

CYPRESS POINT AFFORDABLE HOUSING COMMUNITY

ENVIRONMENTAL IMPACT REPORT

SCH NO. 2022120189

SUBMITTED TO

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August 2023

PREPARED BY

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DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE CYPRESS POINT AFFORDABLE HOUSING COMMUNITY PROJECT, SAN MATEO COUNTY, CALIFORNIA

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Acronyms and Abbreviations

Acronym	Term
°F	degrees Fahrenheit
AAQS	ambient air quality standards
AB	Assembly Bill
ADA	Americans with Disabilities Act
amsl	above mean sea level
APN	Assessor's Parcel Number
ATCM	Airborne Toxic Control Measure
BAAQMD	Bay Area Air Quality Management District
BAU	business-as-usual
BIR	biological impact report
BMP	best management practice
BSC	Building Standards Commission
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy [standards]
CalEEMod	California Emission Estimator Model
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCC	California Coastal Commission
CCIC	Central Coast Information Center
CCR	California Code of Regulations
CD	Coastal Development District
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CH_4	methane
CHRIS	California Historical Resources Information System
CMP	Congestion Management Plan
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level

Acronym	Term
CNG	compressed natural gas
CNPS	California Native Plant Society
CO	carbon monoxide
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CWA	Clean Water Act
CY	cubic yards
dB	decibel
SMA	drainage management areas
EIR	environmental impact report
EISA	Energy Independence and Security Act
EMFAC	EMission FACtors [model]
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	federal Endangered Species Act
EV	electric vehicle
FAA	Federal Aviation Administration
GHG	greenhouse gas
gpm	gallons per minute
GWP	global warming potential
HCP	Habitat Conservation Plan
HFC	hydrofluorocarbon
HM	hydromodification management
HRA	health risk assessment
IPaC	Information for Planning and Consultation
IS/NOP	Initial Study/Notice of Preparation
ITP	Incidental Take Permit
LCP	Local Coastal Program
LED	light-emitting diode
LEV	Low-Emission Vehicle
LID	Low Impact Development
LNG	liquefied natural gas
MBTA	Migratory Bird Treaty Act
MidPen	MidPen Housing Corporation
MMRP	Mitigation Monitoring and Reporting Program
$MMTCO_2e$	Million Metric Tons of Carbon Dioxide Emissions
mph	miles per hour
MRP	Municipal Regional Permit
MWSD	Montara Water and Sanitary District

Acronym	Term
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	California Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NEPA	National Environmental Policy Act
NF_3	nitrogen trifluoride
NHSTA	National Highway Traffic Safety Administration
NO	nitrogen oxide
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NOAA Fisheries	National Oceanic and Atmospheric Administration National Marine Fisheries Service
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O_3	ozone
Pb	lead
PFC	perfluorocarbon
PG&E	Pacific Gas and Electric Company
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
ppm	parts per million
PRC	Public Resources Code
prject	Cypress Point Affordable Housing Community Project
PUD	Planned Unit Development
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SAFE	Safer Affordable Fuel-Efficient [Vehicles Rule]
SB	Senate Bill
SCH	State Clearinghouse
SF_6	sulfur hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SIP	State Implementation Plan
SO_2	sulfur dioxide
SP	service population
SR	State Route
SSC	Species of Special Concern

Acronym	Term
SWCA	SWCA Environmental Consultants
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCM	Transportation Control Measure
TDM	transportation demand management
US	U.S. Route
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USEIA	U.S. Energy Information Administration
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles traveled
VOC	volatile organic compound
WDR	waste discharge requirement
WHO	World Health Organization
ZEV	zero-emission vehicle
ZNE	zero net energy

EXECUTIVE SUMMARY

1. PURPOSE OF THE EIR

The County of San Mateo (County) received a development application from MidPen Housing Corporation (MidPen) for the proposed Cypress Point Affordable Housing Community Project (project). The project proposes the development of 70 affordable housing units and a manager's unit on an 11.02-acre parcel in the unincorporated community of Moss Beach.

This draft environmental impact report (EIR) evaluates the potential environmental effects of the proposed project with the intention to provide the public, relevant public agencies, and stakeholders information about the proposed project and its potential environmental effects. For the purposes of compliance with the California Environmental Quality Act (CEQA), this document evaluates the project under CEQA (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.).

2. PROJECT LOCATION

The project site is located on an 11.02-acre parcel adjacent to the northeast corner of Carlos Street and Sierra Street in the unincorporated community of Moss Beach, San Mateo County, California. The parcel is designated as Assessor's Parcel Number (APN) 037-022-070. The project site is bounded by vacant land to the southwest (towards State Route 1), residential properties along 16th Street to the northwest (in the community of Montara), and residential properties along Carlos, Sierra, and Lincoln Streets on the other two sides. Individual houses along Stetson Street and Buena Vista Street also border the property.

3. PROJECT BACKGROUND AND OVERVIEW

The project involves development of 71 residential units on an 11.02-acre parcel within the unincorporated community of Moss Beach in San Mateo County, California. The project requires amendment of the General Plan to redesignate the parcel from Medium-High Density Residential to Medium Density Residential.

Public outreach began in 2016, when MidPen conducted voluntary outreach to understand community concerns prior to applying to the County for a pre-application workshop. MidPen held three community open houses in 2016 (on March 16, July 11, and August 18) to discuss project conceptualization.

San Mateo County sponsored a public workshop on September 20, 2017, from 6:00 to 8:00 p.m. at the El Granada Elementary School in El Granada, California. Consistent with Section 6415.4 of the County of San Mateo Zoning Code, the purpose of the facilitated public workshop was to allow community members and public agency representatives the opportunity to provide project input on the pre-application and prior to the preparation of final development plans.

Community members had opportunities to provide input on September 27, 2017, at a meeting of the Midcoast Community Council (an elected advisory body representing the community where the project is located), and at San Mateo County Planning Commission hearings on January 22, 2020, and June 10, 2020. Public comment was heard during a Board of Supervisors hearing on July 21, 2020.

4. PROJECT OBJECTIVES

MidPen seeks to achieve the following objectives by undertaking the proposed project and provide affordable housing on the coastal portion of San Mateo County:

1. Provide a significant number of low-income affordable housing units in a vibrant, safe, well-designed community that respects the coastal character of the region, consistent with the San Mateo County Housing Element Adequate Site Inventory.
2. Provide affordable housing in the region at cost-effective densities that are competitive for financing.
3. Address housing needs of households, families, and workers in the Midcoast and surrounding region.
4. Provide housing for a diverse range of low-income workers and families.
5. Improve the jobs/housing balance and jobs/housing fit in the region by providing affordable dwelling units near coastal jobs.
6. Provide informal recreational opportunities for residents in the region and the general public by providing access to a trail on undeveloped portions of the site.
7. Be consistent with the character of the surrounding neighborhood by adhering to the existing development guidelines to the extent feasible.

5. SIGNIFICANT ENVIRONMENTAL IMPACTS IDENTIFIED

Impacts of the proposed project and alternatives have been classified using the categories described below:

- **Significant, unavoidable, adverse impacts:** Significant impacts that cannot be fully and effectively mitigated. No measures could be taken to avoid or reduce these adverse effects to insignificant or negligible levels.
- **Significant, but mitigable impacts:** These impacts are potentially similar in significance to those of significant, unavoidable, adverse impacts, but can be reduced or avoided by the implementation of mitigation measures.
- **Less than significant impacts:** Mitigation measures may still be required for these impacts as long as there is rough proportionality between the environmental impacts caused by the project and the mitigation measures imposed on the project.

The term “significance” is used throughout the EIR to characterize the magnitude of the projected impact. For the purpose of this EIR, a significant impact is a substantial or potentially substantial change to resources in the local proposed project area or the area adjacent to the proposed project. In the discussions of each issue area, thresholds are identified that are used to distinguish between significant and insignificant impacts. To the extent feasible, distinctions are also made between local and regional significance and short-term versus long-term duration. Where possible, measures have been identified to reduce project impacts to less than significant levels. CEQA requires that public agencies should not approve projects as proposed if there are feasible mitigation measures available which would substantially lessen the environmental effects of such projects (CEQA Statute §21002). Included with each mitigation measure are the plan requirements needed to ensure that the mitigation is included in the plans and construction of the project and the required timing of the action (e.g., prior to development of final construction plans, prior to commencement of construction, prior to operation, etc.).

The impacts and associated mitigation measures are shown in Table ES-1, Summary of EIR Impacts and Mitigation Measures. Table ES-1 includes all impacts, including those described in the EIR and those described separately in the initial study (see EIR Appendix B). This table should not be relied upon for a thorough understanding of the proposed project and its associated impacts and mitigation needs; instead it is presented for the reader as an overview of impacts and mitigation measures of the proposed project. Please refer to the relevant environmental topic sections in EIR Chapter 3, Environmental Impacts Analysis, and the initial study (see EIR Appendix B) for a thorough discussion and analysis of project-level and cumulative environmental impacts and the mitigation measures identified to address those impacts, as well as the basis for any proposed improvement measures.

The impact summary table describes and classifies each impact, lists recommended mitigation when applicable, and states the level of residual impact (i.e., impact after implementation of mitigation).

Table ES-1. Summary of EIR Impacts and Mitigation Measures

Impacts	Mitigation Measures	Residual Impacts
AESTHETICS		
AES-1: The project could have a substantial adverse effect on a scenic vista, views from existing residential areas, public lands, water bodies, or roads.	No mitigation required.	Less than significant
AES-2: The project could substantially damage or destroy scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No mitigation required.	Less than significant
AES-3: The project could, in nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings, such as significant change in topography or ground surface relief features, and/or development on a ridgeline. (Public views are those that are experienced from publicly accessible vantage point.) In an urbanized area, the project could conflict with applicable zoning and other regulations governing scenic quality.	No mitigation required.	Less than significant
AES-4: The project could create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	No mitigation required.	Less than significant
AES-5: The project could be adjacent to a designated Scenic Highway or within a State or County Scenic Corridor	No mitigation required.	Less than significant
AES-6: If within a Design Review District, would the project conflict with applicable General Plan or Zoning Ordinance provisions?	No mitigation required.	Less than significant
AES-7: Would the project visually intrude into an area having natural scenic qualities?	No mitigation required.	Less than significant
AIR QUALITY		
Impact AQ-1: Would the project conflict with or obstruct implementation of the applicable air quality plan	No mitigation required.	Less than significant
Impact AQ-2: Would the project 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?	MM-AQ-2a Implement BAAQMD BMPs During any construction period ground disturbance, the applicant shall ensure that the general contractor implements measures to control dust and exhaust. MidPen would include terms in all construction contracts related to the Cypress Point project that require contractors to implement the following BMPs: • Exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, unpaved access roads) shall be watered with non-potable water two times per day. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered.	Less than significant

