31] BAAQMD, Web: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3

hazard impacts. Twelve sources were identified using this tool. The BAAQMD GIS website did not provide screening risks and hazards for all sources, so a stationary source information request was submitted to BAAQMD. BAAQMD provided updated emissions data and risk values.[32] One source will be demolished as part of this project, leaving eleven total sources operational near the project site.

The screening risk and hazard levels for the sources were adjusted for distance using BAAQMD's *Gasoline Dispensing Facility, Diesel Internal Combustion Engine, and Generic Equipment Distance Adjustment Multiplier Tools*. Estimated health risk values for the permitted stationary source is listed in Table 6.

Construction Risk Impacts from Nearby Approved Developments

- **888 Bransten Road** – this project is located at 888 Bransten Road, approximately 1000 feet northeast of the project site. The project proposes to construct a three-story, 105,416-sf office/research and development (R&D) building. Surface parking will also be constructed on the two project site borders adjacent to other lots that will total 88 parking spaces. This project has been analyzed by *Illingworth & Rodkin, Inc.* in September of 2022. However, the MEI for this project was not included in the analysis for the 888 Bransten Road project since the MEI for this project is over 1,000 feet away from the 888 Bransten Road project. Therefore, the impacts from the 888 Bransten Road Project are not included in this analysis.

There are a number of other development projects under consideration by the City of San Carlos. Some projects under consideration by the City of San Carlos are within 1,000 feet of this project but are not yet approved. However, based on analyses of those projects performed by *Illingworth & Rodkin, Inc.*, inclusion of those projects in this analysis once those projects are approved would not change the outcomes found in this analysis.

Conclusion AIR-3

Table 6 reports both the project and cumulative health risk impacts at the sensitive receptors most affected by project construction and operation (i.e., the project MEI). As shown in Table 6, the project would not exceed the single-source or cumulative-source thresholds for cancer risk, annual $PM_{2.5}$ concentration, and hazard index.

[32] Correspondence with BAAQMD CEQA, February 24, 2023.

Table 6. Cumulative Health Risk Impacts at the Location of the Project MEI

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Impacts			
Total/Maximum w/ Net Change (Years 0 - 30) Unmitigated	6.21 (infant)	-0.51	-0.01
BAAQMD Single-Source Threshold	***10***	***0.3***	***1.0***
Exceed Threshold? Unmitigated	*No*	*No*	*No*
Cumulative Sources			
El Camino Real, ADT 31,212	1.49	0.08	<0.01
Industrial Road, ADT 14,788	0.16	0.01	<0.01
Commercial Street, ADT 13,467	0.18	0.01	<0.01
Caltrain and freight rail	59.64	0.11	-
Midland Cabinet Co (Facility ID #5337, Wood Kitchen Cabinet and Countertop Manufacturing), MEI at 1000+ feet	-	<0.01	-
Royalite Manufacturing Inc (Facility ID #10925, Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers), MEI at 145 feet	-	<0.01	-
Nxedge San Carlos (Facility ID #20582, Electroplating, Plating, Polishing, Anodizing, and Coloring), MEI at 1000+ feet	0.17	0.01	<0.01
Supreme Auto Body (Facility ID #16364, Automotive Body, Paint, and Interior Repair and Maintenance), MEI at 375 feet	-	-	<0.01
Plantation Coffee Roastery (Facility ID #23758, Coffee and Tea Manufacturing), MEI at 880 feet	<0.01	<0.01	<0.01
Caliber Collision Center (Facility ID #23794, Automotive Body, Paint, and Interior Repair and Maintenance), MEI at 1000+ feet	-	-	<0.01
Grove Construction (Facility ID #24886, Remediation Services), MEI at 920 feet	0.02	-	<0.01
City of San Carlos - Corporation Yard (Facility ID #108501, Other General Government Support), MEI at 815 feet	1.75	<0.01	<0.01
Nielsen Automotive Inc (Facility ID #103155_1, Gas Dispensing Facility), MEI at 1000+ feet	0.14	-	<0.01
City of San Carlos - Corporation Yard (Facility ID #108501_1, Gas Dispensing Facility), MEI at 815 feet	0.24	-	<0.01
Sutro BioPharma (Facility ID #21826, Generator), MEI at 1000+ feet	0.31	<0.01	<0.01
Combined Sources Unmitigated	70.32	-<0.24	<0.11
BAAQMD Cumulative Source Threshold	***100***	***0.8***	***10.0***
Exceed Threshold? Unmitigated	*No*	*No*	*No*

GREENHOUSE GAS EMISSIONS

Setting

Gases that trap heat in the atmosphere, GHGs, regulate the earth's temperature. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate. The most common GHGs are carbon dioxide (CO_2) and water vapor but there are also several others, most importantly methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These are released into the earth's atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

- CO_2, CH_4, and N_2O are byproducts of fossil fuel combustion.
- N_2O is associated with agricultural operations such as fertilization of crops.
- CH_4 is commonly created by off-gassing from agricultural practices (e.g., keeping livestock) and landfill operations.
- Chlorofluorocarbons (CFCs) were widely used as refrigerants, propellants, and cleaning solvents but their production has been stopped by international treaty.
- HFCs are now used as a substitute for CFCs in refrigeration and cooling.
- PFCs and sulfur hexafluoride emissions are commonly created by industries such as aluminum production and semi-conductor manufacturing.

Each GHG has its own potency and effect upon the earth's energy balance. This is expressed in terms of a global warming potential (GWP), with CO_2 being assigned a value of 1 and sulfur hexafluoride being several orders of magnitude stronger. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of CO_2 equivalents (CO_2e).

An expanding body of scientific research supports the theory that global climate change is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally occurring resources within California are adversely affected by the global warming trend. Increased precipitation and sea level rise will increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

Recent Regulatory Actions for GHG Emissions

Executive Order S-3-05 – California GHG Reduction Targets

Executive Order (EO) S-3-05 was signed by Governor Arnold Schwarzenegger in 2005 to set GHG emission reduction targets for California. The three targets established by this EO are as follows: (1) reduce California's GHG emissions to 2000 levels by 2010, (2) reduce California's GHG emissions to 1990 levels by 2020, and (3) reduce California's GHG emissions by 80 percent below 1990 levels by 2050.

Assembly Bill 32 – California Global Warming Solutions Act (2006)

Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, codified the State's GHG emissions target by directing CARB to reduce the State's global warming emissions to 1990 levels by 2020. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, the CARB, CEC, California Public Utilities Commission (CPUC), and Building Standards Commission have all been developing regulations that will help meet the goals of AB 32 and Executive Order S-3-05, which has a target of reducing GHG emissions 80 percent below 1990 levels.

A Scoping Plan for AB 32 was adopted by CARB in December 2008. It contains the State's main strategies to reduce GHGs from business-as-usual emissions projected in 2020 back down to 1990 levels. Business-as-usual (BAU) is the projected emissions in 2020, including increases in emissions caused by growth, without any GHG reduction measures. The Scoping Plan has a range of GHG reduction actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system.

As directed by AB 32, CARB has also approved a statewide GHG emissions limit. On December 6, 2007, CARB staff resolved an amount of 427 million metric tons (MMT) of CO_2e as the total statewide GHG 1990 emissions level and 2020 emissions limit. The limit is a cumulative statewide limit, not a sector- or facility-specific limit. CARB updated the future 2020 BAU annual emissions forecast, in light of the economic downturn, to 545 MMT of CO_2e. Two GHG emissions reduction measures currently enacted that were not previously included in the 2008 Scoping Plan baseline inventory were included, further reducing the baseline inventory to 507 MMT of CO_2e. Thus, an estimated reduction of 80 MMT of CO_2e is necessary to reduce statewide emissions to meet the AB 32 target by 2020.

Executive Order B-30-15 & Senate Bill 32 GHG Reduction Targets – 2030 GHG Reduction Target

In April 2015, Governor Brown signed EO B-30-15, which extended the goals of AB 32, setting a greenhouse gas emissions target at 40 percent of 1990 levels by 2030. On September 8, 2016, Governor Brown signed Senate Bill (SB) 32, which legislatively established the GHG reduction target of 40 percent of 1990 levels by 2030. In November 2017, CARB issued *California's 2017 Climate Change Scoping Plan*. [33] While the State is on track to exceed the AB 32 scoping plan 2020 targets, this plan is an update to reflect the enacted SB 32 reduction target.

SB 32 was passed in 2016, which codified a 2030 GHG emissions reduction target of 40 percent below 1990 levels. CARB has drafted a 2022 Scoping Plan Update to reflect the 2030 target set by Executive Order B-30-15 and codified by SB 32. The 2022 draft plan:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at

[33] California Air Resource Board, 2017. *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Targets.* November. Web: https://ww2.arb.ca.gov/sites/default/files/classic//cc/scopingplan/scoping_plan_2017.pdf

least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 or earlier.
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California's most impacted communities as a driving principle.
- Incorporates the contribution of natural and working lands to the state's GHG emissions, as well as its role in achieving carbon neutrality.
- Relies on the most up to date science, including the need to deploy all viable tools, including carbon capture and sequestration as well a direct air capture.
- Evaluates multiple options for achieving our GHG and carbon neutrality targets, as well as the public health benefits and economic impacts associated with each.

The draft Scoping Plan Update was published on May 10, 2022 and, once final, will lay out how the state can get to carbon neutrality by 2045 or earlier. It is also the first Scoping Plan that adds carbon neutrality as a science-based guide and touchstone beyond statutorily established emission reduction targets.[34]

The mid-term 2030 target is considered critical by CARB on the path to obtaining an even deeper GHG emissions target of 80 percent below 1990 levels by 2050, as directed in Executive Order S-3-05. The 2022 Draft Scoping Plan outlines the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure, providing a blueprint to continue driving down GHG emissions and to not only obtain the statewide goals, but cost-effectively achieve carbon-neutrality by 2045 or earlier. In the draft 2022 Scoping Plan, CARB recommends:

- VMT per capita reduced 12% below 2019 levels by 2030 and 22% below 2019 levels by 2045.
- 100% of Light-duty vehicle sales are zero emissions vehicles (ZEV) by 2035.
- 100% of medium duty/heavy duty vehicle sales are ZEV by 2040.
- 100% of passenger and other locomotive sales are ZEV by 2030.
- 100% of line haul locomotive sales are ZEV by 2035.
- All electric appliances in new residential and commercial building beginning 2026 (residential) and 2029 (commercial).
- 80% of residential appliance sales are electric by 2030 and 100% of residential appliance sales are electric by 2035.
- 80% of commercial appliance sales are electric by 2030 and 100% of commercial appliance sales are electric by 2045.

Executive Order B-55-18 – Carbon Neutrality

In 2018, a new statewide goal was established to achieve carbon neutrality as soon as possible, but no later than 2045, and to maintain net negative emissions thereafter. CARB and other relevant

[34] https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents

state agencies are tasked with establishing sequestration targets and create policies/programs that would meet this goal. The Draft 2022 Scoping Plan Update addresses EO B-55-18 and would cost-effectively achieve carbon-neutrality by 2045 or earlier.

Senate Bill 375 – California's Regional Transportation and Land Use Planning Efforts (2008)

California enacted legislation (SB 375) to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 provides incentives for local governments and applicants to implement new conscientiously planned growth patterns. This includes incentives for creating attractive, walkable, and sustainable communities and revitalizing existing communities. The legislation also allows applicants to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Development of more alternative transportation options that would reduce vehicle trips and miles traveled, along with traffic congestion, would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency in developing regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB works with the metropolitan planning organizations (e.g. Association of Bay Area Governments [ABAG] and Metropolitan Transportation Commission [MTC]) to align their regional transportation, housing, and land use plans to reduce vehicle miles traveled and demonstrate the region's ability to attain its GHG reduction targets. A similar process is used to reduce transportation emissions of ozone precursor pollutants in the Bay Area.

Senate Bill 350 - Renewable Portfolio Standards

In September 2015, the California Legislature passed SB 350, which increases the states Renewables Portfolio Standard (RPS) for content of electrical generation from the 33 percent target for 2020 to a 50 percent renewables target by 2030.

Senate Bill 100 – Current Renewable Portfolio Standards

In September 2018, SB 100 was signed by Governor Brown to revise California's RPS program goals, furthering California's focus on using renewable energy and carbon-free power sources for its energy needs. The bill would require all California utilities to supply a specific percentage of their retail sales from renewable resources by certain target years. By December 31, 2024, 44 percent of the retails sales would need to be from renewable energy sources, by December 31, 2026 the target would be 40 percent, by December 31, 2017 the target would be 52 percent, and by December 31, 2030 the target would be 60 percent. By December 31, 2045, all California utilities would be required to supply retail electricity that is 100 percent carbon-free and sourced from eligible renewable energy resource to all California end-use customers.

California Building Standards Code – Title 24 Part 11 & Part 6

The California Green Building Standards Code (CALGreen Code) is part of the California Building Standards Code under Title 24, Part 11.[35] The CALGreen Code encourages sustainable

[35] See: https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen#:~:text=CALGreen%20is%20the%20first%2Din,to%201990%20levels%20by%202020.

construction standards that involve planning/design, energy efficiency, water efficiency resource efficiency, and environmental quality. These green building standard codes are mandatory statewide and are applicable to residential and non-residential developments. The most recent CALGreen Code (2019 California Building Standard Code) was effective as of January 1, 2020.

The California Building Energy Efficiency Standards (California Energy Code) is under Title 24, Part 6 and is overseen by the California Energy Commission (CEC). This code includes design requirements to conserve energy in new residential and non-residential developments, while being cost effective for homeowners. This Energy Code is enforced and verified by cities during the planning and building permit process. The current energy efficiency standards (2019 Energy Code) replaced the 2016 Energy Code as of January 1,2020. Under the 2019 standards, single-family homes are predicted to be 53 percent more efficient than homes built under the 2016 standard due more stringent energy-efficiency standards and mandatory installation of solar photovoltaic systems. For nonresidential developments, it is predicted that these buildings will use 30 percent less energy due to lightening upgrades.[36]

CEC studies have identified the most aggressive electrification scenario as putting the building sector on track to reach the carbon neutrality goal by 2045.[37] Installing new natural gas infrastructure in new buildings will interfere with this goal. To meet the State's goal, communities have been adopting "Reach" codes that prohibit natural gas connections in new and remodeled buildings.

Requirements for electric vehicle (EV) charging infrastructure are set forth in Title 24 of the California Code of Regulations and are regularly updated on a 3-year cycle. The CALGreen standards consist of a set of mandatory standards required for new development, as well as two more voluntary standards known as Tier 1 and Tier 2. The CalGreen standards have recently been updated (2022 version) to require deployment of additional EV chargers in various building types, including multifamily residential and nonresidential land uses. They include requirements for both EV capable parking spaces and the installation of Level 2 EV supply equipment for multifamily residential and nonresidential buildings. The 2022 CALGreen standards include requirements for both EV readiness and the actual installation of EV chargers. The 2022 CALGreen standards include both mandatory requirements and more aggressive voluntary Tier 1 and Tier 2 provisions. Providing EV charging infrastructure that meets current CALGreen requirements will not be sufficient to power the anticipated more extensive level of EV penetration in the future that is needed to meet SB 30 climate goals.

SB 743 Transportation Impacts

Senate Bill 743 required lead agencies to abandon the old "level of service" metric for evaluating a project's transportation impacts, which was based solely on the amount of delay experienced by motor vehicles. In response, the Governor's Office of Planning and Research (OPR) developed a VMT metric that considered other factors such as reducing GHG emissions and developing

[36] See: https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf
[37] California Energy Commission. 2021. F*inal Commission Report: California Building Decarbonization Assessment. Publication Number CEC-400-2021-006-CMF*.August

multimodal transportation[38]. A VMT-per-capita metric was adopted into the CEQA Guidelines Section 15064.3 in November 2017. Given current baseline per-capita VMT levels computed by CARB in the 2030 Scoping Plan of 22.24 miles per day for light-duty vehicles and 24.61 miles per day for all vehicle types, the reductions needed to achieve the 2050 climate goal are 16.8 percent for light-duty vehicles and 14.3 percent for all vehicle types combined. Based on this analysis (as well as other factors), OPR recommended using a 15-percent reduction in per capita VMT as an appropriate threshold of significance for evaluating transportation impacts.

Federal and Statewide GHG Emissions

The U.S. EPA reported that in 2018, total gross nationwide GHG emissions were 6,676.6 million metric tons (MMT) carbon dioxide equivalent (CO_2e).[39] These emissions were lower than peak levels of 7,416 MMT that were emitted in 2007. CARB updates the statewide GHG emission inventory on an annual basis where the latest inventory includes 2000 through 2017 emissions.[40] In 2017, GHG emissions from statewide emitting activities were 424 MMT. The 2017 emissions have decreased by 14 percent since peak levels in 2004 and are 7 MMT below the 1990 emissions level and the State's 2020 GHG limit. Per capita GHG emissions in California have dropped from a 2001 peak of 14.1 MT per person to 10.7 MT per person in 2017. The most recent Bay Area emission inventory was computed for the year 2011.[41] The Bay Area GHG emission were 87 MMT. As a point of comparison, statewide emissions were about 444 MMT in 2011

City of San Carlos 2030 General Plan

The City of San Carlos General Plan 2030 includes policies and programs to reduce exposure of the City's sensitive population to exposure of air pollution, TACs, and GHG emissions. The following policies and programs are applicable to the proposed project:

Policies

Policy EM-7.1: Take appropriate action to address climate change and reduce greenhouse gas emissions.

Policy EM-7.3: Participate in regional, State, and federal efforts to reduce greenhouse gas emissions and mitigate the impacts resulting from climate change.

Policy EM-7.6: Support greenhouse gas (GHG) emission reduction measures and climate change resiliency strategies that are cost effective and help create an environmentally sustainable, livable, and equitable community. The cost of implementation to the City and private sector shall be considered prior to the adoption of any GHG reduction strategy.

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[38] Governor's Office of Planning and Research. 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. December.

[39] United States Environmental Protection Agency, 2020. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2018*. April. Web: https://www.epa.gov/sites/production/files/2020-04/documents/us-ghg-inventory-2020-main-text.pdf

[40] CARB. 2019. *2019 Edition, California Greenhouse Gas Emission Inventory: 2000 – 2017*. Web: https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf

[41] BAAQMD. 2015. *Bay Area Emissions Inventory Summary Report: Greenhouse Gases Base Year 2011*. January. Web: http://www.baaqmd.gov/~/media/files/planning-and-research/emission-inventory/by2011_ghgsummary.pdf accessed Nov. 26, 2019.

City of San Carlos Climate Mitigation and Adaptative Plan (CMAP)

The City of San Carlos has adopted a new Climate Mitigation and Adaptation Plan (CMAP) to reduce greenhouse gas emissions[42]. The CMAP aims to reduce emissions 40% by 2030 and 80% by 2050 relative to 1990 levels. This CMAP is an update to the 2009 Climate Action Plan (2009 CAP) that provides updated information, an expanded set of GHG reduction strategies, climate adaptation strategies and a planning horizon out to 2050. The following goals and strategies found in the CMAP are relevant to this project:

- Goal 1: Reduce energy use
    - Strategy 1: Regional Energy Conservation and Efficiency Programs. Promote available energy efficiency and conservation opportunities, incentives, and technical assistance for businesses and residents.
- Goal 2: Transition to carbon-free energy sources
    - Strategy 4: Electrification. Transition to electricity as the primary energy source citywide.
    - Strategy 5: Building Codes. Advance electrification through local amendments to the California Building Code.
    - Strategy 7: Peninsula Clean Energy. Continue to support and promote PCE as the community's official electricity provider with a goal to provide 100 percent carbon-free renewable energy by 2025.
- Goal 4: Promote sustainable development that reduces vehicle miles traveled.
    - Strategy 17: Vehicles Miles Traveled. Reduce community-wide transportation-related emissions per resident and employee, with an emphasis on reductions from existing and new development in the city's core commercial, office, and industrial areas, including development on the east side.
- Goal 7: Become a zero-waste community
    - Strategy 27: Construction and Demolition Waste. Increase the amount of waste recycled during construction and demolition of buildings.

[42] City of San Carlos Climate Mitigation and Adaptation Plan, URL: https://www.cityofsancarlos.org/government/departments/city-manager-s-office-communications/responsible-environment/climate-action-plan

BAAQMD GHG Significance Thresholds

On April 20, 2022, BAAQMD adopted new thresholds of significance for operational GHG emissions from land use projects for projects beginning the CEQA process. The following framework is how BAAQMD will determine GHG significance moving forward.[43] Note BAAQMD intends that the thresholds apply to projects that begin the CEQA process after adoption of the thresholds, unless otherwise directed by the lead agency. The new thresholds of significance are:

A. Projects must include, at a minimum, the following project design elements:
   a. Buildings
      i. The project will not include natural gas appliances or natural gas plumbing (in both residential and non-residential development).
      ii. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
   b. Transportation
      i. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:
         1. Residential Projects: 15 percent below the existing VMT per capita
         2. Office Projects: 15 percent below the existing VMT per employee
         3. Retail Projects: no net increase in existing VMT
      ii. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

B. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

Any new land use project would have to include either section A or B from the above list, not both, to be considered in compliance with BAAQMD's GHG thresholds of significance.

Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

GHG emissions associated with development of the proposed project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. There would also be long-term operational emissions associated with vehicular traffic within the project vicinity, energy and water usage, and solid waste disposal.

[43] Justification Report: BAAQMD CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Project and Plans. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-thresholds-2022/justification-report-pdf.pdf?la=en

Emissions for the proposed project are discussed below and were analyzed using the methodology recommended in the BAAQMD CEQA Air Quality Guidelines.

CalEEMod Modeling

CalEEMod was used to predict GHG emissions from operation of the site assuming full build-out of the project. The project land use types and size and other project-specific information were input to the model, as described above within the construction period emissions. CalEEMod output is included in *Attachment 2*.

Construction GHG Emissions

GHG emissions associated with construction were computed at 2,758 MT of CO_2e for the total construction period. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the City nor BAAQMD have an adopted threshold of significance for construction-related GHG emissions, though BAAQMD recommends quantifying emissions and disclosing that GHG emissions would occur during construction. BAAQMD also encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable.

Operational GHG Emissions

The CalEEMod model, along with the project vehicle trip generation rates, was used to estimate daily emissions associated with operation of the fully-developed site under the proposed project. As shown in Table 7 for informational purposes, net annual GHG emissions resulting from operation of the proposed project are predicted to be a net of 4,960 MT of CO_2e in 2027.

Table 7. Annual Project GHG Emissions (CO_2e) in Metric Tons[1]

Source Category	Existing Use	2027 Proposed Project
Mobile	317	4,385
Area	2	6
Energy	449	1,147
Water Usage	61	209
Solid Waste Generation	52	9
Refrigerants	6	1
Stationary	-	90
Total (MT CO_{2e}/year)	887	5,847
Net Total (MT CO_{2e}/year)		4,960

Note: [1] Since completion of the original analysis presented in this report, the size of the project has been reduced by approximately 14.5 percent and the retail portion of the project is no longer being proposed. Construction and operational activities would be reduced by a similar amount and operational emission sources have not moved around the property by any significant amount. Any reanalysis of the project would result in lower emissions than what is presented in this report. As a result, the original analysis is presented herein, and the conclusions of the analysis remain valid.

Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

For this impact to be considered less than significant, it must be consistent with a local GHG reduction strategy or meet the minimum project design elements recommended by BAAQMD.

Conclusion GHG-1 and GHG-2

The City of San Carlos has an adopted Climate Mitigation and Adaptation Plan (CMAP) and provides applicants with a CMAP checklist. Based on the information provided by the applicant, the project is expected to comply with the City of San Carlos' CMAP, which would result in compliance with threshold B of the BAAQMD GHG thresholds of significance[44]. As a result, the GHG impacts from the proposed project would be less-than-significant.

[44] Email from Rebecca Auld, March 15, 2023, File: 789 OCR CMAP Checklist_23-0314.pdf

Supporting Documentation

Attachment 1 is the methodology used to compute health risk impacts, including the methods to compute increased cancer risk from exposure to project emissions.

Attachment 2 includes the CalEEMod output for project construction and operational criteria air pollutant. The operational output for existing project uses is also included in this attachment. Also included are any modeling assumptions.

Attachment 3 is the health risk assessment. This includes the summary of the dispersion modeling and the cancer risk calculations for construction. The AERMOD dispersion modeling files for this assessment, which are quite voluminous, are available upon request and would be provided in digital format.

Attachment 4 includes the cumulative health risk calculations, modeling results, and health risk calculations from sources affecting the MEI.

Attachment 1: Health Risk Calculation Methodology

Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[45] These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines. CARB has provided additional guidance on implementing OEHHA's recommended methods.[46] This HRA used the 2015 OEHHA risk assessment guidelines and CARB guidance. The BAAQMD has adopted recommended procedures for applying the newest OEHHA guidelines as part of Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.[47] Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

Potential increased cancer risk from inhalation of TACs is calculated based on the TAC concentration over the period of exposure, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer causing TACs. The inhalation dose depends on a person's breathing rate, exposure time and frequency and duration of exposure. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location or other sensitive receptor location.

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day) or liters per kilogram of body weight per 8-hour period for the case of worker or school child exposures. As recommended by the BAAQMD for residential exposures, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. For children at schools and daycare facilities, BAAQMD recommends using the 95th percentile 8-hour breathing rates. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of

[45] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.
[46] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
[47] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

30 years for sources with long-term emissions (e.g., roadways). For workers, assumed to be adults, a 25-year exposure period is recommended by the BAAQMD. For school children a 9-year exposure period is recommended by the BAAQMD.

Under previous OEHHA and BAAQMD HRA guidance, residential receptors are assumed to be at their home 24 hours a day, or 100 percent of the time. In the 2015 Risk Assessment Guidance, OEHHA includes adjustments to exposure duration to account for the fraction of time at home (FAH), which can be less than 100 percent of the time, based on updated population and activity statistics. The FAH factors are age-specific and are: 0.85 for third trimester of pregnancy to less than 2 years old, 0.72 for ages 2 to less than 16 years, and 0.73 for ages 16 to 70 years. Use of the FAH factors is allowed by the BAAQMD if there are no schools in the project vicinity have a cancer risk of one in a million or greater assuming 100 percent exposure (FAH = 1.0).

Functionally, cancer risk is calculated using the following parameters and formulas:

Cancer Risk (per million) = $CPF \times Inhalation\ Dose \times ASF \times ED/AT \times FAH \times 10^6$

Where:

CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = $C_{air} \times DBR^* \times A \times (EF/365) \times 10^{-6}$

Where:

C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
8HrBR = 8-hour breathing rate (L/kg body weight-8 hours)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

* An 8-hour breathing rate (8HrBR) is used for worker and school child exposures.

The health risk parameters used in this evaluation are summarized as follows:

Exposure Type →	**Infant**		**Child**	**Adult**
Parameter ***Age Range →***	**3rd Trimester**	**0<2**	**2 < 16**	**16 - 30**
DPM CPF $(mg/kg\text{-}day)^{-1}$	1.10E+00	1.10E+00	1.10E+00	1.10E+00
Vehicle TOG Exhaust CPF $(mg/kg\text{-}day)^{-1}$	6.28E-03	6.28E-03	6.28E-03	6.28E-03
Vehicle TOG Evaporative CPF $(mg/kg\text{-}day)^{-1}$	3.70E-04	3.70E-04	3.70E-04	3.70E-04
Daily Breathing Rate (L/kg-day) 95th Percentile Rate	361	1,090	745	335
8-hour Breathing Rate (L/kg-8 hours) 95th Percentile Rate	-	1,200	520	240
Inhalation Absorption Factor	1	1	1	1
Averaging Time (years)	70	70	70	70
Exposure Duration (years)	0.25	2	14	14*
Exposure Frequency (days/year)	350	350	350	350*
Age Sensitivity Factor	10	10	3	1
Fraction of Time at Home (FAH)	0.85-1.0	0.85-1.0	0.72-1.0	0.73*
* An 8-hour breathing rate (8HrBR) is used for worker and school child exposures.				

Non-Cancer Hazards

Non-cancer health risk is usually determined by comparing the predicted level of exposure to a chemical to the level of exposure that is not expected to cause any adverse effects (reference exposure level), even to the most susceptible people. Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The total HI is calculated as the sum of the HIs for each TAC evaluated and the total HI is compared to the BAAQMD significance thresholds to determine whether a significant non-cancer health impact from a project would occur.

Typically, for residential projects located near roadways with substantial TAC emissions, the primary TAC of concern with non-cancer health effects is diesel particulate matter (DPM). For DPM, the chronic inhalation REL is 5 micrograms per cubic meter ($\mu g/m^3$).

Annual $PM_{2.5}$ Concentrations

While not a TAC, fine particulate matter ($PM_{2.5}$) has been identified by the BAAQMD as a pollutant with potential non-cancer health effects that should be included when evaluating potential community health impacts under the California Environmental Quality Act (CEQA). The thresholds of significance for $PM_{2.5}$ (project level and cumulative) are in terms of an increase in the annual average concentration. When considering $PM_{2.5}$ impacts, the contribution from all sources of $PM_{2.5}$ emissions should be included. For projects with potential impacts from nearby local roadways, the $PM_{2.5}$ impacts should include those from vehicle exhaust emissions, $PM_{2.5}$ generated from vehicle tire and brake wear, and fugitive emissions from re-suspended dust on the roads.

Attachment 2: CalEEMod Input Assumptions and Outputs

Attachment 3: Project Construction and Operation Dispersion Modeling Inputs and Risk Calculations

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DPM Construction Emissions and Modeling Emission Rates

Construction Year	Activity	DPM (ton/year)	Source Type	No. Sources	DPM Emissions (lb/yr)	(lb/hr)	(g/s)	Emissions per Point Source (g/s)
2024	Construction	0.1866	Point	298	373.2	0.11360	1.43E-02	4.80E-05
2025	Construction	0.0608	Point	298	121.5	0.03700	4.66E-03	1.56E-05
2026	Construction	0.0722	Point	298	144.3	0.04393	5.54E-03	1.86E-05
Total		***0.3195***			***639.0***	***0.1945***	***0.0245***	

Emissions assumed to be evenly distributed over each construction areas

hr/day =	9	(8am -5pm)
days/yr =	365	
hours/year =	3285	

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PM2.5 Fugitive Dust Construction Emissions for Modeling

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	(lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	DPM Emission Rate $g/s/m^2$
2023	Construction	CON_FUG	0.5483	1096.6	0.33382	4.21E-02	14244.1	2.95E-06
2024	Construction	CON_FUG	0.0514	102.8	0.03129	3.94E-03	14244.1	2.77E-07
2025	Construction	CON_FUG	0.0497	99.5	0.03028	3.81E-03	14244.1	2.68E-07
Total			***0.6494***	***1298.8***	***0.3954***	***0.0498***		

Emissions assumed to be evenly distributed over each construction areas

hr/day =	9	(8am -5pm)
days/yr =	365	
hours/year =	3285	

789 Old County Road, San Carlos, CA
Construction Health Impact Summary

Maximum Impacts at MEI Location - Without Mitigation

Emissions Year	Maximum Concentrations		Cancer Risk (per million)		Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM10/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Infant/Child	Adult	(-)	($\mu g/m^3$)
2024	0.0265	0.1150	4.71	0.08	0.01	0.14
2025	0.0086	0.0108	1.42	0.02	0.00	0.02
2026	0.0102	0.0104	0.26	0.03	0.00	0.02
Total	-	-	**6.39**	**0.13**		-
Maximum	0.0265	0.1150	**-**	**-**	**0.01**	**0.14**

Maximum Impacts at Little Learners Preschool

Construction Year	Unmitigated Emissions				
	Maximum Concentrations		Child Cancer Risk (per million)	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
	Exhaust PM10/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)			
2024	0.0119	0.0443	0.84	0.0024	0.056
2025	0.0039	0.0042	0.27	0.0008	0.008
2026	0.0046	0.0040	0.32	0.0009	0.009
Total	-	-	**1.44**	-	-
Maximum	0.0119	0.0443	**-**	**0.0024**	**0.056**

789 Old County Road, San Carlos, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 7.6 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information						
							Modeled				Maximum		
Exposure	Exposure Duration		DPM Conc (ug/m3)		Age Sensitivity	Infant/Child Cancer Risk	DPM Conc (ug/m3)		Age Sensitivity	Adult Cancer Risk	Hazard	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	Index	PM2.5	PM2.5
0	0.25	-0.25 - 0*	2024	0.0151	10	0.21	2024	0.0151	-	-			
1	1	0 - 1	2024	0.0151	10	2.48	2024	0.0151	1	0.04	0.003	0.07	0.08
2	1	1 - 2	2025	0.0049	10	0.81	2025	0.0049	1	0.01	0.001	0.01	0.01
3	1	2 - 3	2026	0.0059	3	0.15	2026	0.0059	1	0.02	0.001	0.01	0.01
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**3.65**				**0.07**			

* Third trimester of pregnancy

789 Old County Road, San Carlos, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 4.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information					Maximum	
				DPM Conc (ug/m3)	Age	Infant/Child		Modeled DPM Conc (ug/m3)	Age	Adult			
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Annual**	**Sensitivity Factor**	**Cancer Risk (per million)**	**Year**	**Annual**	**Sensitivity Factor**	**Cancer Risk (per million)**	**Hazard Index**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	2024	0.0156	10	0.21	2024	0.0156	-	-			
1	1	0 - 1	2024	0.0156	10	2.56	2024	0.0156	1	0.04	0.003	0.069	0.09
2	1	1 - 2	2025	0.0051	10	0.83	2025	0.0051	1	0.01	0.001	0.007	0.01
3	1	2 - 3	2026	0.0060	3	0.16	2026	0.0060	1	0.02	0.001	0.006	0.01
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**3.76**				**0.08**			

* Third trimester of pregnancy

789 Old County Road, San Carlos, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information					Maximum	
							Modeled						
Exposure Year	**Exposure Duration (years)**	**Age**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Hazard Index**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	2024	0.0265	10	0.36	2024	0.0265	-	-			
1	1	0 - 1	2024	0.0265	10	4.35	2024	0.0265	1	0.08	0.01	0.115	0.14
2	1	1 - 2	2025	0.0086	10	1.42	2025	0.0086	1	0.02	0.00	0.011	0.02
3	1	2 - 3	2026	0.0102	3	0.26	2026	0.0102	1	0.03	0.00	0.010	0.02
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**6.39**				**0.13**			

* Third trimester of pregnancy

789 Old County Road, San Carlos, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Little Learners Preschool - 1 meter - Child Exposure

Student Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)

Inhalation Dose = C_{air} x SAF x 8-Hr BR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
SAF = Student Adjustment Factor (unitless)
= (24 hrs/9 hrs) x (7 days/5 days) = 3.73
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	School Infant	School Child
Age -->	**0 - <2**	**2 - <16**
Parameter		
ASF =	10	3
DPM CPF =	1.10E+00	1.10E+00
8-Hr BR* =	1200	520
SCHR =	9	9
SHR =	9	9
SDay =	5	5
A =	1	1
EF =	250	250
AT =	70	70
SCAF =	4.20	4.20

* 95th percentile 8-hr breathing rates for moderate intensity activities

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Child - Exposure Information			Child Cancer Risk (per million)
			DPM Conc (ug/m3)		Age* Sensitivity Factor	
			Year	Annual		
1	1	2 - 3	2024	0.0119	3	0.8
2	1	3 - 4	2025	0.0039	3	0.3
3	1	4 - 5	2026	0.0046	3	0.3
Total Increased Cancer Risk						**1.44**

Maximum		
Hazard Index	Fugitive PM2.5	Total PM2.5
0.0024	0.0443	0.056
0.0008	0.0042	0.008
0.0009	0.0040	0.009

* Children assumed to be 2 years of age or older with 3 years of Construction Exposure

789 Old County Road, San Carlos, CA

Standby Emergency Generator Impacts

Off-site Sensitive Receptors

MEI Locations = 1.5 meter receptor height

DPM Emission Rates			
	DPM Emissions per Generator		
	Max Daily	Annual	
Source Type	(lb/day)	(lb/year)	
1,500kW & 2,000kW Generator	0.021	7.55	
CalEEMod DPM Emissions	3.78E-03	tons/year	

Modeling Information	
Model	AERMOD
Source	Diesel Generator Engine
Source Type	Point
Meteorological Data	2011 - 2015 San Carlos Airport Meteorological Data
Point Source Stack Parameters	
Generator Engine Size (hp)	600 & 670
Stack Height (ft)	10.00
Stack Diameter (ft)**	0.60
Exhaust Gas Flowrate (CFM)*	2527.73
Stack Exit Velocity (ft/sec)**	149.00
Exhaust Temperature (˚F)**	872.00
Emissions Rate (lb/hr)	0.000862

* AERMOD default

**BAAQMD default generator parameters

789 Old County Road, San Carlos, CA - Cancer Risks from Project Operation
Project Emergency Generators
Impacts at Off-Site Receptors- 1.5m MEI Receptor Heights
Impact at Project MEI (27-year Exposure)

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information: DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age Sensitivity Factor	Infant/Child Cancer Risk (per million)		Hazard Index	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2024	0.0000	10	0.000				
1	1	0 - 1	2024	0.0000	10	0.000				
2	1	1 - 2	2025	0.0000	10	0.000				
3	1	2 - 3	2026	0.0000	3	0.000				
4	1	3 - 4	2027	0.0003	3	0.006		0.00005	0.0000	0.0003
5	1	4 - 5	2028	0.0003	3	0.006				
6	1	5 - 6	2029	0.0003	3	0.006				
7	1	6 - 7	2030	0.0003	3	0.006				
8	1	7 - 8	2031	0.0003	3	0.006				
9	1	8 - 9	2032	0.0003	3	0.006				
10	1	9 - 10	2033	0.0003	3	0.006				
11	1	10 - 11	2034	0.0003	3	0.006				
12	1	11 - 12	2035	0.0003	3	0.006				
13	1	12 - 13	2036	0.0003	3	0.006				
14	1	13 - 14	2037	0.0003	3	0.006				
15	1	14 - 15	2038	0.0003	3	0.006				
16	1	15 - 16	2039	0.0003	3	0.006				
17	1	16-17	2040	0.0003	1	0.001				
18	1	17-18	2041	0.0003	1	0.001				
19	1	18-19	2042	0.0003	1	0.001				
20	1	19-20	2043	0.0003	1	0.001				
21	1	20-21	2044	0.0003	1	0.001				
22	1	21-22	2045	0.0003	1	0.001				
23	1	22-23	2046	0.0003	1	0.001				
24	1	23-24	2047	0.0003	1	0.001				
25	1	24-25	2048	0.0003	1	0.001				
26	1	25-26	2049	0.0003	1	0.001				
27	1	26-27	2050	0.0003	1	0.001				
28	1	27-28	2051	0.0003	1	0.001				
29	1	28-29	2052	0.0003	1	0.001				
30	1	29-30	2053	0.0003	1	0.001				
Total Increased Cancer Risk						**0.09**	**Max**	**0.00005**	**0.0000**	**0.0003**

* Third trimester of pregnancy

789 Old County Road Cooling Tower PM Emissions
Evaporative Cooling Tower PM Emissions per Cooling Tower

No. Cooling Tower Cells			4
Operating Hours per Year			8,760
Total Circulating Water Flow Rate (gpm)			3,000
Influent Water Total Dissolved Solids (TDS) Conc. (ppm)*			96
Circulating Water Cycles of Concentration*			5
Mist Eliminator Efficiency (%)			0.001
Total Cooling Tower Drift (gpm)			0.03
Particulate Matter Emissions			
	PM	**PM10**	**PM2.5**
Fraction of PM**	1.0	0.7	0.42
Hourly (lb/hr)	0.0072	0.0050	0.0030
Average Daily (lb/day)	0.2	0.1	0.1
Annual lb/yr)	63	44.2	26.5
Annual (ton/yr)	0.03	0.02	0.01

* TDS value from City of San Carlos 2021 Water Quality Report

** South Coast AQMD, Final-Methodology to Calculate Particulate Matter (PM) 2.5 and PM2.5 Significance Thresholds, Appendix A.