Impacts	Mitigation Measures	Residual Impacts
	• 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. • All roadways, driveways, and sidewalks shall be paved as soon as possible. • Idling times shall be minimized either by shutting equipment off when not in use or by reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure in Title 13, Section 2485 of the CCR). Clear signage shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator. • A publicly visible sign shall be posted with the telephone number and person to contact at the City regarding dust complaints. This person shall respond and take corrective action within 48 hours of a complaint or issue notification. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations. • All vehicle speeds on unpaved roads shall be limited to 15 miles per hour. • Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. • 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.	
	MM-AQ-2b Use Low Diesel Particulate Matter Exhaust Construction Equipment Prior to initiating any construction activities, MidPen or their contractors shall develop a plan demonstrating that the off-road equipment used on-site to construct the project would achieve a fleet-wide average of at least 78% reduction in DPM emissions compared to the emissions calculated for the project without mitigation. One feasible plan to achieve this reduction would include the following: all mobile diesel-powered off-road equipment larger than 25 horsepower and operating on-site for more than 2 days shall meet, at a minimum, EPA particulate matter emissions standards for Tier 4 engines or equivalent. Note that the construction contractor could use other measures to minimize construction period DPM emissions to reduce the estimated cancer risk below the thresholds. The use of equipment that meets EPA Tier 2 standards and includes CARB-certified Level 3 Diesel Particulate Filters or alternatively fueled equipment (i.e., non-diesel) would meet this requirement. Other measures may be the use of added exhaust devices, or a combination of measures, provided that these measures are approved by the County and demonstrated to reduce community risk impacts to less than significant.	Less than significant

Impacts	Mitigation Measures	Residual Impacts
AQ-3: Would the project expose sensitive receptors to substantial pollutant concentrations, as defined by the Bay Area Air Quality Management District?	MM-AQ-2a and MM-AQ-2b	Less than significant with mitigation
AQ-4: Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people	No mitigation required.	Less than significant
Impact C-AQ-1: Would the impacts of the proposed project, in combination with other past, present, and reasonably foreseeable future projects, contribute to a cumulative impact related to air quality?	No mitigation required.	Less than significant
BIOLOGICAL RESOURCES		
Impact BIO-1: Would the project have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	MM-BIO-1. The following general measures shall be implemented during the project: a) Prior to the start of the project, all construction crew members, including the project stormwater inspector, will attend an environmental awareness training presented by a qualified biologist. A training brochure describing special-status species, project avoidance and minimization measures, key contacts, and potential consequences of impacts to special-status species and potentially jurisdictional features will be distributed to the crew members during the training. During the training the qualified biologist will review with the project stormwater inspector the requirement of weekly inspection of wildlife exclusion fencing as described in MM-BIO-1m. Trainees will sign an environmental training attendance sheet. b) If any animals are encountered during project activities, said animals shall be allowed to leave the work area unharmed. Animals shall not be picked up or moved in any way. c) During project activities, all trash that may attract predators shall be properly contained, removed, and disposed of regularly. Following construction, trash/construction debris shall be removed from work areas. d) Construction materials, including, but not limited to, wooden pallets, best management practices (BMPs), equipment, or other materials, that are left on the ground for more than 24 hours shall be inspected before and during moving of the materials to prevent potential impacts to animals that may have utilized the materials as a temporary refuge. Plastic pipes, if used, shall be covered with material to prevent animals from entering the pipes. e) The number of access routes, number and size of staging areas, and total area of the activity shall be limited to the minimum necessary to complete the project, and their boundaries shall be clearly demarcated.	Less than significant with mitigation

Impacts	Mitigation Measures	Residual Impacts
	f) Disturbance to vegetation shall be kept to the minimum necessary to complete the project activities. To minimize impacts to vegetation, a qualified biologist shall work with the contractor to designate the work area and any staging areas and clearly delineate areas that shall be avoided with exclusion fencing (e.g., high-visibility orange construction fencing, silt fence, ERTEC fencing, or other similar material). The following measure shall be implemented to minimize impacts to special-status plant species: g) Prior to the start of construction, a preconstruction survey for Choris's popcorn flower shall be conducted during the appropriate blooming period. Choris's popcorn flower occurrences within 50 feet of the project work areas shall be flagged for avoidance by the project. If the project cannot avoid impacts to this species, the project Proponent shall consult with the CDFW on appropriate measures and/or actions to protect or salvage the plant(s) prior to beginning construction. The following measures shall be implemented to minimize impacts to special-status amphibians and reptiles: h) A qualified biological monitor shall be present during all initial ground-disturbing activities, including grubbing and/or vegetation removal and installation of the wildlife exclusion fence. i) A preconstruction survey for California red-legged frog shall be conducted within the project site immediately prior to ground disturbance. If no individuals are detected, then construction-related activities may proceed provided project avoidance and minimization measures in this document are adhered to. If adults are present in the construction area, work shall be stopped until individuals are allowed to disperse on their own volition, or the species is relocated by a qualified biologist with permission to handle California red-legged frog. j) Disturbance to vegetation shall be kept to the minimum necessary to complete the project activities. To minimize impacts to vegetation, a qualified biologist shall work with the contractor to designate the work area and any staging areas and clearly delineate areas that shall be avoided with exclusion fencing (e.g., high-visibility orange construction fencing, silt fence, ERTEC fencing, or other similar material). k) Ground-disturbing construction activities (e.g., grubbing or grading) should occur during the dry season (June 1–October 15) to facilitate avoidance of California red-legged frog. Regardless of the season, no ground-disturbing activities shall occur within 24 hours following a significant rain event (greater than ¼ inch in a 24-hour period). Following a significant rain event and the 24 hour drying-out period, a qualified biologist would conduct a preconstruction survey for California red-legged frog prior to the restart of any project ground-disturbing activities.	

Impacts	Mitigation Measures	Residual Impacts
	l) To avoid impacts to California red-legged frog and other sensitive wildlife species, a wildlife exclusion fence (e.g., silt fence, ERTEC fencing, or other similar material) shall be installed around the perimeter of the project, at the discretion of the qualified biologist. m) The wildlife exclusion fence shall be inspected by a qualified biologist or project stormwater inspector, who has received environmental awareness training from a qualified biologist, on a weekly basis to ensure that the fence is functioning as intended throughout the duration of construction activities that may impact California red-legged frog (e.g., ground disturbance, materials staging/parking required on the north side of the project site). Removal of the wildlife exclusion fence may be conducted at the discretion of a qualified biologist if ground-disturbing activities have been completed and remaining project activities would not impact California red-legged frog (i.e., only interior site buildout activities remain).	
Impact BIO-2: Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? (No Impact)	No mitigation required.	No Impact
Impact BIO-3: Would the project 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? (Less than Significant with Mitigation)	MM-BIO-3: Implement the following BMPs to prevent erosion and sedimentation to Montara Creek: a) Adhere to BMPs. Regardless of the season, construction shall adhere to SWRCB BMPs, and no ground-disturbing activities shall occur within 24 hours following a significant rain event (defined as greater than ¼ inch in a 24 hour period). b) Permanently Protect Exposed Surfaces. Before completion of the project, all exposed or disturbed surfaces shall be permanently protected from erosion with reseeding and landscaping. c) Cover and Secure Spoils. All spoils, such as dirt, excavated material, debris, and construction-related materials, generated during project activities shall be placed within the limits of the designated construction area. Spoils shall be covered or secured to prevent sediment from escaping. Once the spoil pile is no longer active, it shall be removed from the work area and disposed of lawfully at an appropriate facility. d) Stabilize Soils and Use BMPs. All exposed soils in the work area resulting from project activities shall be stabilized immediately following the completion of work to prevent erosion. Erosion and sediment control BMPs, such as silt fences, straw hay bales, gravel or rock-lined drainages, water check bars, and broadcast straw, can be used. BMPs shall be made of certified weed-free materials. Straw wattles, if used, shall be made of biodegradable fabric (e.g., burlap) and free of monofilament netting. At no time shall silt-laden runoff be allowed to enter any drainages or other sensitive areas.	Less than significant with mitigation

Impacts	Mitigation Measures	Residual Impacts
	e) Do Not Fuel Near Drainages. All fueling and maintenance of vehicles and other equipment and staging areas shall occur at least 100 feet from any drainages and other water features. Crew members shall ensure that contamination of habitat does not occur during such operations. Prior to the onset of work, the construction contractor shall prepare a plan to be approved by the County before construction begins to allow a prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and the appropriate measures to take should a spill occur.	
BIO-4: Would the project 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? (Less than Significant with Mitigation)	MM-BIO-4 Conduct Nesting Bird Surveys. If project activities, including grass mowing and tree trimming/removal, are conducted during nesting bird season (February 15–September 15), preconstruction nest surveys shall be conducted in and near the project site (within 250 feet for large raptors and 100 feet for all other birds) by a qualified biologist within 7 days of the start of construction. If nesting birds are identified during the preconstruction survey, then the project shall be modified (i.e., a no-work exclusion buffer of appropriate size [to be determined by the qualified project biologist] shall be erected around active nests) and/or delayed as necessary to avoid impacts to the identified nests, eggs, and/or young	Less than significant with mitigation
BIO-5: Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (including the County Heritage and Significant Tree Ordinances)?	MM-BIO-5: Tree Replacement and Maintenance Plan a) Plans affecting the trees should be reviewed by the consulting arborist with regard to tree impacts. These include, but are not limited to, site plans, improvement plans, utility and drainage plans, grading plans, landscape and irrigation plans, and demolition plans. b) Route underground services including utilities, sub-drains, water, or sewer around the Tree Protection Zone. For design purposes, the Tree Protection Zone trees shall be defined as the tree dripline. c) Any herbicides placed under paving materials must be safe for use around trees and labeled for that use. d) Do not lime the subsoil within 50 feet of any tree. Lime is toxic to tree roots. e) As trees withdraw water from the soil, expansive soils may shrink within the root area. Therefore, foundations, footings, and pavements on expansive soils near trees should be designed to withstand differential displacement. f) Fences are to remain until all grading and construction is completed. Where demolition must occur close to trees, such as removing curb and pavement, install trunk protection devices such as winding silt sock wattling around trunks or stacking hay bales around tree trunks. g) Trees to be removed shall be felled so as to fall away from Tree Protection Zone and avoid pulling and breaking of roots of trees to remain. If roots are entwined, the Consulting Arborist may require first severing the major woody root mass before extracting the trees, or grinding the stump below ground.	Less than significant with mitigation

Impacts	Mitigation Measures	Residual Impacts
	h) All contractors shall conduct operations in a manner that will prevent damage to trees to be preserved. i) Any brush clearing required within the Tree Protection Zone shall be accomplished with hand operated equipment. j) All grading within the dripline of trees shall be done using the smallest equipment possible. The equipment shall operate perpendicular to the tree and operate from outside the Tree Protection Zone. Any modifications must be approved and monitored by the consulting arborist. k) If injury should occur to any tree during construction, it should be evaluated as soon as possible by the consulting arborist so that appropriate treatments can be applied. Maintenance of Impacted Trees: l) Preserved trees will experience a physical environment different from that pre-development. As a result, tree health and structural stability should be monitored. Occasional pruning, fertilization, mulch, pest management, replanting and irrigation may be required. m) Provisions for monitoring both tree health and structural stability following construction must be made a priority. Inspect trees annually and following major storms to identify conditions requiring treatment to manage risk associated with tree failure.	
BIO-6: Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	IN INITIAL STUDY 2.4.f	No Impact
BIO-7: Would the project be located inside or within 200 feet of a marine or wildlife reserve?	No mitigation required.	No Impact
BIO-8: Would the project result in loss of oak woodlands or other non-timber woodlands?	No mitigation required.	Less than significant
C-BIO-1: Would the impacts of the proposed project, in combination with other past, present, and reasonably foreseeable future projects, contribute to a cumulative impact related to biological resources?	No mitigation required.	Less than significant