789 Old County Road, San Carlos, CA - Project Cooling Tower - PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations - Project Cooling Towers at Project MEI (1.5m receptor height)

Emission Year	2027
Receptor Information	Offsite Residential MEI receptor
Number of Receptors	1
Receptor Height	1.5 meters
Receptor Distances	At Residential MEI location
Meteorological Conditions	
BAQMD San Carlos Airport Met Data	2011 - 2015
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3) Project MEI
2011 - 2015	0.00611

Attachment 4: Cumulative Community Risk from Existing TAC Sources

File Name: Local Roadways 2027.EF
EMFAC2021/CT-EMFAC2017
Run Date: 4/6/2023 12:59
Area: San Mateo (SF)
Analysis Year: 2027
Season: Annual

==========

Vehicle Category	VMT Fraction Across Category	Diesel VMT Fr Within Categc	Gas VMT Fraction Within Category
Truck 1	0.017	0.509	0.491
Truck 2	0.014	0.871	0.111
Non-Truck	0.969	0.017	0.948

==========

Road Type:		Freeway	Major/Collect	Local Urban
Silt Loading Factor:	CARB	0.015 g/m2	0.032 g/m2	0.32 g/m2
Precipitation Correcti	CARB	P = 64 days	N = 365 days	

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Fleet Average Running Exhaust Emission Factors (grams/veh-mile)

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
PM2.5	0.007822	0.005129	0.003484	0.002486	0.001882	0.001504	0.001268	0.001131	0.001070	0.001071	0.001131	0.001246	0.001422	0.009038	0.009038
PM10	0.008464	0.005543	0.003763	0.002683	0.002029	0.001621	0.001366	0.001217	0.001150	0.001150	0.001213	0.001336	0.001524	0.009506	0.009506
NOx	0.216795	0.174730	0.135972	0.114958	0.100060	0.088849	0.080408	0.074541	0.071128	0.070101	0.071444	0.075096	0.081071	0.495535	0.495535
CO	1.389100	1.239449	1.109245	1.002043	0.913427	0.837378	0.771304	0.713834	0.663970	0.621007	0.584521	0.554441	0.531063	1.535022	1.535250
HC	0.115177	0.074199	0.049655	0.035035	0.026265	0.020744	0.017207	0.014993	0.013729	0.013225	0.013412	0.014317	0.016085	0.081202	0.081220
TOG	0.103071	0.066372	0.044230	0.031118	0.023325	0.018424	0.015274	0.013291	0.012146	0.011670	0.011803	0.012569	0.014091	0.090778	0.090804
ROG	0.093166	0.060403	0.040342	0.028411	0.021361	0.016922	0.014059	0.012252	0.011211	0.010785	0.010919	0.011635	0.013039	0.069627	0.069649
1,3-Butadiene	0.001164	0.000755	0.000510	0.000364	0.000276	0.000219	0.000184	0.000163	0.000151	0.000147	0.000151	0.000164	0.000186	0.000186	0.000186
Acetaldehyde	0.001818	0.001251	0.000748	0.000455	0.000332	0.000263	0.000219	0.000192	0.000176	0.000169	0.000172	0.000184	0.000205	0.000208	0.000210
Acrolein	0.000260	0.000168	0.000114	0.000082	0.000062	0.000049	0.000041	0.000037	0.000034	0.000033	0.000034	0.000037	0.000042	0.000042	0.000042
Benzene	0.005137	0.003341	0.002243	0.001588	0.001200	0.000954	0.000800	0.000706	0.000656	0.000639	0.000656	0.000708	0.000803	0.000804	0.000805
Diesel PM	0.000523	0.000457	0.000369	0.000301	0.000261	0.000241	0.000235	0.000241	0.000260	0.000291	0.000334	0.000388	0.000449	0.000450	0.000450
Ethylbenzene	0.002198	0.001424	0.000964	0.000689	0.000521	0.000415	0.000348	0.000307	0.000286	0.000279	0.000286	0.000309	0.000351	0.000351	0.000351
Formaldehyde	0.005407	0.003645	0.002273	0.001468	0.001086	0.000861	0.000720	0.000632	0.000583	0.000564	0.000574	0.000617	0.000694	0.000699	0.000704
Naphthalene	0.000156	0.000102	0.000069	0.000049	0.000037	0.000030	0.000025	0.000022	0.000021	0.000020	0.000020	0.000022	0.000025	0.000024	0.000024
POM	0.000174	0.000113	0.000075	0.000052	0.000039	0.000031	0.000026	0.000023	0.000021	0.000020	0.000021	0.000022	0.000025	0.000025	0.000025
DEOG	0.011293	0.126332	0.068659	0.034862	0.025483	0.020656	0.016979	0.014337	0.012648	0.011849	0.011890	0.012250	0.012352	0.012372	0.012396
CO2	770.341090	628.417545	513.910146	429.211864	368.291929	327.641288	303.512920	292.762118	292.336558	299.531539	311.005853	323.691329	334.884146	401.317497	401.317497
N2O	0.015786	0.013479	0.011074	0.009715	0.008729	0.007912	0.007389	0.007010	0.006783	0.006721	0.006840	0.007085	0.007474	0.007474	0.007474
CH4	0.018258	0.012367	0.008725	0.006446	0.004996	0.004052	0.003435	0.003044	0.002821	0.002734	0.002773	0.002942	0.003266	0.012859	0.012860
BC	0.001841	0.001185	0.000801	0.000571	0.000430	0.000342	0.000288	0.000256	0.000240	0.000237	0.000246	0.000268	0.000303	0.000303	0.000303

Fleet Average Fuel Consumption (gallons/veh-mile)

Fuel Type	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
Gasoline	0.067163	0.054504	0.044629	0.037108	0.031703	0.028148	0.026086	0.025234	0.02531	0.026037	0.027104	0.028205	0.029034	0.029034	0.029034
Diesel	0.005486	0.004589	0.003549	0.00303	0.002647	0.002342	0.002144	0.001997	0.001908	0.001905	0.001964	0.002066	0.002232	0.002232	0.002232

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Fleet Average Running Loss Emission Factors (grams/veh-hour)

Pollutant Name	Emission Factor
HC	0.896388
TOG	0.865514
ROG	0.958355
1,3-Butadiene	0
Benzene	0.010454
Ethylbenzene	0.017144
Naphthalene	0.001464
CH4	0.162343
HFC	0.011118

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Fleet Average Tire Wear Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.001999
PM10	0.007996

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Fleet Average Brake Wear Factors (grams/veh-mile)

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
PM2.5	0.003531933	0.004085775	0.004636833	0.005179826	0.005415859	0.005439685	0.00544377	0.004958266	0.003955897	0.002960085	0.002320115	0.002015201	0.001710287	0.001710287	0.001710287
PM10	0.010091238	0.011673642	0.013248095	0.014799502	0.015473884	0.015541957	0.015553628	0.014166475	0.011302564	0.008457386	0.006628901	0.005757718	0.004886536	0.004886536	0.004886536

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Fleet Average Road Dust Factors (grams/veh-mile)
Road Type: Major/Collector

Pollutant Name	
PM2.5	0.015032
PM10	0.100216

==========END==========

789 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - El Camino Real
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_NB_ECR	El Camino Real Northbound	NB	2	666.0	0.41	13.3	43.7	3.4	35	15,606
DPM_SB_ECR	El Camino Real Southbound	SB	3	661.5	0.41	17.0	55.7	3.4	35	15,606
									Total	31,212

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.00052			

2024 Hourly Traffic Volumes and DPM Emissions - DPM_NB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.80%	593	3.55E-05	9	6.65%	1037	6.20E-05	17	6.48%	1012	6.05E-05
2	3.14%	490	2.93E-05	10	8.30%	1295	7.75E-05	18	3.84%	599	3.58E-05
3	2.48%	387	2.31E-05	11	6.32%	986	5.90E-05	19	2.35%	367	2.19E-05
4	0.99%	155	9.26E-06	12	7.64%	1192	7.13E-05	20	1.19%	186	1.11E-05
5	0.99%	155	9.26E-06	13	6.81%	1063	6.36E-05	21	2.81%	439	2.62E-05
6	2.15%	335	2.01E-05	14	6.65%	1037	6.20E-05	22	4.79%	748	4.47E-05
7	4.83%	754	4.51E-05	15	5.99%	934	5.59E-05	23	3.47%	542	3.24E-05
8	3.34%	521	3.12E-05	16	4.33%	676	4.04E-05	24	0.66%	103	6.17E-06
								Total		15,606	

2024 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.80%	593	3.52E-05	9	6.65%	1037	6.16E-05	17	6.48%	1012	6.01E-05
2	3.14%	490	2.91E-05	10	8.30%	1295	7.69E-05	18	3.84%	599	3.56E-05
3	2.48%	387	2.30E-05	11	6.32%	986	5.86E-05	19	2.35%	367	2.18E-05
4	0.99%	155	9.19E-06	12	7.64%	1192	7.08E-05	20	1.19%	186	1.11E-05
5	0.99%	155	9.19E-06	13	6.81%	1063	6.32E-05	21	2.81%	439	2.61E-05
6	2.15%	335	1.99E-05	14	6.65%	1037	6.16E-05	22	4.79%	748	4.44E-05
7	4.83%	754	4.48E-05	15	5.99%	934	5.55E-05	23	3.47%	542	3.22E-05
8	3.34%	521	3.10E-05	16	4.33%	676	4.02E-05	24	0.66%	103	6.13E-06
								Total		15,606	

789 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - El Camino Real
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5_NB_ECR	El Camino Real Northbound	NB	2	666.0	0.41	13.3	44	1.3	35	15,606
PM2.5_SB_ECR	El Camino Real Southbound	SB	3	661.5	0.41	17.0	56	1.3	35	15,606
									Total	31,212

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.001808			

2024 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_NB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	174	3.62E-05	9	7.12%	1111	2.31E-04	17	7.43%	1159	2.41E-04
2	0.42%	65	1.35E-05	10	4.38%	683	1.42E-04	18	8.23%	1284	2.67E-04
3	0.38%	59	1.23E-05	11	4.65%	726	1.51E-04	19	5.73%	894	1.86E-04
4	0.18%	28	5.72E-06	12	5.90%	920	1.91E-04	20	4.30%	671	1.39E-04
5	0.46%	72	1.50E-05	13	6.17%	963	2.00E-04	21	3.25%	508	1.06E-04
6	0.85%	132	2.75E-05	14	6.05%	944	1.96E-04	22	3.31%	517	1.07E-04
7	3.73%	583	1.21E-04	15	7.05%	1100	2.29E-04	23	2.48%	387	8.05E-05
8	7.76%	1212	2.52E-04	16	7.18%	1121	2.33E-04	24	1.88%	293	6.09E-05
								Total		15,606	

2024 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5_SB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	174	3.60E-05	9	7.12%	1111	2.29E-04	17	7.43%	1159	2.39E-04
2	0.42%	65	1.34E-05	10	4.38%	683	1.41E-04	18	8.23%	1284	2.65E-04
3	0.38%	59	1.22E-05	11	4.65%	726	1.50E-04	19	5.73%	894	1.85E-04
4	0.18%	28	5.68E-06	12	5.90%	920	1.90E-04	20	4.30%	671	1.39E-04
5	0.46%	72	1.49E-05	13	6.17%	963	1.99E-04	21	3.25%	508	1.05E-04
6	0.85%	132	2.73E-05	14	6.05%	944	1.95E-04	22	3.31%	517	1.07E-04
7	3.73%	583	1.20E-04	15	7.05%	1100	2.27E-04	23	2.48%	387	7.99E-05
8	7.76%	1212	2.50E-04	16	7.18%	1121	2.31E-04	24	1.88%	293	6.05E-05
								Total		15,606	

789 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - El Camino Real
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_NB_ECR	El Camino Real Northbound	NB	2	666.0	0.41	13.3	44	1.3	35	15,606
TEXH_SB_ECR	El Camino Real Southbound	SB	3	661.5	0.41	17.0	56	1.3	35	15,606
									Total	31,212

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.02050			

2024 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	174	4.11E-04	9	7.12%	1111	2.62E-03	17	7.43%	1159	2.73E-03
2	0.42%	65	1.53E-04	10	4.38%	683	1.61E-03	18	8.23%	1284	3.03E-03
3	0.38%	59	1.39E-04	11	4.65%	726	1.71E-03	19	5.73%	894	2.11E-03
4	0.18%	28	6.49E-05	12	5.90%	920	2.17E-03	20	4.30%	671	1.58E-03
5	0.46%	72	1.70E-04	13	6.17%	963	2.27E-03	21	3.25%	508	1.20E-03
6	0.85%	132	3.12E-04	14	6.05%	944	2.22E-03	22	3.31%	517	1.22E-03
7	3.73%	583	1.37E-03	15	7.05%	1100	2.59E-03	23	2.48%	387	9.13E-04
8	7.76%	1212	2.86E-03	16	7.18%	1121	2.64E-03	24	1.88%	293	6.90E-04
								Total		15,606	

2024 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	174	4.08E-04	9	7.12%	1111	2.60E-03	17	7.43%	1159	2.71E-03
2	0.42%	65	1.52E-04	10	4.38%	683	1.60E-03	18	8.23%	1284	3.01E-03
3	0.38%	59	1.38E-04	11	4.65%	726	1.70E-03	19	5.73%	894	2.09E-03
4	0.18%	28	6.44E-05	12	5.90%	920	2.15E-03	20	4.30%	671	1.57E-03
5	0.46%	72	1.69E-04	13	6.17%	963	2.26E-03	21	3.25%	508	1.19E-03
6	0.85%	132	3.10E-04	14	6.05%	944	2.21E-03	22	3.31%	517	1.21E-03
7	3.73%	583	1.36E-03	15	7.05%	1100	2.58E-03	23	2.48%	387	9.07E-04
8	7.76%	1212	2.84E-03	16	7.18%	1121	2.62E-03	24	1.88%	293	6.86E-04
								Total		15,606	

789 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - El Camino Real
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_NB_ECR	El Camino Real Northbound	NB	2	666.0	0.41	13.3	44	1.3	35	15,606
TEVAP_SB_ECR	El Camino Real Southbound	SB	3	661.5	0.41	17.0	56	1.3	35	15,606
									Total	31,212

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle per Hour (g/hour)	0.99591			
Emissions per Vehicle per Mile (g/VMT)	0.02845			

2024 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	174	5.70E-04	9	7.12%	1111	3.63E-03	17	7.43%	1159	3.79E-03
2	0.42%	65	2.12E-04	10	4.38%	683	2.23E-03	18	8.23%	1284	4.20E-03
3	0.38%	59	1.93E-04	11	4.65%	726	2.37E-03	19	5.73%	894	2.93E-03
4	0.18%	28	9.00E-05	12	5.90%	920	3.01E-03	20	4.30%	671	2.19E-03
5	0.46%	72	2.36E-04	13	6.17%	963	3.15E-03	21	3.25%	508	1.66E-03
6	0.85%	132	4.33E-04	14	6.05%	944	3.09E-03	22	3.31%	517	1.69E-03
7	3.73%	583	1.91E-03	15	7.05%	1100	3.60E-03	23	2.48%	387	1.27E-03
8	7.76%	1212	3.96E-03	16	7.18%	1121	3.67E-03	24	1.88%	293	9.58E-04
								Total		15,606	

2024 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	174	5.66E-04	9	7.12%	1111	3.61E-03	17	7.43%	1159	3.77E-03
2	0.42%	65	2.11E-04	10	4.38%	683	2.22E-03	18	8.23%	1284	4.17E-03
3	0.38%	59	1.92E-04	11	4.65%	726	2.36E-03	19	5.73%	894	2.91E-03
4	0.18%	28	8.94E-05	12	5.90%	920	2.99E-03	20	4.30%	671	2.18E-03
5	0.46%	72	2.34E-04	13	6.17%	963	3.13E-03	21	3.25%	508	1.65E-03
6	0.85%	132	4.30E-04	14	6.05%	944	3.07E-03	22	3.31%	517	1.68E-03
7	3.73%	583	1.89E-03	15	7.05%	1100	3.57E-03	23	2.48%	387	1.26E-03
8	7.76%	1212	3.94E-03	16	7.18%	1121	3.64E-03	24	1.88%	293	9.52E-04
								Total		15,606	

789 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - El Camino Real
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_NB_ECR	El Camino Real Northbound	NB	2	666.0	0.41	13.3	44	1.3	35	15,606
FUG_SB_ECR	El Camino Real Southbound	SB	3	661.5	0.41	17.0	56	1.3	35	15,606
									Total	31,212

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00207			
Brake Wear - Emissions per Vehicle (g/VMT)	0.00629			
Road Dust - Emissions per Vehicle (g/VMT)	0.01654			
otal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.02490			

2024 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	174	4.99E-04	9	7.12%	1111	3.18E-03	17	7.43%	1159	3.32E-03
2	0.42%	65	1.86E-04	10	4.38%	683	1.95E-03	18	8.23%	1284	3.68E-03
3	0.38%	59	1.69E-04	11	4.65%	726	2.08E-03	19	5.73%	894	2.56E-03
4	0.18%	28	7.88E-05	12	5.90%	920	2.63E-03	20	4.30%	671	1.92E-03
5	0.46%	72	2.06E-04	13	6.17%	963	2.76E-03	21	3.25%	508	1.45E-03
6	0.85%	132	3.79E-04	14	6.05%	944	2.70E-03	22	3.31%	517	1.48E-03
7	3.73%	583	1.67E-03	15	7.05%	1100	3.15E-03	23	2.48%	387	1.11E-03
8	7.76%	1212	3.47E-03	16	7.18%	1121	3.21E-03	24	1.88%	293	8.38E-04
								Total		15,606	

2024 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	174	4.95E-04	9	7.12%	1111	3.16E-03	17	7.43%	1159	3.30E-03
2	0.42%	65	1.84E-04	10	4.38%	683	1.94E-03	18	8.23%	1284	3.65E-03
3	0.38%	59	1.68E-04	11	4.65%	726	2.06E-03	19	5.73%	894	2.54E-03
4	0.18%	28	7.82E-05	12	5.90%	920	2.62E-03	20	4.30%	671	1.91E-03
5	0.46%	72	2.05E-04	13	6.17%	963	2.74E-03	21	3.25%	508	1.44E-03
6	0.85%	132	3.76E-04	14	6.05%	944	2.68E-03	22	3.31%	517	1.47E-03
7	3.73%	583	1.66E-03	15	7.05%	1100	3.13E-03	23	2.48%	387	1.10E-03
8	7.76%	1212	3.44E-03	16	7.18%	1121	3.19E-03	24	1.88%	293	8.33E-04
								Total		15,606	

789 Old County, San Carlos, CA - Off-Site Residential
Cumulative Operation - Industrial Road
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_NB_IND	Industrial Road Northbound	NB	2	503.8	0.31	13.3	43.7	3.4	35	7,394
DPM_SB_IND	Industrial Road Southbound	SB	2	511.1	0.32	13.3	43.7	3.4	35	7,394
									Total	14,788

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.00052			

2024 Hourly Traffic Volumes and DPM Emissions - DPM_NB_IND

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.80%	281	1.27E-05	9	6.65%	491	2.22E-05	17	6.48%	479	2.17E-05
2	3.14%	232	1.05E-05	10	8.30%	614	2.78E-05	18	3.84%	284	1.28E-05
3	2.48%	183	8.29E-06	11	6.32%	467	2.11E-05	19	2.35%	174	7.86E-06
4	0.99%	73	3.32E-06	12	7.64%	565	2.56E-05	20	1.19%	88	3.99E-06
5	0.99%	73	3.32E-06	13	6.81%	504	2.28E-05	21	2.81%	208	9.40E-06
6	2.15%	159	7.19E-06	14	6.65%	491	2.22E-05	22	4.79%	354	1.60E-05
7	4.83%	357	1.62E-05	15	5.99%	443	2.00E-05	23	3.47%	257	1.16E-05
8	3.34%	247	1.12E-05	16	4.33%	320	1.45E-05	24	0.66%	49	2.21E-06
								Total		7,394	

2024 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_IND

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.80%	281	1.29E-05	9	6.65%	491	2.26E-05	17	6.48%	479	2.20E-05
2	3.14%	232	1.07E-05	10	8.30%	614	2.82E-05	18	3.84%	284	1.30E-05
3	2.48%	183	8.41E-06	11	6.32%	467	2.14E-05	19	2.35%	174	7.97E-06
4	0.99%	73	3.37E-06	12	7.64%	565	2.59E-05	20	1.19%	88	4.05E-06
5	0.99%	73	3.37E-06	13	6.81%	504	2.31E-05	21	2.81%	208	9.54E-06
6	2.15%	159	7.29E-06	14	6.65%	491	2.26E-05	22	4.79%	354	1.63E-05
7	4.83%	357	1.64E-05	15	5.99%	443	2.03E-05	23	3.47%	257	1.18E-05
8	3.34%	247	1.13E-05	16	4.33%	320	1.47E-05	24	0.66%	49	2.24E-06
								Total		7,394	

789 Old County, San Carlos, CA - Off-Site Residential
Cumulative Operation - Industrial Road
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5_NB_IND	Industrial Road Northbound	NB	2	503.8	0.31	13.3	44	1.3	35	7,394
PM2.5_SB_IND	Industrial Road Southbound	SB	2	511.1	0.32	13.3	44	1.3	35	7,394
									Total	14,788

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.001808			

2024 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_NB_IND

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	83	1.30E-05	9	7.12%	526	8.27E-05	17	7.43%	549	8.63E-05
2	0.42%	31	4.83E-06	10	4.38%	324	5.09E-05	18	8.23%	609	9.57E-05
3	0.38%	28	4.39E-06	11	4.65%	344	5.41E-05	19	5.73%	424	6.66E-05
4	0.18%	13	2.05E-06	12	5.90%	436	6.85E-05	20	4.30%	318	5.00E-05
5	0.46%	34	5.37E-06	13	6.17%	456	7.17E-05	21	3.25%	241	3.78E-05
6	0.85%	63	9.86E-06	14	6.05%	447	7.03E-05	22	3.31%	245	3.85E-05
7	3.73%	276	4.34E-05	15	7.05%	521	8.19E-05	23	2.48%	183	2.88E-05
8	7.76%	574	9.02E-05	16	7.18%	531	8.35E-05	24	1.88%	139	2.18E-05
								Total		7,394	

2024 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5_SB_IND

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	83	1.32E-05	9	7.12%	526	8.39E-05	17	7.43%	549	8.76E-05
2	0.42%	31	4.90E-06	10	4.38%	324	5.16E-05	18	8.23%	609	9.70E-05
3	0.38%	28	4.46E-06	11	4.65%	344	5.49E-05	19	5.73%	424	6.76E-05
4	0.18%	13	2.08E-06	12	5.90%	436	6.95E-05	20	4.30%	318	5.07E-05
5	0.46%	34	5.45E-06	13	6.17%	456	7.28E-05	21	3.25%	241	3.84E-05
6	0.85%	63	1.00E-05	14	6.05%	447	7.13E-05	22	3.31%	245	3.91E-05
7	3.73%	276	4.40E-05	15	7.05%	521	8.31E-05	23	2.48%	183	2.93E-05
8	7.76%	574	9.16E-05	16	7.18%	531	8.47E-05	24	1.88%	139	2.21E-05
								Total		7,394	

789 Old County, San Carlos, CA - Off-Site Residential
Cumulative Operation - Industrial Road
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_NB_IND	Industrial Road Northbound	NB	2	503.8	0.31	13.3	44	1.3	35	7,394
TEXH_SB_IND	Industrial Road Southbound	SB	2	511.1	0.32	13.3	44	1.3	35	7,394
									Total	14,788

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.02050			

2024 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_IND

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	83	1.47E-04	9	7.12%	526	9.38E-04	17	7.43%	549	9.79E-04
2	0.42%	31	5.48E-05	10	4.38%	324	5.77E-04	18	8.23%	609	1.09E-03
3	0.38%	28	4.98E-05	11	4.65%	344	6.13E-04	19	5.73%	424	7.56E-04
4	0.18%	13	2.33E-05	12	5.90%	436	7.77E-04	20	4.30%	318	5.67E-04
5	0.46%	34	6.09E-05	13	6.17%	456	8.14E-04	21	3.25%	241	4.29E-04
6	0.85%	63	1.12E-04	14	6.05%	447	7.97E-04	22	3.31%	245	4.37E-04
7	3.73%	276	4.92E-04	15	7.05%	521	9.29E-04	23	2.48%	183	3.27E-04
8	7.76%	574	1.02E-03	16	7.18%	531	9.47E-04	24	1.88%	139	2.47E-04
								Total		7,394	

2024 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_IND

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	83	1.49E-04	9	7.12%	526	9.52E-04	17	7.43%	549	9.93E-04
2	0.42%	31	5.56E-05	10	4.38%	324	5.85E-04	18	8.23%	609	1.10E-03
3	0.38%	28	5.05E-05	11	4.65%	344	6.22E-04	19	5.73%	424	7.67E-04
4	0.18%	13	2.36E-05	12	5.90%	436	7.88E-04	20	4.30%	318	5.75E-04
5	0.46%	34	6.18E-05	13	6.17%	456	8.26E-04	21	3.25%	241	4.35E-04
6	0.85%	63	1.13E-04	14	6.05%	447	8.09E-04	22	3.31%	245	4.43E-04
7	3.73%	276	4.99E-04	15	7.05%	521	9.43E-04	23	2.48%	183	3.32E-04
8	7.76%	574	1.04E-03	16	7.18%	531	9.60E-04	24	1.88%	139	2.51E-04
								Total		7,394	

789 Old County, San Carlos, CA - Off-Site Residential
Cumulative Operation - Industrial Road
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_NB_IND	Industrial Road Northbound	NB	2	503.8	0.31	13.3	44	1.3	35	7,394
TEVAP_SB_IND	Industrial Road Southbound	SB	2	511.1	0.32	13.3	44	1.3	35	7,394
									Total	14,788

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle per Hour (g/hour)	0.99591			
Emissions per Vehicle per Mile (g/VMT)	0.02845			

2024 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_IND

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	83	2.04E-04	9	7.12%	526	1.30E-03	17	7.43%	549	1.36E-03
2	0.42%	31	7.61E-05	10	4.38%	324	8.01E-04	18	8.23%	609	1.51E-03
3	0.38%	28	6.91E-05	11	4.65%	344	8.51E-04	19	5.73%	424	1.05E-03
4	0.18%	13	3.23E-05	12	5.90%	436	1.08E-03	20	4.30%	318	7.87E-04
5	0.46%	34	8.45E-05	13	6.17%	456	1.13E-03	21	3.25%	241	5.95E-04
6	0.85%	63	1.55E-04	14	6.05%	447	1.11E-03	22	3.31%	245	6.06E-04
7	3.73%	276	6.83E-04	15	7.05%	521	1.29E-03	23	2.48%	183	4.54E-04
8	7.76%	574	1.42E-03	16	7.18%	531	1.31E-03	24	1.88%	139	3.43E-04
								Total		7,394	

2024 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_IND

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	83	2.07E-04	9	7.12%	526	1.32E-03	17	7.43%	549	1.38E-03
2	0.42%	31	7.72E-05	10	4.38%	324	8.12E-04	18	8.23%	609	1.53E-03
3	0.38%	28	7.01E-05	11	4.65%	344	8.64E-04	19	5.73%	424	1.06E-03
4	0.18%	13	3.27E-05	12	5.90%	436	1.09E-03	20	4.30%	318	7.98E-04
5	0.46%	34	8.57E-05	13	6.17%	456	1.15E-03	21	3.25%	241	6.04E-04
6	0.85%	63	1.57E-04	14	6.05%	447	1.12E-03	22	3.31%	245	6.15E-04
7	3.73%	276	6.93E-04	15	7.05%	521	1.31E-03	23	2.48%	183	4.61E-04
8	7.76%	574	1.44E-03	16	7.18%	531	1.33E-03	24	1.88%	139	3.48E-04
								Total		7,394	

789 Old County, San Carlos, CA - Off-Site Residential
Cumulative Operation - Industrial Road
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_NB_IND	Industrial Road Northbound	NB	2	503.8	0.31	13.3	44	1.3	35	7,394
FUG_SB_IND	Industrial Road Southbound	SB	2	511.1	0.32	13.3	44	1.3	35	7,394
									Total	14,788

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00207			
Brake Wear - Emissions per Vehicle (g/VMT)	0.00629			
Road Dust - Emissions per Vehicle (g/VMT)	0.01654			
otal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.02490			

2024 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_IND

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	83	1.79E-04	9	7.12%	526	1.14E-03	17	7.43%	549	1.19E-03
2	0.42%	31	6.65E-05	10	4.38%	324	7.00E-04	18	8.23%	609	1.32E-03
3	0.38%	28	6.05E-05	11	4.65%	344	7.45E-04	19	5.73%	424	9.17E-04
4	0.18%	13	2.82E-05	12	5.90%	436	9.44E-04	20	4.30%	318	6.88E-04
5	0.46%	34	7.39E-05	13	6.17%	456	9.88E-04	21	3.25%	241	5.21E-04
6	0.85%	63	1.36E-04	14	6.05%	447	9.68E-04	22	3.31%	245	5.30E-04
7	3.73%	276	5.98E-04	15	7.05%	521	1.13E-03	23	2.48%	183	3.97E-04
8	7.76%	574	1.24E-03	16	7.18%	531	1.15E-03	24	1.88%	139	3.00E-04
								Total		7,394	

2024 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_IND

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	83	1.81E-04	9	7.12%	526	1.16E-03	17	7.43%	549	1.21E-03
2	0.42%	31	6.75E-05	10	4.38%	324	7.11E-04	18	8.23%	609	1.34E-03
3	0.38%	28	6.14E-05	11	4.65%	344	7.56E-04	19	5.73%	424	9.31E-04
4	0.18%	13	2.86E-05	12	5.90%	436	9.57E-04	20	4.30%	318	6.98E-04
5	0.46%	34	7.50E-05	13	6.17%	456	1.00E-03	21	3.25%	241	5.28E-04
6	0.85%	63	1.38E-04	14	6.05%	447	9.82E-04	22	3.31%	245	5.38E-04
7	3.73%	276	6.06E-04	15	7.05%	521	1.14E-03	23	2.48%	183	4.03E-04
8	7.76%	574	1.26E-03	16	7.18%	531	1.17E-03	24	1.88%	139	3.05E-04
								Total		7,394	

789 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - Commercial Street
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_EB_COM	Commercial Street Eastbound	EB	1	455.0	0.28	9.7	31.7	3.4	25	6,734
DPM_WB_COM	Commercial Street Westbound	WB	1	455.5	0.28	9.7	31.7	3.4	25	6,734
									Total	13,467

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Emissions per Vehicle (g/VMT)	0.00060			

2024 Hourly Traffic Volumes and DPM Emissions - DPM_EB_COM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.80%	256	1.20E-05	9	6.65%	448	2.11E-05	17	6.48%	436	2.05E-05
2	3.14%	211	9.95E-06	10	8.30%	559	2.63E-05	18	3.84%	258	1.22E-05
3	2.48%	167	7.86E-06	11	6.32%	425	2.00E-05	19	2.35%	158	7.45E-06
4	0.99%	67	3.14E-06	12	7.64%	514	2.42E-05	20	1.19%	80	3.78E-06
5	0.99%	67	3.14E-06	13	6.81%	459	2.16E-05	21	2.81%	189	8.91E-06
6	2.15%	145	6.81E-06	14	6.65%	448	2.11E-05	22	4.79%	323	1.52E-05
7	4.83%	325	1.53E-05	15	5.99%	403	1.90E-05	23	3.47%	234	1.10E-05
8	3.34%	225	1.06E-05	16	4.33%	292	1.37E-05	24	0.66%	45	2.10E-06
								Total		6,734	

2024 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_WB_COM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.80%	256	1.21E-05	9	6.65%	448	2.11E-05	17	6.48%	436	2.06E-05
2	3.14%	211	9.97E-06	10	8.30%	559	2.63E-05	18	3.84%	258	1.22E-05
3	2.48%	167	7.87E-06	11	6.32%	425	2.00E-05	19	2.35%	158	7.46E-06
4	0.99%	67	3.15E-06	12	7.64%	514	2.42E-05	20	1.19%	80	3.78E-06
5	0.99%	67	3.15E-06	13	6.81%	459	2.16E-05	21	2.81%	189	8.92E-06
6	2.15%	145	6.82E-06	14	6.65%	448	2.11E-05	22	4.79%	323	1.52E-05
7	4.83%	325	1.53E-05	15	5.99%	403	1.90E-05	23	3.47%	234	1.10E-05
8	3.34%	225	1.06E-05	16	4.33%	292	1.37E-05	24	0.66%	45	2.10E-06
								Total		6,734	

789 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - Commercial Street
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5_EB_COM	Commercial Street Eastbound	EB	1	455.0	0.28	9.7	32	1.3	25	6,734
PM2.5_WB_COM	Commercial Street Westbound	WB	1	455.5	0.28	9.7	32	1.3	25	6,734
									Total	13,467

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Emissions per Vehicle (g/VMT)	0.002639			

2024 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_EB_COM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	75	1.56E-05	9	7.12%	479	9.93E-05	17	7.43%	500	1.04E-04
2	0.42%	28	5.80E-06	10	4.38%	295	6.11E-05	18	8.23%	554	1.15E-04
3	0.38%	25	5.27E-06	11	4.65%	313	6.49E-05	19	5.73%	386	8.00E-05
4	0.18%	12	2.46E-06	12	5.90%	397	8.23E-05	20	4.30%	290	6.00E-05
5	0.46%	31	6.45E-06	13	6.17%	416	8.61E-05	21	3.25%	219	4.54E-05
6	0.85%	57	1.18E-05	14	6.05%	407	8.44E-05	22	3.31%	223	4.62E-05
7	3.73%	251	5.21E-05	15	7.05%	475	9.84E-05	23	2.48%	167	3.46E-05
8	7.76%	523	1.08E-04	16	7.18%	483	1.00E-04	24	1.88%	126	2.62E-05
								Total		6,734	

2024 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5_WB_COM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	75	1.56E-05	9	7.12%	479	9.94E-05	17	7.43%	500	1.04E-04
2	0.42%	28	5.81E-06	10	4.38%	295	6.11E-05	18	8.23%	554	1.15E-04
3	0.38%	25	5.28E-06	11	4.65%	313	6.50E-05	19	5.73%	386	8.01E-05
4	0.18%	12	2.46E-06	12	5.90%	397	8.24E-05	20	4.30%	290	6.01E-05
5	0.46%	31	6.45E-06	13	6.17%	416	8.62E-05	21	3.25%	219	4.55E-05
6	0.85%	57	1.19E-05	14	6.05%	407	8.45E-05	22	3.31%	223	4.63E-05
7	3.73%	251	5.22E-05	15	7.05%	475	9.85E-05	23	2.48%	167	3.47E-05
8	7.76%	523	1.08E-04	16	7.18%	483	1.00E-04	24	1.88%	126	2.62E-05
								Total		6,734	

789 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - Commercial Street
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_EB_COM	Commercial Street Eastbound	EB	1	455.0	0.28	9.7	32	1.3	25	6,734
TEXH_WB_COM	Commercial Street Westbound	WB	1	455.5	0.28	9.7	32	1.3	25	6,734
									Total	13,467

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Emissions per Vehicle (g/VMT)	0.03105			

2024 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_EB_COM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	75	1.83E-04	9	7.12%	479	1.17E-03	17	7.43%	500	1.22E-03
2	0.42%	28	6.82E-05	10	4.38%	295	7.18E-04	18	8.23%	554	1.35E-03
3	0.38%	25	6.20E-05	11	4.65%	313	7.64E-04	19	5.73%	386	9.41E-04
4	0.18%	12	2.90E-05	12	5.90%	397	9.68E-04	20	4.30%	290	7.06E-04
5	0.46%	31	7.58E-05	13	6.17%	416	1.01E-03	21	3.25%	219	5.34E-04
6	0.85%	57	1.39E-04	14	6.05%	407	9.93E-04	22	3.31%	223	5.44E-04
7	3.73%	251	6.13E-04	15	7.05%	475	1.16E-03	23	2.48%	167	4.07E-04
8	7.76%	523	1.27E-03	16	7.18%	483	1.18E-03	24	1.88%	126	3.08E-04
								Total		6,734	

2024 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_WB_COM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	75	1.84E-04	9	7.12%	479	1.17E-03	17	7.43%	500	1.22E-03
2	0.42%	28	6.83E-05	10	4.38%	295	7.19E-04	18	8.23%	554	1.35E-03
3	0.38%	25	6.21E-05	11	4.65%	313	7.65E-04	19	5.73%	386	9.42E-04
4	0.18%	12	2.90E-05	12	5.90%	397	9.69E-04	20	4.30%	290	7.07E-04
5	0.46%	31	7.59E-05	13	6.17%	416	1.01E-03	21	3.25%	219	5.35E-04
6	0.85%	57	1.39E-04	14	6.05%	407	9.94E-04	22	3.31%	223	5.45E-04
7	3.73%	251	6.14E-04	15	7.05%	475	1.16E-03	23	2.48%	167	4.08E-04
8	7.76%	523	1.28E-03	16	7.18%	483	1.18E-03	24	1.88%	126	3.08E-04
								Total		6,734	

789 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - Commercial Street
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_EB_COM	Commercial Street Eastbound	EB	1	455.0	0.28	9.7	32	1.3	25	6,734
TEVAP_WB_COM	Commercial Street Westbound	WB	1	455.5	0.28	9.7	32	1.3	25	6,734
									Total	13,467

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Emissions per Vehicle per Hour (g/hour)	0.99591			
Emissions per Vehicle per Mile (g/VMT)	0.03984			

2024 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_EB_COM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	75	2.35E-04	9	7.12%	479	1.50E-03	17	7.43%	500	1.56E-03
2	0.42%	28	8.76E-05	10	4.38%	295	9.22E-04	18	8.23%	554	1.73E-03
3	0.38%	25	7.96E-05	11	4.65%	313	9.80E-04	19	5.73%	386	1.21E-03
4	0.18%	12	3.72E-05	12	5.90%	397	1.24E-03	20	4.30%	290	9.06E-04
5	0.46%	31	9.73E-05	13	6.17%	416	1.30E-03	21	3.25%	219	6.86E-04
6	0.85%	57	1.79E-04	14	6.05%	407	1.27E-03	22	3.31%	223	6.98E-04
7	3.73%	251	7.86E-04	15	7.05%	475	1.49E-03	23	2.48%	167	5.23E-04
8	7.76%	523	1.64E-03	16	7.18%	483	1.51E-03	24	1.88%	126	3.95E-04
								Total		6,734	

2024 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_WB_COM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	75	2.36E-04	9	7.12%	479	1.50E-03	17	7.43%	500	1.57E-03
2	0.42%	28	8.77E-05	10	4.38%	295	9.23E-04	18	8.23%	554	1.74E-03
3	0.38%	25	7.97E-05	11	4.65%	313	9.81E-04	19	5.73%	386	1.21E-03
4	0.18%	12	3.72E-05	12	5.90%	397	1.24E-03	20	4.30%	290	9.07E-04
5	0.46%	31	9.74E-05	13	6.17%	416	1.30E-03	21	3.25%	219	6.86E-04
6	0.85%	57	1.79E-04	14	6.05%	407	1.28E-03	22	3.31%	223	6.99E-04
7	3.73%	251	7.87E-04	15	7.05%	475	1.49E-03	23	2.48%	167	5.23E-04
8	7.76%	523	1.64E-03	16	7.18%	483	1.51E-03	24	1.88%	126	3.96E-04
								Total		6,734	

789 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - Commercial Street
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2024

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_EB_COM	Commercial Street Eastbound	EB	1	455.0	0.28	9.7	32	1.3	25	6,734
FUG_WB_COM	Commercial Street Westbound	WB	1	455.5	0.28	9.7	32	1.3	25	6,734
									Total	13,467

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00207			
Brake Wear - Emissions per Vehicle (g/VMT)	0.00629			
Road Dust - Emissions per Vehicle (g/VMT)	0.01654			
otal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.02490			

2024 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_EB_COM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	75	1.47E-04	9	7.12%	479	9.37E-04	17	7.43%	500	9.78E-04
2	0.42%	28	5.47E-05	10	4.38%	295	5.76E-04	18	8.23%	554	1.08E-03
3	0.38%	25	4.98E-05	11	4.65%	313	6.13E-04	19	5.73%	386	7.55E-04
4	0.18%	12	2.32E-05	12	5.90%	397	7.76E-04	20	4.30%	290	5.66E-04
5	0.46%	31	6.08E-05	13	6.17%	416	8.13E-04	21	3.25%	219	4.28E-04
6	0.85%	57	1.12E-04	14	6.05%	407	7.96E-04	22	3.31%	223	4.36E-04
7	3.73%	251	4.92E-04	15	7.05%	475	9.28E-04	23	2.48%	167	3.27E-04
8	7.76%	523	1.02E-03	16	7.18%	483	9.45E-04	24	1.88%	126	2.47E-04
								Total		6,734	

2024 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_WB_COM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	75	1.47E-04	9	7.12%	479	9.38E-04	17	7.43%	500	9.79E-04
2	0.42%	28	5.48E-05	10	4.38%	295	5.77E-04	18	8.23%	554	1.08E-03
3	0.38%	25	4.98E-05	11	4.65%	313	6.13E-04	19	5.73%	386	7.55E-04
4	0.18%	12	2.32E-05	12	5.90%	397	7.77E-04	20	4.30%	290	5.67E-04
5	0.46%	31	6.09E-05	13	6.17%	416	8.14E-04	21	3.25%	219	4.29E-04
6	0.85%	57	1.12E-04	14	6.05%	407	7.97E-04	22	3.31%	223	4.37E-04
7	3.73%	251	4.92E-04	15	7.05%	475	9.29E-04	23	2.48%	167	3.27E-04
8	7.76%	523	1.02E-03	16	7.18%	483	9.46E-04	24	1.88%	126	2.47E-04
								Total		6,734	

789 Old County Road, San Carlos, CA - El Camino Real Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction Residential MEI Receptor (1.5 meter receptor height)

Emission Year	2024
Receptor Information	Construction Residential MEI receptor
Number of Receptors	1
Receptor Height	1.5 meters
Receptor Distances	At Construction Residential MEI location

Meteorological Conditions	
BAAQMD San Carlos Airport Met Data	2011 - 2015
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction Residential MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0016	0.0605	0.0841

Construction Residential MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.0789	0.0736	0.0053

789 Old County Road, San Carlos, CA - El Camino Real Traffic Cancer Risk
Impacts at Construction Residential MEI - 1.5 meter receptor height
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Age Sensitivity Factor**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	**DPM**	**Exhaust TOG**	**Evaporative TOG**	**TOTAL**
0	0.25	-0.25 - 0*	2024	10	0.0016	0.0605	0.0841	0.022	0.005	0.0004	0.03
1	1	0 - 1	2024	10	0.0016	0.0605	0.0841	0.268	0.057	0.0046	0.33
2	1	1 - 2	2025	10	0.0016	0.0605	0.0841	0.268	0.057	0.0046	0.33
3	1	2 - 3	2026	3	0.0016	0.0605	0.0841	0.042	0.009	0.0007	0.05
4	1	3 - 4	2027	3	0.0016	0.0605	0.0841	0.042	0.009	0.0007	0.05
5	1	4 - 5	2028	3	0.0016	0.0605	0.0841	0.042	0.009	0.0007	0.05
6	1	5 - 6	2029	3	0.0016	0.0605	0.0841	0.042	0.009	0.0007	0.05
7	1	6 - 7	2030	3	0.0016	0.0605	0.0841	0.042	0.009	0.0007	0.05
8	1	7 - 8	2031	3	0.0016	0.0605	0.0841	0.042	0.009	0.0007	0.05
9	1	8 - 9	2032	3	0.0016	0.0605	0.0841	0.042	0.009	0.0007	0.05
10	1	9 - 10	2033	3	0.0016	0.0605	0.0841	0.042	0.009	0.0007	0.05
11	1	10 - 11	2034	3	0.0016	0.0605	0.0841	0.042	0.009	0.0007	0.05
12	1	11 - 12	2035	3	0.0016	0.0605	0.0841	0.042	0.009	0.0007	0.05
13	1	12 - 13	2036	3	0.0016	0.0605	0.0841	0.042	0.009	0.0007	0.05
14	1	13 - 14	2037	3	0.0016	0.0605	0.0841	0.042	0.009	0.0007	0.05
15	1	14 - 15	2038	3	0.0016	0.0605	0.0841	0.042	0.009	0.0007	0.05
16	1	15 - 16	2039	3	0.0016	0.0605	0.0841	0.042	0.009	0.0007	0.05
17	1	16-17	2040	1	0.0016	0.0605	0.0841	0.005	0.001	0.0001	0.01
18	1	17-18	2041	1	0.0016	0.0605	0.0841	0.005	0.001	0.0001	0.01
19	1	18-19	2042	1	0.0016	0.0605	0.0841	0.005	0.001	0.0001	0.01
20	1	19-20	2043	1	0.0016	0.0605	0.0841	0.005	0.001	0.0001	0.01
21	1	20-21	2044	1	0.0016	0.0605	0.0841	0.005	0.001	0.0001	0.01
22	1	21-22	2045	1	0.0016	0.0605	0.0841	0.005	0.001	0.0001	0.01
23	1	22-23	2046	1	0.0016	0.0605	0.0841	0.005	0.001	0.0001	0.01
24	1	23-24	2047	1	0.0016	0.0605	0.0841	0.005	0.001	0.0001	0.01
25	1	24-25	2048	1	0.0016	0.0605	0.0841	0.005	0.001	0.0001	0.01
26	1	25-26	2049	1	0.0016	0.0605	0.0841	0.005	0.001	0.0001	0.01
27	1	26-27	2050	1	0.0016	0.0605	0.0841	0.005	0.001	0.0001	0.01
28	1	27-28	2051	1	0.0016	0.0605	0.0841	0.005	0.001	0.0001	0.01
29	1	28-29	2052	1	0.0016	0.0605	0.0841	0.005	0.001	0.0001	0.01
30	1	29-30	2053	1	0.0016	0.0605	0.0841	0.005	0.001	0.0001	0.01
Total Increased Cancer Risk								1.21	0.257	0.021	**1.49**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00033	0.07	0.08

* Third trimester of pregnancy

789 Old County Road, San Carlos, CA - Industrial Road Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction Residential MEI Receptor (1.5 meter receptor height)

Emission Year	2024
Receptor Information	Construction Residential MEI receptor
Number of Receptors	1
Receptor Height	1.5 meters
Receptor Distances	At Construction Residential MEI location

Meteorological Conditions	
BAAQMD San Carlos Airport Met Data	2011 - 2015
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction School MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0001	0.0039	0.0055

Construction School MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.0051	0.0048	0.0004

789 Old County Road, San Carlos, CA - Industrial Road Traffic Cancer Risk
Impacts at Construction Residential MEI - 1.5 meter receptor height
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
SAF = Student Adjustment Factor (unitless)
= (24 hrs/9 hrs) x (7 days/5 days) = 3.73
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
8-Hr BR* =	361	1200	520	240
A =	1	1	1	1
EF =	250	250	250	250
AT =	70	70	70	70
FAH =	1.00	1.00	3.73	1.00

* 95th percentile 8-hr breathing rates for moderate intensity activities

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	1	-0.25 - 0*	2024	10	0.0001	0.0039	0.0055	0.004	0.001	0.0001	0.01
1	1	0 - 1	2024	10	0.0001	0.0039	0.0055	0.014	0.003	0.0002	0.02
2	1	1 - 2	2025	10	0.0001	0.0039	0.0055	0.014	0.003	0.0002	0.02
3	1	2 - 3	2026	3	0.0001	0.0039	0.0055	0.007	0.001	0.0001	0.01
4	1	3 - 4	2027	3	0.0001	0.0039	0.0055	0.007	0.001	0.0001	0.01
5	1	4 - 5	2028	3	0.0001	0.0039	0.0055	0.007	0.001	0.0001	0.01
6	1	5 - 6	2029	3	0.0001	0.0039	0.0055	0.007	0.001	0.0001	0.01
7	1	6 - 7	2030	3	0.0001	0.0039	0.0055	0.007	0.001	0.0001	0.01
8	1	7 - 8	2031	3	0.0001	0.0039	0.0055	0.007	0.001	0.0001	0.01
9	1	8 - 9	2032	3	0.0001	0.0039	0.0055	0.007	0.001	0.0001	0.01
10	1	9 - 10	2033	3	0.0001	0.0039	0.0055	0.007	0.001	0.0001	0.01
11	1	10 - 11	2034	3	0.0001	0.0039	0.0055	0.007	0.001	0.0001	0.01
12	1	11 - 12	2035	3	0.0001	0.0039	0.0055	0.007	0.001	0.0001	0.01
13	1	12 - 13	2036	3	0.0001	0.0039	0.0055	0.007	0.001	0.0001	0.01
14	1	13 - 14	2037	3	0.0001	0.0039	0.0055	0.007	0.001	0.0001	0.01
15	1	14 - 15	2038	3	0.0001	0.0039	0.0055	0.007	0.001	0.0001	0.01
16	1	15 - 16	2039	3	0.0001	0.0039	0.0055	0.007	0.001	0.0001	0.01
17	1	16-17	2040	1	0.0001	0.0039	0.0055	0.000	0.000	0.0000	0.00
18	1	17-18	2041	1	0.0001	0.0039	0.0055	0.000	0.000	0.0000	0.00
19	1	18-19	2042	1	0.0001	0.0039	0.0055	0.000	0.000	0.0000	0.00
20	1	19-20	2043	1	0.0001	0.0039	0.0055	0.000	0.000	0.0000	0.00
21	1	20-21	2044	1	0.0001	0.0039	0.0055	0.000	0.000	0.0000	0.00
22	1	21-22	2045	1	0.0001	0.0039	0.0055	0.000	0.000	0.0000	0.00
23	1	22-23	2046	1	0.0001	0.0039	0.0055	0.000	0.000	0.0000	0.00
24	1	23-24	2047	1	0.0001	0.0039	0.0055	0.000	0.000	0.0000	0.00
25	1	24-25	2048	1	0.0001	0.0039	0.0055	0.000	0.000	0.0000	0.00
26	1	25-26	2049	1	0.0001	0.0039	0.0055	0.000	0.000	0.0000	0.00
27	1	26-27	2050	1	0.0001	0.0039	0.0055	0.000	0.000	0.0000	0.00
28	1	27-28	2051	1	0.0001	0.0039	0.0055	0.000	0.000	0.0000	0.00
29	1	28-29	2052	1	0.0001	0.0039	0.0055	0.000	0.000	0.0000	0.00
30	1	29-30	2053	1	0.0001	0.0039	0.0055	0.000	0.000	0.0000	0.00
Total Increased Cancer Risk								0.133	0.027	0.002	**0.16**

Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0000	0.00	0.01

* Third trimester of pregnancy

789 Old County Road, San Carlos, CA - Commercial Street Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction Residential MEI Receptor (1.5 meter receptor height)

Emission Year	2024
Receptor Information	Construction Residential MEI receptor
Number of Receptors	1
Receptor Height	1.5 meters
Receptor Distances	At Construction Residential MEI location

Meteorological Conditions	
BAAQMD San Carlos Airport Met Data	2011 - 2015
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction School MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0001	0.0032	0.0076

Construction School MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.0052	0.0047	0.0005

789 Old County Road, San Carlos, CA - Commercial Street Traffic Cancer Risk
Impacts at Construction Residential MEI - 1.5 meter receptor height
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
SAF = Student Adjustment Factor (unitless)
= (24 hrs/9 hrs) x (7 days/5 days) = 3.73
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
8-Hr BR* =	361	1200	520	240
A =	1	1	1	1
EF =	250	250	250	250
AT =	70	70	70	70
FAH =	1.00	1.00	3.73	1.00

* 95th percentile 8-hr breathing rates for moderate intensity activities

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	1	-0.25 - 0*	2024	10	0.0001	0.0032	0.0076	0.005	0.001	0.0001	0.01
1	1	0 - 1	2024	10	0.0001	0.0032	0.0076	0.017	0.002	0.0003	0.02
2	1	1 - 2	2025	10	0.0001	0.0032	0.0076	0.017	0.002	0.0003	0.02
3	1	2 - 3	2026	3	0.0001	0.0032	0.0076	0.008	0.001	0.0002	0.01
4	1	3 - 4	2027	3	0.0001	0.0032	0.0076	0.008	0.001	0.0002	0.01
5	1	4 - 5	2028	3	0.0001	0.0032	0.0076	0.008	0.001	0.0002	0.01
6	1	5 - 6	2029	3	0.0001	0.0032	0.0076	0.008	0.001	0.0002	0.01
7	1	6 - 7	2030	3	0.0001	0.0032	0.0076	0.008	0.001	0.0002	0.01
8	1	7 - 8	2031	3	0.0001	0.0032	0.0076	0.008	0.001	0.0002	0.01
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11	1	10 - 11	2034	3	0.0001	0.0032	0.0076	0.008	0.001	0.0002	0.01
12	1	11 - 12	2035	3	0.0001	0.0032	0.0076	0.008	0.001	0.0002	0.01
13	1	12 - 13	2036	3	0.0001	0.0032	0.0076	0.008	0.001	0.0002	0.01
14	1	13 - 14	2037	3	0.0001	0.0032	0.0076	0.008	0.001	0.0002	0.01
15	1	14 - 15	2038	3	0.0001	0.0032	0.0076	0.008	0.001	0.0002	0.01
16	1	15 - 16	2039	3	0.0001	0.0032	0.0076	0.008	0.001	0.0002	0.01
17	1	16-17	2040	1	0.0001	0.0032	0.0076	0.000	0.000	0.0000	0.00
18	1	17-18	2041	1	0.0001	0.0032	0.0076	0.000	0.000	0.0000	0.00
19	1	18-19	2042	1	0.0001	0.0032	0.0076	0.000	0.000	0.0000	0.00
20	1	19-20	2043	1	0.0001	0.0032	0.0076	0.000	0.000	0.0000	0.00
21	1	20-21	2044	1	0.0001	0.0032	0.0076	0.000	0.000	0.0000	0.00
22	1	21-22	2045	1	0.0001	0.0032	0.0076	0.000	0.000	0.0000	0.00
23	1	22-23	2046	1	0.0001	0.0032	0.0076	0.000	0.000	0.0000	0.00
24	1	23-24	2047	1	0.0001	0.0032	0.0076	0.000	0.000	0.0000	0.00
25	1	24-25	2048	1	0.0001	0.0032	0.0076	0.000	0.000	0.0000	0.00
26	1	25-26	2049	1	0.0001	0.0032	0.0076	0.000	0.000	0.0000	0.00
27	1	26-27	2050	1	0.0001	0.0032	0.0076	0.000	0.000	0.0000	0.00
28	1	27-28	2051	1	0.0001	0.0032	0.0076	0.000	0.000	0.0000	0.00
29	1	28-29	2052	1	0.0001	0.0032	0.0076	0.000	0.000	0.0000	0.00
30	1	29-30	2053	1	0.0001	0.0032	0.0076	0.000	0.000	0.0000	0.00
Total Increased Cancer Risk								0.157	0.022	0.003	**0.18**

Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0000	0.00	0.01

* Third trimester of pregnancy

CULTURAL RECORDS SEARCH, SACRED LAND SEARCH

ATTACHMENT B

to the
789 Old County Road Project Initial Study / Mitigated Negative Declaration

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

ALAMEDA
COLUSA
CONTRA COSTA
DEL NORTE
HUMBOLDT
LAKE
MARIN
MENDOCINO
MONTEREY
NAPA
SAN BENITO
SAN FRANCISCO
SAN MATEO
SANTA CLARA
SANTA CRUZ
SOLANO
SONOMA
YOLO

Northwest Information Center
Sonoma State University
1400 Valley House Drive, Suite 210
Rohnert Park, California 94928-3609
Tel: 707.588.8455
nwic@sonoma.edu
https://nwic.sonoma.edu

February 22, 2023 NWIC File No.: 22-1238

Jenna Sunderlin
Lamphier-Gregory, Inc.
4100 Redwood Road, STE 20A - #601
Oakland, CA 94619

Re: Record search results for the proposed 789 Old County Project

Dear Jenna Sunderlin:

Per your request received by our office on the 13th of February, 2023, a rapid response records search was conducted for the above referenced project by reviewing pertinent Northwest Information Center (NWIC) base maps that reference cultural resources records and reports, historic-period maps, and literature for San Mateo County. Please note that use of the term cultural resources includes both archaeological resources and historical buildings and/or structures.

The proposed project entails an approximately 3.4-acre site that is bounded by Bransten Road to the south and Old County Road to the west. The site includes the following addresses: 781 Old County Road and 1026 Bransten Road (Assessor's Parcel Numbers 046-131-610 and -630). The site currently contains an industrial cement plant and a trucking company and is mostly paved. The project sponsor is proposing to demolish all existing site improvements and to construct two new office/R&D buildings with a total of 351,371 square feet of building space, attached on the 1st and 2nd floors and in two levels of underground parking.

Construction details are not yet final, but construction activities are anticipated to disturb all onsite soils (e.g., during demolition, site grading and preparation, and foundation work) with subsurface excavation to accommodate subsurface parking levels to depths of about 25 feet below grade. The site is almost fully covered by the existing buildings and cement/asphalt surface, and is known to be underlain by alluvial deposit, with some artificial fill along the southeastern edge of the property.

Review of the information at our office indicates that there have been four cultural resource studies that include approximately 100% of the 789 Old County project area. See enclosed Report Listing. This 789 Old County project area contains no recorded archaeological resource. The State Office of Historic Preservation Built Environment Resources Directory (OHP BERD), which includes listings of the California Register of Historical Resources, California State Historical Landmarks, California State Points of Historical Interest, and the National Register of Historic Places, lists no recorded buildings or structures within or adjacent to the proposed 789 Old County project area. In addition to these inventories, the NWIC base maps show no recorded buildings or structures within the proposed 789 Old County project area.

At the time of Euroamerican contact, the Native Americans that lived in the area were speakers of the Ramaytush language, which is part of the Costanoan/Ohlone language family (Levy 1978: 485). Using Milliken's study of various mission records, the proposed 789 Old County project area is located within the lands of the *Lamchin* tribe, whose territory held the portion of the bay shore of the San Francisco Peninsula from present day Belmont south to present day Redwood City, and adjacent interior valleys to the west. Their most important village, "*Cachanigtac*, alias Las Pulgas" was probably on Pulgas Creek in the present city of San Carlos (Milliken 1995: 246-7).

Based on an evaluation of the environmental setting and features associated with known sites, Native American resources in this part of San Mateo County have been found in areas marginal to the San Francisco Bayshore and its associated wetlands, near intermittent and perennial fresh watercourses, and near areas populated by oak, buckeye, manzanita, and pine, as well as near a variety of plant and animal resources. The 789 Old County project area is located in the San Carlos area approximately 110 meters southwest of the historic bayshore and marshland margins, approximately 760 meters from Steinberger Slough and its confluence with Smith Slough and Pulgas Creek, and approximately 465 meters north of Pulgas Creek. Aerial maps indicate buildings and paved areas, with some small areas of dirt. Given the similarity of these environmental factors and the ethnographic sensitivity of the area, there is a moderate to high potential for unrecorded Native American resources to be within the proposed 789 Old County project area.

Review of historical literature and maps indicated the possibility historic-period activity within the 789 Old County project area. Early San Mateo County maps indicated the project area was located within the lands of Congressman T.G. Phelps, who was also an attorney, a merchant, and a real estate investor (Bromfield 1894, SMA County 1984: 21). As there are no buildings indicated on the maps, it is unclear if this land was developed at this time. With this information in mind, there is a moderate potential for unrecorded historic-period archaeological resources to be within the proposed 789 Old County project area.

The 1949 San Mateo USGS 7.5-minute topographic quadrangle and the August 1950 Sanborn Maps depict approximately eight buildings or structures and a railroad spur of the Southern Pacific Railroad within the 789 Old County project area. If present, these unrecorded buildings or structures meet the Office of Historic Preservation's minimum age standard that buildings, structures, and objects 45 years or older may be of historical value.

RECOMMENDATIONS:

1) There is a moderate to high potential for Native American archaeological resources and a moderate potential for historic-period archaeological resources to be within the project area. Please note that the previous studies were for adjacent fiberoptic and high-speed train projects that may have included all or portions of the project area (11396 BioSystems Analysis, Inc. 1989, Carrico et al 2000, Sikes et al 2006, and Jurich and Grady 2011. With that in mind, we recommend a qualified archaeologist conduct further archival and field study to identify cultural resources.

The proposed project area, however, has been highly developed and is presently covered with asphalt, buildings, or fill that obscures the visibility of original surface soils, which negates the feasibility of an adequate surface inspection. Field study may include, but is not

limited to, hand auger sampling, shovel test units, or geoarchaeological analyses as well as other common methods used to identify the presence of buried archaeological resources. Please refer to the list of consultants who meet the Secretary of Interior's Standards at http://www.chrisinfo.org.

2) We recommend the lead agency contact the local Native American tribe(s) regarding traditional, cultural, and religious heritage values. For a complete listing of tribes in the vicinity of the project, please contact the Native American Heritage Commission at 916/373-3710.

3) If the proposed project area contains buildings or structures that meet the minimum age requirement, prior to commencement of project activities, it is recommended that this resource be assessed by a professional familiar with the architecture and history of San Mateo County. Please refer to the list of consultants who meet the Secretary of Interior's Standards at http://www.chrisinfo.org.

4) Review for possible historic-period buildings or structures has included only those sources listed in the attached bibliography and should not be considered comprehensive.

5) If archaeological resources are encountered **during construction,** work should be temporarily halted in the vicinity of the discovered materials and workers should avoid altering the materials and their context until a qualified professional archaeologist has evaluated the situation and provided appropriate recommendations. Project personnel should not collect cultural resources. Native American resources include chert or obsidian flakes, projectile points, mortars, and pestles; and dark friable soil containing shell and bone dietary debris, heat-affected rock, or human burials. Historic-period resources include stone or adobe foundations or walls; structures and remains with square nails; and refuse deposits or bottle dumps, often located in old wells or privies.

6) It is recommended that any identified cultural resources be recorded on DPR 523 historic resource recordation forms, available online from the Office of Historic Preservation's website: https://ohp.parks.ca.gov/?page_id=28351

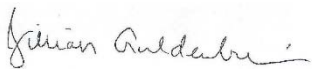
Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the California Historical Resources Information System (CHRIS) Inventory, and you should contact

the California Native American Heritage Commission for information on local/regional tribal contacts.

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

Thank you for using our services. Please contact this office if you have any questions, (707) 588-8455.

Sincerely,



Jillian Guldenbrein
Researcher

LITERATURE REVIEWED

In addition to archaeological maps and site records on file at the Northwest Information Center of the Historical Resources Information System, the following literature was reviewed:

Brabb, Earl E., Fred A. Taylor, and George P. Miller
1982 *Geologic, Scenic, and Historic Points of Interest in San Mateo County, California*. Miscellaneous Investigations Series, Map I-1257-B, 1:62,500. Department of the Interior, United States Geological Survey, Washington, D.C.

Bromfield, Davenport
1894 Official Map of San Mateo County, California

Helley, E.J., K.R. Lajoie, W.E. Spangle, and M.L. Blair
1979 *Flatland Deposits of the San Francisco Bay Region - Their Geology and Engineering Properties, and Their Importance to Comprehensive Planning*. Geological Survey Professional Paper 943. United States Geological Survey and Department of Housing and Urban Development.

Levy, Richard
1978 Costanoan. In *California*, edited by Robert F. Heizer, pp. 485-495. Handbook of North American Indians, vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Milliken, Randall
1995 *A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area 1769-1810*. Ballena Press Anthropological Papers No. 43, Menlo Park, CA.

Nelson, N.C.
1909 *Shellmounds of the San Francisco Bay Region*. University of California Publications in American Archaeology and Ethnology 7(4):309-356. Berkeley. (Reprint by Kraus Reprint Corporation, New York, 1964)

Nichols, Donald R., and Nancy A. Wright
1971 Preliminary Map of Historic Margins of Marshland, San Francisco Bay, California. U.S. Geological Survey Open File Map. U.S. Department of the Interior, Geological Survey in cooperation with the U.S. Department of Housing and Urban Development, Washington, D.C.

San Mateo County Historic Resources Advisory Board
1984 San Mateo County: Its History and Heritage. Second Edition. Division of Planning and Development Department of Environmental Management.

State of California Department of Parks and Recreation
1976 *California Inventory of Historic Resources*. State of California Department of Parks and Recreation, Sacramento.

State of California Department of Parks and Recreation and Office of Historic Preservation
1988 *Five Views: An Ethnic Sites Survey for California*. State of California Department of Parks and Recreation and Office of Historic Preservation, Sacramento.

State of California Office of Historic Preservation **
2022 *Built Environment Resources Directory*. Listing by City (through September 23, 2022). State of California Office of Historic Preservation, Sacramento.

**Note that the Office of Historic Preservation's *Historic Properties Directory* includes National Register, State Registered Landmarks, California Points of Historical Interest, and the California Register of Historical Resources as well as Certified Local Government surveys that have undergone Section 106 review.

Report List

NWIC File # 22-1238 789 Old County Road

Report No.	Other IDs	Year	Author(s)	Title	Affiliation
S-011396		1989		Technical Report of Cultural Resources Studies for the Proposed WTG-WEST, Inc., Los Angeles to San Francisco and Sacramento, California: Fiber Optic Cable Project	BioSystems Analysis, Inc.
S-026045		2000	Richard Carrico, Theodore Cooley, and William Eckhardt	Cultural Resources Reconnaissance Survey and Inventory Report for the Metromedia Fiberoptic Cable Project, San Francisco Bay Area and Los Angeles Basin Networks	Mooney & Associates

Report List

NWIC File # 22-1238 789 Old County Road

Report No.	Other IDs	Year	Author(s)	Title	Affiliation
S-033061	Submitter - SWCA Cultural Resources Report Database No. 06-507; Submitter - SWCA Report No. 10715-180	2006	Nancy Sikes, Cindy Arrington, Bryon Bass, Chris Corey, Kevin Hunt, Steve O'Neil, Catherine Pruett, Tony Sawyer, Michael Tuma, Leslie Wagner, and Alex Wesson	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California	SWCA Environmental Consultants
S-033061a		2006		Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California	SWCA Environmental Consultants
S-033061b		2007	Nancy E. Sikes	Final Report of Monitoring and Findings for the Qwest Network Construction Project (letter report)	SWCA Environmental Consultants

Report List

NWIC File # 22-1238 789 Old County Road

Report No.	Other IDs	Year	Author(s)	Title	Affiliation
S-048738		2011	Denise Jurich and Amber Grady	California High-Speed Train Project, Environmental Impact Report/Environmental Impact Statement, San Francisco to San Jose Section, Archaeological Survey Report, Technical Report [Draft]	PBS&J

Report List

NWIC File # 22-1238 789 Old County Road

Report No.	Other IDs	Year	Author(s)	Title	Affiliation
S-048738a		2011	Amber Grady and Richard Brandi	California High-Speed Train Project, Environmental Impact Report/Environmental Impact Statement, San Francisco to San Jose Section, Historic Architectural Survey Report, Technical Report [Draft]	PBS&J

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

February 20, 2023

Rebecca Auld
Lamphier-Gregory

Via Email to: rauld@lamphier-gregory.com

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, 789 Old County Road Project, San Mateo County

Dear Ms. Auld:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

- Any report that may contain site forms, site significance, and suggested mitigation measures.

  All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was negative.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Cody.Campagne@nahc.ca.gov.

Sincerely,

Cody Campagne

Cody Campagne
Cultural Resources Analyst

Attachment

ENERGY CALCULATIONS

ATTACHMENT C

to the
789 Old County Road Project Initial Study / Mitigated Negative Declaration

Construction Energy Use

To support the Energy Analysis for the following project: 789 Old County Road

Construction Equipment/Vehicles

	# of Vehicles	Hrs per Day	Horse-power	Load Factor	Days in Phase	horsepower-hour/BSFC per day	horsepower-hour per phase	fuel used per vehicle	Fuel Used (gallons)
Demolition									
Rubber Tired Dozers	2	8	367	0.4	66	1174.40	77510.40	4100.30	8,201
Concrete/Industrial Saws	1	8	33	0.73	66	192.72	12719.52	747.91	748
Excavators	3	8	36	0.38	66	109.44	7223.04	424.71	1,274
Site Preparation									
Rubber Tired Dozers	3	8	367	0.4	66	1174.40	77510.40	4100.30	12,301
Tractors/Loaders/Backhoes	4	8	84	0.37	66	248.64	16410.24	964.92	3,860
Grading / Excavation									
Excavators	2	8	36	0.38	72	109.44	7879.68	463.33	927
Graders	1	8	148	0.41	72	485.44	34951.68	1848.94	1,849
Rubber Tired Dozers	1	8	367	0.4	72	1174.40	84556.80	4473.05	4,473
Scrapers	2	8	423	0.48	72	1624.32	116951.04	6186.71	12,373
Tractors/Loaders/Backhoes	2	8	84	0.37	72	248.64	17902.08	1052.64	2,105
Building Construction									
Cranes	1	7	367	0.29	638	745.01	475316.38	25144.24	25,144
Forklifts	3	8	82	0.2	638	131.20	83705.60	4921.89	14,766
Generator Sets	1	8	14	0.74	638	82.88	52877.44	3109.19	3,109
Tractors/Loaders/Backhoes	3	7	84	0.37	638	217.56	138803.28	8161.63	24,485
Welders	1	8	46	0.45	638	165.60	105652.80	6212.38	6,212
Building - Interior / Architectural Coating									
Air Compressors	1	6	37	0.48	162	106.56	17262.72	1015.05	1,015
Paving									
Pavers	2	8	81	0.42	170	272.16	46267.20	2720.51	5,441
Paving Equipment	2	8	89	0.36	170	256.32	43574.40	2562.17	5,124
Rollers	2	8	36	0.38	170	109.44	18604.80	1093.96	2,188
Total Fuel Used for Construction Equipment/Vehicles									**135,595** (diesel)

Compression-Ignition Engine Brake-Specific Fuel Consumption (BSFC) Factors [1] used in the above calculations are (in gallons per horsepower-hour/BSFC)

0.0588 <100 horsepower
0.0529 >100 horsepower

Worker Trips

Phase	MPG [2]	Trips	Trip Length (miles)	Total Miles per Day	Days in Phase	Totel Miles in Phase		Fuel Used (gallons)
Demolition	24	15	12.8	192	66	12672		528
Site Prep Phase	24	17.5	12.8	224	66	14784		616
Grading Phase	24	20	12.8	256	72	18432		768
Paving	24	15	12.8	192	170	32640		1,360
Building Construction	24	129	12.8	1651.2	638	1053465.6		43,894
Architectural Coating	24	25.7	12.8	328.96	162	53291.52		2,220
Total Fuel Used for Construction Worker Trips							Total	**49,387** (gasoline)

Construction Energy Use, Continued

Vendor Trips

Phase	MPG [2]	Trips	Trip Length (miles)	Total Miles per Day	Days in Phase	Totel Miles in Phase		Fuel Used (gallons)
Demolition	7.4	0	7.3	0	66	0		0
Site Prep Phase	7.4	0	7.3	0	66	0		0
Grading Phase	7.4	0	7.3	0	72	0		0
Paving	7.4	0	7.3	0	170	0		0
Building Construction	7.4	63.9	7.3	466.47	638	297607.86		40,217
Architectural Coating	7.4	0	7.3	0	162	0		0
Total Fuel Used for Vendor Trips								**40,217** (diesel)

Hauling Trips

Phase	MPG [2]	Trips	Trip Length (miles)	Total Miles in Phase	Days in Phase	Totel Miles in Phase		Fuel Used (gallons)
Demolition	7.4	23.5	20	470	66	31020		4,192
Site Prep Phase	7.4	0	20	0	66	0		0
Grading Phase	7.4	186	20	3720	72	267840		36,195
Paving	7.4	0.59	20	11.8	170	2006		271
Building Construction	7.4	1.3	20	26	638	16588		2,242
Architectural Coating	7.4	0	20	0	162	0		0
Total Fuel Used for Hauling Trips								**42,899** (diesel)

Fuel Use Converted to MMBtu

	Total Construction Fuel Use (gallons)	Conversion Factor Btu/gallon	Source	Fuel Converted to Energy Use
Diesel	**218,712**	137,381	[3]	**30,047** MMBtu
Gasoline	**49,387**	109,786	[4]	**5,422** MMBtu
Total Energy Use from Construction Fuel				**35,469** MMBtu

Sum of above

Total Construction Energy Use 35,469 MMBtu

Operational Energy Use

Operational Vehicular Fuel Use

Gross Annual VMT	13,470,684

Fleet Class	Fleet Mix	VMT per Class	Fuel Ecomony [5]	Fuel Consumption (gallons)		
Light Duty Auto (LDA)	0.422850966	5696091.7	30.9	184339.54		
Light Duty Truck 1 (LDT1)	0.041922994	564731.4	26.63	21206.59		
Light Duty Truck 2 (LDT2)	0.290786296	3917090.3	24.36	160800.09		
Medium Duty Vehicle (MDV)	0.1670461	2250225.2	20.2	111397.29		
Motorcycle (MCY)	0.024092335	324540.24	37.06	8757.16	Total Gasoline	486,501
Light Heavy Duty 1 (LHD1)	0.0300506	404802.14	18.23	22205.27		gallons
Light Heavy Duty 2 (LHD2)	0.006807728	91704.755	16.24	5646.84		
Medium Heavy Duty (MHD)	0.008513381	114681.06	9.43	12161.30		
Heavy Heavy Duty (HHD)	0.002474418	33332.102	6.42	5191.92		
Other Bus (OBUS)	0.002266215	30527.465	8.26	3695.82		
Urban Bus (UBUS)	0.000698351	9407.2658	5.17	1819.59		
School Bus (SBUS)	0.000406865	5480.7499	7.25	755.97		
Motorhome (MH)	0.002083744	28069.456	9.91	2832.44	Total Diesel	54,309
						gallons

Note that the above numbers represent gross fuel consumption.

The project is required to implement a TDM program, which would be expected to reduce VMT, resulting in the following gasoline usage:

Anticpated TDM VMT reduction: [6]	20%	
Resultant Total Gasoline Use with TDM Reductions:	389,201	**gallons (gasoline)**

	Total Fuel Use (gallons)	Conversion Factor Btu/gallon	Source	Fuel Converted to Use	Energy
Diesel	54,309	137,381	[3]	7,461	MMBtu
Gasoline	389,201	109,786	[4]	42,729	MMBtu
Total Energy Use from Operational Fuel				**50,190**	MMBtu

Operational Built Environment

Type of Energy	Annual Usage	Units	Converted to MMBtu
Electricity	7.56E+06	kWh	25781
Natural Gas	8290419	kBtu	8290.42

Sum of above

Total Annual Operational Energy Use	**84,261**	**MMBtu**

Existing and Net Energy Use

Net Operational Vehicular Fuel Energy Use

To determine the net increase in fuel usage, fuel usage of the existing uses at the site can be subtracted from the gross consumption above. The following number also incorproates the TDM reduction identified in the Operational calculations.

Existing Use VMT:	907,765	
Resultant Net Annual Gasoline Use:	362,973	gallons
Resultant Net Annual Diesel Use:	50,649	gallons

	Net Fuel Use (gallons)	Conversion Factor Btu/gallon	Source	Fuel Converted to Energy Use	
Diesel	50,649	137,381	[3]	6,958	MMBtu
Gasoline	362,973	109,786	[4]	39,849	MMBtu
Total Energy Use from Net Operational Fuel				**46,808**	MMBtu

Existing and Net Operational Built Environment

	Existing			Net
Type of Energy	Annual Usage	Units	Converted to MMBtu	Energy Use in MMBtu
Electricity	1.46E+06	kWh	4988	20792
Natural Gas	5.87E+06	kBtu	5867.74	2423
Total			10856	**23215**

Sum of above

Total Net Annual Operational Energy Use **70,023** **MMBtu**

Sources

Unless otherwise noted, information in these calculations is from the project-specific Air Quality/Emissions Assessment for the project, including CalEEMod output tables.

[1] United States Environmental Protection Agency. 2018. Exhaust and Crankcase Emission Factors for Nonroad Compression-Ignition Engines in MOVES2014b . July 2018. Available at: https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100UXEN.pdf.

[2] United States Department of Transportation, Bureau of Transportation Statistics. 2018. National Transportation Statistics 2018 . Available at: https://www.bts.gov/sites/bts.dot.gov/files/docs/browse-statistical-products-anddata/national-transportation-statistics/223001/ntsentire2018q4.pdf.

https://www.eia.gov/totalenergy/data/monthly/archive/00352205.pdf

[4] California Air Resources Board, CA-GREET 2.0 Supplemental Document and Tables of Changes, Appendix C, Supplement to the LCFS CA-GREET 2.0 Model, 12/15/2014 , page C-24, Table 10. Available at: https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2015/lcfs2015/lcfs15appc.pdf

[5] California Air Resources Board (CARB), EMFAC2021 v1.0.0., 2021. Available at https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools-emfac-software-and

[6] Anticipated TDM reduction information is from the the project-specific CEQA Transportation Analysis.