Impacts	Mitigation Measures	Residual Impacts
GEOLOGY AND SOILS		
GEO-1: Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: • 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 (Less than Significant) • Strong seismic ground shaking? (Less than Significant) • Seismic-related ground failure, including liquefaction and differential settling? (Less than Significant) • Landslides? (Less than Significant) • Coastal cliff/bluff instability or erosion? (Less than Significant)	No mitigation required.	Less than significant
GEO-2: Would the project result in substantial soil erosion or the loss of topsoil?	No mitigation required.	Less than significant
GEO-3: Would the project 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?	No mitigation required.	Less than significant
GEO-4: Would the project 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?	No mitigation required.	Less than significant
GEO-5: Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	IN INITIAL STUDY 2.7.e	No Impact
GEO-6: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	MM-GEO-1 Accidental Discovery of Paleontological Resources In the event that paleontological resources are exposed during project work, regardless of the location or geologic units in which the fossils are found, work in the immediate vicinity of the find must stop until a Qualified Professional Paleontologist (Qualified Paleontologist/Project Paleontologist/Principal Paleontologist), who meets or exceeds the SVP definition, can evaluate the significance of the find. Ground-disturbing activities may continue in other areas outside an appropriate buffer, usually 50 feet. If the paleontologist determines the discovery to be significant, the fossil(s) shall be salvaged.	Less than significant
C-GEO-1:Would the impacts of the proposed project, in combination with other past, present, and reasonably foreseeable future projects, contribute to a cumulative impact related to geology and soils?	No mitigation required.	Less than significant

Impacts	Mitigation Measures	Residual Impacts
GREENHOUSE GAS AND CLIMATE CHANGE		
GHG-1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	MM-TR-2 and MM-TR-4b	Less than significant
GHG-2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	No mitigation required.	Less than significant
GHG-3: Result in the loss of forestland or conversion of forestland to non-forest use, such that it would release significant amounts of GHG emissions, or significantly reduce GHG sequestering?	No mitigation required.	Less than significant
GHG-4: Expose new or existing structures and/or infrastructure (e.g., leach fields) to accelerated coastal cliff/bluff erosion due to rising sea levels?	No mitigation required.	Less than significant
GHG-5: Expose people or structures to a significant risk of loss, injury or death involving sea level rise?	No mitigation required.	Less than significant
GHG-6: Place structures within an anticipated 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, or that would impede or redirect flood flows?	No mitigation required.	No Impact
GHG-7: Place within an anticipated 100-year flood hazard area structures that would impede or redirect flood flows?	No mitigation required.	No Impact
C-GHG-1: Would the impacts of the proposed project, in combination with other past, present, and reasonably foreseeable future projects, contribute to a cumulative impact related to greenhouse gas emissions?	No mitigation required.	Less than significant
HAZARDS AND HAZARDOUS MATERIALS		
HAZ-1: Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	MM-HAZ-1a: Preconstruction Planning and Notification Prior to the start of construction activity involving below-groundwork (e.g., slab removal or excavating), a copy of the SMP shall be provided by the applicant to all contractors for review. MM-HAZ-1b: Implement Site-Specific Health and Safety Worker Requirements Prior to the start of construction, a HASP shall be prepared by the General Contractor. The General Contractor and any subcontractors shall be responsible for the health and safety of their own workers, as required by Cal-OSHA, including but not limited to preparation of their own HASP and Injury and Illness Prevention Plan (IIPP). The HASP(s) shall contain provisions for limiting and monitoring chemical exposure to construction workers, chemical and non-chemical hazards, emergency procedures, and standard safety protocols.	Less than significant

Impacts	Mitigation Measures	Residual Impacts
	The General Contractor shall submit the HASP to San Mateo County Environmental Health Services (EHS) at least 2 weeks prior to beginning construction field work. HASPs shall be updated as the project proceeds if unforeseen conditions are identified and necessitate modifications. MM-HAZ-1c: Construction Best Management Practices The following best management practices shall be implemented during construction. A. Site Control: Site control procedures shall be implemented by the General Contractor to control the flow of personnel, vehicles, and materials in and out of the site while working with potentially contaminated materials. To control the spread of the contaminants of potential concern, the following controls shall be taken by the General Contractor: a. The site perimeter shall be fenced by the General Contractor. b. Access and egress shall be controlled at selected locations. c. Signs shall be posted at each entrance by the General Contractor, instructing visitors to sign in at the project support area. B. Equipment Decontamination: Decontamination procedures shall be established and implemented by the General Contractor to reduce the potential for construction equipment and vehicles to transfer potentially impacted soil onto public roadways or other off-site areas. Gravel shall be placed at all site access points by the General Contractor and excess soil shall be removed from construction equipment using dry methods (e.g., brushing or scraping) prior to moving equipment off-site. C. Personal Protective Equipment: PPE shall be used to isolate workers from the contaminant of potential concern and physical hazards. The minimum level of protection for workers coming into direct contact with potentially contaminated materials is OSHA Level D PPE, listed below. The level of PPE shall be evaluated by the General Contractor on a continuing basis and modified, based upon conditions encountered at the site. The minimum PPE to be utilized during construction activities shall include the following: • Coveralls or similar construction work clothing; • Reflective safety vests; • Steel-toed boots; • Hard hat; • Work gloves, as necessary; • Safety glasses, as necessary; and • Hearing protection, as necessary.	

Impacts	Mitigation Measures	Residual Impacts
	MM-HAZ-1d: Dust Control Measures All demolition and construction activities that have the potential to create dust shall comply with specified dust control measures. The following actions are required by the General Contractor to adequately address dust control: • Construction areas shall be watered down at a sufficient frequency to eliminate visible dust. Additional watering may be required whenever the wind speed exceeds 15 miles per hour. Watering shall be performed in a manner such that runoff will not be produced at any time. • At the end of each workday, all streets, sidewalks, paths, and intersections where work has occurred shall be swept or vacuumed to remove visible soil(s). • All inactive soil piles expected to remain in-place for more than 7 days shall be covered with plastic sheeting or an equivalent tarp and properly secured to avoid wind damage. • Signage shall be placed along Lincoln, Sierra, Carlos, and Stetson Streets to inform surrounding community members of the hotline phone number(s) to call and report visible dust problems. • If proposed dust suppression efforts are unsuccessful, other measures shall be implemented to help control dust, such as wind breaks and/or dust curtains along street frontages, pending final resolution of necessary dust suppression efforts. • Materials contained in all loading trucks or metal bins carrying excavated materials shall be maintained below the sides and back of the truck or metal bin and shall be properly covered to avoid dust generation and drying of soils during transport. Excavated materials may be moistened prior to transport. • Drop heights shall be minimized while loading and unloading soil. • Truck tires shall be brushed prior to leaving the site, and truck loading areas will be routinely swept and cleaned to avoid creating visible dust. Soil handling activities shall be halted when the wind speed exceeds 25 miles per hour and visible dust is being created that cannot be mitigated by soil moistening. MM-HAZ-1e: Retain a Hazardous Materials Specialist 1. Prior to the start of construction activities, a Hazardous Materials Specialist shall be retained for consultation on the following: • Soil sampling analysis shall occur prior to any construction that would result in excavation within impacted soil areas near the community room and building 12, or residential buildings 15 and 16. Inspection may use a portable, x-ray fluorescence analyzer to field screen work area(s) during construction. Work area soils also may be monitored based upon visual observations.	

Impacts	Mitigation Measures	Residual Impacts
	• Soil sampling analysis shall occur if previously unidentified features of concern are encountered. These include USTs, sumps, clarifiers, former water supply wells or similar features of potential environmental concern. If any of the above-listed material is found to contain lead, such materials shall be disposed of in accordance with applicable federal, state, and local regulations regarding worker safety and the safe removal and disposal of lead-impacted soil. 2. Excavation Dewatering During construction, if groundwater is encountered or accumulates in any excavation(s) due to rainwater, the Hazardous Materials Specialist shall be notified, and such water shall be handled in accordance with the following protocols: • For relatively small volumes of water, a temporary storage tank (frac tank) shall be utilized to hold such groundwater on a short-term basis while testing and disposal is arranged. • If conditions require installation of a dewatering system or larger volume of groundwater requires handling, proper RWQCB permits shall be obtained. Required permit conditions shall be followed for discharge into the nearby existing sanitary sewer or stormwater system. 3. Soil Monitoring and Screening During construction, the Hazardous Materials Specialist shall be notified by the General Contractor of the discovery of the below conditions and shall be on-site during the duration of construction activities to perform screening and possible sample collection: • Discovery and removal of previously unidentified features of concern, such as USTs, sumps, clarifiers, former water supply wells or similar features of potential environmental concern. • Areas of suspected contaminated soils as deemed appropriate by the Hazardous Materials Specialist or as reported by the General Contractor. The General Contractor is responsible for notification to the applicant of suspected impacted soils or possible conditions of environmental concern. If a UST or other features are discovered, work shall be suspended in its immediate vicinity, and the applicant and Hazardous Materials Specialist will be notified. EHS will be notified of the proposed response actions. Should a UST be encountered, it shall be addressed under permit with the County.	

Impacts	Mitigation Measures	Residual Impacts
	4. Contaminated Soils Excavation Practices During construction activities if soil is encountered that is suspected of being contaminated, earthwork in these suspect area(s) shall be stopped and worker access to the suspect area(s) shall be restricted. Areas shall be cordoned off, followed by notifying the Hazardous Materials Specialist. Soils suspected as being contaminated shall be evaluated through screening and/or analytical testing performed by a qualified professional tant so that appropriate handling and disposal alternatives can be determined. Site development activities may result in a net export of soil. Such soil shall be properly characterized by a Hazardous Materials Specialist in accordance with applicable regulations prior to transportation from the site. If on-site reuse of potentially contaminated soil is desired, soil samples shall be collected from such soil by the Hazardous Materials Specialist and analyzed by the Hazardous Materials Specialist for the contaminant of potential concern. If the contaminant is detected, whether above or below regulatory agency screening levels, further investigation of such soils may be performed by the Hazardous Materials Specialist. For soils considered for reuse, if the contaminant(s) is detected below the applicable ESL, reuse of the soil may be deemed appropriate, at the discretion of the applicant. If the contaminant is detected above the applicable ESL and soils are being considered for reuse on-site, the results and conditions shall be communicated to EHS for concurrence. If soils are proposed to be hauled off-site, any impacted soils shall be profiled for proper disposal at landfill facilities under appropriate waste manifests. Prior to off-site disposal, additional soil samples may be collected and analyzed in accordance with the requirements of disposal facility(s). Soil suspected of being contaminated during excavation, shall be stockpiled or otherwise segregated from “clean” soil. Such soil shall be stockpiled on-site on top of and covered by an “impermeable” liner (e.g., 6-mil plastic sheeting) or other appropriate materials to reduce infiltration by rainwater and contamination of underlying soil while its disposition is being determined. Any such stockpiles shall be checked daily by the General Contractor to verify that they are adequately covered. 5. Excavation of Surplus Soil During construction, if excavation of surplus soil is proposed, surplus soils generated during grading activities shall be profiled by the Hazardous Materials Specialist for acceptance at appropriate facilities. Criteria for acceptance (e.g., concentrations of specific contaminants, odors, additional analytical testing, etc.) shall be determined by the acceptance facility(s) as part of the acceptance process.	