Acronyms used include:

Btu = British Thermal Units
hrs = hours
kBtu = Thousand British Thermal Units
kWH = kilowatt hours
MMBtu = Million British Thermal Units
MPG = miles per gallon
TDM = Transportation Demand Management
VMT = vehicle miles traveled

NOISE AND VIBRATION ASSESSMENT

ATTACHMENT D

to the
789 Old County Road Project Initial Study / Mitigated Negative Declaration

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M E M O

Date: February 16, 2024

To: Rebecca Auld
Vice President, Lamphier-Gregory

From: Carrie J. Janello
Senior Consultant, Illingworth & Rodkin, Inc.

**SUBJECT: 789 Old County Road Project, San Carlos, CA –
Addendum Letter to the Noise and Vibration Assessment**

The original 789 Old County Road Project, evaluated by our firm in May 2023[1], included an office/research and development (R&D) development consisting of 349,066 square feet of R&D plus 2,305 square feet of retail space on the 3.4-acre project site. Combined with the structured parking, the total original structure gross square footage was 672,199. The project has since been updated to remove the retail space entirely and increase the office/R&D space to 358,202 square feet. The total building area, including the parking garage has increased in size to 681,655 gross square feet. Additionally, there have been some changes in outdoor open space and the location of an emergency generator.

The purpose of this addendum letter is to address changes to the original noise and vibration assessment based on the new project site plan.

Noise and Land Use Compatibility

Future Exterior Noise Environment

While most of the proposed terraces are the same with the updated site plan dated December 22, 2023, the level 6 terrace located in the east building has changed from a large outdoor space located in the southeastern corner of the building to a smaller terrace in the southeastern corner and a second terrace stretching along the northern building façade of the east building. The small terrace in the southeastern corner no longer has direct line-of-sight to the train tracks or Old County Road but continues to have direct line-of-sight to Bransten Road, with a setback of approximately 35

[1] Illingworth & Rodkin, Inc., 789 Old County Road Noise and Vibration Assessment, May 10, 2023.

feet from the centerline. Due to the elevation of this terrace being 89 feet above the ground, the center of the terrace would be shielded from the roadway below. Future exterior noise levels at the center of the level 6 terrace in the southeastern corner of the east building would remain below 60 dBA L_{dn}. The level 6 terrace located along the northern façade would be shielded from all surrounding noise sources. Therefore, this level 6 terrace would have future exterior noise levels below 60 dBA L_{dn}.

Impact 1a and 2 (Construction Noise and Vibration)

The total building construction gross square footage would increase under current project conditions from 672,199 square feet to 681,655 square feet, a 1.4% increase. The construction equipment and schedule assumptions would remain the same with slightly more activity. Such a minor increase in construction activities would not result in substantial changes in the modeled construction and vibration impacts. Construction-period noise and vibration impacts would remain less-than-significant with compliance with City noise policies and implementation of Construction Vibration Reduction and Monitoring.

Impact 1b (Operational Noise)

Project Traffic Increase

The peak hour trips would reduce under current project conditions from 563 peak AM trips and 584 peak PM trips to 506 peak AM trips and 496 peak PM trips. Therefore, the existing plus project peak hour volumes would be at or below those calculated in the original noise and vibration assessment completed in May 2023. The project's traffic would result in a 2 dBA L_{dn} or less increase along all roadway segments in the project vicinity. This would remain a less-than-significant impact.

Mechanical Equipment

The emergency generator in the west building has been relocated from the western façade to the northern façade. The type of emergency generator has not changed, and therefore, would have the same source noise levels discussed in the May 2023 noise and vibration assessment. Additionally, the location of the emergency generator in the east building would not change. Table 1 summarizes the updated hourly average noise levels and the combined day-night average noise level for all noise-generating mechanical equipment located on the ground level of the proposed project site as propagated to the surrounding receptors.

Average noise levels (L_{eq}) due to the operation of the transformer and both emergency generators would not exceed daytime or nighttime average ambient noise levels at any of the surrounding receptors. For all existing receptors, the noise level increase due to transformer and emergency generator operations would not be measurable or detectable (0 dBA L_{dn} increase). This would remain a less-than-significant impact.

Overall Noise and Vibration Conclusions

The updated project would not result in any other changes to the May 2023 noise and vibration assessment, and the updated project details would not result in a new significant noise or vibration impact.

(23-010)

TABLE 1 Updated Operational Noise Levels for Ground-Level Mechanical Equipment Sources

Receptor	Distance from Center of the Transformer Room, feet	L_{eq} from Transformer Noise, dBA	Distance from Center of the Emergency Generator Rooms, feet	L_{eq} from Emergency Generators, dBA	Combined L_{dn}, dBA	Noise Level Increase, dBA L_{dn}
Adjoining NW Warehouse & Commercial	185	< 20[a]	65 (East) 20 (West)	46[a] (East) 56[a] (West)	43[a]	0
Adjoining NE Warehouse	45	24[a]	55 (East) 420 (West)	47[a] (East) 30[a] (West)	36[a]	0
SE Future Office/ R&D	110	< 20[a]	230 (East) 275 (West)	35[a] (East) 33[a] (West)	26[a]	N/A[b]
SW Commercial	790	< 20[a]	775 (East) 425 (West)	24[a] (East) 30[a] (West)	< 20[a]	0
Nearest Residential	600	< 20[a]	485 (East) 430 (West)	29[a] (East) 30[a] (West)	< 20[a]	0

[a] Conservative 20 dBA attenuation assumed for building façade.
[b] Future receptors are not subject to existing ambient conditions, and therefore, are not subject to a noise level increase.

789 OLD COUNTY ROAD
NOISE AND VIBRATION ASSESSMENT

San Carlos, California

May 10, 2023

Prepared for:

Rebecca Auld
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Prepared by:

Carrie J. Janello
Michael S. Thill

ILLINGWORTH & RODKIN, INC.
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Project: 23-010

INTRODUCTION

Two new office/research and development (R&D) buildings are proposed on the 3.4-acre project site located at 1026 Bransten Road and 781 Old County Road in the City of San Carlos, California. Currently, these properties are occupied by CEMEX, a cement and concrete manufacturing and distributing company, and Morey Transport, a cargo truck company. These buildings will be demolished as part of the proposed project. The proposed project buildings will include a four-story west building and six-story east building that share a connected ground floor lobby and parking, two levels of underground parking, and the second-floor office/R&D area, with a total combined square footage of 329,066.

This report evaluates the project's potential to result in significant noise and vibration impacts with respect to applicable California Environmental Quality Act (CEQA) guidelines. The report is divided into three sections: 1) the Setting Section provides a brief description of the fundamentals of environmental noise and groundborne vibration, summarizes applicable regulatory background, and describes the existing ambient noise environment at the project site; 2) the Plan Consistency Analysis Section discusses noise and land use compatibility utilizing applicable regulatory background; and, 3) the Impacts and Mitigation Measures Section describes the significance criteria used to evaluate project impacts, provides a discussion of each project impact, and presents measures, where necessary, to mitigate the impacts of the project on sensitive receptors in the vicinity.

SETTING

Fundamentals of Environmental Noise

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its *pitch* or its *loudness*. *Pitch* is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. *Loudness* is the intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A *decibel (dB)* is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table 1.

There are several methods of characterizing sound. The most common in California is the *A-weighted sound level (dBA).* This scale gives greater weight to the frequencies of sound to which

the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This *energy-equivalent sound/noise descriptor* is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

Since the sensitivity to noise increases during the evening and at night -- because excessive noise interferes with the ability to sleep -- 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The *Community Noise Equivalent Level* (*CNEL*) is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 pm - 10:00 pm) and a 10 dB addition to nocturnal (10:00 pm - 7:00 am) noise levels. The *Day/Night Average Sound Level* (L_{dn} or *DNL*) is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

Effects of Noise

Sleep and Speech Interference

The thresholds for speech interference indoors are about 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors the thresholds are about 15 dBA higher. Steady noises of sufficient intensity (above 35 dBA) and fluctuating noise levels above about 45 dBA have been shown to affect sleep. Interior residential standards for multi-family dwellings are set by the State of California at 45 dBA L_{dn}. Typically, the highest steady traffic noise level during the daytime is about equal to the L_{dn} and nighttime levels are 10 dBA lower. The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses. Typical structural attenuation is 12-17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is around 20 dBA for an older structure and 25 dBA for a newer dwelling. Sleep and speech interference is therefore possible when exterior noise levels are about 57-62 dBA L_{dn} with open windows and 65-70 dBA L_{dn} if the windows are closed. Levels of 55-60 dBA are common along collector streets and secondary arterials, while 65-70 dBA is a typical value for a primary/major arterial. Levels of 75-80 dBA are normal noise levels at the first row of development outside a freeway right-of-way. In order to achieve an acceptable interior noise environment, bedrooms facing secondary roadways need to be able to have their windows closed; those facing major roadways and freeways typically need special glass windows.

Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that the causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. When measuring the percentage of the population highly annoyed, the threshold for ground vehicle noise is about 50 dBA L_{dn}. At a L_{dn} of about 60 dBA, approximately 12 percent of the population is highly annoyed. When the L_{dn} increases to 70 dBA, the percentage of the population highly annoyed increases to about 25-30 percent of the population. There is, therefore, an increase of about 2 percent per dBA between a L_{dn} of 60-70 dBA. Between a L_{dn} of 70-80 dBA, each decibel increase increases by about 3 percent the percentage of the population highly annoyed. People appear to respond more adversely to aircraft noise. When the L_{dn} is 60 dBA, approximately 30-35 percent of the population is believed to be highly annoyed. Each decibel increase to 70 dBA adds about 3 percentage points to the number of people highly annoyed. Above 70 dBA, each decibel increase results in about a 4 percent increase in the percentage of the population highly annoyed.

Fundamentals of Groundborne Vibration

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One method is the Peak Particle Velocity (PPV). The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. In this report, a PPV descriptor with units of mm/sec or in/sec is used to evaluate construction generated vibration for building damage and human complaints. Table 3 displays the reactions of people and the effects on buildings that continuous or frequent intermittent vibration levels produce. The guidelines in Table 3 represent syntheses of vibration criteria for human response and potential damage to buildings resulting from construction vibration.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generates the highest construction related groundborne vibration levels. Because of the impulsive nature of such activities, the use of the PPV descriptor has been routinely used to measure and assess groundborne vibration and almost exclusively to assess the potential of vibration to cause damage and the degree of annoyance for humans.

The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life, are evaluated against different vibration limits. Human perception of vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level.

Structural damage can be classified as cosmetic only, such as paint flaking or minimal extension of cracks in building surfaces; minor, including limited surface cracking; or major, that may threaten the structural integrity of the building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher. The damage criteria presented in Table 3 include several categories for ancient, fragile, and historic structures, the types of structures most at risk to damage. Most buildings are included within the categories ranging from "Historic and some old buildings" to "Modern industrial/commercial buildings". Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is at a high state of disrepair and the construction activity occurs immediately adjacent to the structure.

The annoyance levels shown in Table 3 should be interpreted with care since vibration may be found to be annoying at lower levels than those shown, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage.

Railroad and light rail operations are potential sources of substantial ground vibration depending on distance, the type and the speed of trains, and the type of railroad track. People's response to ground vibration from rail vehicles has been correlated best with the average, root mean square (RMS) velocity of the ground. The velocity of the ground is expressed on the decibel scale. The reference velocity is 1 x 10-6 in/sec RMS, which equals 0 VdB, and 1 in/sec equals 120 VdB. Although not a universally accepted notation, the abbreviation "VdB" is used in this document for vibration decibels to reduce the potential for confusion with sound decibels.

Typical background vibration levels in residential areas are usually 50 VdB or lower, well below the threshold of perception for most humans. Perceptible vibration levels inside residences are attributed to the operation of heating and air conditioning systems, door slams and foot traffic. Construction activities, train operations, and street traffic are some of the most common external sources of vibration that can be perceptible inside residences. Table 4 illustrates some common sources of vibration and the association to human perception or the potential for structural damage.

TABLE 1 Definition of Acoustical Terms Used in this Report

Term	Definition
Decibel, dB	A unit describing, the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20 micro Pascals.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e. g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 p.m. and 7:00 a.m.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 p.m.to 10:00 p.m. and after addition of 10 decibels to sound levels measured in the night between 10:00 p.m. and 7:00 a.m.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Handbook of Acoustical Measurements and Noise Control, Harris, 1998.

TABLE 2 Typical Noise Levels in the Environment

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110 dBA	Rock band
Jet fly-over at 1,000 feet		
	100 dBA	
Gas lawn mower at 3 feet		
	90 dBA	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80 dBA	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60 dBA	
		Large business office
Quiet urban daytime	50 dBA	Dishwasher in next room
Quiet urban nighttime	40 dBA	Theater, large conference room
Quiet suburban nighttime		
	30 dBA	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20 dBA	
		Broadcast/recording studio
	10 dBA	
	0 dBA	

Source: Technical Noise Supplement (TeNS), California Department of Transportation, September 2013.

TABLE 3 Reaction of People and Damage to Buildings from Continuous or Frequent Intermittent Vibration Levels

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.01	Barely perceptible	No effect
0.04	Distinctly perceptible	Vibration unlikely to cause damage of any type to any structure
0.08	Distinctly perceptible to strongly perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.1	Strongly perceptible	Threshold at which there is a risk of damage to fragile buildings with no risk of damage to most buildings
0.25	Strongly perceptible to severe	Threshold at which there is a risk of damage to historic and some old buildings.
0.3	Strongly perceptible to severe	Threshold at which there is a risk of damage to older residential structures
0.5	Severe – Vibrations considered unpleasant	Threshold at which there is a risk of damage to new residential and modern commercial/industrial structures

Source: Transportation and Construction Vibration Guidance Manual, California Department of Transportation, April 2020.

TABLE 4 Typical Levels of Groundborne Vibration

Human/Structural Response	Velocity Level, VdB	Typical Events (50-foot setback)
Threshold, minor cosmetic damage	100	Blasting, pile driving, vibratory compaction equipment
		Heavy tracked vehicles (Bulldozers, cranes, drill rigs)
Difficulty with tasks such as reading a video or computer screen	90	
		Commuter rail, upper range
Residential annoyance, infrequent events	80	Rapid transit, upper range
Residential annoyance, occasional events		Commuter rail, typical Bus or truck over bump or on rough roads
Residential annoyance, frequent events	70	Rapid transit, typical
Approximate human threshold of perception to vibration		Buses, trucks and heavy street traffic
	60	
		Background vibration in residential settings in the absence of activity
Lower limit for equipment ultra-sensitive to vibration	50	

Source: Transit Noise and Vibration Impact Assessment, US Department of Transportation Federal Transit Administration, September 2018.

Regulatory Background – Noise

Federal Agencies, the State of California, San Mateo County, and the City of San Carlos have established noise criteria that are applicable in this assessment. Federal Agencies, the State of California, and the City of San Carlos have also established vibration criteria that are applicable in this assessment. The State of California Environmental Quality Act (CEQA) Guidelines, Appendix G, 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. A summary of the applicable regulatory criteria is provided below.

Federal Government

Federal Transit Administration. The Federal Transit Administration (FTA) has identified construction noise thresholds in the *Transit Noise and Vibration Impact Assessment Manual*,[1] which limit daytime construction noise to 80 dBA L_{eq} at residential land uses and to 90 dBA L_{eq} at commercial and industrial land uses.

State of California

State CEQA Guidelines. CEQA contains guidelines to evaluate the significance of effects of environmental noise attributable to a proposed project. Under CEQA, noise impacts would be considered significant if the project would result in:

(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; or

(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, if the project would expose people residing or working in the project area to excessive noise levels.

2022 California Building Cal Green Code. The State of California established exterior sound transmission control standards for new non-residential buildings as set forth in the 2022 California Green Building Standards Code (Section 5.507.4.1 and 5.507.4.2). The sections that pertain to this project are as follows:

> **5.507.4.1 Exterior noise transmission, prescriptive method.** Wall and roof-ceiling assemblies exposed to the noise source making up the building envelope shall meet a composite STC rating of at least 50 or a composite OITC rating of no less than 40, with exterior windows of a minimum STC of 40 or OITC of 30 when the building falls within

[1] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, FTA Report No. 0123, September 2018.

the 65 dBA L_{dn} noise contour of a freeway or expressway, railroad, industrial source or fixed-guideway noise source, as determined by the local general plan noise element.

5.507.4.2 Performance method. For buildings located, as defined by Section 5.507.4.1, wall and roof-ceiling assemblies exposed to the noise source making up the building envelope shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly equivalent noise level ($L_{eq\ (1\text{-}hr)}$) of 50 dBA in occupied areas during any hour of operation.

The performance method, which establishes the acceptable interior noise level, is the method typically used when applying these standards.

San Mateo County

Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport, July 2012. Noise compatibility policies established in this document were designed to protect the public health, safety, and welfare by minimizing the exposure of residents and occupants of future noise-sensitive development to excessive noise and to protect the public interest in providing for the orderly development of SFO by ensuring that new development in the Airport environs complies with all requirements necessary to ensure compatibility with aircraft noise in the area. The intent is to avoid the introduction of new incompatible land uses into the Airport's "noise impact area" so that the Airport will continue to be in compliance with the State Noise Standards for airports (California Code of Regulations, Title 21, Sections 5012 and 5014).[2] The following noise compatibility policies (NP) shall apply to the ALUCP and are applicable to this project:

NP-1: Noise Compatibility Zones. For the purposes of this ALUCP, the projected 2020 CNEL noise contour map from the Draft Environmental Assessment for the Proposed Runway Safety Area Program shall define the boundaries within which noise compatibility policies described in this Section shall apply.[3] Exhibit IV-5 depicts the noise compatibility zones. More detail is provided on Exhibit IV-6. The zones are defined by the CNEL 65, 70 and 75 dB contours.

NP-2: Airport Noise/Land Use Compatibility Criteria. The compatibility of proposed land uses located in the Airport noise compatibility zones shall be determined according to the noise/land use compatibility criteria shown in Table IV-1. The criteria indicate the maximum acceptable airport noise levels, described in terms of Community Noise Equivalent Level (CNEL), for the indicated land uses. The compatibility criteria indicate whether a proposed land use is "compatible," "conditionally compatible," or "not compatible" within each zone, designated by the identified CNEL ranges.

[2] In 2002, the San Mateo County Board of Supervisors declared that the Airport had eliminated its "noise impact area," as defined under state law -- California Code of Regulations, Title 21, Sections 5012 and 5014.
[3] URS Corporation and BridgeNet International. Draft Environmental Assessment, Proposed Runway Safety Area Program, San Francisco International Airport, June 2011.

- "Compatible" means that the proposed land use is compatible with the CNEL level indicated in the table and may be permitted without any special requirements related to the attenuation of aircraft noise.

- "Conditionally compatible" means that the proposed land use is compatible if the conditions described in Table IV-1 are met.

- "Not compatible" means that the proposed land use is incompatible with aircraft noise at the indicated CNEL level.

NP-3: Grant of Avigation Easement. Any action that would either permit or result in the development or construction of a land use considered to be conditionally compatible with aircraft noise of CNEL 65 dB or greater shall be subject to this easement requirement. The determination of conditional compatibility shall be based on the criteria presented in Table IV-1 "Noise/Land Use Compatibility Criteria."

The San Mateo County Airport Land Use Commission (the C/CAG Board) deems it necessary to: (1) ensure the unimpeded use of airspace in the vicinity of SFO; (2) to ensure that new noise-sensitive land uses within the CNEL 65 dB contour are made compatible with aircraft noise, in accordance with California Code of Regulations, Title 21, Section 5014; and (3) to provide notice to owners of real property near the Airport of the proximity to SFO and of the potential impacts that could occur on the property from airport/aircraft operations. Thus, C/CAG shall condition its approval of proposed development upon the owner of the subject property granting an avigation easement to the City and County of San Francisco, as the proprietor of SFO. The local government with the ultimate permitting and approval authority over the proposed development shall ensure that this condition is implemented prior to final approval of the proposed development. If the approval action for the proposed development includes construction of a building(s) and/or other structures, the local permitting authority shall require the grant of an avigation easement to the City and County of San Francisco prior to issuance of a building permit(s) for the proposed building or structure. If the proposed development is not built, then, upon notice by the local permitting authority, SFO shall record a notice of termination of the avigation easement.

The avigation easement to be used in fulfilling this condition is presented in Appendix G.

NP-4: Residential Uses Within CNEL 70 dB Contour. As described in Table IV-1, residential uses are not compatible in areas exposed to noise above CNEL 70 dB and typically should not be allowed in these high noise areas.

> *NP-4.1: Situations Where Residential Use Is Conditionally Compatible.* Residential uses are considered conditionally compatible in areas exposed to noise above CNEL 70 dB only if the proposed use is on a lot of record zoned exclusively for residential use as of the effective date of the ALUCP. In such a case, the residential use must be sound-insulated to achieve an indoor noise level of CNEL 45 dB or less from exterior sources. The property owner also shall grant an avigation easement to the City and County of San Francisco in accordance with Policy NP-3 prior to issuance of a building permit for the proposed building or structure.

Table IV-1 Noise/Land Use Compatibility Criteria

	COMMUNITY NOISE EQUIVALENT LEVEL (CNEL)			
LAND USE	**BELOW 65 dB**	**65-70 dB**	**70-75 dB**	**75 dB AND OVER**
Residential				
Residential, single family detached	Y	C	N *(a)*	N
Residential, multi-family and single family attached	Y	C	N *(a)*	N
Transient lodgings	Y	C	C	N
Public/Institutional				
Public and Private Schools	Y	C	N	N
Hospitals and nursing homes	Y	C	N	N
Places of public assembly, including places of worship	Y	C	N	N
Auditoriums, and concert halls	Y	C	C	N
Libraries	Y	C	C	N
Outdoor music shells, amphitheaters	Y	N	N	N
Recreational				
Outdoor sports arenas and spectator sports	Y	Y	Y	N
Nature exhibits and zoos	Y	Y	N	N
Amusements, parks, resorts and camps	Y	Y	Y	N
Golf courses, riding stables, and water recreation	Y	Y	Y	Y
Commercial				
Offices, business and professional, general retail	Y	Y	Y	Y
Wholesale; retail building materials, hardware, farm equipment	Y	Y	Y	Y
Industrial and Production				
Manufacturing	Y	Y	Y	Y
Utilities	Y	Y	Y	Y
Agriculture and forestry	Y	Y *(b)*	Y *(c)*	Y *(c)*
Mining and fishing, resource production and extraction	Y	Y	Y	Y

Notes:

CNEL = Community Noise Equivalent Level, in A-weighted decibels.

Y (Yes) = Land use and related structures compatible without restrictions.

C (conditionally compatible) = Land use and related structures are permitted, provided that sound insulation is provided to reduce interior noise levels from exterior sources to CNEL 45 dB or lower and that an avigation easement is granted to the City and County of San Francisco as operator of SFO. See Policy NP-3.

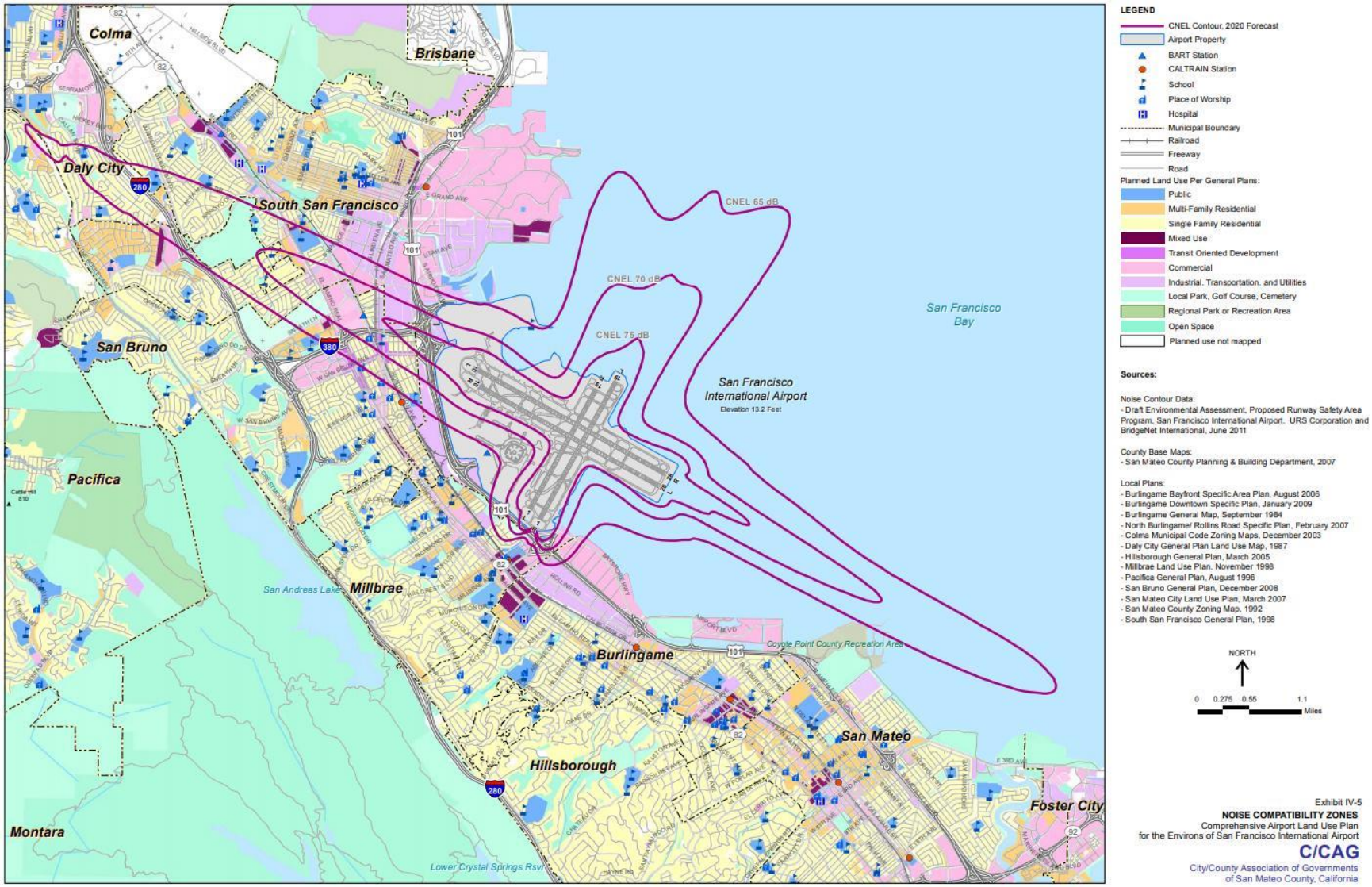
N (No) = Land use and related structures are not compatible..

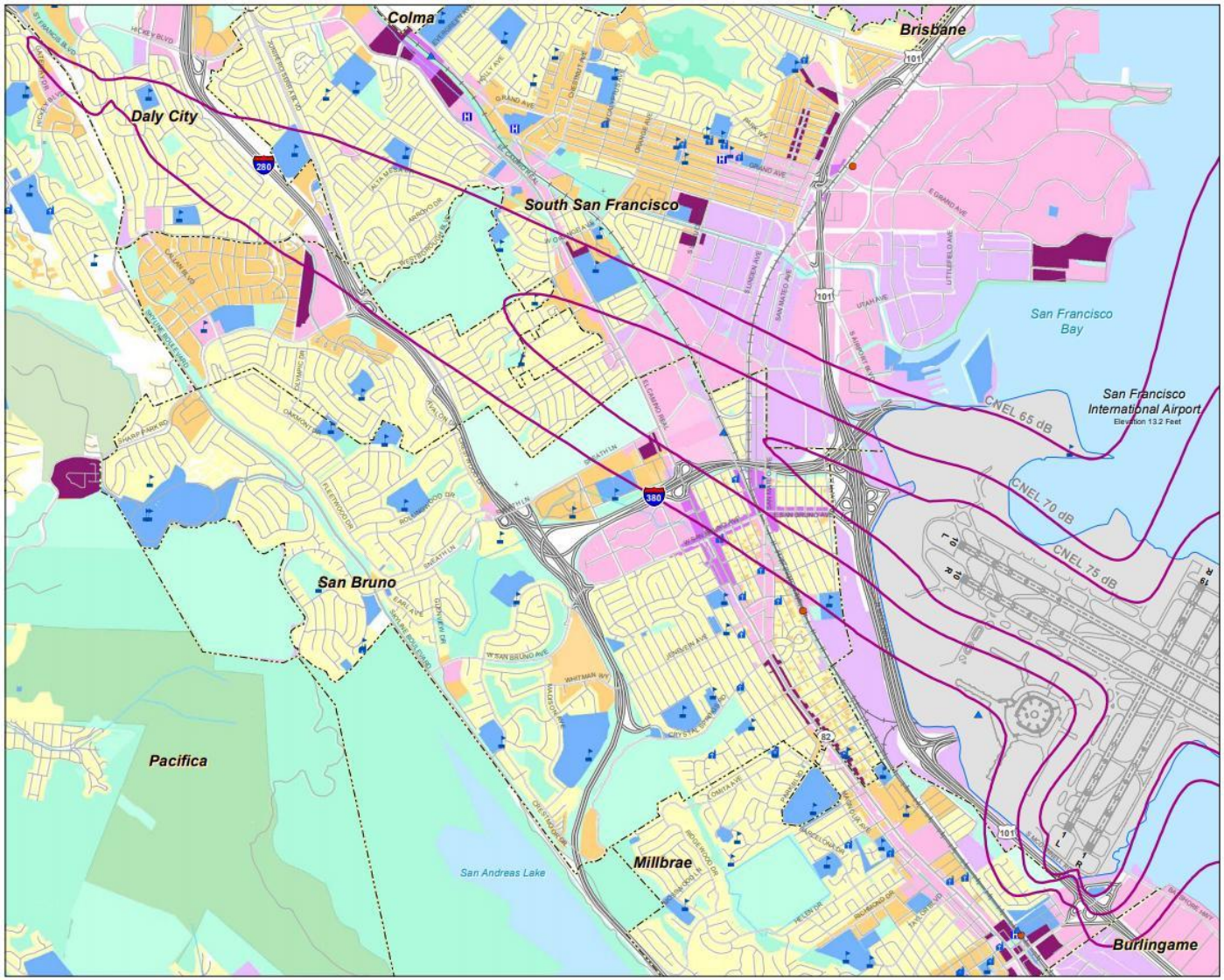
(a) Use is conditionally compatible only on an existing lot of record zoned only for residential use as of the effective date of the ALUCP. Use must be sound-insulated to achieve an indoor noise level of CNEL 45 dB or less from exterior sources. The property owners shall grant an avigation easement to the City and County of San Francisco prior to issuance of a building permit for the proposed building or structure. If the proposed development is not built, then, upon notice by the local permitting authority, SFO shall record a notice of termination of the avigation easement.

(b) Residential buildings must be sound-insulated to achieve an indoor noise level of CNEL 45 dB or less from exterior sources.

(c) Accessory dwelling units are not compatible.

SOURCES: Jacobs Consultancy Team 2010. Based on State of California General Plan Guidelines for noise elements of general plans; California Code of Regulations, Title 21, Division 2.5, Chapter 6, Section 5006; and 14 CFR Part 150, Appendix A, Table 1.
PREPARED BY; Ricondo & Associates, Inc., June 2012.


Colma
Brisbane
Daly City
South San Francisco
San Bruno
Pacifica
Millbrae
Burlingame
San Mateo
Hillsborough
Foster City
Montara
San Francisco International Airport
Elevation 13.2 Feet
San Francisco Bay
CNEL 65 dB
CNEL 70 dB
CNEL 75 dB
San Andreas Lake
Coyote Point County Recreation Area
Lower Crystal Springs Rsvr
LEGEND
CNEL Contour, 2020 Forecast
Airport Property
BART Station
CALTRAIN Station
School
Place of Worship
Hospital
Municipal Boundary
Railroad
Freeway
Road
Planned Land Use Per General Plans:
Public
Multi-Family Residential
Single Family Residential
Mixed Use
Transit Oriented Development
Commercial
Industrial. Transportation. and Utilities
Local Park, Golf Course, Cemetery
Regional Park or Recreation Area
Open Space
Planned use not mapped
Sources:
Noise Contour Data:
- Draft Environmental Assessment, Proposed Runway Safety Area Program, San Francisco International Airport. URS Corporation and BridgeNet International, June 2011
County Base Maps:
- San Mateo County Planning & Building Department, 2007
Local Plans:
- Burlingame Bayfront Specific Area Plan, August 2006
- Burlingame Downtown Specific Plan, January 2009
- Burlingame General Map, September 1984
- North Burlingame/ Rollins Road Specific Plan, February 2007
- Colma Municipal Code Zoning Maps, December 2003
- Daly City General Plan Land Use Map, 1987
- Hillsborough General Plan, March 2005
- Millbrae Land Use Plan, November 1998
- Pacifica General Plan, August 1996
- San Bruno General Plan, December 2008
- San Mateo City Land Use Plan, March 2007
- San Mateo County Zoning Map, 1992
- South San Francisco General Plan, 1998
NORTH
0 0.275 0.55 1.1
Miles
Exhibit IV-5
NOISE COMPATIBILITY ZONES
Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport
C/CAG
City/County Association of Governments
of San Mateo County, California



LEGEND

- CNEL Contour, 2020 Forecast
- Airport Property
- BART Station
- CALTRAIN Station
- School
- Place of Worship
- Hospital
- Municipal Boundary
- Railroad
- Freeway
- Road

Planned Land Use Per General Plans:

- Public
- Multi-Family Residential
- Single Family Residential
- Mixed Use
- Transit Oriented Development
- Commercial
- Industrial, Transportation, and Utilities
- Local Park, Golf Course, Cemetery
- Regional Park or Recreation Area
- Open Space
- Planned use not mapped

Sources:

Noise Contour Data:
- Draft Environmental Assessment, Proposed Runway Safety Area Program, San Francisco International Airport. URS Corporation and BridgeNet International, June 2011

County Base Maps:
- San Mateo County Planning & Building Department, 2007

Local Plans:
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- Daly City General Plan Land Use Map, 1987
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- Pacifica General Plan, August 1996
- San Bruno General Plan, December 2008
- San Mateo City Land Use Plan, March 2007
- San Mateo County Zoning Map, 1992
- South San Francisco General Plan, 1998

NORTH

0 0.1 0.2 0.4 Miles

Exhibit IV-6

NOISE COMPATIBILITY ZONES -- DETAIL

Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG

City/County Association of Governments
of San Mateo County, California

City of San Carlos

San Carlos 2030 General Plan. The City of San Carlos adopted the 2030 General Plan in October 2009. The Noise Element of the General Plan[4] provides goals, policies, and actions to maintain a community with a noise environment that supports a high quality of life. The goals, policies, and actions that apply to the proposed project are as follows:

Goal NOI-1: Encourage compatible noise environments for new development and control sources of excessive noise citywide.

Policy NOI-1.1. Use the Noise and Land Compatibility Standards shown in Figure 9-1, the noise level performance standards in Table 9-1 and the projected future noise contours for the General Plan shown in Figure 9-3 and detailed in Table 9-2, as a guide for future planning and development decisions.

Policy NOI-1.2. Minimize noise impacts on noise-sensitive land uses. Noise-sensitive land uses include residential uses, retirement homes, hotel/motels, schools, libraries, community centers, places of public assembly, daycare facilities, churches, and hospitals.

Policy NOI-1.3. Limit noise impacts on noise-sensitive uses to noise level standards as indicated in Table 9-1.

Policy NOI-1.4. Require a detailed acoustic report in all cases where noise-sensitive land uses are proposed in areas exposed to exterior noise levels of 60 CNEL L_{dn} or greater. If recommended in the report, mitigation measures shall be required as conditions of project approval.

Policy NOI-1.5. New development of noise-sensitive land uses proposed in noise-impacted areas shall incorporate effective mitigation measures into the project design to reduce exterior and interior noise levels to the following acceptable levels.

a. For new single-family residential development, maintain a standard of 60 L_{dn} (day/night average noise level) for exterior noise in private use areas.

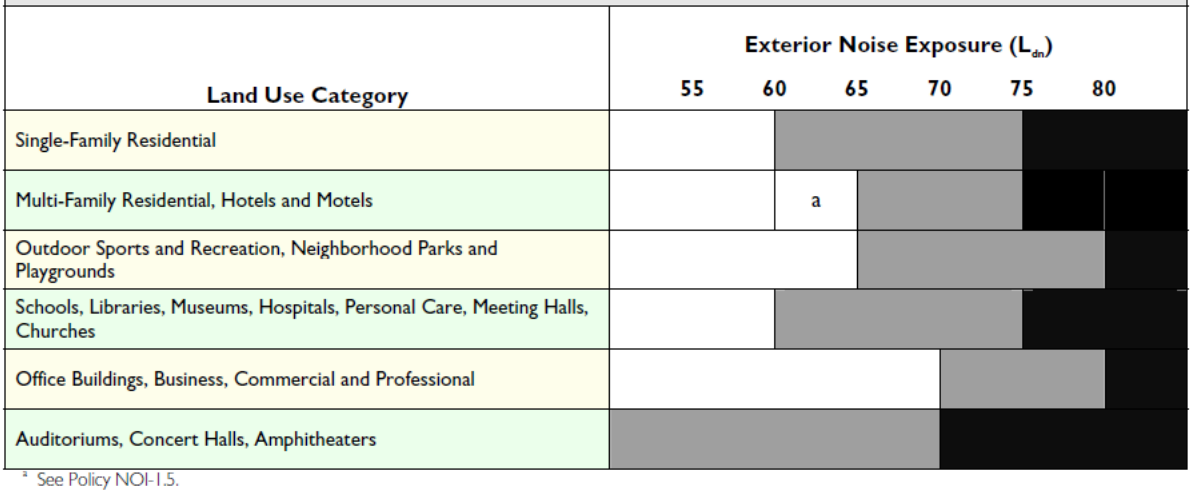
b. For new multi-family residential development maintain a standard of 65 L_{dn} in community outdoor recreation areas. Noise standards are not applied to private decks and balconies and shall be considered on a case-by-case basis in the downtown core.

c. Interior noise levels shall not exceed 45 L_{dn} in all new residential units (single- and multi-family). Development sites exposed to noise levels exceeding 60 L_{dn} shall be analyzed following protocols in Appendix Chapter 12, Section 1208, A, Sound Transmission Control, 2001 Building Code Chapter 12, Appendix 1207.11.2 of the 2007 California Building Coe (or the latest version).

[4] City of San Carlos, *San Carlos 2030 General Plan*, Noise Element, Adopted October 12, 2009.

d. Where new residential units (single- and multi-family) would be exposed to intermittent noise levels generated during train operations, maximum railroad noise levels inside homes shall not exceed 50 dBA in bedrooms or 55 dBA in other occupied spaces. These single event limits are only applicable where there are normally four or more train operations per day.

FIGURE 9-1 LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENT



[a] See Policy NOI-1.5.