Impacts	Mitigation Measures	Residual Impacts
	6. Imported Fill Best Practices During construction, an evaluation of import fill materials shall be conducted by the Hazardous Materials Specialist and General Contractor to ensure such fill meets the geotechnical and environmental requirements for the proposed project. All selected sources of import fill shall have adequate documentation or certification to verify that the fill source is appropriate for the site. Documentation shall include detailed information on previous land use of the fill source, any Phase I ESAs performed and findings, and the results of any analytical testing performed. If no documentation is available or the documentation is inadequate or if no analytical testing has been performed, samples of the potential fill material shall be collected and analyzed by the Hazardous Materials Specialist prior to delivery of such soil to the site. The Hazardous Materials Specialist shall provide guidance to the General Contractor regarding acceptability of imported fill. No fill material shall be accepted if contaminant levels exceed current residential environmental screening goals and/or regional background concentrations. 7. Notifications During construction, notifications of the discovery of the contaminants in field screening, observations, or analytical results or other conditions of potential environmental concern shall be immediately made to the applicant, General Contractor, and Hazardous Materials Specialist. If analytical testing shows that the contaminant is above its applicable screening level, the applicant and the General Contractor shall be notified. The discovery of any subsurface features shall be reported to the Hazardous Materials Specialist, followed by notifying the County Environmental Health Services. If such discovery or conditions require notification to another General Contractor or subcontractors, then such notification shall be made by the General Contractor. 8. Documentation Upon completion of excavation and earthwork performed in accordance with the SMP, the Hazardous Materials Specialist shall prepare a report that includes a site map showing areas of excavation and import fill, sample locations, and tables summarizing data. The report shall include appendices with copies of permits, including any dewatering permits, manifests, or bills of lading for removed soil and/or groundwater, and laboratory reports for soil and water profiling not previously submitted. The certified final project report will be prepared for EHS and MidPen Housing Corporation.	
HAZ-2: Would the project 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?	MM-HAZ-1a through MM-HAZ-1e	Less than significant
HAZ-3: Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	In initial Study 2.9.c	Less than significant

Impacts	Mitigation Measures	Residual Impacts
HAZ-4: Would the project 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?	No mitigation required.	No Impact
HAZ-5: Would a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	In initial Study 2.9.e	Less than significant
HAZ-6: Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	No mitigation required.	Less than significant
HAZ-7: Would the project expose people or structures, directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	No mitigation required.	Less than significant
HAZ-9: Place within an existing 100-year flood hazard area structures that would impede or redirect flood flows?	No mitigation required.	No Impact
HAZ-10: Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	No mitigation required.	Less than significant
HAZ-11: Inundation by seiche, tsunami, or mudflow?	No mitigation required.	Less than significant
C-HAZ-1: Would the impacts of the proposed project, in combination with other past, present, and reasonably foreseeable future projects, contribute to a cumulative impact related to hazards and hazardous materials?	No mitigation required.	Less than significant
HYDROLOGY AND WATER QUALITY		
HYD-1: Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	Less than significant	Less than significant
HYD-2: Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	No mitigation required.	Less than significant

Impacts	Mitigation Measures	Residual Impacts
HYD-3: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: • result in substantial erosion or siltation on- or off-site; • substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; • create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; • or impede or redirect flood flows?	No mitigation required.	Less than significant
HYD-4: Would the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	No mitigation required.	Less than significant
HYD-5: Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	No mitigation required.	Less than significant
HYD-6: Significantly degrade surface or groundwater water quality?	No mitigation required.	Less than significant
HYD-7: Result in increased impervious surfaces and associated increased runoff?	No mitigation required.	Less than significant
C-HYD-1: Would the impacts of the proposed project, in combination with other past, present, and reasonably foreseeable future projects, contribute to a cumulative impact related to hydrology and water quality?	No mitigation required.	Less than significant
LAND USE AND PLANNING		
LUP-1: Would the project physically divide an established community?	No mitigation required.	No Impact
LUP-2: Would the project 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?	No mitigation required.	Less than significant
LUP-3: Would the project serve to encourage off-site development of presently undeveloped areas or increase development intensity of already developed areas (examples include the introduction of new or expanded public utilities, new industry, commercial facilities or recreation activities)?	No mitigation required.	Less than significant
C-LUP-1: Would the impacts of the proposed project, in combination with other past, present, and reasonably foreseeable future projects, contribute to a cumulative impact related to land use and planning?	No mitigation required.	Less than significant

Impacts	Mitigation Measures	Residual Impacts
NOISE		
N-1: Would the project generate 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?	MM-N-1: Implement Construction Noise Best Management Practices Construction activities shall be conducted in accordance with the provisions of Section 4.88.360 of the San Mateo County Code of Ordinances, which limits construction work to the hours between 7:00 a.m. and 6:00 p.m. on weekdays and 9:00 a.m. and 5:00 p.m. on Saturdays. No construction shall occur at any time on Sundays, Thanksgiving, and Christmas. The noise impacts of construction equipment may be minimized through modification of the equipment, the placement of equipment on the site, and by imposing constraints on equipment operations. Construction equipment should be well-maintained and used judiciously to be as quiet as possible. The project proponent shall include the following BMPs in all contracts related to project construction activities near sensitive land uses: • Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment. • Unnecessary idling of internal combustion engines should be strictly prohibited. • Locate stationary noise-generating equipment, such as air compressors or portable power generators, as far as possible from sensitive receptors as feasible. If they must be located near receptors, adequate muffling (with enclosures where feasible and appropriate) shall be used to reduce noise levels at the adjacent sensitive receptors. Any enclosure openings or venting shall face away from sensitive receptors. • Use “quiet” air compressors and other stationary noise sources where technology exists. • Establish construction staging areas at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction. • Locate material stockpiles, as well as maintenance/equipment staging and parking areas, as far as feasible from residential receptors. • Control noise from construction workers’ radios to a point where they are not audible at existing residences bordering the project site. • Notify all adjacent business, residences, and other noise-sensitive land uses of the construction schedule, in writing, and provide a written schedule of “noisy” construction activities to the adjacent land uses and nearby residences.	Less than significant

Impacts	Mitigation Measures	Residual Impacts
	• Designate a "disturbance coordinator" who would be responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., bad muffler) and will require that reasonable measures be implemented to correct the problem. 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 schedule.	
N-2: Would the project generate excessive groundborne vibration or groundborne noise levels?	MM-N-2: Implement Construction Vibration Best Management Practices. Prior to start of ground-disturbing activities, the contractor shall use administrative controls to minimize construction impacts, such as notifying neighbors of scheduled construction activities. During construction activities, the contractor shall schedule construction activities with the highest potential to produce perceptible vibration during the hours with the least potential to affect nearby businesses, so perceptible vibration can be kept to a minimum.	Less than significant
N-3: Would the project, if 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?	Initial Study 2.13.c	Less than significant
C-N-1: Would the impacts of the proposed project, in combination with other past, present, and reasonably foreseeable future projects, contribute to a cumulative impact related to noise?	No mitigation required.	Less than significant
TRANSPORTATION		
TR-1: Implementation of the proposed project could conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.	No mitigation required.	Less than significant
TR-2: The proposed project would exceed the County VMT thresholds and therefore would not be consistent with State CEQA Guidelines Section 15064.3(b).	MM-TR-2: Implement C/CAG TDM Checklist Measure M4 The project sponsor shall incorporate C/CAG TDM Checklist Measure M4 - Actively Participate in Commute.org or TMA Equivalent: Certified participation in Commute.org/or TMA from the "Additional Recommended" list in the "Residential (Multi-Family) Land Use: Small Project" checklist. Consistent with C/CAG TDM Checklist Measure M3, the project sponsor shall ensure there is designated staff to communicate the availability of these resources and rewards to residents to encourage bicycling for commuting purposes and promote participation in Commute.org or Transportation Management Association Equivalent. C/CAG TDM Checklist Measure M4 shall be implemented as part of the new tenant move in procedures consistent with required C/CAG TDM Checklist Measure M2, and on a monthly basis with rent payment notice. In addition, to ensure that any changes to transportation benefits are communicated to tenants in a timely manner, the project sponsor (or designated TDM coordinator through Commute.org) shall use a private tenant noticing system or equivalent as needed.	Significant and unavoidable with mitigation

Impacts	Mitigation Measures	Residual Impacts
TR-3: Project-related traffic contributions to vehicle movements at the Carlos Street and SR-1 intersection would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	MM-TR-3: Temporary Carlos Street Closure at State Route-1 In order to reduce the project-related traffic contributions to an existing traffic safety hazard at State Route-1 and Carlos Street, the project sponsor, in coordination with the County Department of Public Works and the Coastside Fire Protection District, will close the northern 500 feet of Carlos Street between State Route-1 and the proposed Carlos Street driveway to all vehicular traffic except emergency vehicles until the Moss Beach/SR-1 Project is constructed and in operation (expected 2030). The closure shall be implemented with the placement of infrastructure such as knock-over bollards at the north end of Carlos Street and at its intersection with the proposed driveway (i.e., at each end of the 500-foot-long road segment) along with pavement markings and sign poles indicating "Emergency Vehicle Access Only". At the Carlos Street driveway, the closure will be noticed with the placement of a sign pole and pavement markings at the Carlos Street driveway exit indicating "Left-Turn Only". All road closure infrastructure at the Carlos Street/SR-1 intersection and Carlos Street and proposed project driveway will be temporary and will require a Caltrans encroachment permit and County approval to ensure that emergency vehicle access will not be inhibited. Furthermore, all temporary improvements shall be consistent with the Moss Beach/SR-1 Project. Implementation authority for the Moss Beach/SR-1 Project rests jointly with the County and Caltrans; therefore, the recommended closure is a temporary solution until the County implements the Moss Beach/SR-1 Project. Ultimate improvements are expected to be consistent with Caltrans Highway Design Manual standards and provide adequate sight distance.	Less than significant

Impacts	Mitigation Measures	Residual Impacts
TR-4: Project-related pedestrians and bicyclists would be exposed to roadway-related hazards at the State Route 1 and Carlos Street intersection due to a geometric design feature (e.g., sharp curves or dangerous intersections).	MM-TR-4a: Implement MM-TR-3 (Temporary Carlos Street Closure at State Route-1).	Significant and unavoidable with mitigation
	MM-TR-4b: Augment C/CAG TDM Checklist Measure M3 In addition to the proposed project characteristics (i.e., affordable housing and Local Preference agreement; C/CAG TDM Checklist measures incorporated as part of the project; and the additional pedestrian and bicycle network and transit stop improvements identified under MM-TR-4c, below), the project sponsor shall augment standard educational materials associated with the C/CAG TDM Checklist M3 to support safe and sustainable active transportation. Consistent with C/CAG TDM Checklist Measure M3, the project sponsor shall ensure there is designated staff to develop educational materials that includes pedestrian, bicycle, and vehicle safety-related information for review and approval by County. Educational materials shall include, but not be limited to, a bus stop location map highlighting stops that do not require travel along or across SR-1, pedestrian and bicycle route network map highlighting potential hazards (e.g., no marked crosswalk, discontinuous sidewalk, narrow roadway), and other site-specific safety-related information.	Significant and unavoidable with mitigation
	MM-TR-4c: Additional Transportation Demand Management Measures In addition to the C/CAG Transportation Demand Management measures included as part of the proposed project to reduce project-related vehicle trips and promote carpooling and non-auto modes of travel to improve mode share, the project sponsor in coordination with the County shall implement, or facilitate the implementation of, the additional pedestrian-, bicycle-, and transit-related TDM measures detailed below. The additional TDM measures focus on the filling of gaps in the existing pedestrian and bicycle network in the vicinity of the project site and within Moss Beach to facilitate commute, household, and recreation trips by foot, bicycle, or transit; and commits the project sponsor to a fair share contribution to transit stop improvements at selected SamTrans stops. All proposed improvements would be designed to meet accessibility requirements and the needs of all users consistent with County and Caltrans' Complete Streets policies. Off-Site Pedestrian Network and Access to Transit Improvements • Stetson Street/Kelmore Street o Add a curb ramp with truncated domes on the northeast corner if feasible with fire station configuration and drainage. o Add a high-visibility crosswalk for pedestrians to cross Kelmore Street and connect to the existing sidewalk on the east side of Stetson Street.	Significant and unavoidable with mitigation

Impacts	Mitigation Measures	Residual Impacts
	• Stetson Street/California Avenue o Add a curb ramp and high-visibility crosswalk with advanced stop bar to cross Stetson Street (from northeast corner to northwest corner toward Etheldore Street). o California Avenue/Etheldore Street o Add a curb ramp and high-visibility crosswalk with advanced stop bar for pedestrians to cross California Avenue and access the northbound bus stop at the southeast corner of intersection. o Add a curb ramp and high-visibility crosswalk with advanced stop bar for pedestrians to cross Etheldore Street and access the southbound bus stop at the northwest corner of intersection. o California Avenue, south of Etheldore Street o Add approximately 80 feet of new sidewalk on north side of California Avenue to connect to the existing sidewalk and downtown Moss Beach. Off-Site Bicycle Network Improvements o Sierra Street o Provide sharrows on Sierra Street between project site and California Avenue to connect to the planned Class III Bikeway on California Avenue identified in the Unincorporated San Mateo County Active Transportation Plan. o California Avenue o Provide sharrows on California Avenue between Sierra and Carlos streets to assist with implementation of the planned Class III Bikeway along California Avenue between Tierra Alta Street and North Lake Street, as identified in the Unincorporated San Mateo County Active Transportation Plan. Off-Site Transit Stop Improvements • Evaluate the need for the project sponsor to contribute toward accessible bus stops at the southeast and northwest corners of California Avenue/Etheldore Street including provision of bus benches at each stop if feasible based on topography and other site constraints.	
TR-5: Project-related pedestrians would be exposed to roadway hazards due to a discontinuous sidewalk network.	MM-TR-5: Implement MM-TR-4b and MM-TR-4c	Less than significant
TR-6: Buildout of the project would not result in inadequate emergency access.	No mitigation required.	Less than significant
C-TR-1: The proposed project, in combination with other past, present, and reasonably foreseeable future projects, would not result in a cumulatively considerable transportation impact related to a conflict with a program, plan, ordinance, or policy addressing the circulation system.	No mitigation required.	Less than significant

Impacts	Mitigation Measures	Residual Impacts
C-TR-2: The proposed project, in combination with other past, present, and reasonably foreseeable future projects, would result in a cumulatively considerable transportation impact related to VMT and consistency with State CEQA Guidelines Section 15064.3(b).	C-TR-2: Implement MM-TR-2, MM-TR-3, MM-TR-4b and MM-TR-4c	Significant and Unavoidable with Mitigation
C-TR-3: The proposed project, in combination with other past, present, and reasonably foreseeable future projects, would result in a cumulatively considerable transportation impact related to hazards.	C-TR-3: Implement MM-TR-2, MM-TR-3, MM-TR-4b and MM-TR-4c	Significant and Unavoidable with Mitigation
C-TR-4: The proposed project, in combination with other past, present, and reasonably foreseeable future projects, would not result in a cumulatively considerable transportation impact related to emergency access.	No mitigation required.	Less than significant
UTILITES AND SERVICE SYSTEMS		
UT-1: Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	No mitigation required.	Less than significant
UT-2: Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	No mitigation required.	Less than significant
UT-3: Would the project 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?	No mitigation required.	Less than significant
UT-4: Would the project 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?	No mitigation required.	Less than significant
UT-5: Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	No mitigation required.	Less than significant
C-UT-1: Would the impacts of the proposed project, in combination with other past, present, and reasonably foreseeable future projects, contribute to a cumulative impact related to utilities and service systems?	No mitigation required.	Less than significant
WILDFIRE		
WF-1: Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?	No mitigation required.	Less than significant
WF-2: Would the project 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?	No mitigation required.	Less than significant

Impacts	Mitigation Measures	Residual Impacts
WF-3: Would the project 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?	No mitigation required.	Less than significant
WF-4: Would the project 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?	No mitigation required.	Less than significant
Impact C-WF-1: Would the impacts of the proposed project, in combination with other past, present, and reasonably foreseeable future projects, contribute to a cumulative impact related to wildfire?	No mitigation required.	Less than significant

Table ES-2. Summary of Initial Study Impacts and Mitigation Measures

Impacts	Mitigation Measures	Residual Impacts
AGRICULTURE		
AG-2 a) For lands outside of the Coastal Zone, would the project 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?	No mitigation required.	No Impact
a) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?	No mitigation required.	No Impact
b) Would the project 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))?	No mitigation required.	No Impact
c) Would the project result in the loss of forest land or conversion of forest land to non-forest use?	No mitigation required.	No Impact
d) Would the project 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?	No mitigation required.	No Impact
e) For lands within the Coastal Zone, would the project convert or divide lands identified as Class I or Class II Agriculture Soils and Class III Soils rated good or very good for artichokes or Brussels sprouts?	No mitigation required.	No Impact

Impacts	Mitigation Measures	Residual Impacts
f) Would the project result in damage to soil capability or loss of agricultural land?	No mitigation required.	No Impact
BIOLOGICAL RESOURCES		
a) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	No mitigation required.	Less than significant
CULTURAL RESOURCES		
a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	No mitigation required.	Less than significant

Impacts	Mitigation Measures	Residual Impacts
b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	MM-CR-1: Additional Site Excavation. An archaeological salvage program shall take place prior to the earthmoving activities and shall consist of four hand-excavated 1 × 1–m mitigation units. Placement of the units shall be based on available archival background data, field observations, and proposed project plans. Hand excavation shall be conducted using standard archaeological techniques with trowels, picks, and shovels at arbitrary levels and dry screened through ¼-inch mesh. All identified artifactual material shall be collected from each level. Collected material shall be placed in level bags, and each level shall be recorded using level forms. Artifacts, soil type, color, stratigraphy, and features present shall be recorded. All artifactual material from this process shall then be placed within its appropriate level bag during the field process. MM-CR-2: Archaeological Monitoring. Archaeological monitoring shall be conducted during all earthmoving activities involved with the project in accordance with the schedule coordinated between the general contractor and project archaeologist. This shall consist of full-time monitoring during all earthmoving activities within 50 feet of CA-SMA-431. Archaeological spot-check monitoring, consisting of periodic monitoring of the project site during ground-disturbing activities, including during demolition of the existing concrete foundations, shall take place for the remainder of the project. The timing and frequency of these spot checks shall be determined throughout the course of earthmoving activities for the proposed project based upon the construction schedule and the nature of any cultural materials encountered. Per the schedule, the archaeologist shall inspect the site and shall subsequently provide an archaeological monitoring report. This report shall document all cultural materials encountered and be submitted to project representatives within 40 working days of the completion of earthmoving activities for the project. Considering that cultural resources frequently exist below the surface, their location is often not visible. Field archaeologists therefore monitor earthmoving activities to observe whether artifactual remains, soil changes indicating cultural use, and/or other indicators of human activity are present within a project site. Monitoring consists of a qualified archaeological field technician observing the ground-disturbing activities in native soil. MM-CR-3: Unanticipated Findings during Construction. If any individual artifacts (prehistoric or historic), features, potential midden soils, or other indicators of cultural use are noted by the archaeological monitor during the earthmoving activities, work within 50 feet of the find shall be stopped until appropriate measures are formulated by the project archaeologist and accepted by the County and the project representative. If the project archaeologist is not present on the site, the County, owner, and project archaeologist shall be notified by telephone, and the project archaeologist shall examine the materials encountered within 24 hours. Any archaeological materials found at the site shall be collected and stored for further analysis by a qualified archaeologist and may require consultation with appropriate Tribal representatives, as dictated by the California Native American Heritage Commission (NAHC) and County.	Less than significant

Impacts	Mitigation Measures	Residual Impacts
c) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?	MM-CR-4: Procedures for Discovery and Treatment of Human Remains. If human remains are found during excavation or construction, work shall be halted at a minimum of 50 feet from the find, the area shall be staked off, and the owner and project archaeologist shall be notified. The owner shall contact the County Coroner, and no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains shall be performed until the coroner determines that no investigation of the cause of death is required. If the coroner determines the remains to be Native American, the coroner shall contact the NAHC within 24 hours of this determination. The NAHC shall identify the person or persons it believes to be the most likely descendent (MLD) of the deceased. The MLD may then make recommendations to the owner and execute an agreement for the means of treating or disposing of, with appropriate dignity, the human remains and associated grave goods, as provided in Public Resources Code Section 5097.98. If required, reinternment of human remains shall be performed according to California law for Native American burials (Chapter 1492, Statutes of 1982). The intent of the California state law is to protect Native American burials, isolated and disarticulated human remains, and associated cultural materials found during the course of an undertaking. It also serves to insure proper analysis prior to their final disposition. The location and procedures of this undertaking shall be recorded by the project archaeologist. Reinternment shall take place with all due speed upon completion of all necessary analysis. This information shall be included in the final report prepared by the project archaeologist, or if necessary, as an addendum to the report. The owner shall rebury the Native American human remains and associated grave goods with the appropriate dignity on the property in a location not subject to further disturbance if: 1. The NAHC is unable to identify a MLD or the MLD failed to make a recommendation within 24 hours after being notified by the commission. 2. The descendent identified by the NAHC fails to make a recommendation for burial and mediation by the NAHC fails to provide measures acceptable to the owner. Any associated grave goods and soil samples from the burial site shall be analyzed per the agreement between the owner and the MLD. Dependent upon the nature of this agreement, diagnostic artifacts such as projectile points, shell beads, and ground stone artifacts may be studied and illustrated in the final report to be prepared by the project archaeologist. Radiocarbon dating and obsidian hydration and sourcing may be undertaken in order to provide a chronology for newly identified features.	Less than significant
ENERGY		
a) Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	No mitigation required.	Less than significant

Impacts	Mitigation Measures	Residual Impacts
b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	No mitigation required.	Less than significant
GEOLOGY AND SOILS		
e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	No mitigation required.	Less than significant
HAZARDS AND HAZARDOUS MATERIALS		
c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	No mitigation required.	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	No mitigation required.	Less than significant
MINERAL RESOURCES		
a) Would the project 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?	No mitigation required.	No Impact
b) Would the project 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?	No mitigation required.	No Impact
NOISE		
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?	No mitigation required.	No Impact
POPULATION AND HOUSING		
a) Would the project 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)?	No mitigation required.	Less than significant
b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	No mitigation required.	No Impact

Impacts	Mitigation Measures	Residual Impacts
PUBLIC SERVICES		
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	No mitigation required.	Less than significant
RECREATION		
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	No mitigation required.	Less than significant
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	No mitigation required.	Less than significant
TRIBAL CULTURAL RESOURCES		
a) Would the project cause a substantial adverse change in the significance of a Tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	MM-CR-1 through MM-CR-4	Less than significant
a-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)?		
a-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.		