NORMALLY ACCEPTABLE. Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special insulation requirements.

CONDITIONALLY ACCEPTABLE. Specified land use may be permitted only after detailed analysis of the noise reduction requirements and needed noise insulation features included in the design.

UNACCEPTABLE. New construction or development should generally not be undertaken because mitigation is usually not feasible to comply with noise element policies.

TABLE 9-1 NON-TRANSPORTATION NOISE STANDARDS

Land Use Receiving the Noise	Hourly Noise-Level Descriptor	Exterior Noise-Level Standard In Any Hour (dBA)		Interior Noise-Level Standard In Any Hour (dBA)	
		Daytime (7am-10pm)	Nighttime (10pm-7am)	Daytime (7am-10pm)	Nighttime (10pm-7am)
Residential	L_{eq}	55	45	40	30
	L_{max}	70	60	55	45
Medical, convalescent	L_{eq}	55	45	45	35
	L_{max}	70	60	55	45
Theater, auditorium	L_{eq}	--	--	35	35
	L_{max}	--	--	50	50
Church, meeting hall	L_{eq}	55	--	40	40
	L_{max}	--	--	55	55
School, library, museum	L_{eq}	55	--	40	--
	L_{max}	--	--	55	--

Notes:
1. The Residential standards apply to all residentially zoned properties.
2. Each of the noise levels specified above shall be lowered by 5 dBA for tonal noises characterized by a whine, screech, or hum, noises consisting primarily of speech or music, or recurring impulsive noises.
3. In situations where the existing noise level exceeds the noise levels indicated in the above table, any new noise source must include mitigation that reduces the noise level of the noise source to the existing level.
4. The exterior noise standards are measured at any point on the receiving property where there is, or could be in the future, frequent human use and quiet would be beneficial.
5. These standards do not apply to temporary sources such as construction activities.

Policy NOI-1.6. Where noise mitigation measures are required to achieve the noise level standards, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered after practical design-related noise mitigation measures have been integrated into the project.

Policy NOI-1.7. The City shall seek to reduce impacts from groundborne vibration associated with rail operations by requiring that vibration-sensitive buildings (e.g. residences) are sited at least 100 feet from the centerline of the railroad tracks whenever feasible. The development of vibration-sensitive buildings within 100 feet from the centerline of the railroad tracks would require a study demonstrating that groundborne vibration issues associated with rail operations have been adequately addressed (i.e., through building siting, foundation design and construction techniques).

Policy NOI-1.8. During all phases of construction activity, reasonable noise reduction measures shall be utilized to minimize the exposure of neighboring properties to excessive noise levels.

a. Construction activities shall comply with the City's noise ordinance.

Policy NOI-1.9. Minimize potential transportation-related noise through the use of setbacks, street circulation design, coordination of routing and other traffic control measures and the construction of noise barriers and consider use of "quiet" pavement surfaces when resurfacing roadways.

Policy NOI-1.10. Ensure that mixed-use development projects are designed to minimize noise impacts on residential units.

Policy NOI-1.11. Ensure that proposed noise sensitive land uses include appropriate mitigation to reduce noise impacts from aircraft operations at San Carlos Airport. Work with the San Carlos Airport Pilots Association and San Mateo County to continue to refine and implement the Airport's noise abatement procedures.

Policy NOI-1.12. Ensure consistency with the noise compatibility policies and criteria contained in the San Carlos Airport Land Use Plan.

Policy NOI-1.13. Require a noise analysis for new residential uses located within the 55 CNEL impact area of the San Carlos Airport. If recommended in the report, mitigation measures shall be required as conditions of project approval.

Policy NOI-1.14. The Federal Transit Administration vibration impact criteria and assessment methods shall be used to evaluate the compatibility of train vibration with proposed land uses adjoining the UPRR (Caltrain) corridor. Site specific vibration studies shall be completed for vibration-sensitive uses proposed within 100 feet of active railroad tracks.

Action NOI-1.1. Establish a noise abatement protocol for existing sensitive land uses located in areas anticipated to experience significant noise increases with the implementation of the General Plan. Cumulative traffic noise impacts on existing noise-sensitive uses could be reduced through the inclusion of exterior and/or interior sound-reduction measures, such as setbacks, noise barriers, forced-air mechanical ventilation and sound-rated window construction. The City should research sources of funding for these actions.

Action NOI-1.2. Revise the City's Noise Ordinance to be consistent with this Element.

Action NOI-1.3. Require residents of new mixed-use developments to be informed of potential noise from refuse collection and other activities typically associated with commercial activity.

Action NOI-1.4. Require the evaluation of mitigation measures for projects that would cause the following criteria to be exceeded or would cause a significant adverse community response:

a. Cause the L_{dn} at noise-sensitive uses to increase by 3 dBA or more and exceed the "normally acceptable" level.

b. Cause the L_{dn} at noise-sensitive uses to increase by 5 dBA or more and remain "normally acceptable."

c. Cause noise levels to exceed the limits in Table 9-1.

Action NOI-1.5. Enforce Section 27007 of the California Motor Vehicle Code that prohibits amplified sound that can be heard 50 or more feet from a vehicle.

Action NOI-1.6. Enforce Section 27150 of the California Motor Vehicle Code that addresses excessive exhaust noise.

Action NOI-1.7. Update and review procedures for dealing with noise complaints in the community.

Action NOI-1.8. Evaluate the necessity of requesting Caltrain to establish a Quiet Zone designation for San Carlos.

San Carlos Municipal Code. Chapter 9.30, Noise Control, of the City's Municipal Code seeks to protect the peace, health and safety of its citizens from unnecessary and unreasonable noises produced by any machine, person or device.

9.30.030 Basic noise regulation. Except as otherwise permitted under this chapter, no person shall cause and no property owner shall permit, as to property owned by him, a noise produced by any person, amplified sound or device, or any combination thereof in excess of the noise limits established in Table 18.21.050-A to emanate from any property, public or private, as measured at the receiving property line. (Ord. 1439 § 4 (Exh. B (part)), 2011: Ord. 1086 § 1 (part), 1991)

9.30.070 Exempt activities. The following noise-generating activities are exempt from the provisions of this chapter:

A. Transportation facilities, such as freeways, airports, buses, and railroads;

B. Construction activities; such activities, however, shall be limited to the hours of eight a.m. to six p.m. Monday through Friday, and nine a.m. to five p.m. on Saturdays and Sundays. No construction noise-related activities on the following holidays: New Year's Day, Martin Luther King Jr. Day, President's Day, Memorial Day, 4th of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day. All gasoline-powered construction equipment shall be equipped with an operating muffler or baffling system as originally provided by the manufacturer, and no modification to these systems is permitted (the Building Official shall have the authority to grant exceptions to construction noise-related activities);

C. Home workshops and gas-powered gardening equipment; such activities, however, shall be limited to the hours of eight a.m. to sunset Monday through Friday, and ten a.m. to sunset on Saturday, Sunday and holidays stated in subsection B of this section;

D. Public works and public utilities activities; such activities, however, shall be limited to the hours set forth under subsection B of this section, except for emergency situations (the Public Works Director shall have the authority to grant exceptions to public works and public utilities construction noise-related activities);

E. Emergency vehicles;

F. Solid waste pickup; such activities, however, shall be limited to the hours of collection set forth under the applicable franchise agreement for solid waste pickup, recyclable materials pickup and/or organic materials pickup as may be restricted for residential, commercial and City facilities. (Ord. 1439 § 4 (Exh. B (part)), 2011: Ord. 1086 § 1 (part), 1991)

Chapter 18.21 provides performance standards for noise and vibration. The following sections apply to this report:

18.21.050 Noise.

A. Noise Limits. No use or activity shall create noise levels that exceed the following standards. The maximum allowable noise levels specified in Table 18.21.050-A, Noise Limits, do not apply to noise generated by automobile traffic or other mobile noise sources in the public right-of-way.

1. Adjustments to Noise Limits. The maximum allowable noise levels of Table 18.21.050-A, Noise Limits, shall be adjusted according to the following provisions. No more than one increase in the maximum permissible noise level shall be applied to the noise generated on each property.

a. Ambient Noise. If the ambient noise level at a noise-sensitive use is ten dBA or more below the standard, the allowable noise standard shall be decreased by five decibels.

b. Duration. The maximum allowable noise level (L_{50}) shall be increased as follows to account for the effects of duration:

i. Noise that is produced for no more than a cumulative period of fifteen minutes in any hour may exceed the noise limit by five decibels; and

ii. Noise that is produced for no more than a cumulative period of five minutes in any hour may exceed the noise limits by ten decibels;

iii. Noise that is produced for no more than a cumulative period of one minute in any hour may exceed the noise limits by fifteen decibels.

c. Character of Sound. If a noise contains a steady audible tone or is a repetitive noise (such as hammering or riveting) or contains music or speech conveying informational content, the maximum allowable noise levels shall be reduced by five decibels.

d. Prohibited Noise. Noise for a cumulative period of thirty minutes or more in any hour which exceeds the noise standard for the receiving land use.

TABLE 18.21.050-A: NOISE LIMITS

Land Use Receiving the Noise	Noise-Level Descriptor	Exterior Noise Level Standard in Any Hour (dBA)		Interior Noise-Level Standard in Any Hour (dBA)	
		Daytime (7 a.m. – 10 p.m.)	Nighttime (10 p.m. – 7 a.m.)	Daytime (7 a.m. – 10 p.m.)	Nighttime (10 p.m. – 7 a.m.)
Residential	L_{50}	55	45	40	30
	L_{max}	70	60	55	45
Medical, convalescent	L_{50}	55	45	45	35
	L_{max}	70	60	55	45
Theater, auditorium	L_{50}	-	-	35	35
	L_{max}	-	-	50	50
Church, meeting hall	L_{50}	55	-	40	40
	L_{max}	-	-	55	55
School, library, museum	L_{50}	55	-	40	-
	L_{max}	-	-	55	-

Notes: 1. New residential development in noise impacted areas area subject to the following noise levels:

a. For new single-unit residential development, maintain a standard of 60 L_{dn} for exterior noise in private use areas.

b. For new multi-unit residential development, maintain a standard of 65 L_{dn} in community outdoor recreation areas. Noise standards are not applied to private decks and balconies and shall be considered on a case-by-case basis in the MU-DC District.

c. Where new residential units (single and multifamily) would be exposed to intermittent noise levels generated during train operations, maximum railroad noise levels inside homes shall not exceed forty-five dBA in bedrooms or fifty-five dBA in other occupied spaces. These single-event limits are only applicable where there are normally four or more train operations per day.

TABLE 18.21.050-B: NOISE EXPOSURE
—LAND USE REQUIREMENTS AND LIMITATIONS

Land Use	Day/Night Average Sound Level (Ldn)	Requirements and Limitations
Residential (1) and Other Noise-Sensitive Uses (e.g., Schools, Hospitals, and Churches)	Less than 60	Satisfactory
	60 to 75	Acoustic study and noise attenuation measures required
	Over 75	Acoustic study and noise attenuation measures required
Auditoriums, Concert Halls, Amphitheaters	Less than 70	Acoustic study and noise attenuation measures required
	Over 70	Not allowed
Commercial and Industrial	Less than 70	Satisfactory
	70 to 80	Acoustic study and noise attenuation measures required
	Over 80	Airport-related development only; noise attenuation measures required
Outdoor Sports and Recreation, Parks	Less than 65	Satisfactory
	65 to 80	Acoustic study and noise attenuation measures required; avoid uses involving concentrations of people or animals
	Over 80	Limited to open space; avoid uses involving concentrations of people or animals

Notes: 1. New residential development in noise impacted areas area subject to the following noise levels:

a. For new single-unit residential development, maintain a standard of 60 L_{dn} for exterior noise in private use areas.

b. For new multi-unit residential development, maintain a standard of 65 L_{dn} in community outdoor recreation areas. Noise standards are not applied to private decks and balconies and shall be considered on a case-by-case basis in the MU-DC District.

c. Where new residential units (single and multifamily) would be exposed to intermittent noise levels generated during train operations, maximum railroad noise levels inside homes shall not exceed forty-five dBA in bedrooms or fifty-five dBA in other occupied spaces. These single-event limits are only applicable where there are normally four or more train operations per day.

B. Noise Exposure – Land Use Requirements and Limitations. Table 18.21.050-B, Noise Exposure—Land Requirements and Limitations, describes the requirements and limitations of various land uses within the listed day/night average sound level (L_{dn}) ranges.

C. Acoustic Study. The Director may require an acoustic study for any proposed project that could cause any of the following:

1. Locate new residential uses within the fifty-five CNEL impact area of the San Carlos Airport;

2. Cause noise levels to exceed the limits in Table 18.21.050-A;

3. Create a noise exposure that would require an acoustic study and noise attenuation measures listed in Table 18.21.050-B, Noise Exposure – Land Use Requirements and Limitations; or

4. Cause the L_{dn} at noise-sensitive uses to increase three dBA or more.

D. Establishing Ambient Noise. When the Director has determined that there could be cause to make adjustments to the standards, an acoustical study shall be performed to establish ambient noise levels. In order to determine if adjustments to the standards should be made either upwards or downwards, a minimum twenty-four-hour-duration noise measurement shall be conducted. The noise measurements shall collect data utilizing noise metrics that are consistent with the noise limits presented in Table 18.21.050-A, e.g., L_{max} (zero minutes), L_{02} (one minute), L_{08} (five minutes), L_{25} (fifteen minutes) and L_{50} (thirty minutes). An arithmetic average of these ambient noise levels during the three quietest hours shall be made to demonstrate that the ambient noise levels are regularly ten or more decibels below the respective noise standards. Similarly, an arithmetic average of ambient noise levels during the three loudest hours should be made to demonstrate that ambient noise levels regularly exceed the noise standards.

E. Noise Attenuation Measures. Any project subject to the acoustic study requirements of subsection C of this section may be required as a condition of approval to incorporate noise attenuation measures deemed necessary to ensure that noise standards are not exceeded.

1. New noise-sensitive uses (e.g., schools, hospitals, churches, and residences) shall incorporate noise attenuation measures to achieve and maintain an interior noise level of forty-five dBA.

2. Noise attenuation measures identified in an acoustic study shall be incorporated into the project to reduce noise impacts to satisfactory levels.

3. Emphasis shall be placed upon site planning and project design measures. The use of noise barriers shall be considered and may be required only after all feasible design-related noise measures have been incorporated into the project. (Ord. 1438 § 4 (Exh. A (part)), 2011)

Regulatory Background – Vibration

Federal Government

Federal Transit Administration. The FTA has identified vibration impact criteria for sensitive buildings, residences, and institutional land uses near rail transit and railroads. These criteria are shown in Table 5. The thresholds for office buildings that operate primarily during daytime hours are 75 VdB for frequent events (more than 70 events of the same source per day), 78 VdB for occasional events (30 to 70 vibration events of the same source per day), and 83 VdB for infrequent events (less than 30 vibration events of the same source per day).

TABLE 5 Groundborne Vibration Impact Criteria

Land Use Category	Groundborne Vibration Impact Levels (VdB re 1 µinch/sec, RMS)		
	Frequent Events[1]	**Occasional Events[2]**	**Infrequent Events[3]**
Category 1 Buildings where vibration would interfere with interior operations.	65 VdB[4]	65 VdB[4]	65 VdB[4]
Category 2 Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
Category 3 Institutional land uses with primarily daytime use.	75 VdB	78 VdB	83 VdB

Notes:

1. "Frequent Events" is defined as more than 70 vibration events of the same source per day. Most rapid transit projects fall into this category.
2. "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day. Most commuter trunk lines have this many operations.
3. "Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day. This category includes most commuter rail branch lines.
4. This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration sensitive manufacturing or research should always require detailed evaluation to define the acceptable vibration levels. Ensuring low vibration levels in a building requires special design of HVAC systems and stiffened floors.

State of California

California Department of Transportation. To avoid damage to buildings, Caltrans recommends that construction vibration levels are limited to 0.5 in/sec PPV for buildings structurally sound and designed to modern engineering standards, to 0.3 in/sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern, and to 0.08 in/sec PPV for ancient buildings or buildings that are documented to be structurally weakened (see Table 3).

City of San Carlos

San Carlos Municipal Code. Chapter 18.21 of the City's Municipal Code includes the following regarding vibration:

18.21.060 Vibration. No vibration shall be produced that is transmitted through the ground and is discernible without the aid of instruments by a reasonable person at the lot lines of the site. Vibrations from temporary construction, demolition, and vehicles that enter and leave the subject parcel (e.g., construction equipment, trains, trucks, etc.) are exempt from this standard. (Ord. 1438 § 4 (Exh. A (part)), 2011)

Existing Noise Environment

The project site is located north of the Old County Road/Branston Road interchange in the City of San Carlos. Currently, the site is occupied by a concrete plant. Adjoining the site to the northwest are existing warehouse and commercial uses, and adjoining the site to the northeast is an existing warehouse use. Southeast of the site, opposite Bransten Road, are an existing garden center and children's gymnasium, which are also planned for future office/R&D development. Existing commercial uses are located southwest of the project site, opposite Old County Road, Caltrain tracks, and El Camino Real. The nearest residences are located approximately 420 feet northwest of the project site along Hall Street.

The noise environment at the site and in the surrounding areas results primarily from traffic along Old County Road and El Camino Real and train activity along the Caltrain tracks. Aircraft associated with San Francisco International Airport also contributes to the noise environment.

A noise monitoring survey, which included two long-term (LT-1 and LT-2) and three short-term (ST-1 through ST-3) noise measurements, was performed at the site beginning on Wednesday March 22, 2023 and concluding on Friday March 24, 2023. All measurement locations are shown in Figure 1.

Long-term noise measurement LT-1 was installed in trees approximately 65 feet northwest of the Bransten Road centerline on the adjoining site. This long-term measurement was positioned far enough away from the train tracks to capture the existing noise environment along Bransten Road. Hourly average noise levels at LT-1 typically ranged from 51 to 65 dBA L_{eq} during daytime hours (between 7:00 a.m. and 10:00 p.m.) and from 49 to 64 dBA L_{eq} during nighttime hours (between 10:00 p.m. and 7:00 a.m.). The day-night average noise level (L_{dn}) measured on Thursday March 23, 2023 was 66 dBA L_{dn}. The daily trends in noise levels at LT-1 are shown in Figures A1 through A3 in the Appendix of this report.

LT-2 was made approximately 20 feet northeast of the Old County Road centerline and approximately 75 feet northeast of the edge of the nearest Caltrain tracks, which are the dominant noise sources at LT-2. Hourly average noise levels at LT-2 typically ranged from 64 to 69 dBA L_{eq} during the day and from 49 to 67 dBA L_{eq} at night. The day-night average noise level was 70 dBA L_{dn} on Thursday, March 23, 2023. The daily trends in noise levels at LT-2 are shown in Figures A4 through A6 in the Appendix of this report.

Each short-term noise measurement was made on Thursday March 23, 2023, in 10-minute intervals between 12:00 p.m. and 12:50 p.m. Table 6 summarizes the measurements at each short-term location.

ST-1 was made along the sidewalk in front of 1039 Hall Street, approximately 20 feet from the centerline of Hall Street. This measurement represents the existing noise environment at the nearest residential uses. During this 10-minute measurement, four passenger cars drove along Hall Street, generating noise levels at ST-1 ranging from 52 to 70 dBA. Traffic noise from nearby Old County Road generated noise levels of 51 to 60 dBA. Additional noise sources contributing to the noise measurement included jet flyovers (53 to 57 dBA), general aviation (56 dBA), and birds (61 dBA). The 10-minute average noise level at ST-1 was 56 dBA.

ST-2 was made from the backyard equivalent of 1005 Hall Street, approximately 25 feet from the centerline of Bayport Avenue. Local traffic along Hall Street (two passenger cars) and nearby Terminal Way (five passenger cars and one heavy truck) generated noise levels of 49 to 61 dBA at ST-2. Other contributing noise sources included an emergency vehicle (53 dBA), a train pass-by (66 dBA), and local industrial uses (58 dBA). The 10-minute average noise level at ST-2 was 54 dBA.

ST-3 was made from the parking lot of 1025 Tanklage Road. Traffic along Tanklage Road produced noise levels ranging from 51 to 57 dBA. A siren in the distance generated a noise level at ST-3 of 63 dBA. The 10-minute average noise level at ST-3 was 53 dBA L_{eq}.

TABLE 6 Summary of Short-Term Noise Measurement Data (dBA)

Noise Measurement Location (Date, Time)	L_{max}	$L_{(1)}$	$L_{(10)}$	$L_{(50)}$	$L_{(90)}$	$L_{eq(10)}$
ST-1: front yard equivalent of 1039 Hall Street (3/23/2023, 12:00-12:10 p.m.)	70	66	57	53	50	56
ST-2: backyard equivalent of 1005 Hall Street (3/23/2023, 12:20-12:30 p.m.)	66	63	56	51	50	54
ST-3: 1025 Tanklage Road parking lot (3/23/2023, 12:40-12:50 p.m.)	65	61	55	51	48	53

Existing Vibration Environment

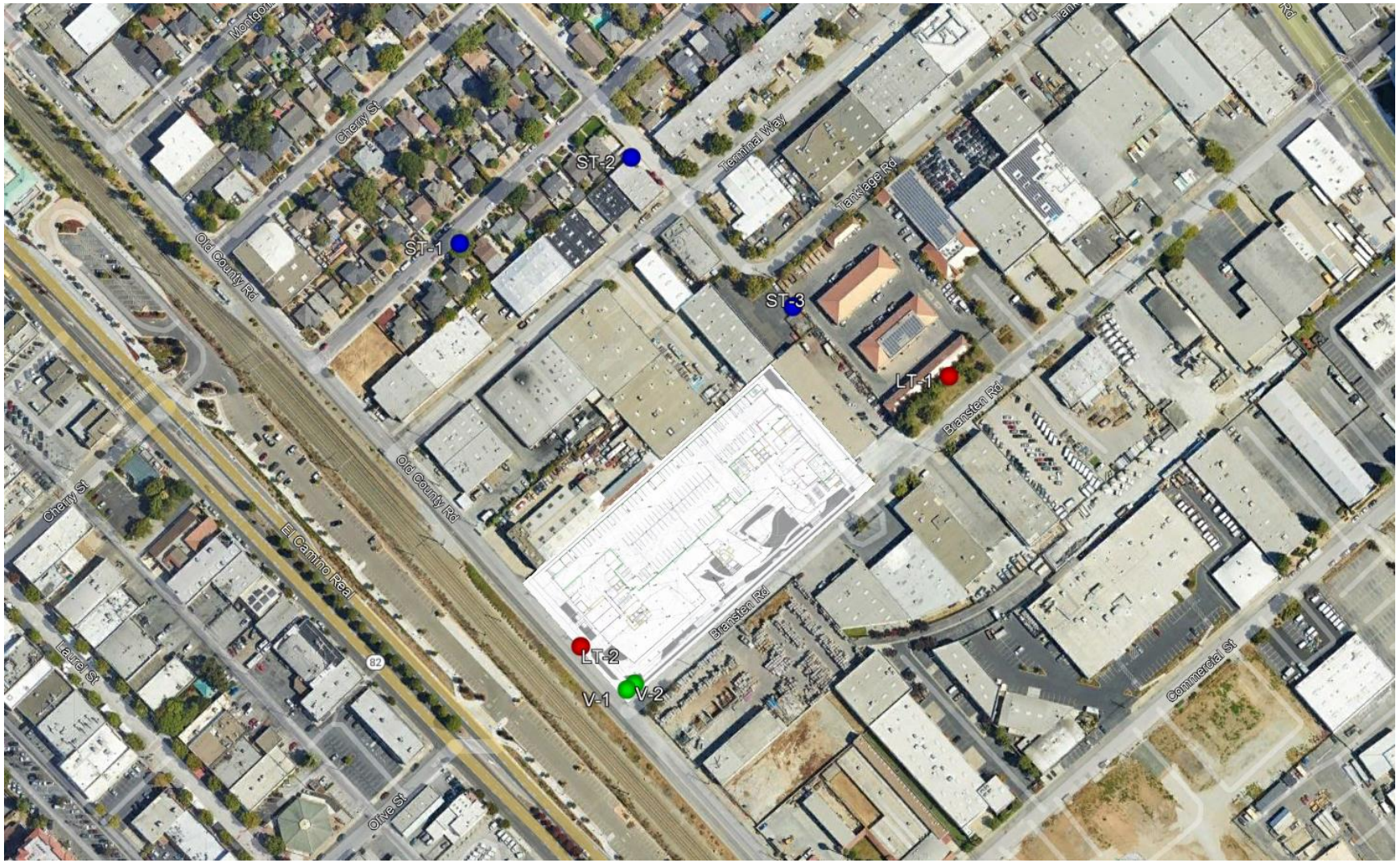
Vibration measurements were made near the southwestern corner of the project site, at the intersection of Old County Road and Bransten Road. As shown in Figure 1, V-1 was made approximately 90 feet from the edge of the nearest set of Caltrain tracks, while V-2 was made approximately 105 feet from the edge of the nearest set of Caltrain tracks. At these locations, the vibration sensors were approximately 20 feet below the grade of the elevated tracks.

Eight observed and recorded vibration measurements of individual train activity were conducted on Thursday, March 23, 2023, between 10:25 a.m. and 11:50 a.m. The instrumentation used to conduct the measurements included a Roland model R-05 solid state recorder and seismic grade, low noise accelerometers firmly fixed to the ground. This system was capable of accurately

measuring very low vibration levels. Vibration levels were measured at ground level at a setback distance of approximately 90 and 105 feet from the edge of the nearest Caltrain tracks.

All measurements were made along the sidewalk at the intersection of Old County Road and Bransten Road. AT V-1, vibration levels ranged from 65 to 71 VdB, and the average was 68 VdB. AT V-2, vibration levels ranged from 59 to 64 VdB, and the average was 63 VdB. Table 7 summarizes each of the eight measurements made at V-1 and V-2. Vibration levels were measured in the vertical axis because ground vibration is typically the most dominant on this axis. Vibration levels measured at V-1 and V-2 during each of the train pass-by events can be seen in Figures A7 and A8 of Appendix A.

FIGURE 1 Aerial Image of the Project Site and Surrounding Area with Long- and Short-Term Measurement Locations Identified



Source: Google Earth, 2023.

TABLE 7 Summary of Train Pass-by Vibration Measurements Made at V-1 and V-2

Date, Time	Train Information						Distance from V-1	Vibration Level at V-1	Distance from V-2	Vibration Level at V-2
	Type of Train	No. of Engines	No. of Cars	Track	Direction of Travel	Speed				
3/23/2023, 10:29 a.m.	Caltrain	1	5	Far	SB	32 mph	105 feet	65 VdB	120 feet	60 VdB
3/23/2023, 10:30 a.m.	Caltrain	1	5	Near	NB	54 mph	90 feet	68 VdB	105 feet	62 VdB
3/23/2023, 10:40 a.m.	Caltrain	1	5	Near	NB	47 mph	90 feet	65 VdB	105 feet	59 VdB
3/23/2023, 10:48 a.m.	Caltrain	1	5	Far	SB	60 mph	105 feet	70 VdB	120 feet	64 VdB
3/23/2023, 11:21 a.m.	Caltrain	1	5	Near	NB	45 mph	90 feet	68 VdB	105 feet	62 VdB
3/23/2023, 11:28 a.m.	Caltrain	1	5	Far	SB	31 mph	105 feet	67 VdB	120 feet	63 VdB
3/23/2023, 11:42 a.m.	Caltrain	1	5	Near	NB	46 mph	90 feet	69 VdB	105 feet	64 VdB
3/23/2023, 11:48 a.m.	Caltrain	1	5	Far	SB	64 mph	105 feet	71 VdB	120 feet	64 VdB

PLAN CONSISTENCY ANALYSIS

Noise and Land Use Compatibility

The City of San Carlos's General Plan sets forth policies with the goal of minimizing the impact of noise on people through noise reduction and suppression techniques and through appropriate land use policies in the City of San Carlos. Noise level thresholds established in Figure 9-1 of the City's General Plan that apply to this project include the following:

- The City's acceptable exterior noise level standard is 70 dBA L_{dn} or less for proposed office buildings, business, commercial and professional uses.

- The Cal Green Code standards specify an interior noise environment attributable to exterior sources not to exceed an hourly equivalent noise level ($L_{eq\ (1\text{-}hr)}$) of 50 dBA in occupied areas of nonresidential uses during any hour of operation.

The future noise environment at the project site would continue to be dominated by trains traveling along the Caltrain tracks and local traffic. A traffic study completed for the proposed project included average daily traffic (ADT) volumes for several segments in the project vicinity. Under the 2040 with project scenario, traffic volumes along Old County Road would increase above existing ambient conditions by up to 1 dBA L_{dn}.

Future Exterior Noise Environment

The project's site plan shows a courtyard at the entrance of the building, facing Bransten Road on level 1; a level 2 terrace located behind the entrance courtyard; a level 3 terrace connecting the two buildings; four smaller, private balconies on level 4; two smaller, private balconies on level 5; and a level 6 terrace along the southeastern façade of the east building. Note, the exterior thresholds established by the City are applied to outdoor common use areas only and not private balconies, such as those on levels 4 and 5.

The entrance courtyard on level 1 and the level 2 terrace behind the courtyard would be surrounded by the proposed building to the northeast, to the northwest, and to the southwest. Therefore, these outdoor use areas would be mostly shielded from Old County Road and the Caltrain tracks. The center of the courtyard would be approximately 75 feet from the centerline of Bransten Road, and the center of the level 2 terrace would be approximately 135 feet from the centerline of Bransten Road. Future exterior noise levels at the centers of these outdoor use areas would range from 63 dBA L_{dn} at the level 2 terrace to 66 dBA L_{dn} at the courtyard.

The level 3 terrace connecting the east and west buildings would be shielded from Old County Road and the Caltrain tracks by the west building. The center of this terrace would be approximately 200 feet from the centerline of Bransten Road. Future exterior noise levels at the center of this terrace would be 61 dBA L_{dn}.

The level 6 terrace would have direct line-of-sight to the train tracks (setback of approximately 550 from the edge of the nearest track), Old County Road (setback of approximately 495 feet from the centerline), and Bransten Road (setback of approximately 70 feet from the centerline). Due to

the elevation of this terrace being 89 feet above the ground, the elevation would provide partial shielding at the center of the terrace. Future exterior noise levels at the center of the level 6 terrace would be below 60 dBA L_{dn}.

The future exterior noise levels at the centers of each of the outdoor use areas would be below 70 dBA L_{dn}. Therefore, the proposed project would be compatible with the future exterior noise environment at the project site.

Future Interior Noise Environment

The southwest building façade, which faces Old County Road and the Caltrain tracks, would be set back approximately 50 feet from the centerline of the roadway and approximately 100 feet from the edge of the nearest track. The southeast building façades would be set back approximately 25 feet from the centerline of Bransten Road. At these distances, daytime hourly average noise levels would range from 64 to 70 dBA L_{eq} at the building façades, with day-night average noise level ranging from 70 to 71 dBA L_{dn}.

Standard construction materials for commercial uses would provide about 25 dBA of noise reduction in interior spaces. The inclusion of adequate forced-air mechanical ventilation systems is normally required so that windows may be kept closed at the occupant's discretion and would provide an additional 5 dBA reduction. The standard construction materials in combination with forced-air mechanical ventilation would satisfy the daytime threshold of 50 dBA $L_{eq(1\text{-}hr)}$.

Spaces where lower noise levels would be desired, such as private offices and conference rooms, may benefit from additional noise control in order to meet a lower, more desirable interior noise level. Additional noise control could be accomplished by selecting higher sound-rated windows (STC 34 or greater along exterior façades).

Train Vibration and Land Use Compatibility

The FTA vibration impact assessment criteria (summarized in Table 5) were used to evaluate vibration levels produced by trains passing the project area under future conditions. The FTA vibration impact criteria are based on maximum overall levels for a single event. The impact criteria in Table 5 provide thresholds based on the number of train pass-bys in a given day: frequent events (more than 70 events of the same source per day), occasional events (30 to 70 vibration events of the same source per day), and infrequent events (less than 30 vibration events of the same source per day).

Future Vibration Environment

As shown in Table 7, eight trains were measured in less than 1.5 hours. According to the existing Caltrain schedule,[5] about 61 trains currently pass through San Carlos in a 24-hour period, which would fall within the occasional events FTA vibration impact category. Assuming more than 70 pass-by events under future conditions, which would represent worst-case conditions, maximum

[5] https://www.caltrain.com/station/sancarlos?active_tab=route_explorer_tab&origin=7013

vibration levels of 75 VdB for institutional buildings used mostly during daytime hours would be the threshold for the proposed project.

Train pass-bys along the near and far tracks resulted in measured vibration levels of 65 to 71 VdB at 90 to 100 feet. Therefore, the proposed building would be compatible with the future worst-case vibration environment at the project site.

NOISE IMPACTS AND MITIGATION MEASURES

Significance Criteria

The following criteria were used to evaluate the significance of environmental noise and vibration resulting from the project:

(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, if the project would expose people residing or working in the project area to excessive noise levels.

Impact 1a: **Temporary Construction Noise.** Existing noise-sensitive land uses would be exposed to a temporary increase in ambient noise levels due to project construction activities. The incorporation of construction best management practices as project conditions of approval would result in a **less-than-significant** temporary noise impact.

The construction schedule assumed that the earliest possible start date would be late March 2024, and the development would be built over a period of about 31 months, with construction expected to conclude by early November 2026. Construction phases would include demolition, site preparation, grading, building construction, architectural coating, and paving. During each phase of construction, there would be a different mix of equipment operating, and noise levels would vary by phase and vary within phases, based on the amount of equipment in operation and the location at which the equipment is operating.

Noise impacts resulting from construction depend upon the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise-sensitive areas. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (e.g., early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise-sensitive land uses, or when construction lasts over extended periods of time.

Chapter 9.30.070 of the City's Municipal Code limits construction activities to between 8:00 a.m. and 6:00 p.m. on weekdays and to between 9:00 a.m. and 5:00 p.m. on weekends. Construction activities are prohibited on the following holidays: New Year's Day, Martin Luther King Jr. Day, President's Day, Memorial Day, 4th of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day. Additionally, the Municipal Code requires all gasoline-powered construction equipment to be equipped with an operating muffler or baffling system as originally provided by the manufacturer, and no modification to these systems is permitted.

While the City of San Carlos does not establish noise level thresholds for construction activities, this analysis uses the noise limits established by the Federal Transit Administration (FTA) to identify the potential for impacts due to substantial temporary construction noise. The FTA identifies construction noise limits in the *Transit Noise and Vibration Impact Assessment Manual*. During daytime hours, an exterior threshold of 80 dBA L_{eq} shall be enforced at residential land uses and 90 dBA L_{eq} shall be enforced at commercial and industrial land uses.

Construction activities for individual projects are typically carried out in phases. During each phase of construction, there would be a different mix of equipment operating, and noise levels would vary by phase and vary within phases, based on the amount of equipment in operation and the location at which the equipment is operating. The typical range of maximum instantaneous noise levels for the proposed project would be 70 to 90 dBA L_{max} at a distance of 50 feet (see Table 8) from the equipment. Table 9 shows the hourly average noise level ranges, by construction phase, typical for various types of projects. Hourly average noise levels generated by construction are about 75 to 89 dBA L_{eq} for office buildings, measured at a distance of 50 feet from the center of a busy construction site. Construction-generated noise levels drop off at a rate of about 6 dBA per doubling of the distance between the source and receptor. Shielding by buildings or terrain often result in lower construction noise levels at distant receptors.

Equipment expected to be used in each construction phase are summarized in Table 10, along with the quantity of each type of equipment and the reference noise level at 50 feet, assuming the operation of the two loudest pieces of construction equipment for each construction phase.

Federal Highway Administration's (FHWA's) Roadway Construction Noise Model (RCNM) was used to calculate the hourly average noise levels for each phase of construction, assuming the two loudest pieces of equipment would operate simultaneously, as recommended by the FTA for construction noise evaluations. This construction noise model includes representative sound levels for the most common types of construction equipment and the approximate usage factors of such equipment that were developed based on an extensive database of information gathered during the construction of the Central Artery/Tunnel Project in Boston, Massachusetts (CA/T Project or "Big Dig"). The usage factors represent the percentage of time that the equipment would be operating at full power. Table 10 also summarizes the construction noise levels for the two loudest pieces of equipment propagated to the surrounding receiving land uses.

To assess construction noise impacts at the receiving property lines of existing noise-sensitive receptors, the worst-case hourly average noise level, which are calculated from combining all equipment per phase, was propagated from the geometrical center of the nearest building to the

property lines of the receptors. These noise level estimates are shown in Table 11. Noise levels in Table 11 do not assume reductions due to intervening buildings or existing barriers.

TABLE 8 Construction Equipment, 50-foot Noise Emission Limits

Equipment Category	L_{max} Level (dBA)[1,2]	Impact/Continuous
Arc Welder	73	Continuous
Auger Drill Rig	85	Continuous
Backhoe	80	Continuous
Bar Bender	80	Continuous
Boring Jack Power Unit	80	Continuous
Chain Saw	85	Continuous
Compressor[3]	70	Continuous
Compressor (other)	80	Continuous
Concrete Mixer	85	Continuous
Concrete Pump	82	Continuous
Concrete Saw	90	Continuous
Concrete Vibrator	80	Continuous
Crane	85	Continuous
Dozer	85	Continuous
Excavator	85	Continuous
Front End Loader	80	Continuous
Generator	82	Continuous
Generator (25 KVA or less)	70	Continuous
Gradall	85	Continuous
Grader	85	Continuous
Grinder Saw	85	Continuous
Horizontal Boring Hydro Jack	80	Continuous
Hydra Break Ram	90	Impact
Impact Pile Driver	105	Impact
Insitu Soil Sampling Rig	84	Continuous
Jackhammer	85	Impact
Mounted Impact Hammer (hoe ram)	90	Impact
Paver	85	Continuous
Pneumatic Tools	85	Continuous
Pumps	77	Continuous
Rock Drill	85	Continuous
Scraper	85	Continuous
Slurry Trenching Machine	82	Continuous
Soil Mix Drill Rig	80	Continuous
Street Sweeper	80	Continuous
Tractor	84	Continuous
Truck (dump, delivery)	84	Continuous
Vacuum Excavator Truck (vac-truck)	85	Continuous
Vibratory Compactor	80	Continuous
Vibratory Pile Driver	95	Continuous
All other equipment with engines larger than 5 HP	85	Continuous

Notes: [1] Measured at 50 feet from the construction equipment, with a "slow" (1 sec.) time constant.

[2] Noise limits apply to total noise emitted from equipment and associated components operating at full power while engaged in its intended operation.

[3]Portable Air Compressor rated at 75 cfm or greater and that operates at greater than 50 psi.

TABLE 9 Typical Ranges of Construction Noise Levels at 50 Feet, L_{eq} (dBA)

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

I – All pertinent equipment present at site.
II – Minimum required equipment present at site.

Source: U.S.E.P.A., Legal Compilation on Noise, Vol. 1, p. 2-104, 1973.