6. ALTERNATIVES

As required by CEQA, this EIR examines alternatives to the proposed project. Studied alternatives include the following four alternatives. Based on the alternatives analysis, Alternative 4 was determined to be the Environmentally Superior Alternative.

- Alternative 1: No Project
- Alternative 2: Reduced Residential Units
- Alternative 3: South Moss Beach Site
- Alternative 4: El Granada Site

Alternative 1: No Project. In the No Project Alternative, implementation of the project would not occur, and any future buildout of the project site would need to be consistent with the allowable uses and density under the existing Planned Unit Development zoning. This alternative would not meet any of the Project objectives, and the project site would remain undeveloped. Current safety- and transportation-related constraints at the project site and on the immediate road network would remain unchanged. Under the existing General Plan zoning of Medium-High Density Residential, the project site could ultimately accommodate the development of up to 191 residential units (8.8–17.4 units per acre); any project would be subject to a similar environmental review as the proposed project.

Alternative 2: Reduced Residential Units. The Reduced Residential Units Alternative would achieve some of the Project objectives. This alternative would only create 30 units of affordable housing, and a manager's unit, which would only partially meet Objectives 1 through 4, and would not meet County Regional Housing Needs Allocation goals. This alternative would not avoid the significant and unavoidable vehicle miles traveled (VMT) impact because of location and would not avoid the pedestrian safety impact because of existing conditions near the site. This alternative would partially meet County, State, or Applicant's goals.

Alternative 3: South Moss Beach Site. The South Moss Beach site is designated for affordable housing in the San Mateo County Midcoast Local Coastal Program (LCP). This alternative is zoned R-3-A High Density Affordable Housing and Coastal Zone (R-3-A/S-5/ DR/CZ). Approximately half of the South Moss Beach site has a zoning district associated with the Half Moon Bay Airport Safety Zone overlay zoning district, which limits development to one unit per 2 acres. With this overlay, three units could be constructed on this half of the site. The remaining half of the South Moss Beach site outside of the airport safety zone overlay zoning district could be developed at the same density as the proposed project, which would accommodate approximately 63,374 square feet of residential housing configured within 71 residential units. The portion of the site in the airport district could remain as open space to meet project objectives. However, there is a notable slope that could possibly exceed 30 percent on the portion of the site that is not covered by the airport safety zone overlay zoning district and which would necessitate excessive grading near a wetland area. MidPen does not own the site, and the individual does not appear receptive to selling the site.

Alternative 4: El Granada Site. The El Granada site is designated for affordable housing in the LCP. The parcel is owned by the Cabrillo Unified School District. This alternative is zoned R-3-A/S-5/DR/CZ. Approximately 71 housing units could be constructed on this property if the entire parcel were developed. Although the project site has environmental constraints including steep slopes, Alternative 4 meets most of the project objectives and would lessen the significant transportation impacts related to pedestrian safety.

Environmentally Superior Alternative: Alternative 4: El Granada Site would reduce the magnitude of most environmental impacts because it would result in the least land developed while meeting the proposed 71 units developed. This alternative would be the Environmentally Superior Alternative.

However, the El Granada Site does not meet Objective 6, which states to provide open space on-site as an amenity to residents. MidPen does not own the site, and Cabrillo Unified School District does not appear receptive to selling the site. While the project site has environmental constraints, Alternative 4 meets most of the project objectives and would lessen the significant transportation impact related to pedestrian safety.

7. AREAS OF KNOWN CONTROVERSY

The EIR scoping process identified any areas of known controversy for the proposed project. Responses to the Notice of Preparation of a Draft EIR and input received at the EIR scoping meeting held by the County are summarized in Chapter 1, Introduction, and below.

A Notice of Preparation (NOP) was distributed on December 9, 2022, which began a 30-day public review period. The County accepted comments until January 9, 2023. The NOP was sent to the California State Clearinghouse, the County Clerk, adjacent Cities, potential responsible agencies, and other interested parties. Responsible agencies are those public agencies, in addition to the County, that may have a role in approving or carrying out the project. An NOP scoping meeting was held on Wednesday, December 14, 2022, at 9:00 a.m. via video conference. Oral and written comments were received at the meeting.

Table ES-3. Summary of Scoping Comments

EIR or Initial Study Section	Main Issues Raised
EIR Chapter 2 Project Description	• Conflict of interest with MidPen paying for CEQA study. • Coastal Development Permit and EIR approval timeline. • Provision of garbage cans and refuse receptacles.
EIR Section 3.3 Biological Resources	• Potential presence of California red-legged frog on-site.
EIR Section 3.4 Geology and Soils	• Clarifications of grading, construction fill, stormwater impacts, and detailed plans for on-site open space. • Details of several slope failures and soil stability in project site. • Liquefaction zone at 16th Street. • Geotechnical investigation.
EIR Section 3.6 Hazards and Hazardous Materials	• Potential presence of asbestos and other contaminates. • Toxic hazard study. • Coordination with Regional Water Quality Control Board and Department of Toxic Substances Control.
EIR Section 3.7 Hydrology and Water Quality	• Deficient water supply. • Water company payment for new connections • Sewage, water infrastructure, and runoff. • Consultation with Regional Water Quality Control Board. • Bioretention basin locations. • Sea level rise adaptation and flood protection measures. • Increase of hardscape and flooding, drainage, and erosion.

EIR or Initial Study Section	Main Issues Raised
EIR Section 3.8 Land Use and Planning	• Scale is too large for neighborhood.
EIR Section 3.10 Transportation	• Safety of intersections and driveways along Carlos, California, Stetson, and Sierra Streets. • Sidewalk and accessibility concerns. • Hazardous design of Highway 1 in project site. • Limited roadway infrastructure to serve emergency evacuation, public transit, traffic hazards. • Upgrades to roadway infrastructure to accommodate new residents, workers, and pedestrians/visitors in the project site. • Emergency evacuation challenges, increased traffic in the area. • Increase of vehicle miles traveled. • Parking concerns, existing on-street parking on Carlos Street. • Timing of traffic mitigations. • Clear explanation of transportation impacts.
EIR Section 3.11 Utilities and Service Systems	• Infrastructure adequacy to support the project. • Water infrastructure and payment of connections. • Pacific Gas and Electric Company easement requirement to call before excavation occurs. • Preservation of access to Montara Water and Sanitary District tanks during construction.
EIR Chapter 4 Alternatives Analysis	• Scale is too large for neighborhood. • Lessened units or project downsizing as an alternative.
Initial Study Section 2.18 Tribal Cultural Resources	• Assembly Bill 52, Senate Bill 18, and Native American Heritage Commission recommendations for cultural resources research, surveys, and reporting.

Comments expressing support or opposition for the proposed project will be considered independent of the environmental review process by County decision-makers, as part of their decision to approve, modify, or disapprove the proposed project.

CHAPTER 1. INTRODUCTION

This draft environmental impact report (EIR) evaluates the potential environmental effects of the Cypress Point Affordable Housing Community Project (proposed project) with the intention to provide the public, relevant public agencies, and stakeholders with information about the proposed project and its potential environmental effects. For the purposes of compliance with the California Environmental Quality Act (CEQA), this document evaluates the project under CEQA (Public Resources Code [PRC] Section 21000 et seq.) and the CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.).

1.1 PROJECT BACKGROUND

In 1980, the California Coastal Commission (CCC) certified San Mateo County's (County's) Local Coastal Program (LCP). The site of this proposed project was designated as "Affordable Housing" by both the County and the CCC at that time.

In 1986, the County approved, and the CCC certified, a rezoning of the project site to Planned Unit Development No. 124/Coast Development District (PUD-124/CD) to enable the construction of a mixed-market rate/affordable housing development (Farallone Vista) consisting of 148 dwelling units. Under the 1986 amendment, the project site had a land use designation of Medium-High Density Residential. The Medium-High Density Residential designation allowed for development at densities of between 8.8 to 17.4 housing units per acre.[1] This project was never developed.

In July 2018, the County received an application from MidPen Housing Corporation (MidPen) for the proposed Cypress Point Affordable Housing Community Project. This application proposed amending the LCP and rezoning the project site to allow the proposed project. The proposed rezoning reduced the maximum development density on the site and restricted all dwelling units for affordable housing. The project consists of the proposed development of 70 affordable housing units and one manager's unit on an 11.02-acre parcel (project site) in the unincorporated community of Moss Beach.

Following public hearings at the County Planning Commission and Board of Supervisors in 2020, the CCC certified the LCP land use designation amendment from Medium-High Density Residential to Medium Density Residential on March 22, 2021.[2, 3]

After receiving approval from the CCC for the amendment to the LCP, the County Board of Supervisors adopted a resolution on July 21, 2020, to do the following:

- Amend the LCP Implementation Plan to change the zoning designation from PUD-124/CD to Planned Unit Development No. 140/Coast Development District (PUD-140/CD).
- Amend the LCP Land Use Plan to change the site's land use designation from Medium-High Density Residential to Medium Density Residential.

[1] County of San Mateo. 1986. General Plan. Available at: https://www.smcgov.org/planning/general-plan. Accessed May 15, 2023.
[2] County of San Mateo Planning and Building Department. 2023. Local Coastal Program. Available at: https://www.smcgov.org/planning/local-coastal-program#. Accessed May 15, 2023.
[3] On April 21, 2021, a lawsuit was filed challenging the Coastal Commission staff report under CEQA, the LCP amendment under the Coastal Act, and the hearing process under the Code of Civil Procedure Section 1094.5(b). The lawsuit was dismissed entirely on April 21, 2023. Evidence supporting the challenge was not provided, and the court found that the commission complied with CEQA and the Coastal Act and did not deprive the petitioner of a fair hearing. *(Superior Court of California, 2023. County of San Francisco. Order Denying Verified Petition for Writ of Mandate Case No. CPF-21-517430. April 21, 2023.)*

- Amend LCP Section 3.15(d) to allow for 100% of the units, apart from a resident manager's unit, to serve low-income households.
- Add the Design Review Overlay to the parcel.

Therefore, the project site land use designation in the LCP is Medium Density Residential, which allows for development at densities from 6.1 to 8.0 units per acre. The project site is zoned PUD-140/CD. This zoning designation allows for a total of 71 units on the site.[4]

Following public hearings at the County Planning Commission and Board of Supervisors in 2020, the CCC certified the LCP land use designation amendment from Medium-High Density Residential to Medium Density Residential on March 22, 2021.[5, 6] In the San Mateo County General Plan, the project site is currently designated Medium-High Density Residential, which permits 8.8 to 17.4 units per acre. As part of project approvals, a General Plan Amendment to Medium Density Residential, which permits 6.1 to 8.7 units per acre, is proposed.

A Coastal Development Permit (CDP) application to construct the project in accordance with the PUD-140 zoning was received on July 6, 2022, by the County.

San Mateo County Planning and Building Department Design Review is required separately from the CDP application process.

1.2 PURPOSE OF ENVIRONMENTAL REVIEW

CEQA has several basic purposes:

- To inform governmental decision-makers and the public about the potential significant environmental effects of proposed activities.
- To identify the ways in which environmental damage can be avoided or substantially reduced.
- To prevent significant, avoidable damage to the environment by requiring implementation of feasible mitigation measures or project alternatives that would substantially lessen any significant effects that a project would have on the environment.
- To disclose to the public the reasons why a governmental agency approved a project in the manner the agency chose if significant environmental effects are involved.

With certain, strictly limited exceptions, CEQA requires all state and local government agencies to consider the environmental consequences of projects over which they have discretionary authority before approving or carrying out projects. CEQA establishes both procedural and substantive requirements that agencies must satisfy to meet CEQA's objectives. For example, the agency with principal responsibility for approving or carrying out a project (the lead agency) must first assess whether a proposed project would result in significant environmental impacts. If there is substantial evidence that the project would

[4] San Mateo County. 2013. Local Coastal Program Policies. Available at: https://www.smcgov.org/media/73646/download?attachment. Accessed March 3, 2023.
[5] County of San Mateo Planning and Building Department. 2023. Local Coastal Program. Available at: https://www.smcgov.org/planning/local-coastal-program#. Accessed May 15, 2023.
[6] On April 21, 2021, a lawsuit was filed challenging the Coastal Commission staff report under CEQA, the LCP amendment under the Coastal Act, and the hearing process under the Code of Civil Procedure Section 1094.5(b). The lawsuit was dismissed entirely on April 21, 2023. Evidence supporting the challenge was not provided, and the court found that the commission complied with CEQA and the Coastal Act and did not deprive the petitioner of a fair hearing. *(Superior Court of California, 2023. County of San Francisco. Order Denying Verified Petition for Writ of Mandate Case No. CPF-21-517430. April 21, 2023.)*

result in significant environmental impacts, CEQA requires that the agency prepare an EIR analyzing both the proposed project and a reasonable range of potentially feasible alternatives.

As described in the CEQA Guidelines (California Code Regulations, Title 14, Section 15121, Subdivision [a]), an EIR is an informational document that assesses potential environmental effects of a proposed project and identifies mitigation measures and alternatives to the project that could reduce or avoid potentially significant environmental impacts. Other key CEQA requirements include developing a plan to implement and monitor the success of the identified mitigation measures and carrying out specific public notice and distribution steps to facilitate public involvement in the environmental review process. As an informational document used in the planning and decision-making process, an EIR's purpose is not to recommend either approval or denial of a project. Note that an EIR does not expand or otherwise provide independent authority for the lead agency to impose mitigation measures or avoid project-related significant environmental impacts beyond the authority already within the lead agency's jurisdiction.

1.3 ENVIRONMENTAL REVIEW PROCESS

1.3.1 Notice of Preparation

A Notice of Preparation (NOP) was distributed on December 9, 2022, which began a 30-day public review period. The County accepted comments until January 9, 2023. The NOP was sent to the California State Clearinghouse, the County Clerk, adjacent Cities, potential responsible agencies, and other interested parties. Responsible agencies are those public agencies, in addition to the County, that may have a role in approving or carrying out the project. An NOP scoping meeting was held on Wednesday, December 14, 2022, at 9:00 a.m. via video conference. Oral and written comments were received at the meeting.

The scoping meeting was held to provide the public, as well as responsible and trustee agencies, an opportunity to ask questions and submit comments on the proposed program and the scope of the draft EIR. Notices of the meeting were mailed to interested parties; in addition, scoping meeting information was published on the County's website prior to the event.

In addition to County and consultant staff, one individual attended the scoping meeting. The County accepted written comments at the meeting, as well as during the 30-day scoping period. Comment forms were distributed at the scoping meeting for submission of written comments during or after the meeting. During the scoping period, 21 comments were received. The topics raised in the written and oral comments included, but were not limited to, the environmental topics listed in Table 1.3-1, which also summarizes the main issues raised in the comments.

Table 1.3-1. Summary of Scoping Comments

EIR or Initial Study Section	Main Issues Raised
EIR Chapter 2 Project Description	• Conflict of interest with MidPen paying for CEQA study. • Coastal Development Permit and EIR approval timeline. • Provision of garbage cans and refuse receptacles.
EIR Section 3.3 Biological Resources	• Potential presence of California red legged frog on-site.

EIR or Initial Study Section	Main Issues Raised
EIR Section 3.4 Geology and Soils	• Clarifications of grading, construction fill, stormwater impacts, and detailed plans for on-site open space. • Details of several slope failures and soil stability in project site. • Liquefaction zone at 16th Street. • Geotechnical investigation.
EIR Section 3.6 Hazards and Hazardous Materials	• Potential presence of asbestos and other contaminates. • Toxic hazard study. • Coordination with Regional Water Quality Control Board and Department of Toxic Substances Control.
EIR Section 3.7 Hydrology and Water Quality	• Deficient water supply. • Water company payment for new connections • Sewage, water infrastructure, and runoff. • Consultation with Regional Water Quality Control Board. • Bioretention basin locations. • Sea level rise adaptation and flood protection measures. • Increase of hardscape and flooding, drainage, and erosion.
EIR Section 3.8 Land Use and Planning	• Scale is too large for neighborhood.
EIR Section 3.10 Transportation	• Safety of intersections and driveways along Carlos, California, Stetson, and Sierra Streets. • Sidewalk and accessibility concerns. • Hazardous design of Highway 1 in project site. • Limited roadway infrastructure to serve emergency evacuation, public transit, traffic hazards. • Upgrades to roadway infrastructure to accommodate new residents, workers, and pedestrians/visitors in the project site. • Emergency evacuation challenges, increased traffic in the area. • Increase of vehicle miles traveled. • Parking concerns, existing on-street parking on Carlos Street. • Timing of traffic mitigations. • Clear explanation of transportation impacts.
EIR Section 3.11 Utilities and Service Systems	• Infrastructure adequacy to support the project. • Water infrastructure and payment of connections. • Pacific Gas and Electric Company easement requirement to call before excavation occurs. • Preservation of access to Montara Water and Sanitary District tanks during construction.
EIR Chapter 4 Alternatives Analysis	• Scale is too large for neighborhood. • Lessened units or project downsizing as an alternative.
Initial Study Section 2.18 Tribal Cultural Resources	• Assembly Bill 52, Senate Bill 18, and Native American Heritage Commission recommendations for cultural resources research, surveys, and reporting.

1.3.2 Draft Environmental Impact Report

This draft EIR has been prepared in accordance with CEQA and the CEQA Guidelines. It provides an analysis of the project-specific physical environmental impacts of construction and operation of the proposed project, and the project's contribution to the environmental impacts from foreseeable cumulative development in the project site vicinity and the county as a whole.

This draft EIR will be distributed to responsible and trustee agencies, other affected agencies, surrounding cities, interested parties, and all parties requesting a copy of the draft EIR in accordance with PRC Section 21092(b)(3). The Notice of Completion and Notice of Availability of the draft EIR are distributed and posted as required by CEQA. During this 45-day period, the EIR and all technical appendices are available for review at the following locations:

Redwood City Public Library
1044 Middlefield Road
Redwood City, CA 94063

San Mateo County Planning and Building Department
455 County Center, 2nd Floor;
Redwood City, CA 94063

Location of Documents Available for Public Review: All public review documents for this project will be available for review online at https://www.smcgov.org/planning/cypress-point-affordable-housing-community-project.

1.3.3 How to Comment on the Draft Environmental Impact Report

This draft EIR was published on August 10, 2023. There will be a public hearing before the Planning Commission during the 45-day public review and comment period for this draft EIR to solicit public comment on the adequacy and accuracy of information presented in this draft EIR. The public comment period for this draft EIR is August 10, 2023, to September 25, 2023. The public hearing on this draft EIR has been scheduled before the Planning Commission for September 13, 2023, in the Board of Supervisors Chambers at 400 County Center, Redwood City beginning at 9 a.m. In addition, during the public review and comment period, members of the public are invited to submit written comments on the adequacy of the document, that is, whether this draft EIR identifies and analyzes the possible environmental impacts and identifies appropriate mitigation measures.

Written comments should be submitted to:

County of San Mateo Planning and Building Dept.
Attn: Michael Schaller, Senior Planner
455 County Center, 2nd Floor; Redwood City, CA 94063

Comments may also be submitted by email to planningprojects@smcgov.org. Please include "**Cypress Point EIR**" in the subject line. Comments must be received by 5:00 p.m. on September 25, 2023.

Commenters are not required to provide personal identifying information. All written or oral communications, including submitted personal contact information, may be made available to the public for inspection and copying upon request and may appear on the County Planning and Building Department's website or in other public documents.

Only commenters on the draft EIR will be permitted to file an appeal of the certification of the final EIR to the Board of Supervisors. The public review period is 45 days. Written responses to all significant environmental issues raised will be prepared and included as part of the final EIR and the administrative record for consideration by decision-makers for the project.

1.3.4 Final Environmental Impact Report

Following the close of the draft EIR public review and comment period, the County Planning and Building Department will prepare and publish a document entitled *Responses to Comments*, which will

contain a copy of all comments on this draft EIR and the County responses to those comments and any necessary changes to the text, along with copies of the letters received and a transcript of the Planning Commission public hearing on the draft EIR. This draft EIR, together with the Responses to Comments document, will be considered by the Planning Commission in an advertised public meeting, and then certified as a final EIR, if deemed adequate.

The Planning Commission and the Board of Supervisors will use the information in the final EIR in their deliberations on whether to approve, modify, or deny the proposed project or aspects of the proposed project. If the Planning Commission and the Board of Supervisors decide to approve the proposed project, their approval action must include findings that identify significant project-related impacts that would result; discuss mitigation measures or alternatives that have been adopted to reduce significant impacts to less-than-significant levels; determine whether mitigation measures or alternatives are within the jurisdiction of other public agencies; and explain reasons for rejecting mitigation measures or alternatives if any are infeasible for legal, social, economic, technological, or other reasons.

A Mitigation Monitoring and Reporting Program (MMRP) must be adopted by the Planning Commission and the Board of Supervisors as part of the adoption of the CEQA findings and project approvals by those bodies to the extent that mitigation measures are made part of the proposed project. The MMRP identifies the measures included in the proposed project or imposed by the decision-makers as conditions of approval, the entities responsible for carrying out the measures, and the timing of implementation. If significant unavoidable impacts would remain after all feasible mitigation measures are implemented, the approving body, if it elects to approve the proposed project, must adopt a statement of overriding considerations explaining how the benefits of the proposed project would outweigh the significant impacts.

1.4 ENVIRONMENTAL IMPACT REPORT CONTENTS

The scope of the EIR includes issues identified by the lead agency during the preparation of the NOP for the proposed project, as well as environmental issues raised by agencies and the general public in response to the NOP and at the scoping meeting. The EIR is divided into the following major sections:

Executive Summary. Provides a brief summary of the project background, description, impacts and mitigation measures, and alternatives.

Introduction. Provides the purpose of an EIR, as well as scope, content, and the use of the document.

Project Description. Provides the general background of the project, objectives, a detailed description of the project characteristics, and a listing of necessary permits and government approvals.

Environmental Impacts Analysis. Discusses the environmental setting as it relates to the various issue areas, regulatory settings, thresholds of significance, impact assessment and methodology, project-specific impacts and mitigation measures, cumulative impacts, and secondary impacts. The EIR analyzes the potentially significant impacts to the following resource areas, as identified during the preparation of the NOP:

- Aesthetics
- Air Quality
- Biological Resources
- Hydrology and Water Quality
- Land Use and Planning
- Noise

- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Transportation
- Utilities and Service Systems
- Wildfire

Other CEQA Considerations. Identifies growth-inducing impacts and a discussion of long-term/short-term productivity and irreversible environmental changes.

Alternatives Analysis. Summarizes the environmental advantages and disadvantages associated with the project and alternatives. As required, the "No Project" alternative is included among the alternatives considered. An "Environmentally Superior Alternative" is identified.