TABLE 10 Estimated Construction Noise Levels for the Proposed Project at a Distance of 50 feet

Phase of Construction	Total Workdays	Construction Equipment (Quantity)	Estimated Construction Noise Level at 50 feet, dBA L_{eq}
Demolition	66	Concrete/Industrial Saw (1)[a] Excavator (3) Rubber-Tired Dozer (2)[a]	84
Site Preparation	66	Rubber-Tired Dozer (3)[a] Tractor/Loader/Backhoe (4)[a]	82
Grading/Excavation	72	Excavator (2) Grader (1)[a] Rubber-Tired Dozer (1) Tractor/Loader/Backhoe (2)[a] Scraper (2)	84
Building – Exterior	638	Crane (1) Forklift (3) Generator Set (1)[a] Tractor/Loader/Backhoe (3)[a] Welder (1)[a]	82
Building – Interior/ Architectural Coating	162	Aerial Lift (1)[a]	74
Paving	170	Paver (2)[a] Paving Equipment (2)[a] Roller (2)	83

[a] Denotes two loudest pieces of construction equipment per phase.

TABLE 11 Estimated Construction Noise Levels at Nearby Land Uses

Phase of Construction	Calculated Hourly Average Noise Levels, dBA L_{eq}				
	Adjoining NW Warehouse & Commercial (125ft[a])	**Adjoining NE Warehouse (285ft[a])**	**SE Future Office/R&D (175ft[a])**	**SW Commercial (560ft[a])**	**Nearest Residences (540ft[a])**
Demolition	79[b]	71[b]	76[b]	66[b]	66[b]
Site Preparation	80[b]	73[b]	77[b]	67[b]	67[b]
Grading/ Excavation	80[b]	73[b]	77[b]	67[b]	68[b]
Building – Exterior	78[b]	71[b]	75[b]	65[b]	65[b]
Building – Interior/ Architectural Coating	66[b]	59[b]	63[b]	53[b]	53[b]
Paving	79[b]	71[b]	76[b]	66[b]	66[b]

[a] The distances shown in the table were measured from the center of the nearest project building to the receiving property lines.
[b] These noise levels represent all equipment per phase operating simultaneously and propagated to the surrounding property lines.

As shown in Table 11, construction noise levels would intermittently range from 53 to 68 dBA L_{eq} at existing residential uses and from 53 to 80 dBA L_{eq} at existing office and commercial uses when activities are focused near the center of the nearest project buildings. These construction noise levels would not exceed the exterior threshold of 80 dBA L_{eq} at the nearest existing residential land uses in the project site vicinity or the 90 dBA L_{eq} threshold at the office and commercial land uses surrounding the project site when activities occur near the center of the buildings. When occurring 50 feet from the adjoining property lines, construction noise levels would range from 74 to 84 dBA L_{eq}.

Reasonable regulation of the hours of construction, as well as regulation of the arrival and operation of heavy equipment and the delivery of construction material, are necessary to protect the health and safety of persons, promote the general welfare of the community, and maintain the quality of life.

Policy NOI-1.8 requires all phases of construction activity to utilize reasonable noise reduction measures to minimize the exposure of neighboring properties to excessive noise levels and comply with the City's noise ordinance. The Municipal Code limits temporary construction work to between 8:00 a.m. and 6:00 p.m. on weekdays and between 9:00 a.m. and 5:00 p.m. on weekends. Construction activity is not permitted on the following holidays: New Year's Day, Martin Luther King Jr. Day, President's Day, Memorial Day, 4th of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day. Further, all gasoline-powered construction equipment shall be equipped with an operating muffler or baffling system as originally provided by the manufacturer, and no modification to these systems is permitted. In accordance with Policy NOI-1.8, reasonable noise reduction measures shall be incorporated into all projects within the Plan Area. Such measures shall include, but not be limited to, the following to reduce construction noise levels as low as practical:

- Limit construction activity to weekdays between 8:00 a.m. and 6:00 p.m. and weekends between 9:00 a.m. and 5:00 p.m., with no construction on the following holidays: New Year's Day, Martin Luther King Jr. Day, President's Day, Memorial Day, 4th of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day;

- Utilize "quiet" models of air compressors and other stationary noise sources where such technology exists;

- Equip all internal combustion engine-driven equipment with mufflers, which are in good condition and appropriate for the equipment;

- Locate all stationary noise-generating equipment, such as air compressors and portable power generators, as far away as possible from adjacent land uses;

- Locate staging areas and construction material areas as far away as possible from adjacent land uses;

- Prohibit all unnecessary idling of internal combustion engines;

- Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem are implemented.

- Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction.

With the implementation of these measures to control noise during construction activities, in accordance with Policy NOI-1.8 of the General Plan and Municipal Code allowable construction hours, the temporary construction noise impact would be reduced to a less-than-significant level.

Mitigation Measure 1a: No further mitigation required.

Impact 1b: Permanent Noise Level Increase/Exceed Applicable Standards. The proposed project would not result in a substantial permanent noise level increase. Further, the proposed project would not generate noise levels exceeding the City's established thresholds at noise-sensitive receptors in the project vicinity. **This is a less-than-significant impact.**

According to Action NOI-1.4 of the City's General Plan, a significant impact would occur if the proposed project caused the L_{dn} at noise-sensitive uses to increase by 3 dBA or more and exceed the "normally acceptable" level; caused the L_{dn} at noise-sensitive uses to increase by 5 dBA or more and remain "normally acceptable;" or caused noise levels to exceed the limits in Table 9-1 of the General Plan. According to Figure 9-1 of the City's General Plan, the "normally acceptable" threshold for single-family receptors is 60 dBA L_{dn} and for multi-family receptors is 65 dBA L_{dn}.

Table 9-1 of General Plan and the Municipal Code provides exterior and interior daytime and nighttime L_{eq}/L_{50} and L_{max} thresholds for non-transportation sources. However, Table 9-1 and the Municipal Code include thresholds for the following type of receptors: residential, medical, convalescent, theater, auditorium, church, meeting hall, school, library, and museum uses only. Since the site is surrounded by existing and future warehouse, commercial, and office/R&D developments, with the nearest residential uses located approximately 450 feet northwest of the project site, these thresholds would not apply to the proposed project. Therefore, a significant impact would occur at the receptors surrounding the site if ambient noise levels would be exceeded at the receiving property lines.

TABLE 12 Summary of Ambient Noise Levels for Existing Receptors Surrounding the Project Site

Roadway	Range of Daytime Noise Levels (Average), dBA L_{eq}	Range of Nighttime Noise Levels (Average), dBA L_{eq}	L_{dn}, dBA
Adjoining NW Warehouse & Commercial	64 to 69 (67)	50 to 67 (61)	70
Adjoining NE Warehouse	51 to 65 (58)	49 to 64 (54)	66
SE Future Office/R&D	64 to 69 (67)	50 to 67 (61)	70
SW Commercial	64 to 69 (67)	50 to 67 (61)	70
Nearest Residences	51 to 65 (58)	49 to 64 (54)	66

Project Traffic Increase

The traffic study included average daily traffic (ADT) along several roadway segments in the project vicinity for existing (2019) and daily trips. The daily trips were added to the existing (2019) volumes to calculate an existing plus project traffic scenario. By comparing the existing plus project volumes to the existing volumes, the project's contribution to the overall noise increase was calculated. Table 13 summarizes the estimated noise level increase attributed to the proposed project. As shown in Table 13, the project's traffic would result in a 2 dBA L_{dn} or less increase along all roadway segments in the project vicinity. This would be a less-than-significant impact.

TABLE 13 Estimated Noise Level Increases of Existing Plus Project Traffic Volumes Compared to Existing Volumes at Receptors in the Project Vicinity

Roadway	Segment	Estimated Noise Level Increase, dBA L_{dn}
U.S. Highway 101 Northbound	South of Brittan Avenue	0
	Brittan Avenue to Holly Street	0
	North of Holly Street	0
U.S. Highway 101 Southbound	South of Brittan Avenue	0
	Brittan Avenue to Holly Street	0
	North of Holly Street	0
Industrial Road	South of Brittan Avenue	0
	Brittan Avenue to Commercial Street	1
	Commercial Street to Bransten Road	1
	Bransten Road to Terminal Way	1
	Terminal Way to Montgomery Street	1
	Montgomery Street to San Carlos Avenue	2
	San Carlos Avenue to Holly Street	1
	North of Holly Street	0
Old County Road	Brittan Avenue to Commercial Street	0
	Commercial Street to Bransten Road	0

Roadway	Segment	Estimated Noise Level Increase, dBA L_{dn}
	Bransten Road to Terminal Way	0
	Terminal Way to Montgomery Street	0
	San Carlos Avenue to Holly Street	0
El Camino Real (SR 82)	South of Brittan Avenue	0
	Brittan Avenue to Commercial Street	0
	Commercial Street to San Carlos Avenue	0
	San Carlos Avenue to Holly Street	0
	North of Holly Street	0
Howard Avenue	Old County Road to Industrial Road	0
	Old County Road to El Camino Real (SR 82)	0
	West of El Camino Real (SR 82)	0
Brittan Avenue	East of Industrial Avenue	0
	Industrial Avenue to Old County Road	0
	Old County Road to El Camino Real (SR 82)	0
	West of El Camino Real (SR 82)	0
Commercial Street	Industrial Avenue to Old County Road	0
Montgomery Street	Industrial Avenue to Old County Road	0
San Carlos Avenue	Industrial Avenue to Old County Road	0
	West of El Camino Real (SR 82)	0
Holly Street	East of Industrial Road	0
	Industrial Avenue to Old County Road	0
	Old County Road to El Camino Real (SR 82)	0

Mechanical Equipment

The ground floor of the site plan shows a transformer containing two units and a generator room along the eastern façade of the east building. The ground floor of the west building shows an additional generator room on the western façade of the west building. All other pump, mechanical, and electrical rooms on the ground floor of the proposed buildings would be well insulated by the building and would not generate noise levels audible or measurable at the property lines.

Typically, transformers up to 1,000 kVA generate noise levels up to 64 dB, as measured at 1 meter (3.28 feet). Assuming both transformers runs continuously during daytime and nighttime hours, the hourly average noise levels would be 67 dBA at 1 meter (3.28 feet), and the day-night average noise level would be 73 dBA L_{dn} at a distance of 1 meter (3.28 feet). Assuming no windows, the wall assemblies would provide a minimum attenuation of 20 dBA for all surrounding receptors.

Tier 4 Cummins emergency generators with capacities of 1,500 and 2,000 kW have been selected for the proposed project. According to the manufacturer specifications provided by the applicant,

both generators would produce a maximum average noise level of 75 dBA at 7 meters (23 feet). While generators operating under emergency conditions would be exempt from City noise limits, monthly testing of emergency generators, which typically occur for a period of one hour between 7:00 a.m. and 10:00 p.m., would be required to fall within the existing ambient conditions. Additionally, the building façade would provide a minimum attenuation of 20 dBA at all surrounding receptors.

Table 14 summarizes the hourly average noise levels and the combined day-night average noise level for all noise-generating mechanical equipment located on the ground level of the proposed project site as propagated to the surrounding receptors.

Operational L_{eq} due to transformer and emergency generator noise would not exceed daytime or nighttime average ambient noise levels at any of the surrounding receptors. For all existing receptors, the noise level increase due to transformer and emergency generator noise would not be measurable or detectable (0 dBA L_{dn} increase).

Both buildings show noise-generating equipment on the roofs. For each building, a collective noise source including all potential rooftop equipment for each building is calculated here and propagated from the center of the buildings to the receiving property lines.

TABLE 14 Estimated Operational Noise Levels for Ground-Level Mechanical Equipment Sources

Receptor	Distance from Center of the Transformer Room, feet	L_{eq} from Transformer Noise, dBA	Distance from Center of the Emergency Generator Rooms, feet	L_{eq} from Emergency Generators, dBA	Combined L_{dn}, dBA	Noise Level Increase, dBA L_{dn}
Adjoining NW Warehouse & Commercial	185	< 20[a]	65 (East) 135 (West)	46[a] (East) 40[a] (West)	33[a]	0
Adjoining NE Warehouse	45	24[a]	55 (East) 490 (West)	47[a] (East) 28[a] (West)	34[a]	0
SE Future Office/ R&D	110	< 20[a]	230 (East) 150 (West)	35[a] (East) 39[a] (West)	37[a]	N/A[b]
SW Commercial	790	< 20[a]	775 (East) 350 (West)	24[a] (East) 31[a] (West)	< 20[a]	0
Nearest Residential	600	< 20[a]	485 (East) 560 (West)	29[a] (East) 27[a] (West)	< 20[a]	0

[a] Conservative 20 dBA attenuation assumed for building façade.

[b] Future receptors are not subject to existing ambient conditions, and therefore, are not subject to a noise level increase.

For the west building, the roof plan shows two cooling towers, a heating plant (which could include either natural gas boilers or electric heat pumps), two sets of three lab exhaust fans, three areas identified for tenant exhaust fans or heating/cooling equipment, two areas for air handling units (AHU), two areas of office variable air volume (VAV) AHUs, three stair pressurization fans, a core exhaust fan for restrooms/janitor closet, and a room for chillers and pumps. Additionally, the site plan shows a type of mechanical screen surrounding the west building penthouse, which includes all equipment except the lab exhaust fans.

For the east building, the roof plan shows two cooling towers, a heating plant (which could include either natural gas boilers or electric heat pumps), two sets of four lab exhaust fans, two areas identified for tenant exhaust fans or heating/cooling equipment, two areas for AHUs, two areas of office VAV AHUs, two stair pressurization fans, a core exhaust fan for restrooms/janitor closet, and a room for chillers and pumps. Additionally, the site plan shows a type of mechanical screen surrounding the east building penthouse, which includes all equipment except the lab exhaust fans and cooling towers.

Cooling towers typically include fan operations with noise levels up to 74 dBA at a distance of 50 feet. Typical heating pumps or boilers would generate noise levels ranging from 56 to 66 dBA at a distance of 3 feet. When operating at full speed, noise levels from the exhaust fans could be up to 76 dBA at a distance of 5 feet and up to 65 dBA at 5 feet when operating at 35% speed. Heating/cooling equipment and AHUs typically generate noise levels up to 62 dBA at a distance of 20 feet. Noise levels generated from the chiller and pump room would be up to 68 dBA at 5 feet, assuming 20 dBA attenuation for the wall assembly of the room.

Assuming all equipment to be operating simultaneously during a given hour, the combined rooftop noise level at the proposed west buildings would be 89 dBA L_{eq} at 5 feet, and assuming this worst-hour noise level to be operating each hour in a 24-hour period, the day-night average noise level for the west building would be 95 dBA L_{dn} at 5 feet, assuming a conservative 10 dBA attenuation from the mechanical screen. Assuming the same attenuation at the east building, the hourly average noise level at the east building would be 97 dBA L_{eq} at 5 feet, and the day-night average noise level would be 104 dBA L_{dn} at 5 feet.

Table 15 summarizes the rooftop mechanical equipment noise levels for both buildings propagated to the property lines of the surrounding land uses. Note, an additional attenuation of 10 dBA is assumed for all rooftop sources due to the elevation of the equipment above the ground. This is applied to the values in Table 15 for all ground-level receptors.

While operational L_{eq} due to rooftop equipment at both proposed buildings would not exceed daytime average ambient noise levels at any of the surrounding receptors, the nighttime average ambient noise levels would potentially be exceeded at the adjoining warehouse and commercial uses to the northwest, the adjoining warehouse to the northeast, and the future office/R&D building to the southeast. For all existing noise-sensitive receptors (i.e., residences only), the noise level increase due to rooftop noise sources would not be measurable or detectable (0 dBA L_{dn} increase).

TABLE 15 Estimated Operational Noise Levels for Rooftop Mechanical Equipment Sources

Receptor	Distance from Center of the West Penthouse, feet	L_{eq} from West Penthouse Noise, dBA	Distance from Center of the East Penthouse, feet	L_{eq} from East Penthouse Noise, dBA	Combined L_{eq}, dBA	Combined L_{dn}, dBA	Noise Level Increase, dBA L_{dn}
Adjoining NW Warehouse & Commercial	125	51[a]	100	61[a]	62[a]	68[a]	2
Adjoining NE Warehouse	445	40[a]	125	59[a]	59[a]	66[a]	3
SE Future Office/ R&D	170	48[a]	190	56[a]	57[a]	63[a]	N/A[b]
SW Commercial	385	41[a]	705	44[a]	46[a]	53[a]	0
Nearest Residential	545	38[a]	515	47[a]	48[a]	54[a]	0

[a] Conservative 20 dBA attenuation assumed for penthouse mechanical screens combined with the elevation of the rooftop equipment.
[b] Future receptors are not subject to existing ambient conditions, and therefore, are not subject to a noise level increase.

Truck Loading and Unloading

The site plan shows a loading zone within the west building, which would not expose surrounding land uses to truck loading/unloading noise sources. All loading/unloading activities at the west building would not exceed ambient noise levels at the surrounding receptors. For all existing noise-sensitive receptors, the noise level increase due to loading/unloading activities at the west building would not be measurable or detectable (0 dBA L_{dn} increase).

The east building shows a loading zone along the eastern building façade, which would be enclosed by the building to the north, to the south, and to the west. The only receptors with some exposure to loading activities at the east building would be the northeast warehouse. However, due to the enclosure of the loading area within the building, these receptors would receive some shielding. Conservatively, 5 dBA attenuation is assumed for the northeast warehouse receptors.

The loading zone at the west building is expected to have medium- and heavy-sized trucks, with up to four deliveries in a week. Truck delivery noise would include a combination of engine, exhaust, and tire noise, as well as the intermittent sounds of back-up alarms and releases of compressed air associated with truck/trailer air brakes. Heavy trucks typically generate maximum instantaneous noise levels of 70 to 75 dBA at a distance of 50 feet. Smaller medium-sized delivery trucks typically generate maximum noise levels of 60 to 65 dBA at 50 feet. The noise level of backup alarms can vary depending on the type and directivity of the sound, but maximum noise levels are typically in the range of 65 to 75 dBA at a distance of 50 feet. Assuming a single truck would take up to 10 minutes to load/unload and only one loading/unloading activity would occur in a single hour, hourly average noise levels would range from 57 to 67 dBA L_{eq} for medium and heavy trucks, respectively. It is assumed that all deliveries and on-site maintenance activities would occur during daytime hours between 7:00 a.m. and 10:00 p.m. Assuming up to four deliveries in a single day during these daytime hours, the day-night average noise level at 50 feet would be 59 dBA L_{dn}. This would represent worst-case conditions.

Table 16 summarizes the truck loading/unloading noise levels propagated to the property line of the northeast warehouse land uses.

Operational L_{eq} due to truck loading/unloading noise would not exceed daytime average ambient noise levels at any surrounding land use. For all existing receptors, the noise level increase due to truck loading/unloading noise sources would not be measurable or detectable (0 dBA L_{dn} increase).

TABLE 16 Estimated Operational Noise Levels for Truck Loading and Unloading Sources

Receptor	Distance from Center of the Loading Zone, feet	L_{eq} from Heavy Truck Noise, dBA	L_{eq} from Medium Truck Noise, dBA	Combined L_{dn}, dBA	Noise Level Increase, dBA L_{dn}
Adjoining NE Warehouse	70	59[a]	49[a]	52[a]	0

[a] Conservative 5 dBA attenuation assumed for east building façades surrounding three sides of the loading zone.

Total Combined Project-Generated Noise

Operational noise levels produced by the proposed project combined (i.e., traffic, mechanical equipment, truck loading/unloading) would result in an increase of less than 3 dBA L_{dn} at all existing noise-sensitive receptors (i.e., residences only) in the project vicinity.

Operational noise levels due to mechanical equipment located on the rooftop would potentially exceed nighttime average ambient L_{eq} noise levels at the existing warehouse/commercial uses adjoining the site and at the future office/R&D use located southeast of the site. However, thresholds established in the City's General Plan and Municipal Code would not be exceeded from operations at the project site. Therefore, this would be a less-than-significant impact under CEQA.

A detailed acoustical study shall be prepared during final building design by a qualified acoustical consultant to evaluate the potential noise generated by building mechanical equipment and to demonstrate the necessary noise control to meet the ambient noise level conditions. Noise control features such as sound attenuators, sound enclosures, baffles, and barriers shall be identified and evaluated to demonstrate that mechanical equipment noise would not exceed ambient conditions at noise-sensitive locations around the project site. The noise control features identified by the study shall be incorporated into the project prior to issuance of a building permit.

Mitigation Measure 1b: No further mitigation required.

Impact 2: Exposure to Excessive Groundborne Vibration due to Construction. Construction-related vibration levels resulting from activities at the project site would potentially exceed 0.3 in/sec PPV at the existing structures adjoining the project site, which could result in cosmetic damage to the adjacent buildings. **This is a potentially significant impact.**

The construction of the project may generate vibration when heavy equipment or impact tools (e.g., jackhammers, hoe rams) are used. Construction activities would include grading, foundation work, paving, and new building framing and finishing. According to the equipment list provided at the time of this study, impact or vibratory pile driving activities, which can cause excessive vibration, are not expected for the proposed project.

For structural damage, the California Department of Transportation recommends a vibration limit of 0.5 in/sec PPV for buildings structurally sound and designed to modern engineering standards, 0.3 in/sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern, and a conservative limit of 0.08 in/sec PPV for ancient buildings or buildings that are documented to be structurally weakened. No known ancient buildings or buildings that are documented to be structurally weakened adjoin the project area. Therefore, conservatively, groundborne vibration levels exceeding 0.3 in/sec PPV would have the potential to result in a significant vibration impact.

Table 17 presents typical vibration levels that could be expected from construction equipment at a distance of 25 feet. Project construction activities, such as drilling, the use of jackhammers, rock drills and other high-power or vibratory tools, and rolling stock equipment (tracked vehicles,

compactors, etc.), may generate substantial vibration in the immediate vicinity. Jackhammers typically generate vibration levels of 0.035 in/sec PPV, and drilling typically generates vibration levels of 0.09 in/sec PPV at a distance of 25 feet.

Vibration levels would vary depending on soil conditions, construction methods, and equipment used. Table 17 also summarizes the distances to the 0.3 in/sec PPV threshold for all conventional buildings.

TABLE 17 Vibration Source Levels for Construction Equipment

Equipment		PPV at 25 ft. (in/sec)	Minimum Distance to Meet 0.3 in/sec PPV (feet)
Clam shovel drop		0.202	18
Hydromill (slurry wall)	in soil	0.008	1
	in rock	0.017	2
Vibratory Roller		0.210	19
Hoe Ram		0.089	9
Large bulldozer		0.089	9
Caisson drilling		0.089	9
Loaded trucks		0.076	8
Jackhammer		0.035	4
Small bulldozer		0.003	<1

Source: Transit Noise and Vibration Impact Assessment Manual, Federal Transit Administration, Office of Planning and Environment, U.S. Department of Transportation, September 2018, as modified by Illingworth & Rodkin, Inc., February 2023.

Table 18 summarizes the vibration levels at each of the surrounding buildings in the project vicinity. Vibration levels are highest close to the source and then attenuate with increasing distance at the rate $\left({}^{D_{ref}}/_{D}\right)^{1.1}$, where D is the distance from the source in feet and D_{ref} is the reference distance of 25 feet. While construction noise levels increase based on the cumulative equipment in use simultaneously, construction vibration levels would be dependent on the location of individual pieces of equipment. That is, equipment scattered throughout the site would not generate a collective vibration level, but a vibratory roller, for instance, operating near the project site boundary would generate the worst-case vibration levels for the receptor sharing that property line. Further, construction vibration impacts are assessed based on damage to buildings on receiving land uses, not receptors at the nearest property lines. Therefore, the distances used to propagate construction vibration levels (as shown in Table 18), which are different than the distances used to propagate construction noise levels (as shown in Table 11), were estimated under the assumption that each piece of equipment from Table 17 was operating along the nearest boundary of the busy construction site, which would represent the worst-case scenario.

Project construction activities would potentially generate vibration levels up to 1.2 in/sec PPV at the existing buildings adjoining the project site. A study completed by the US Bureau of Mines analyzed the effects of blast-induced vibration on buildings in USBM RI 8507.[6] The findings of

[6] Siskind, D.E., M.S. Stagg, J.W. Kopp, and C.H. Dowding, Structure Response and Damage Produced by Ground Vibration form Surface Mine Blasting, RI 8507, Bureau of Mines Report of Investigations, U.S. Department of the Interior Bureau of Mines, Washington, D.C., 1980.

this study have been applied to buildings affected by construction-generated vibrations.[7] As reported in USBM RI 8507[6] and reproduced by Dowding,[7] Figure 2 presents the damage probability, in terms of "threshold damage" (described above as cosmetic damage), "minor damage," and "major damage," at varying vibration levels. Threshold damage, or cosmetic damage, would entail hairline cracking in plaster, the opening of old cracks, the loosening of paint or the dislodging of loose objects. Minor damage would include hairline cracking in masonry or the loosening of plaster, and major structural damage would include wide cracking or shifting of foundation or bearing walls.

As shown in Figure 2, maximum vibration levels of 0.3 in/sec PPV or lower would result in virtually no measurable damage, while maximum vibration levels of 1.2 in/sec PPV would result in about 20% chance of cosmetic damage. No minor or major damage would be expected at the buildings immediately adjoining the project site.

Neither cosmetic, minor, or major damage would occur at historical or conventional buildings located 20 feet or more from the project site. At these locations, and in other surrounding areas where vibration would not be expected to cause cosmetic damage, vibration levels may still be perceptible. However, as with any type of construction, this would be anticipated and would not be considered significant, given the intermittent and short duration of the phases that have the highest potential of producing vibration (use of jackhammers and other high-power tools). By use of administrative controls, such as notifying neighbors of scheduled construction activities and scheduling construction activities with the highest potential to produce perceptible vibration during hours with the least potential to affect nearby businesses, perceptible vibration can be kept to a minimum.

In summary, the construction of the project would potentially generate vibration levels exceeding the 0.3 in/sec PPV threshold at conventional properties adjoining the project site, which could result in cosmetic damage to these adjacent buildings. This would be a potentially significant impact.

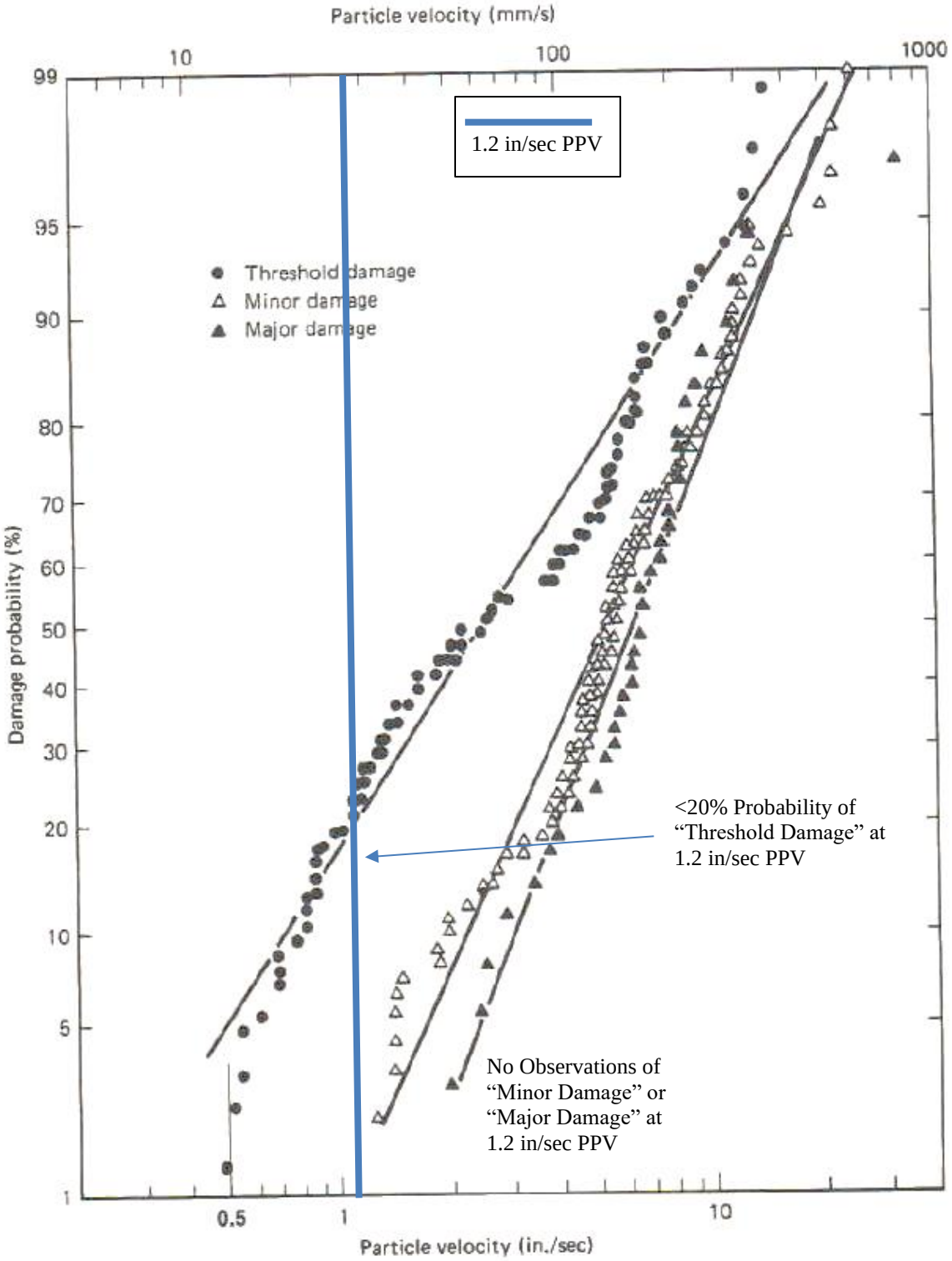
[7] Dowding, C.H., Construction Vibrations, Prentice Hall, Upper Saddle River, 1996.

TABLE 18 Vibration Source Levels for Construction Equipment

Equipment		PPV at 25 ft. (in/sec)	Estimated Vibration Levels at Structures Surrounding the Project Site, in/sec PPV				
			Adjoining NW Warehouse & Commercial (5 feet)	Adjoining NE Warehouse (5 feet)	SE Future Office/R&D (85 feet)	SW Commercial (325 feet)	Nearest Residential (440 feet)
Clam shovel drop		0.202	**1.186**	**1.186**	0.053	0.012	0.009
Hydromill (slurry wall)	in soil	0.008	0.047	0.047	0.002	0.0005	0.0003
	in rock	0.017	0.100	0.100	0.004	0.001	0.001
Vibratory Roller		0.210	**1.233**	**1.233**	0.055	0.012	0.009
Hoe Ram		0.089	**0.523**	**0.523**	0.023	0.005	0.004
Large bulldozer		0.089	**0.523**	**0.523**	0. 023	0.005	0.004
Caisson drilling		0.089	**0.523**	**0.523**	0.023	0.005	0.004
Loaded trucks		0.076	**0.446**	**0.446**	0.020	0.005	0.003
Jackhammer		0.035	0.206	0.206	0.009	0.002	0.001
Small bulldozer		0.003	0.018	0.018	0.001	0.0002	0.0001

Source: Transit Noise and Vibration Impact Assessment Manual, Federal Transit Administration, Office of Planning and Environment, U.S. Department of Transportation, September 2018, as modified by Illingworth & Rodkin, Inc., February 2023.

FIGURE 2 Probability of Cracking and Fatigue from Repetitive Loading



Source: Dowding, C.H., Construction Vibrations, Prentice Hall, Upper Saddle River, 1996.

Mitigation Measure 2:

Construction Vibration Reduction and Monitoring. Wherever feasible, operation of vibration inducing equipment shall be avoided within the distance to existing buildings specified below.

Clam shovel drop – 18 ft
Hydromill (slurry wall) in soil – 1 ft
Hydromill (slurry wall) in rock – 2 ft
Vibratory Roller – 19 ft
Hoe Ram – 9 ft
Large bulldozer – 9 ft
Caisson drilling – 9 ft
Loaded trucks – 8 ft
Jackhammer – 4 ft
Small bulldozer - <1 ft

If this equipment must operate closer to existing buildings than specified above, a vibration monitoring plan shall be prepared, submitted to the City, and implemented to monitor construction vibration at the nearest structures, including at a minimum the following:

- A list of all heavy construction equipment to be used for this project known to produce high vibration levels (e.g., tracked vehicles, vibratory compaction, jackhammers, hoe rams, clam shovel drop, and vibratory roller, etc.).

- An indication of what efforts will be implemented for reducing vibration levels below the thresholds, such as location of equipment away from adjacent building as possible and use of alternative methods or equipment that would produce less vibration.

- A designated contact responsible for registering and investigating claims of excessive vibration. The contact information of such person shall also be clearly posted on the construction site. Any damage to adjacent buildings shall be addressed by the applicant team.

- Document conditions at all structures located within 20 feet of construction prior to, during, and after vibration-generating construction activities. Perform a photo survey, elevation survey, and crack monitoring survey prior to any construction activity, at the end of each phase of construction, and after project completion, and shall include internal and external crack monitoring in structures, settlement, and distress, and shall document the condition of foundations, walls and other structural elements in the interior and exterior of said structures. If vibration generated by project construction results in damage to adjoining structures, repairs shall be completed to restore structures to pre-construction conditions.

Examples of efforts to minimize vibration could include use of a smaller vibratory roller, such as the Caterpillar model CP433E vibratory compactor, and use of alternative methods for breaking up existing pavement, such as a pavement grinder, instead of dropping heavy objects, when work must occur within 20 feet of the adjacent buildings.

The implementation of this mitigation measure would minimize the potential for construction-period cosmetic vibration damage to adjacent buildings and require repair if necessary and would therefore reduce a potential impact to a less-than-significant level.

Impact 3: **Excessive Aircraft Noise.** The project site is located about 9 miles from the San Francisco International Airport. Additionally, the project site lies outside the 60 dBA CNEL noise contour for the San Carlos Airport. The noise environment attributable to aircraft is considered normally acceptable. **This is a less-than-significant impact.**

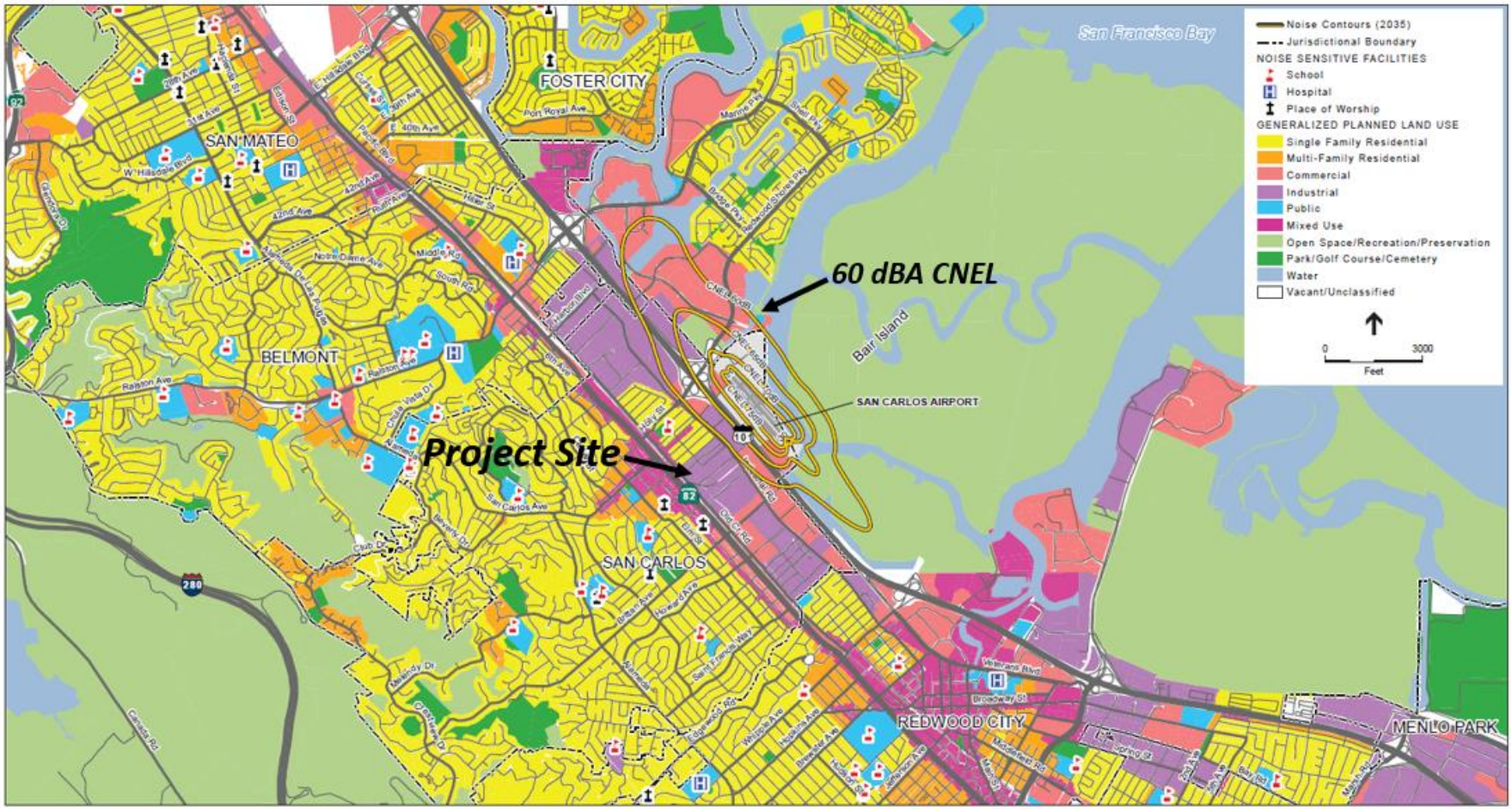
The San Francisco International Airport is a public-use airport located approximately 9 miles northwest of the project site. According to the *Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport*,[8] the project site lies well outside the 65 dBA CNEL/L_{dn} noise contour, and the required safe and compatible threshold for exterior noise levels would be at or below 65 dBA CNEL for aircrafts. As shown in Figure 3, the project site lies well outside the 60 dBA CNEL noise contour for the San Carlos Airport, which is less than a 0.5 mile east of the project site. Therefore, the proposed project would be compatible with the exterior noise standards for aircraft noise.

Assuming standard construction materials, future interior noise levels resulting from aircraft would be below 50 dBA $L_{eq(1\text{-}hr)}$. Therefore, future interior noise at the proposed building would be compatible with aircraft noise. This would be a less-than-significant impact.

Mitigation Measure 3: **None required.**

[8] Ricondo & Associates, Inc. with Jacobs Consultancy and Clarion Associates, *Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport*, November 2012.

FIGURE 3 **2035 Noise Contours for San Carlos Airport**



SOURCE: Belmont, 1982; San Mateo County, 1986; Foster City, 1993; Menlo Park, 1994; San Carlos, 2009; City of San Mateo, 2010; Redwood City, 2010; ESRI, 2014; ESA Airports, 2015

San Carlos Airport ALUCP . 130753

Exhibit 4-2

Future Conditions (2035) Aircraft Noise Contours

Cumulative Impacts

Cumulative noise impacts would include either cumulative traffic noise increases under future conditions or temporary construction noise from cumulative construction projects.

A significant cumulative traffic noise increase would occur if two criteria are met: 1) if the cumulative traffic noise level increase was 3 dBA L_{dn} or greater for future levels exceeding 60 dBA L_{dn} or was 5 dBA L_{dn} or greater for future levels at or below 60 dBA L_{dn}; and 2) if the project would make a "cumulatively considerable" contribution to the overall traffic noise increase. A "cumulatively considerable" contribution would be defined as an increase of 1 dBA L_{dn} or more attributable solely to the proposed project.

The traffic study included ADT volumes for 2040 (no project) and 2040 with project scenarios. Both traffic scenarios were compared to the existing traffic volumes to determine the noise level increase with and without the project, and Table 16 summarizes the estimated increases with and without the project by the year 2040, as well as the project's contribution to the overall traffic noise increase, which was calculated by comparing the increases under the 2040 (no project) and 2040 with project scenarios. The only roadway segments with an increase of 3 dBA L_{dn} or more included U.S. Highway 101. The same increase was calculated for 2040 (no project) and 2040 with project scenarios. Therefore, the project would not result in a cumulatively considerable contribution to the overall noise increase. This would be a less-than-significant impact.

From the City's website,[9] the following planned or approved projects are located within 1,000 feet of the proposed project:

- **841 Old County Road** – this project is located southeast of the project site, opposite Bransten Road. This project was identified as a future receptor in this report. The 841 Old County Road project would include the demolition of existing buildings and the construction of two new Life Science R&D buildings. This project is currently in the planning review phase. While the construction schedule for this project is currently unknown, it is likely to be constructed before the proposed project at 789 Old County Road. The nearest residential uses are over 400 feet northwest of the proposed project site; however, the children's gymnasium northeast of the 841 Old County Road would be a shared receptor for both construction sites. With the loud existing noise environment at the project site and the surrounding area and considering that the 841 Old County Road project is likely to be constructed prior to the 789 Old County Road project, a cumulative construction impact is not expected.

- **Alexandria Center for Life Science** – this project is located at 900, 960, 961, 967 Industrial Road; 1003, 1011 Commercial Street; and 915, 1055, 1063 Old County Road. This project site is approximately 640 feet southeast of the project site. This project involves construction of an office/R&D campus-style development on approximately 25.34 acres. This project is in the planning review phase. This project would not share receptors with direct line-of-sight to both construction sites. This would result in a less-than-significant cumulative construction impact.

[9] https://mydashgis.com/SanCarlosProjects/map

No other projects are located within 1,000 feet of the proposed project site. Therefore, potential cumulative construction impacts would be less-than-significant.

TABLE 16 Estimated Noise Level Increases of Cumulative Plus Project Traffic Volumes and Cumulative Traffic Volumes Compared to Existing Volumes at Receptors in the Project Vicinity

Roadway	Segment	Estimated Noise Level Increase, dBA L_{dn}		Project's Contribution, dBA L_{dn}
		2040 (No Project)	2040 With Project	
U.S. Highway 101 Northbound	South of Brittan Avenue	1	1	0
	Brittan Avenue to Holly Street	1	1	0
	North of Holly Street	4	4	0
U.S. Highway 101 Southbound	South of Brittan Avenue	1	1	0
	Brittan Avenue to Holly Street	1	1	0
	North of Holly Street	4	4	0
Industrial Road	South of Brittan Avenue	1	1	0
	Brittan Avenue to Commercial Street	1	1	0
	Commercial Street to Bransten Road	1	1	0
	Bransten Road to Terminal Way	1	1	0
	Terminal Way to Montgomery Street	1	1	0
	Montgomery Street to San Carlos Avenue	1	1	0
	San Carlos Avenue to Holly Street	1	1	0
	North of Holly Street	0	0	0
Old County Road	Brittan Avenue to Commercial Street	1	1	0
	Commercial Street to Bransten Road	0	0	0
	Bransten Road to Terminal Way	0	0	0

Roadway	Segment	Estimated Noise Level Increase, dBA L_{dn}		Project's Contribution, dBA L_{dn}
		2040 (No Project)	2040 With Project	
	Terminal Way to Montgomery Street	0	0	0
	San Carlos Avenue to Holly Street	0	0	0
El Camino Real (SR 82)	South of Brittan Avenue	2	2	0
	Brittan Avenue to Commercial Street	2	2	0
	Commercial Street to San Carlos Avenue	1	1	0
	San Carlos Avenue to Holly Street	1	1	0
	North of Holly Street	2	2	0
Howard Avenue	Old County Road to Industrial Road	0	0	0
	Old County Road to El Camino Real (SR 82)	0	0	0
	West of El Camino Real (SR 82)	0	0	0
Brittan Avenue	East of Industrial Avenue	2	2	0
	Industrial Avenue to Old County Road	0	0	0
	Old County Road to El Camino Real (SR 82)	2	2	0
	West of El Camino Real (SR 82)	0	0	0
Commercial Street	Industrial Avenue to Old County Road	2	2	0
Montgomery Street	Industrial Avenue to Old County Road	0	0	0

Roadway	Segment	Estimated Noise Level Increase, dBA L_{dn}		Project's Contribution, dBA L_{dn}
		2040 (No Project)	2040 With Project	
San Carlos Avenue	Industrial Avenue to Old County Road	0	0	0
	West of El Camino Real (SR 82)	1	1	0
Holly Street	East of Industrial Road	1	1	0
	Industrial Avenue to Old County Road	0	0	0
	Old County Road to El Camino Real (SR 82)	1	1	0

APPENDIX

FIGURE A1 Daily Trend in Noise Levels at LT-1, Wednesday, March 22, 2023

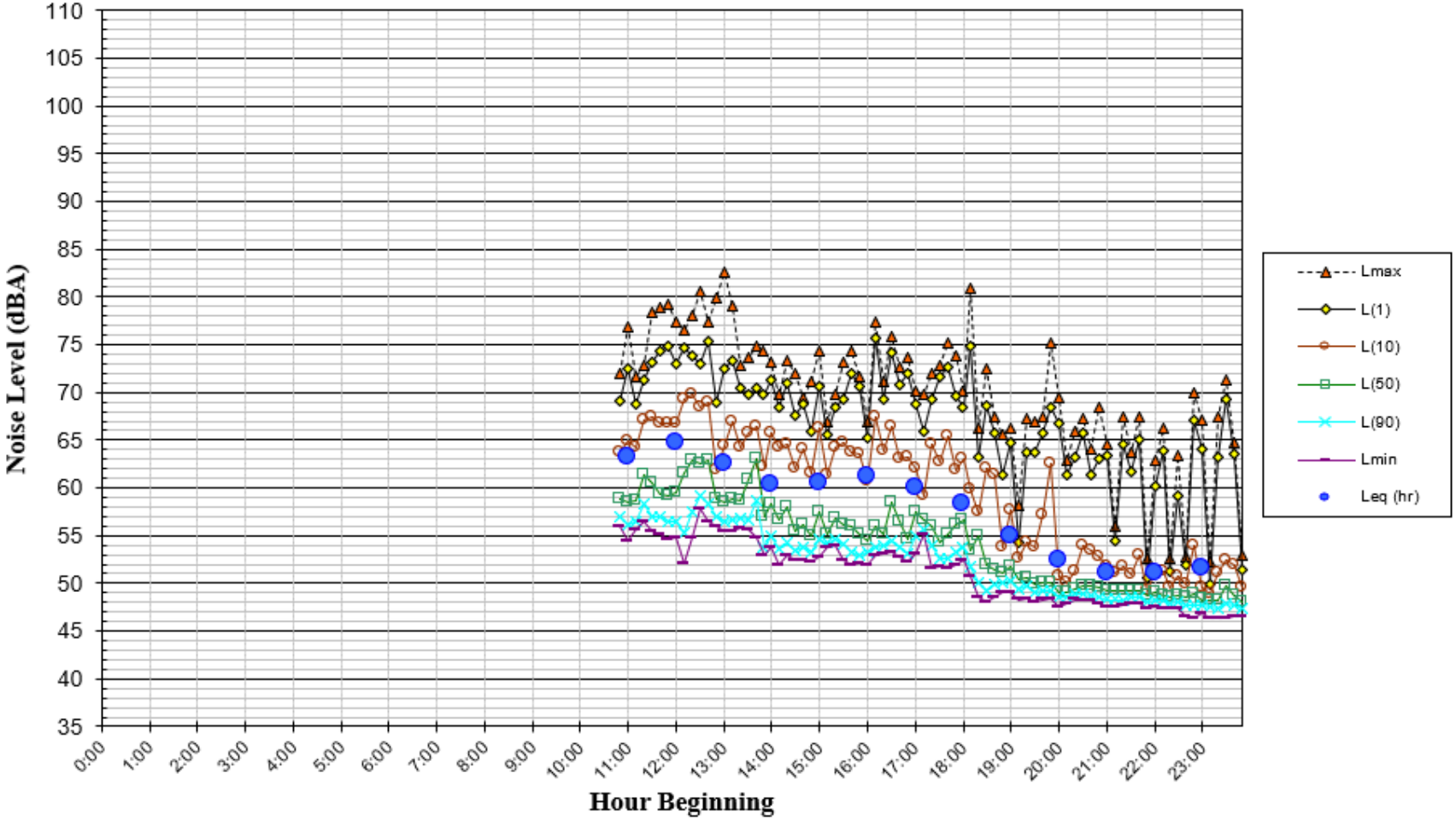


FIGURE A2 Daily Trend in Noise Levels at LT-1, Thursday, March 23, 2023

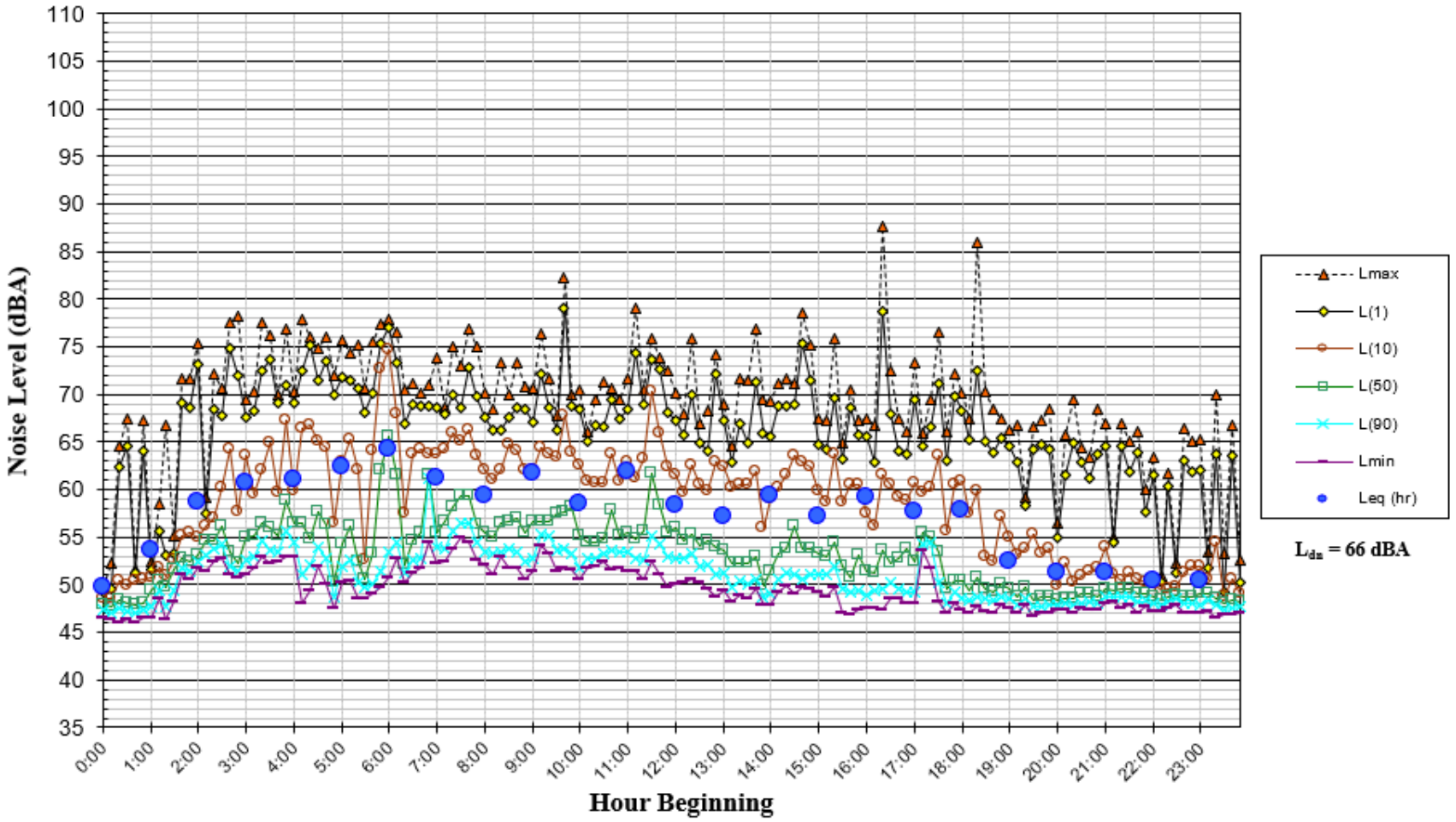


FIGURE A3 Daily Trend in Noise Levels at LT-1, Friday, March 24, 2023

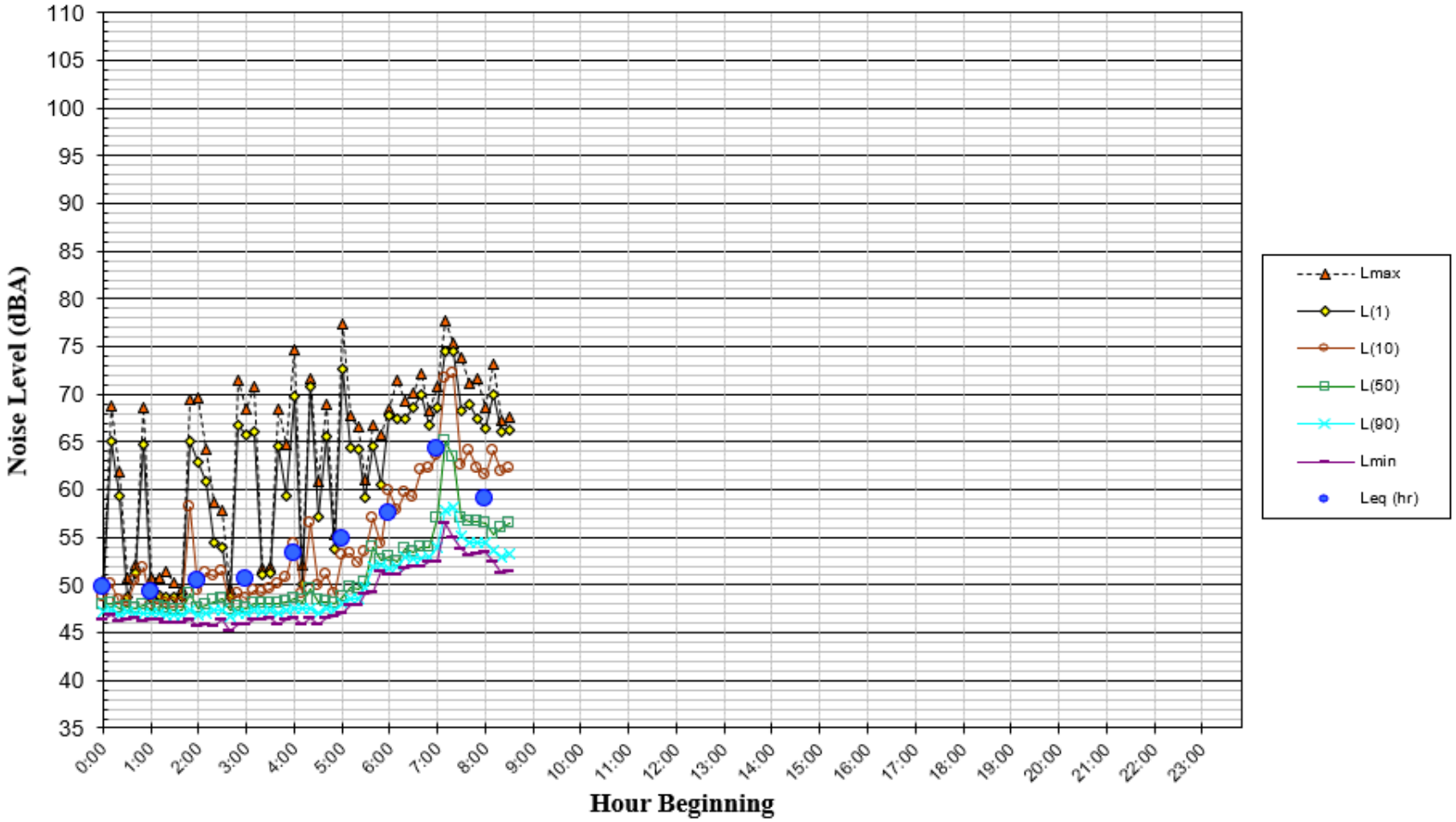


FIGURE A4 Daily Trend in Noise Levels at LT-2, Wednesday, March 22, 2023

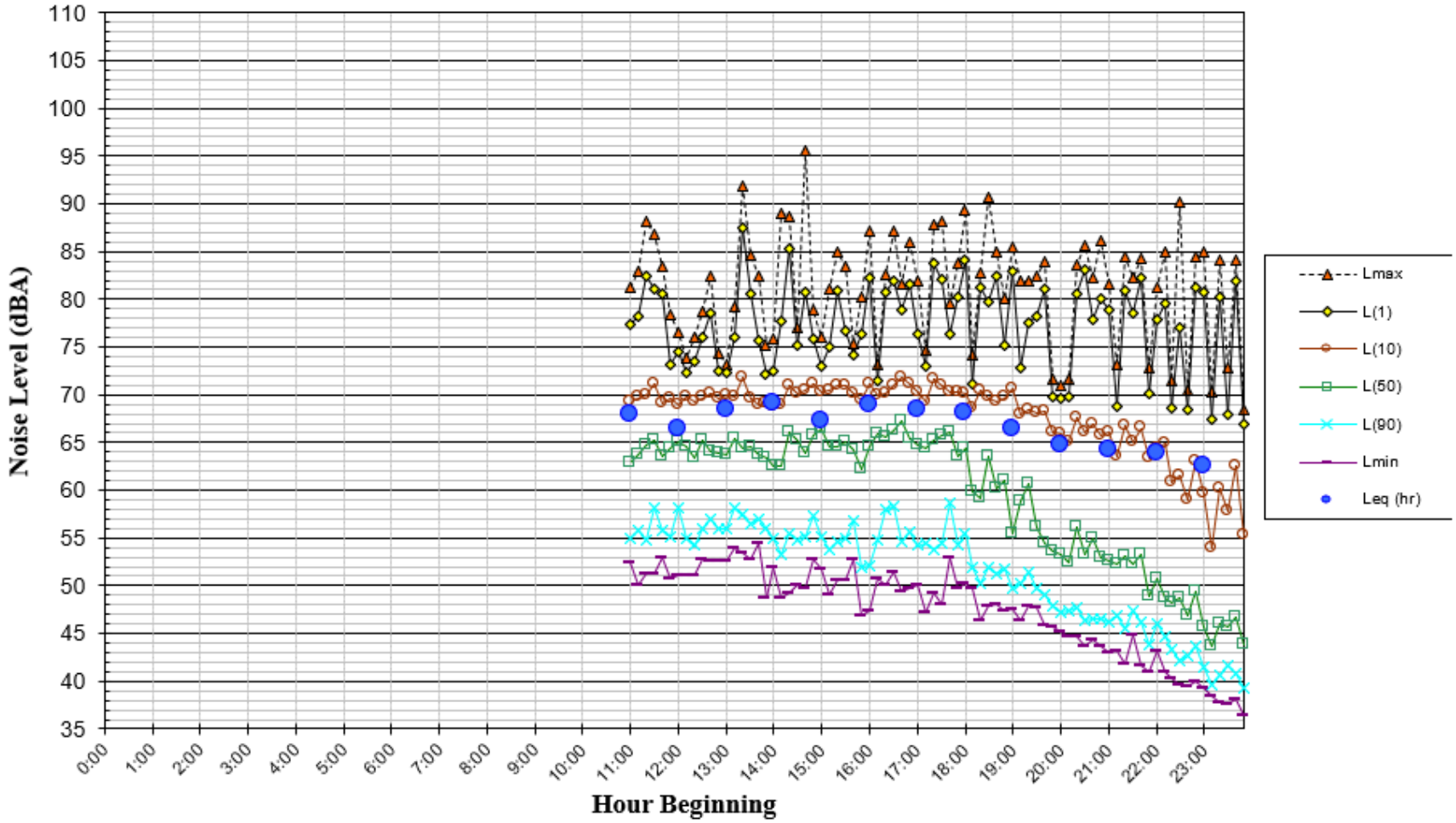


FIGURE A5 Daily Trend in Noise Levels at LT-2, Thursday, March 23, 2023

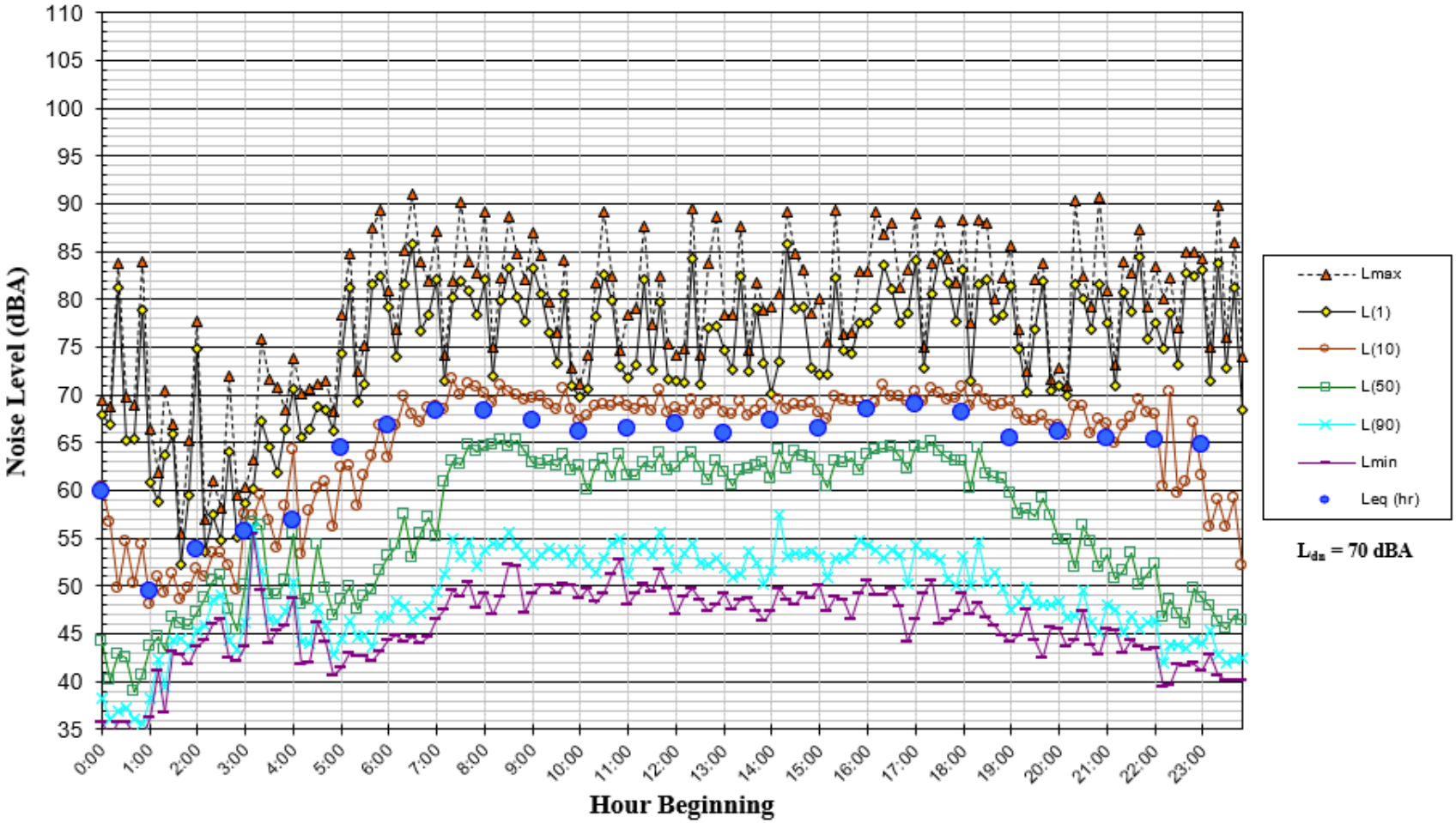


FIGURE A6 Daily Trend in Noise Levels at LT-2, Friday, March 24, 2023

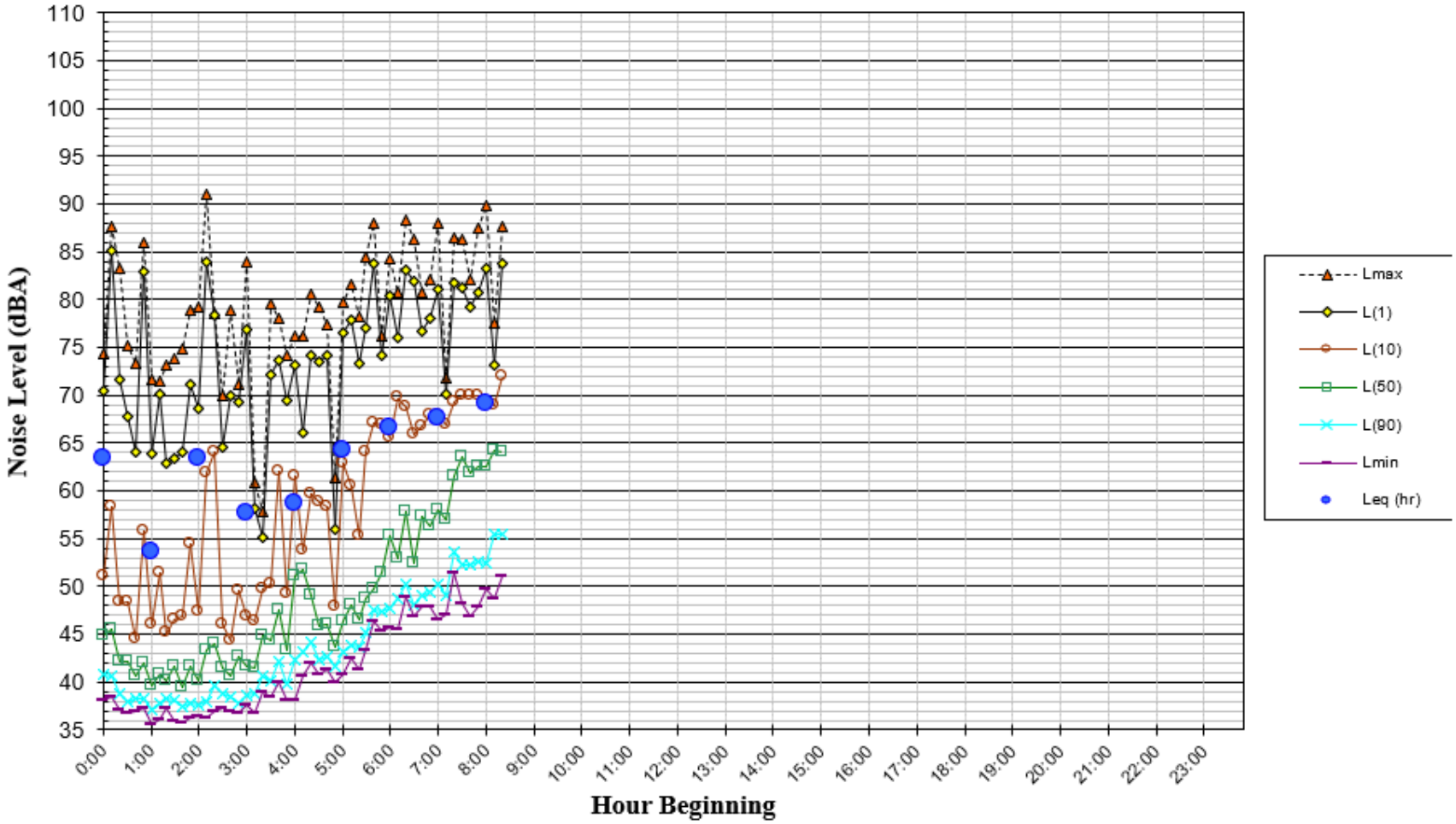


FIGURE A7 Caltrain Vibration Levels at a Distance of 90 feet from the Edge of the Nearest Tracks

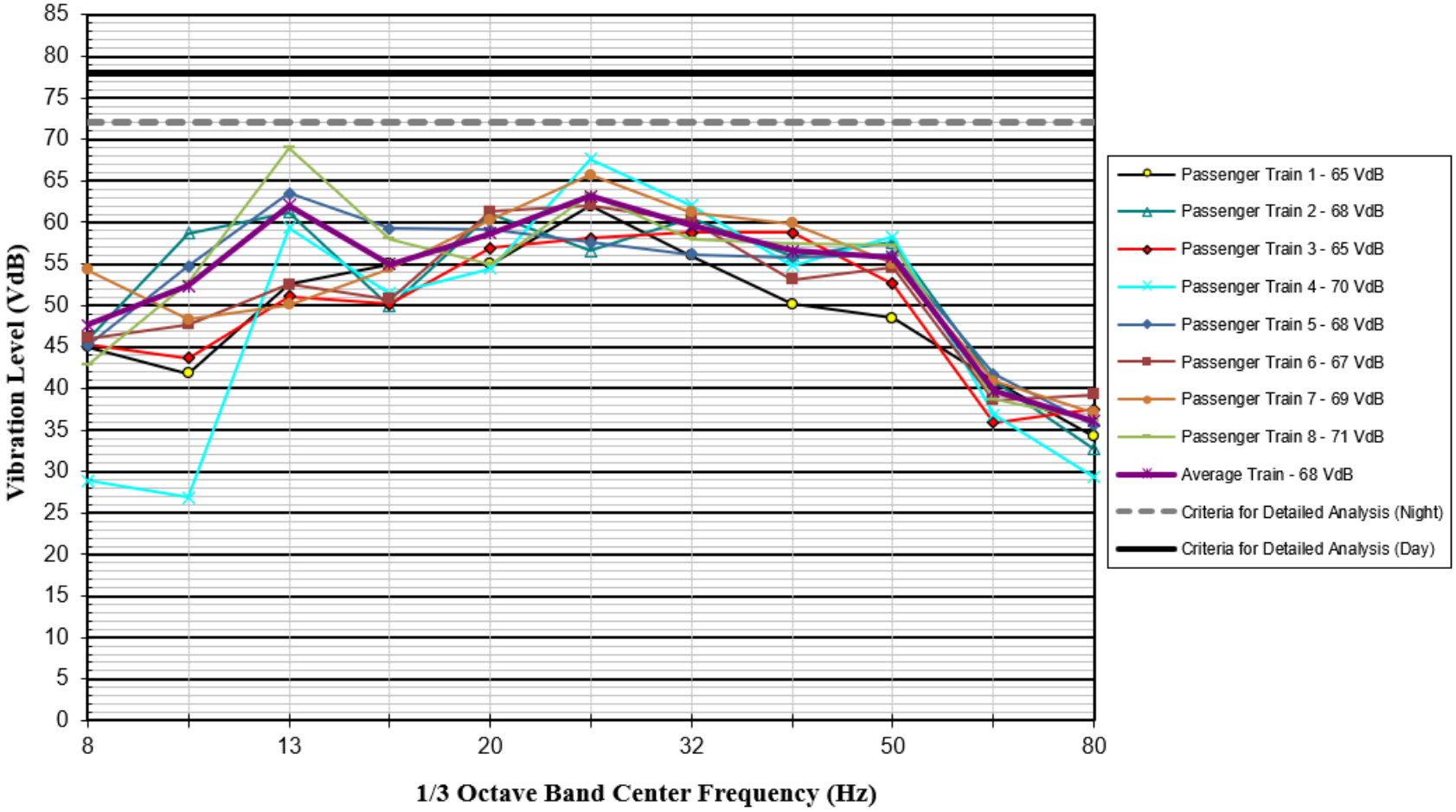
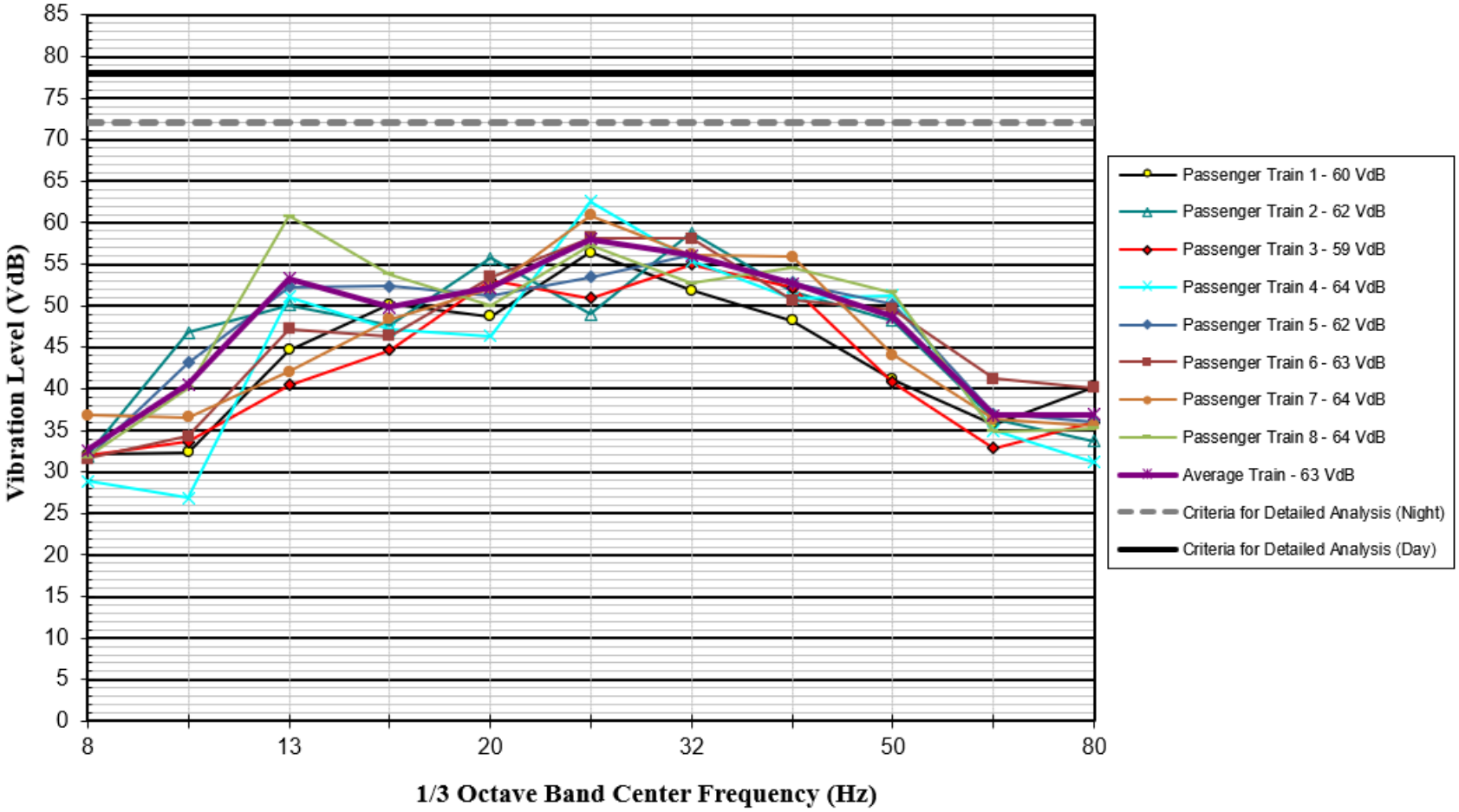


FIGURE A8 Caltrain Vibration Levels at a Distance of 105 feet from the Edge of the Nearest Tracks



CEQA TRANSPORTATION ANALYSIS

ATTACHMENT E

to the
789 Old County Road Project Initial Study / Mitigated Negative Declaration

CEQA Analysis for the 789 Old County Road Project

Prepared for the City of San Carlos

Submitted by
W-Trans

February 11, 2025

TRAFFIC ENGINEERING
TRANSPORTATION PLANNING
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Table of Contents

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Introduction

The proposed 789 Old County Road Project would include the redevelopment of approximately 3.4 acres into an office and research and development facility in the City of San Carlos. The purpose of this letter is to summarize this proposed project's potential transportation impacts under the guidelines of the California Environmental Quality Act (CEQA).

Prelude

The purpose this study is to provide City staff and policy makers with data that they can use to make an informed decision regarding the potential transportation impacts of a proposed project, and any associated improvements that would be required to mitigate these impacts to an acceptable level under CEQA, the City's General Plan, or other policies. This report provides an analysis of those items that are identified as areas of environmental concern under the California Environmental Quality Act (CEQA) and that, if significant, require an EIR. Impacts associated with access for pedestrians, bicyclists, and to transit; the vehicle miles traveled (VMT) generated by the project; potential safety concerns such as increased queuing in dedicated turn lanes, adequacy of sight distance, need for turn lanes, and need for additional right-of-way controls; and emergency access are addressed in the context of the CEQA criteria. While no longer a part of the CEQA review process, vehicular traffic service levels at key intersections were evaluated for consistency with General Plan policies by determining the number of new trips that the proposed use would be expected to generate, distributing these trips to the surrounding street system based on anticipated travel patterns specific to the proposed project, then analyzing the effect the new traffic would be expected to have on the study intersections and need for improvements to maintain acceptable operation. Adequacy of parking is also addressed as a policy issue.

Applied Standards and Criteria

The report is organized to provide background data that supports the various aspects of the analysis, followed by the assessment of CEQA issues and then evaluation of policy-related issues. The CEQA criteria evaluated are as follows.

Would the project:

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 § 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?

The project was also evaluated against the City of San Carlos policies, which provide guidance relative to traffic impacts for CEQA issues as well as the effects caused by traffic associated with new development. Based on the most recent criteria published by the City of San Carlos, the project would have a significant impact or an adverse effect on traffic operation if it results in any of the following conditions.

Project Description

The proposed project would include demolition of the existing cement plant, surface parking and storage yard at 789 Old County Road and construction of two buildings with a combined 297,339 square feet of Life Sciences office space. The western building would have 5 levels and the eastern building would have 6 levels. Also included with the project would be a parking garage structure with eight levels and 691 spaces. In addition, there would be 84 long-term and 20 short-term bicycle parking spaces within an interior bicycle room.

Regulatory Setting

This section describes federal, State, regional, and local environmental laws and policies that are relevant to the California Environmental Quality Act (CEQA) review process for transportation and circulation. These policies provide a context for the impact discussion related to the proposed project's consistency with the applicable regulatory conditions.

Federal Regulations

The Americans with Disabilities Act (ADA) of 1990 provides comprehensive rights and protections to individuals with disabilities. The goal of the ADA is to assure equality of opportunity, full participation, independent living, and economic self-sufficiency for people with disabilities. To implement this goal, the US Access Board, an independent federal agency created in 1973 to ensure accessibility for people with disabilities, has created accessibility guidelines for public rights-of-way. While these guidelines have not been formally adopted, they have been widely followed by jurisdictions and agencies nationwide. These guidelines, last revised in July 2011, address various issues, including roadway design practices, slope and terrain, and pedestrian access to streets, sidewalks, curb ramps, street furnishings, pedestrian signals, parking, public transit, and other components of public rights-of-way. These guidelines would apply to proposed roadways in the study area.

State Regulations

Senate Bill 743

On September 27, 2013, Senate Bill (SB) 743 was signed into law, supporting previous climate-focused and transportation legislation, including the Sustainable Communities and Climate Protection Act of 2008 (SB 375) and the California Global Warming Solutions Act of 2006 (AB 32). SB 743 also supports implementation of the Complete Streets Act (AB 1358), which requires local governments to plan for a balanced, multimodal transportation network that meets the needs of all users. To further the State's commitment to the goals of SB 375, AB 32 and AB 1358, SB 743 added Chapter 2.7, Modernization of Transportation Analysis for Transit-Oriented Infill Projects, to Division 13 (Section 21099) of the Public Resources Code.

SB 743 introduced fundamental changes in the assessment of transportation impacts through the CEQA process. These changes include the elimination of auto delay (measured as Level of Service, or LOS) as a basis for determining significant transportation impacts. SB 743 included amendments that revised the definition of "infill opportunity zones" to allow cities and counties to opt out of traditional LOS standards established by congestion management programs (CMPs) and required the California Governor's Office of Planning and Research (OPR) to update the CEQA Guidelines and establish "criteria for determining the significance of transportation impacts of projects within transit priority areas." As part of the new CEQA guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." SB 743-compliant CEQA analysis became mandatory on July 1, 2020. Since the CEQA transportation analysis prepared for the Certified EIR predated SB 743, potentially significant impacts were defined differently at that time and VMT was not evaluated as is currently required.

In December 2018, OPR released a final advisory to guide lead agencies in implementing SB 743, the "Technical Advisory on Evaluating Transportation Impacts in CEQA." Key guidance includes the following:

- VMT is the most appropriate metric to evaluate a project's transportation impact under CEQA.
- Tour- and trip-based travel models are recommended for estimating VMT, but local agencies have the authority to select the tools they use.
- VMT for residential and office projects is generally assessed using efficiency metrics, i.e., on a "per rate" basis. Specifically, the adopted metrics used by the City of San Carlos are VMT per service population for

both residential and office projects as documented in the City's Significance Criteria adopted in September 2020.

- The recommended thresholds of significance for residential and office projects are VMT per capita or per employee that is fifteen percent below the city or regional average (whichever is applied). In other words, an office project that generates VMT per employee that is more than 85 percent of the regional VMT per employee could result in a significant impact. This threshold is in line with statewide GHG emission reduction targets.
- Lead agencies have the discretion to set or apply their own significance thresholds in lieu of those recommended in the advisory, provided they are based on substantial evidence.
- Cities and counties still have the ability to use metrics such as LOS for other plans, studies, or network monitoring. However, LOS and similar metrics cannot constitute the sole basis for CEQA impacts.

California Complete Streets Act of 2008 (Assembly Bill 1358)

Originally passed in 2008, California's Complete Streets Act came into force in 2011 and requires local jurisdictions to plan for land use transportation policies that reflect a "complete streets" approach to mobility. "Complete streets" comprises a suite of policies and street design guidelines which provide for the needs of all road users, including pedestrians, bicyclists, transit operators and riders, children, the elderly, and the disabled. From 2011 onward, any local jurisdiction, county or city, that undertakes a substantive update of the circulation element of its general plan must consider "complete streets" and incorporate corresponding policies and programs.

Regional Regulations

Plan Bay Area 2040

Plan Bay Area 2040 was adopted in 2017 by the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG). As a single plan for the nine-county San Francisco Bay Area that includes the Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS), Plan Bay Area 2040 sets forth regional transportation policy and provides capital program planning for all regional, State, and Federally funded projects.

As the RTP, Plan Bay Area 2040 provides strategic investment recommendations to improve regional transportation system performance, including investments in regional highway, transit, local roadway, bicycle, and pedestrian facilities. These projects were identified through regional and local transportation planning processes. Plan Bay Area 2040 was the most current iteration of Plan Bay Area when this study was initiated.

It is noted that while Plan Bay Area 2050 was adopted in 2021, it has not yet been integrated into regional planning modeling tools. The forecast used to estimate VMT and vehicle traffic demands in this analysis were based on the San Carlos General Plan and C/CAG travel demand forecast model, both which are based on land use assumptions from Plan Bay Area 2040.

San Mateo County Comprehensive Bicycle and Pedestrian Plan

The San Mateo County Comprehensive Bicycle and Pedestrian Plan (CBPP) provides a framework to help the City/County Association of Governments of San Mateo County (C/CAG) improve walking and bicycling conditions in San Mateo County. By recommending a connected network of biking and walking facilities based on the best practices in the field, implementation of the CBPP will make biking and walking safer and more comfortable for all, and improve health, accessibility, and livability throughout the county. The CBPP has established goals to create a system of safe facilities for bicyclists and pedestrians to increase the number of people walking and riding for transportation and recreation and to raise awareness for local support of non-motorized transportation options.

C/CAG is the County's Congestion Management Agency and is responsible for transportation planning, programming, and funding. This includes developing and updating the region's Congestion Management Plan

and bicycle and pedestrian plans. The CBPP builds on previous walking and bicycling planning efforts, including the San Mateo County Comprehensive Bicycle Route Plan (2000) and CBPP (2011).

The CBPP presents countywide priorities and provides project lists and program and design guidance which C/CAG and local jurisdictions can use to make roadways safer, reduce congestion, and encourage more people to walk and ride a bicycle.

Congestion Management Program

The 2021 Congestion Management Program (CMP) Update is a document of the City/County Association of Governments of San Mateo County (C/CAG), the designated Congestion Management Agency (CMA) for San Mateo County. The 2021 biennial update is required by State statute.

In 1990, California voters approved Propositions 111 and 108, which included a requirement that every urban county within California designate a CMA that would prepare, implement, and biennially update a CMP. In San Mateo County, C/CAG was designated as the CMA. Subsequent legislation (AB 2419) allowed existing Congestion Management Agencies to discontinue participation in the Program; however, C/CAG voted to continue to participate in and adopt a CMP.

According to the state legislation, the purpose of CMPs is to develop a procedure to alleviate or control anticipated increases in roadway congestion and to ensure that "federal, state, and local agencies join with transit districts, business, private and environmental interests to develop and implement comprehensive strategies needed to develop appropriate responses to transportation needs." The first CMP for San Mateo County was adopted by C/CAG in 1991. It has been updated and amended on a biennial basis. The last CMP update was in 2021.

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) is the public agency tasked with regulating air pollution in the nine-county Bay Area, including San Mateo County. As a primary source of air pollution in the Bay Area region is from motor vehicles, air district regulations affect transportation planning in the project study area. The BAAQMD's goals include reducing health disparities due to air pollution, achieving, and maintaining air quality standards, and implementing exemplary regulatory programs and compliance with federal, State, and regional regulations.

Metropolitan Transportation Commission

The Metropolitan Transportation Commission (MTC) is the transportation planning, coordinating, and financing agency for the nine-county Bay Area, including San Mateo County. It also functions jointly as the federally mandated metropolitan planning organization (MPO) for the region along with the Association of Bay Area Governments (ABAG). It is responsible for regularly updating the Regional Transportation Plan (RTP), a comprehensive blueprint for the development of mass transit, highway, airport, seaport, railroad, bicycle, and pedestrian facilities.

Local Regulations

City of San Carlos General Plan

The City of San Carlos General Plan Circulation & Scenic Highways Element (adopted October 2009) provides a vision for long-range physical and economic development of the City, provides strategies and specific implementing actions, and establishes a basis for judging whether specific development proposals and public projects are consistent with the City's plans and policy standards. The General Plan includes the following policies that are appliable to the CEQA Analysis of transportation and circulation:

- POLICY CSH-2.2 Continue to support operation of adequate public bus service throughout San Carlos.

- POLICY CSH-2.3 Access to public transportation facilities should be convenient and designed to encourage use of public transit.
- POLICY CSH-3.1 Strive to reduce baseline and development-related traffic by 20 percent through public-private partnership efforts.
- POLICY CSH-3.12 The City should preserve its existing alley and pedestrian path systems to the maximum extent feasible.
- POLICY CSH-3.2 Support city-wide efforts to reduce vehicular trips within and through the community.
- POLICY CSH-3.3 Support the incorporation of Transportation Demand Measures in new development to reduce traffic impacts.
- POLICY CSH-5.1 Connect neighborhoods, school sites, activity centers, transportation centers, recreational sites and other important community amenities with sidewalks, pedestrian paths, trails and bikeways.
- POLICY CSH-6.1 Bicycling and walking facilities should be incorporated into all new development projects to the maximum extent feasible.
- POLICY CSH-6.2 Support transit-oriented development with mixed, dense land use that reduces the need to travel and that is linked to good transit. The City shall work with local, regional and State representatives to encourage the support and funding of transit-oriented development projects.

Bicycle and Pedestrian Master Plan

The City of San Carlos *Bicycle and Pedestrian Master Plan* (adopted June 9, 2020) establishes a long-term vision for improving walking and bicycling in San Carlos and provides a strategy to develop a comprehensive bicycling and walking network that provides access to transit, schools and downtown. This document also identifies a plan to implement these projects and programs through prioritization and phasing to ensure projects are managed and fundable. The plan has stated goals to maintain and expand the pedestrian and bicycle network, increase support for walking and bicycling and improve access and safety for pedestrian and bicyclists.

This plan is an essential tool for guiding city staff and the development community in building a balanced transportation system where active modes are supported and accessible. The goal of the plan is to promote walking and bicycling through the creation of safe, comfortable, and connected networks, and to encourage alternatives to single-occupancy motor vehicle trips.

East Side Innovation District Vision Plan

The East Side Innovation District (District) Vision Plan (Vision Plan) (adopted October 25, 2021) presents planning strategies, goals, principles, and action items to achieve the desired characteristics for the future East Side Innovation District area. The goal of the Vision Plan is to maximize the City's ability to shape infrastructure, urban design, transportation circulation management and mobility, service provision, open space, community facilities, present and future land uses, economic development, and community benefits. This plan is meant to be used at the beginning stages of project development to determine how a project can be conceptualized and programmed so that a portion of the plan can be fulfilled with each act of new construction or public involvement. As related to transportation, the Vision Plan has several "Big Moves," including to: (1) promote safe and accessible walking and bike trips to, from, and within the District for all users, while balancing the freight circulation and loading needs of industrial commercial uses; (2) incorporate holistic transportation strategies at a range of scales to help address long-term District and Citywide transportation objectives; and (3) develop and define District parking requirements that address the range of existing and future District users.

San Carlos Transportation Demand Management Ordinance

The City's Transportation Demand Management (TDM) Ordinance, which is specified in Title 18 of the City's Municipal Code in Chapter 18.25, Transportation Demand Management, seeks to reduce the amount of traffic generated by new development and the expansion of existing development and maximize alternative transportation usage. The ordinance establishes a performance target of trip generation rates that are a minimum

20 percent lower than the standard rates published in the latest edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual.

Per the ordinance, all projects are required to submit annual documentation of their TDM activities and results. Programs will be evaluated for effectiveness every 5 years. New or modified activities can be suggested to meet the program's objectives, subject to review and approval.

Trip Generation

The anticipated trip generation for the proposed project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 11th Edition, 2021. The most appropriate trip generation rates for the proposed land uses include those for both "General Office Building" (Land Use #710) and "Research and Development Center" (Land Use #760) based on gross floor area. For a conservative analysis, and to be consistent with other recently analyzed Life Sciences office projects in San Carlos, the higher daily trip generation rate for "Research and Development Center" and the peak hour trip generation rates for "General Office Building" were applied to approximate the number of vehicle trips generated by the proposed project based on the proposed square footage. The anticipated number of vehicle trips estimated by these rates are comparable to trip estimates using the assumption that the building would have an occupancy of approximately one employee per 300 square feet of office space, or in this case an occupancy of approximately 991 employees.

Existing Buildings

Because the site is currently occupied by an operating cement batch plant, the trip generation of the existing land use was considered. A trip generation survey of the existing site was conducted via driveway counts on February 7, 2023, between 6:00 a.m. and 6:00 p.m. to determine the number of trips currently being generated by site users. To provide a conservative estimate, a heavy vehicle adjustment factor was not applied to convert truck trips into an equivalent passenger car trip total. According to this observation, the current use generates an average of 228 daily trips, including 38 a.m. peak hour trips and 20 trips during the p.m. peak hour.

Total Project Trip Generation

Based on these assumptions, the proposed project is expected to generate an average of 3,295 daily trips, including 452 a.m. peak hour trips and 428 trips during the p.m. peak hour. This represents a net increase in trips over the existing land uses of 3,067 trips per day including 414 and 408 additional vehicle trips during the a.m. and p.m. peak hours, respectively. These results are summarized in Table 1.

Table 1 – Trip Generation Summary

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
	(ksf)	Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Existing											
Cement Plant & Trucking Co.											
Passenger Cars			-88		-10	-7	-3		-12	-3	-9
Trucks			-140		-28	-14	-14		-8	-3	-5
Total			-228		-38	-21	-17		-20	-6	-14
Proposed											
General Office Building	297.339	11.08*	3,295	1.52	452	397	55	1.44	428	73	355
Net New Trips			**3,067**		**414**	**376**	**38**		**408**	**67**	**341**

Note: ksf = 1,000 square feet; * = Rate applied is for a Research and Development Center

Trip Reduction/Transportation Demand Management (TDM) Plan

The proposed project would be expected to increase vehicle trips, parking demand, traffic congestion, and vehicle emissions. Per Section 18.25.080 of the City of San Carlos Municipal Code, a Transportation Demand Management (TDM) Plan achieving a minimum 20-percent vehicle trip reduction is required for this project. To provide a conservative analysis, and to be consistent with other transportation studies in San Carlos, trip reductions associated with a TDM plan were not included with the trip generation estimates used in the VMT or LOS analyses.

Transportation Management Association (TMA)

A comprehensive TDM program is best implemented when an organization can serve as a mobility champion that can implement programs on an economy of scale. Often, this takes the form of a Transportation Management Association (TMA) whose mission is to collectively represent all uses, existing or new, within a particular area (e.g., East San Carlos); oversee TDM measures; and ensure their ongoing success. General Plan Policy CSH-3.1 directs the City to "Strive to reduce base-line and development-related traffic by 20 percent through public-private partnership efforts." TMAs are typically implemented at a Specific Plan or areawide level but can be expanded over time to cover new areas, if desired.

A TMA is typically either a private/non-profit or public-private partnership member-controlled organization that is established to promote commute alternatives to driving alone. TMAs are controlled and funded through membership with the goal of reducing vehicle trips and congestion. Typically, TMAs allow for businesses of all different sizes to collectively provide commute reduction services to a broader range of users. TMAs allow multiple companies within a geographic area to collectively provide TDM services and measures to employees, rather than each company providing services individually. Residential projects are also included in TMAs, enabling local residents to take advantage of these services and the incentives to walk, bike, carpool, vanpool or use transit to reach their destinations.

In addition to implementing TDM measures, the reduction of vehicle trips resulting from those strategies is also typically monitored and reported by the TMA; the TMA may also monitor vehicle miles traveled (VMT) targets. The monitoring and reporting of vehicle trips would allow participants of the TMA to more efficiently mitigate vehicle trips, vehicle miles traveled, and parking demand within East San Carlos.

As a condition of approval, the project applicant would likely be required to participate in any future TMA in the East Side Innovation District (ESID). This future TMA would potentially increase the efficacy of the project's TDM program as well as those for other nearby proposed developments in the ESID. To provide a conservative analysis for this study, trip reductions related to the TMA were not applied toward the CEQA traffic analysis.

CEQA Checklist

Following is a discussion and analysis of transportation related CEQA checklist items. The results are summarized in Table 2 and a discussion of each criterion follows.

Table 2 – XVII. TRANSPORTATION/TRAFFIC				
Would the Project:	**Potentially Significant Impact**	**Less than Significant Impact with Mitigation**	**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?			X	
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
d) Result in inadequate emergency access?			X	

Discussion of CEQA Checklist Items

a. Would the Project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

The proposed project was evaluated to determine whether there would be conflicts with adopted policies, plans, or programs supporting alternative transportation (e.g., sidewalks, Class IV bikeways, etc.) since employees and visitors will have the option of driving, taking transit, walking, or cycling to and from the proposed project.

Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal phases, curb ramps, curb extensions, and various streetscape amenities such as lighting, benches, etc. In general, a network of sidewalks, crosswalks, pedestrian signals, and curb ramps provide access for pedestrians in the vicinity of the proposed project site; however, sidewalk gaps, obstacles, and barriers can be found along some of the roadways connecting to the project site. Existing gaps and obstacles along the connecting roadways can impact convenient and continuous access for pedestrians and present safety concerns in those locations where appropriate pedestrian infrastructure would address potential conflict points.

- **Old County Road** – Within the study area, continuous sidewalk coverage is provided on both sides Old County Road, except for the segment south of Montgomery Street where sidewalks are only available on the east side. Lighting is provided by overhead streetlights.
- **Bransten Road** – Intermittent sidewalks currently exist on both sides of Bransten Road between Old County Road and Industrial Road. Lighting is provided by overhead streetlights. It is noted that a new sidewalk along the south side of Bransten Road along the 741 Old County Road project frontage is anticipated to be completed by others.
- **Industrial Road** – Continuous sidewalks are provided on Industrial Road within the vicinity of the proposed project. In general, Industrial Road has adequate pedestrian facilities including crosswalks, curb ramps, overhead streetlights, etc.

- **Caltrain Pedestrian Tunnel –** A tunnel provides access under the above-grade Caltrain tracks, connecting El Camino and Old County Road. Access in the tunnel is restricted to pedestrians and cyclists only. The tunnel includes overhead lighting and is approximately 15 feet wide and 50 feet in length.

Bicycle Facilities

The *Highway Design Manual*, Caltrans, 2017, classifies bikeways into four categories:

- **Class I Multi-Use Path** – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II Bike Lane** – a striped and signed lane for one-way bike travel on a street or highway.
- **Class III Bike Route** – signing only for shared use with motor vehicles within the same travel lane on a street or highway.
- **Class IV Bikeway** – also known as a separated bikeway, a Class IV Bikeway is for the exclusive use of bicycles and includes a separation between the bikeway and the motor vehicle traffic lane. The separation may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

In the project area, Class II bike lanes exist on Industrial Road and both Class II bike lanes and a Class III Bike Route are provided along Old County Road. Bicyclists ride in the roadway and/or on sidewalks along all other streets within the project study area. Table 3 summarizes the existing and planned bicycle facilities in the project vicinity, as contained in the *City of San Carlos Bicycle and Pedestrian Master Plan*, 2020.

Table 3 – Bicycle Facility Summary

Status Facility	Class	Length (miles)	Begin Point	End Point
Existing				
Alameda De Las Pulgas	II	1.5	San Carlos Ave	South City Limits
Brittan Ave	II	0.8	Alameda De Las Pulgas	Elm St
Industrial Rd	II	2.1	North City Limits	South City Limits
Old County Rd	II	1.0	Terminal Wy	South City Limits
San Carlos Ave	II	1.0	Beverly Dr	Elm St
East San Carlos Ave	IIIB	0.3	Old County Rd	Industrial Rd
Arroyo Ave	III	0.8	Tarmack Ave	El Camino Real
Cedar St	III	1.9	Hull Dr	North City Limits
Old County Rd	III	1.2	North City Limits	Terminal Wy
San Carlos Ave	III	0.2	Elm St	Laurel St
Planned				
Bransten-Commercial Path	I	0.3	Old County Rd	Industrial Rd
Pulgas Creek Path	I	0.3	Old County Rd	Industrial Rd
Commercial St	II	0.3	Old County Rd	Industrial Rd
Arroyo Ave	IIIB	0.8	Tamarack Ave	El Camino Real
El Camino Real	IV	2.0	North City Limits	South City Limits
Old County Rd	IV	2.0	North City Limits	South City Limits
Industrial Rd	IV	2.1	North City Limits	South City Limits

Source: *City of San Carlos Bicycle and Pedestrian Master Plan*, 2020

Transit Facilities

During the 2020-2022 Coronavirus (COVID-19) Global Pandemic, transit agencies throughout the San Francisco Bay Area significantly reduced the amount of service provided. This included the number of routes and bus stops serviced, the frequency of buses and trains, and the truncation of service hours. The addition of project-generated transit demand is generally expected to incrementally increase the use of transit within the study area. The additional transit trips would be spread out during the day and over several SamTrans bus lines as well as the Caltrain rail service. The following is a summary of existing transit services, and it is noted that transit providers regularly update services in response to changing levels of transit demand.

San Mateo County Transit District (SamTrans)

The San Mateo County Transit District (SamTrans) provides fixed route bus service in San Carlos and throughout San Mateo County. SamTrans buses are equipped with bike racks that can carry two bicycles. Bike rack space is on a first come, first served basis and riders must be able to load and unload their bicycles without any help from the operator. Two additional bicycles are allowed on SamTrans buses at the discretion of the driver and depending on passenger loads.

Route 295 provides service between the Hillsdale area (Hillsdale Shopping Center and Hillsdale Caltrain Station) and Redwood City Transit Center and primarily travels along Alameda de las Pulgas and El Camino Real. This route operates on weekdays only, from approximately 7:00 a.m. to 8:00 p.m. with 60-minue headways. The bus stop nearest the project site is near the intersection of El Camino Real/Arroyo Avenue, located approximately 0.2 miles from the project site.

Route 397 provides service between San Francisco and Palo Alto with stops on El Camino Real in San Carlos. Route 397 operates seven days a week with 60-minute headways. The northbound route operates three buses between 1:04 a.m. and 2:46 a.m., while the southbound route operates four buses from 1:30 a.m. to 4:15 a.m. This route does not operate during either the midday or evening periods. The bus stop nearest the project site is at the intersection of El Camino Real/Brittan Avenue, located approximately 0.2 miles from the project site.

Route 398 provides service between San Francisco and Redwood City along El Camino Real within San Carlos. Route 398 operates with four buses traveling northbound departing the Redwood City Transit Center at 6:00 a.m., 7:50 a.m., 5:50 p.m. and 7:45 p.m. and a southbound service departing the San Francisco Transbay Terminal at 7:48 a.m., 9:48 a.m., 4:48 p.m. and 5:48 p.m. each weekday. The bus stop nearest the project site is at the intersection of El Camino Real/Brittan Avenue, located approximately 0.2 miles from the project site.

Route ECR provides service between Daly City and Palo Alto with stops on El Camino Real within the study area. Route ECR operates seven days a week with 15- to 30-minute headways between 4:00 a.m. and 1:30 a.m. on weekdays and 30-minute headways between around 5:00 a.m. and 2:00 a.m. on weekends. The bus stop nearest the project site is at the intersection of El Camino Real/Brittan Avenue, located approximately 0.2 miles from the project site.

Redi-Wheels and RediCoast, also known as paratransit or door-to-door service, are available for those who are unable to independently use the transit system due to a physical or mental disability. Redi-Wheels is designed to serve the needs of individuals with disabilities within SamTrans and the greater San Carlos area. Trips must be scheduled at least one day in advance.

Caltrain

Caltrain is the commuter rail line serving the San Francisco Peninsula. It connects San Carlos with San Francisco to the north and San Jose and Gilroy to the south. On weekdays there are 61 trains servicing the San Carlos Station in the northbound and southbound directions, 15 of which provide limited-stop, express service. On weekends there are 32 trains that stop at the station in each direction. The San Carlos Caltrain Station is located just east of El Camino Real/San Carlos Avenue, approximately 0.3 miles from the project site. Both bicycle racks and lockers

are provided at the San Carlos station. Bicycle racks are available on a first-come-first-served basis, while lockers must be reserved. Furthermore, paid vehicle parking is available at the station for riders.

On-Demand Transportation Services

On-demand private vehicle services (e.g., taxi, Uber, Lyft, etc.) are available in the study area 24 hours a day. These vehicles can be used for trips within the study area and farther destinations, including nearby airports and major transit stations.

Effect on East San Carlos Residential Streets

The City has been working with the East San Carlos Neighborhood to quantify and forecast existing and future cut-through traffic and identify potential measures to reduce such traffic as requested by concerned neighbors. That process will continue separate from review of the project application.

The City of San Carlos Neighborhood Traffic Management Program (NTMP) defines a local street as a low-speed, low-volume roadway that provides direct and full access to abutting land uses. These streets typically have two travel lanes with parking on both sides and daily traffic volumes of less than 1,200 vehicles per day.

The proposed project would generate 3,741 new daily vehicle trips, including 506 a.m. and 496 p.m. trips during the peak hours. In addition, the project would be required to implement a TDM program that would reduce the number of trips by at least 20 percent. Based on the projected trip distribution pattern and likely paths of travel, 61 percent of project trips would be expected to use the segments of either Old County Road or Industrial Road between Holly Street and Commercial Street to access the project site. Of these project trips, 4.3 percent would be expected to use local residential streets to travel between Old County Road and Industrial Road within the area bounded by Old County Road, East San Carlos Avenue, Industrial Road, and Terminal Way, even in the absence of measures under consideration to reduce residential cut-through traffic. Based on the volume of added traffic in this area the proposed project would not substantially increase hazards due to a geometric design feature, nor result in inadequate emergency access. Further, the addition of project-related traffic to existing volumes along these local streets is not predicted to increase volumes such that they would exceed the 1,200 vehicles per day that defines a local street. Therefore, the addition of project-related vehicle trips to local streets would not conflict with the standards described in the NTMP.

Moreover, in February 2023 the San Carlos City Council approved implementation of a "Slow Streets Program" along multiple streets in the Greater East Side Neighborhood which would include the addition of physical barriers intended to discourage cut-through traffic.

Finding - Pedestrian, bicycle, and transit facilities would be adequate to serve the proposed project, based on the existing and proposed network of pedestrian, bicycle and transit facilities within the study area. Patrons of the site could use this connected network of facilities to access nearby amenities such as the San Carlos Caltrain Station and the downtown district of San Carlos. See discussion under topic b below related to planned bikeway improvements and safety of transitions as the existing Class II and Class III bike facilities along Old County Road are upgraded to a Class IV Bikeway incrementally. The addition of project-generated demand is generally expected to incrementally increase the use of transit within the study area. The project would not impact transit facilities since the additional transit trips would be spread out during the day, and also over several SamTrans bus lines and Caltrain rail service. The project would be close to transit stops and is expected to generate trips via transit services. The project is consistent with the City's General Plan, Bicycle and Pedestrian Master Plan and the East Side Innovation District Vision Plan. Additionally, the project would not conflict with any current programs, plans, ordinances, or policies addressing the circulation system. Therefore, the proposed project would be expected to have a less-than-significant impact on local programs, plans, ordinances, or policies.

b. Would the Project conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision(b)?

Senate Bill (SB) 743 established the potential increase in Vehicle Miles Traveled (VMT) associated with a project as the basis for determining transportation impacts of development projects. Guidance provided by both the

California Governor's Office of Planning and Research (OPR) in the publication *Transportation Impacts (SB 743) CEQA Guidelines Update and Technical Advisory* (2018) and the City of San Carlos' *Transportation Significance Criteria Implementing Vehicle Miles Traveled* (2020) was used.

OPR proposes that an office project exceeding a level of 15 percent below the existing regional VMT per service population may indicate a significant transportation impact. For the purposes of this analysis, Research and Development (R&D) and Life Science uses are considered similar to office projects, as they are employment uses with similar travel patterns. The OPR publication, as well as CEQA Guidelines §15064.3(b)(1), also indicate that "generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact." However, the City of San Carlos VMT policy states that office, commercial and mixed-use projects that are within one-half mile of transit have the potential to increase VMT, depending on the land use, scale of the project, and tenant. As such, office, commercial and mixed-use projects that generate more than 100 daily trips should be evaluated.

According to the walkshed map provided with the City's Transportation Significance Criteria, this project site is located within both the half-mile walkshed of the El Camino Real transit corridor and also the designated Priority Development Area and Transit Priority Area surrounding the San Carlos Caltrain Station. While this would qualify the project for screening under the OPR guidance, City policy requires consideration of VMT impacts for all office, commercial and mixed-use projects that generate more than 100 daily trips. Therefore, a quantified VMT analysis was prepared.

The C/CAG-VTA Bi-County model was used for the VMT analysis, consistent with City and County guidelines for preparation of travel forecasts that include both VMT and trip estimates for the proposed project. Based on data from this model, San Mateo County has an existing Countywide average VMT for 2019 of 17.0 miles per service population. Applying the previously described guidance, an office project generating a VMT that is 15 percent or more below this value, or 14.5 miles per service population or less, would have a less-than-significant VMT impact.

This project as forecasted by the C/CAG-VTA Bi-County model would have an average VMT of 15.2 miles per service population for the 2040 cumulative plus project scenario, which is greater than the significance threshold of 14.5. A Transportation Demand Management (TDM) program includes measures which can reduce the need for vehicle travel by employees of the proposed project. The TDM program proposed for this project, as required per City of San Carlos Municipal Code Section 18.25.03, requires that a TDM plan be implemented with this project that would reduce project trips by at least 20 percent. An estimated VMT reduction attributable to a TDM plan could not be determined since a compliant project specific TDM plan was not available at the time of preparation of this report. However, according to guidance from CAPCOA in their publication titled "*Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity*", there is roughly a 1:1 relationship between the percentage of trip reduction and percentage of VMT reduction for this type of office-based employment project.

Given CAPCOA guidance, because the proposed project is required to implement a TDM plan and achieve at least a 20 percent trip reduction, this analysis assumes there would be a corresponding similar reduction in project-generated VMT. As such, successful implementation of the required TDM program would result in the proposed project reducing its VMT to a less-than-significant level, defined as being 14.5 or lower. A summary of the VMT analysis findings is provided in Table 4. A summary of the VMT analysis is provided in Appendix A.

Table 4 – Vehicle Miles Traveled Analysis Summary

VMT Metric	Baseline VMT Rate	Significance Threshold (15% Below Baseline)	Project VMT Rate	Project VMT Rate (with TDM)	Significance
Employment-Based VMT per Service Population	17.0	14.5	15.2	12.2	Less than Significant

Note: VMT Rate is measured in VMT per Service Population; Project VMT Rate is 15.2 less 20% (approximately equal to the required 20% TDM plan trip reduction) = 12.2

Finding – While a compliant project specific TDM Plan was not available at the time of preparation of this report, estimation of the resultant VMT based on required TDM Plan trip reductions demonstrates that it can be assumed to be well within target VMT reductions. The project, including implementation of a TDM Plan that reduces the project VMT to 14.5 VMT per service population (15 percent below the Countywide average of 17.0) or less, would have a less-than-significant VMT impact.

c. Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Detailed design of the site and adjacent roadways continues to be refined and is undergoing review by City staff and project stakeholders. The finalized design would have to meet or exceed City design standards in terms of placement and configuration of pedestrian and bicycle pathways and also vehicle access roads and approach lanes, and therefore would not increase hazards due to a geometric design feature or incompatible use.

Proposed Project Improvements to Pedestrian and Bicycle Facilities

The project includes the following proposed changes to the existing pedestrian and bicycle network. New facilities are required to be designed and constructed to current City standards to accommodate both pedestrians and bicyclists. All proposed improvements would be within the public right-of-way and would enhance pedestrian and bicycle safety, comfort, and mobility within the vicinity of the project site, specifically providing improved and continuous access between the project site and transit stops including the San Carlos Caltrain Station and SamTrans bus stops along El Camino Real. Acceptable completion of these planned sidewalks and bikeways would improve the pedestrian and bicycle facilities already present in the study area. A summary of these changes is provided below.

- Demolish and reconstruct the sidewalks along the project frontages on Bransten Road and Old County Road. This would include ADA-compliant curb ramps and improved sidewalks.
- Construct the portion of the planned Class IV Bikeway on the western side of Old County Road between Bransten Road and Terminal Way.
- Establishment of a bicycle crosswalk spanning Old County Road at the intersection of Old County Road/Terminal Way that connects the planned Class IV Bikeway on the westside of Old County Road with the eastside of Old County Road and Terminal Way. The crosswalk would be equipped with a Rectangular Rapid Flashing Beacon (RRFB) intended to raise awareness of the presence of users within the crosswalk to motorists when activated.

Detailed design of these pedestrian and bicycle facilities including the transition between the Class IV Bikeway to Class III bike route at the intersection of Old County Road and Terminal Way is currently underway, and therefore is not included with this evaluation. Upon completion of the City's review and refinement process, the design of this bicycle facility transition is not expected to substantially increase hazards due to a geometric design feature or incompatible use.

Construction of the Class IV Bikeway along Old County Road between Bransten Road and Terminal Way is part of this project and is a required element of the Conditions of Approval. Completion of this portion of the bikeway would also contribute to the overall goals of the City of San Carlos Bicycle and Pedestrian Master Plan which indicate a Class IV Bikeway is planned along Old County Road.

Site Access

The site is currently accessed by four driveways (one on Old County Road and three on Bransten Road). The proposed project would remove all four existing driveways and construct two new full access driveways. Both driveways would be located with access to Bransten Road at approximately 370 and 490 feet east of Old County Road. Each driveway would provide full access allowing for all traffic movements.

Pedestrian access to the building would be provided via various pedestrian entrances facing Old County Road and Bransten Road. The network of walkways would provide access between the main building and parking structure.

Sight Distance

At driveways, a substantially clear line of sight should be maintained between the driver of a vehicle waiting to enter the street and the driver of an approaching vehicle. Sight distances along Bransten Road at the proposed driveways were evaluated based on sight distance criteria contained in the *Highway Design Manual* published by Caltrans. The recommended sight distances for driveway approaches are based on stopping sight distance and use the approach travel speed as the basis for determining the recommended sight distance. Based on the 25-mph speed limit along Bransten Road, the minimum stopping sight distance required would be 150 feet.

Bransten Road is relatively flat and straight with favorable sight lines along the project frontage. A review of publicly available aerial photographs shows that sight distances of at least 300 feet in each direction at each proposed project driveway location, which would satisfy the requirements for a road with a prevailing speed of up to 40 miles per hour and are therefore adequate.

For a motorist traveling along eastbound Bransten Road intending to turn left into either project driveway, the stopping sight distance for a following driver also extends at least 300 feet, which also exceeds the required distances and is more than adequate for the posted speed limits.

Finding - Sight lines would be adequate at each of the proposed project vehicle access points. New pedestrian facilities would be designed to meet applicable safety parameters. With the incremental completion of the project's proposed Old County Road bikeway improvements, the project would not result in significant impacts with respect to design hazards or incompatible uses.

d. Would the Project result in inadequate emergency access?

Emergency Access

The project's driveways and internal parking lot circulation network would be designed to meet current City standards and so can be expected to accommodate the access requirements for passenger vehicles. Vehicle access is provided within the internal parking lot via a network of connected drive aisles. These aisles appear to contain sufficient width to accommodate two-way traffic operations for circulating vehicles, as well as parking maneuvers to/from perpendicular parking spaces, and this will be confirmed during the City plan check process.

The *California Fire Code, Section 503.1.1*, states that all portions of the facility and all portions of the exterior walls on the first story of the building shall be within 150 feet of a public street or qualified fire apparatus access road. The proposed building would satisfy this requirement since it would be located within 150 feet of two public streets: Old County Road and Bransten Road. Emergency response vehicles would be able to service the site via the use of ladder trucks parked on these streets. Since all roadway users must yield the right-of-way to emergency vehicles when using their sirens and lights, the added project-generated traffic would not impact access for emergency vehicles.

Finding – The project would result in a less-than-significant impact regarding adequacy of emergency access since all driveways and internal roadways would be designed to accommodate emergency vehicles and all roadway users must yield to emergency vehicles when using their lights and sirens.

Conclusions

- The proposed project is expected to generate 3,295 daily trips; of which 452 would be during the a.m. peak hour and 428 would occur during the p.m. peak hour. When the trips from the existing uses are taken into account, the site would generate 3,067 net new daily trips, including 414 during the morning peak hour and 408 during the evening peak hour.

- Pedestrian, bicycle, and transit facilities would be adequate to serve the project as proposed based on the comprehensive network of pedestrian, bicycle and transit facilities that exist within the study area. The project is consistent with the City's General Plan, Bicycle and Pedestrian Master Plan and the East Side Innovation District Vision Plan. Additionally, the project would not conflict with any current programs, plans, ordinances, or policies addressing the circulation system. Therefore, the proposed project would be expected to have a less-than-significant impact on local programs, plans, ordinances, or policies.

- The proposed project, including implementation of a TDM Plan which successfully reduces the project VMT to 14.5 or lower, would have a less-than-significant transportation impact on vehicle miles traveled since the anticipated VMT per service population would be lower than 15 percent below the Countywide average of 17.0.

- Sight lines would be adequate at each of the proposed project access points. New pedestrian and bicycle facilities would be designed to meet applicable safety parameters.

- Emergency access and circulation would function acceptably, and traffic from the proposed development would be expected to have a less-than-significant impact on emergency response times.

Study Participants and References

Study Participants

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Appendix A

VMT Analysis Summary

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Table 1: VMT Results

Location	Population	Employment	VMT_HH	VMT_EMP	VMT Per Service	VMT/Service Pop	Mitigated VMT (15% below)	Mitigated VMT Required by TDM Plan
2019 - No-Project & 831 Old County Rd Project								
Old County TAZ 2013	-	-	-	-	-	-	-	-
City	32,432	20,955	511,366	398,674	910,040	17.0		
County	781,121	383,605	12,375,840	7,468,941	19,844,781	17.0	14.5	
Region	7,738,947	3,848,620	120,601,346	66,743,539	187,344,885	16.2		
2040 - No-Project								
Old County TAZ 2013	-	-	-	-	-			
City	32,526	18,934	535,440	373,655	909,095	17.7		
County	928,919	478,336	14,027,506	9,760,791	23,788,297	16.9		
Region	9,662,080	4,717,488	154,521,640	83,687,638	238,209,278	16.6		
2040 - 803 Old County Rd - Project (TAZ 2013)								
Old County TAZ 2013	-	1,085	0	16,544	16,544	15.2	0.8	830 (5%)
City	32,526	25,618	526,955	493,441	1,020,395	17.5		
County	928,917	485,008	13,994,807	9,890,024	23,884,831	16.9		
Region	9,662,080	4,723,088	154,257,511	83,587,956	237,845,468	16.5		