Report Preparers. Identifies the EIR authors and the agencies, organizations, and individuals consulted during preparation of the draft EIR. In addition, the project sponsors, their attorneys, and any consultants working on their behalf are listed.

The EIR has 19 appendices:

- Appendix A. Notice of Preparation
- Appendix B. CEQA Initial Study
- Appendix C. Air Quality and Greenhouse Gas Technical Report
- Appendix D. Biological Impact Report
- Appendix E. Arborist Report
- Appendix F. Geotechnical Investigation
- Appendix G. Cultural Resources Evaluation
- Appendix H. Phase I Environmental Site Assessment
- Appendix I. Limited Phase II Subsurface Investigation
- Appendix J. Draft Site Management Plan
- Appendix K. Additional Subsurface Investigation and Water Well Evaluation
- Appendix L. Water Well Sampling and Well Destruction
- Appendix M. Environmental Site Investigation Responses to Comments
- Appendix N. Wildfire and Evacuation Route Assessment
- Appendix O. Noise and Vibration Assessment
- Appendix P. Noise Assessment Update of Proposed Tree Removal Activities
- Appendix Q. Cypress Point Traffic Impact Analysis and Mitigation Plan
- Appendix R. Traffic Impact Analysis Peer Review and Vehicle Miles Traveled Analysis
- Appendix S. Energy Technical Report

CHAPTER 2. PROJECT DESCRIPTION

2.1 OVERVIEW

The Cypress Point Affordable Housing Community Project (proposed project) is an affordable housing development sponsored by MidPen Housing Corporation (MidPen) and designed to provide affordable housing in the San Mateo Midcoast region. The intention of the project sponsors and the County of San Mateo (County) is to improve the jobs/housing balance and jobs/housing fit by providing preference for those who live or work on the San Mateo Coast.

2.2 PROJECT LOCATION

2.2.1 Regional Setting

The project site is located within the unincorporated community of Moss Beach in San Mateo County (Figure 2.2-1). San Mateo County is situated along the central coast of California and encompasses approximately 554 square miles (including tidal waters) of the San Francisco Peninsula. The county's western border is on the Pacific Ocean and the eastern border is on the San Francisco Bay shoreline. The county is bounded by the City and County of San Francisco to the north and by Santa Cruz and Santa Clara Counties to the south and southeast, respectively. Moss Beach is located in northern San Mateo County, 4 miles northwest of the city of Half Moon Bay, and encompasses approximately 2.25 square miles of land.

The Santa Cruz Mountain Range crosses San Mateo County north-south, dividing the county into two distinct regions: the Coastside and the Bayside. The Coastside is characterized by coastal terraces transitioning into the gently sloping foothills of the Santa Cruz Mountains. The Bayside is characterized by low-lying mudflats, marshes, artificial fill, and broad, flat alluvial plains. Farther west, this low-lying region transitions into the foothills of the Santa Cruz Mountains, increasing in slope to 15 to 30 percent near its crest. Moss Beach is within the Coastside region.

2.2.2 Local Setting

The proposed project is located on an 11.02-acre parcel adjacent to the northeast corner of the intersection of Carlos Street and Sierra Street in Moss Beach (Figure 2.2-2). The parcel is designated as Assessor's Parcel Number (APN) 037-022-070. The project site is bounded by vacant land to the southwest (toward Highway 1), residential properties along 16th Street to the northwest (in the community of Montara), and residential properties along Carlos, Sierra, and Lincoln Streets, which border the site on the eastern and southern sides. Individual houses along Stetson Street and Buena Vista Street also border the property. The project site is approximately 750 feet east of the Pacific Ocean and is within 250 feet of Montara Creek at its closest point.



Figure 2.2-1. Project location map.



Figure 2.2-2. Project vicinity map.

2.3 EXISTING CONDITIONS

2.3.1 Land Use and Zoning

The project site is within the California Coastal Zone.[7] In 1980, the County adopted their Local Coastal Program (LCP), which the California Coastal Commission (CCC) certified. The LCP, together with the County's Ordinance Code and zoning map, constitute the Local Coastal Program for the County's coastal zone. All development in the Coastal Zone requires either a Coastal Development Permit (CDP) or an exemption from CDP requirements. The County is the designated agency responsible for CDP approval of projects within the unincorporated San Mateo County limits. The current edition of the LCP policies includes amendments approved through August 8, 2012.[8] For a permit to be issued, the development must comply with the policies of the LCP and those ordinances adopted to implement the LCP. These policies have been adopted by reference into the County's Zoning Regulations under Chapter 20B, Section 6328.19 through 6328.30.

When the CCC certified the County's LCP in 1980, the project site was designated as "Affordable Housing" by both the County and the CCC. In 1986, the County approved, and the CCC certified, a rezoning of the project site to Planned Unit Development No. 124/Coast Development District (PUD-124/CD) to enable the construction of a mixed-market rate/affordable housing development (Farallone Vista) consisting of 148 dwelling units. Under the 1986 amendment, the project site had a land use designation of Medium-High Density Residential. The Medium-High Density Residential designation allowed for development at densities of between 8.8 to 17.4 housing units per acre.[9] This project was never developed. In the LCP, the site is designated as infill and as a priority development site for affordable housing.[10] The site is also designated as an affordable housing opportunity site under the San Mateo County Housing Element.[11]

In July 2018, the County received an application from MidPen for the proposed Cypress Point Affordable Housing Community Project. This application proposed amending the LCP and rezoning the project site to allow the proposed project. The proposed rezoning reduced the maximum development density on the site and restricted all dwelling units for affordable housing. The project consists of the proposed development of 70 affordable housing units and one manager's unit on an 11.02-acre parcel (project site) in the unincorporated community of Moss Beach.

After receiving approval from the CCC for the amendment to the LCP, the County Board of Supervisors adopted a resolution on July 21, 2020 to do the following:

- Amend the LCP Implementation Plan to change the zoning designation from PUD-124/CD to Planned Unit Development No. 140/Coast Development District (PUD-140/CD).
- Amend the LCP Land Use Plan to change the site's land use designation from Medium-High Density Residential to Medium Density Residential.

[7] California Coastal Commission. Maps: Coastal Zone Boundary. Available at: https://www.coastal.ca.gov/maps/czb/. Accessed May 15, 2023.
[8] County of San Mateo Planning and Building Department. 2023. Local Coastal Program. Available at: https://www.smcgov.org/planning/local-coastal-program#. Accessed December 15, 2022.
[9] County of San Mateo. 1986. General Plan. Available at: https://www.smcgov.org/planning/general-plan. Accessed May 15, 2023.
[10] San Mateo County. 2013. *Local Coastal Program Policies.* Available at: https://www.smcgov.org/planning/local-coastal-program. Accessed March 30, 2023.
[11] County of San Mateo. 2023. *San Mateo County Housing Element Update 2023-2031.* Available at: https://www.smcgov.org/planning/san-mateo-county-housing-element-update-2023-2031. Accessed January 9, 2023.

- Amend LCP Section 3.15(d) to allow for 100% of the units, apart from a resident manager's unit, to serve low-income households.
- Add the Design Review Overlay to the parcel.

Therefore, the project site land use designation in the LCP is Medium Density Residential, which allows for development at densities from 6.1 to 8.0 units per acre. The project site is zoned PUD-140/CD. This zoning designation allows for a total of 71 units on the site.[12]

Following public hearings at the County Planning Commission and Board of Supervisors in 2020, the CCC certified the LCP land use designation amendment from Medium-High Density Residential to Medium Density Residential on March 22, 2021.[13, 14] In the San Mateo County General Plan, the project site is currently designated Medium-High Density Residential, which permits 8.8 to 17.4 units per acre. As part of project approvals, a General Plan Amendment to Medium Density Residential, which permits 6.1 to 8.7 units per acre is proposed.

A Coastal Development Permit (CDP) application to construct the project in accordance with the PUD-140 zoning was received on July 6, 2022, by the County.

The San Mateo County Planning and Building Department Design Review is required separately from the CDP application process.

2.3.2 Site Development History

In 1945, the project site was developed by the U.S. Navy as the Point Montara Artillery Training Station as a military training site, which included construction of barracks, offices, a mess hall, a library, a garage, a boiler room, an incinerator, a hanger, and a drill field. After World War II, the military abandoned the site and it was acquired by the Montara Elementary School District for the Farallon View Elementary School. Between 1968 and 1970, a fire destroyed the on-site buildings, leaving numerous slab-on-grade concrete foundations and retaining walls. The parcel has remained vacant since 1970.

In 1986, two domestic water supply wells were installed on the project site and the permits were granted to the California School Employee Association.[15] Both wells were abandoned at an undetermined date. One well near the northern property boundary was discovered in 2015 during the Phase II investigation for the project. This well was cleared of debris, demolished, and sealed with cement to the 350-foot depth in 2018, in accordance with County Environmental Health Services requirements.[16] The second well was not found during reconnaissance.

[12] San Mateo County. 2013. Local Coastal Program Policies. Available at: https://www.smcgov.org/media/73646/download?attachment. Accessed March 3, 2023.
[13] County of San Mateo Planning and Building Department. 2023. Local Coastal Program. Available at: https://www.smcgov.org/planning/local-coastal-program#. Accessed May 15, 2023.
[14] On April 21, 2021, a lawsuit was filed challenging the Coastal Commission staff report under CEQA, the LCP amendment under the Coastal Act, and the hearing process under the Code of Civil Procedure Section 1094.5(b). The lawsuit was dismissed entirely on April 21, 2023. Evidence supporting the challenge was not provided, and the court found that the commission complied with CEQA and the Coastal Act and did not deprive the petitioner of a fair hearing. *(Superior Court of California, 2023. County of San Francisco. Order Denying Verified Petition for Writ of Mandate Case No. CPF-21-517430. April 21, 2023.)*
[15] AEI Consultants. 2018. *Water Well Sampling and Well Destruction*. AEI Consultants.
[16] AEI Consultants. 2015. *Phase 1 Environmental Site Assessment*. AEI Consultants.

2.3.3 Existing Site Conditions

The project site is currently unoccupied and contains concrete building foundations and retaining walls in the center. In some areas, these foundations are covered by graffiti and thick vegetation. Thick vegetation also covers the majority of the project site outside the areas of the building foundations. The vegetation on-site is a variety of grassland, coastal scrub, and ruderal species, with Monterey cypress (*Cupressus macrocarpa*) and Monterey pine (*Pinus radiata*) forest along the northern boundary of the project site.[17] Unpaved internal roadways extend northwest-southeast across the north and central portions of the project site.

The project site contains easements for facilities operated by the Montara Water and Sanitary District (MWSD), including two water storage tanks with a height of 35 feet, a booster pump system, and distribution facilities within a fenced parcel of land adjacent to and west of the intersection of Lincoln Street and Buena Vista Street near the eastern boundary of the project site.

The project site has a range of slopes from 10 to 50 percent. Elevations range from a high point of 205 feet above mean sea level (amsl) on the east side of the project adjacent to Lincoln Street to a low point of 95 feet amsl at the northwest boundary along 16th Street.[18] Montara Creek, a perennial stream, is approximately 250 feet to the northeast of the project site and runs parallel to the northern border of the site (prior to emptying into the Pacific Ocean).

2.3.4 Existing Vehicle Access

There is one existing unpaved internal road on the project site, which is the continuation of Buena Vista Street between Lincoln Street and Carlos Street. The project site can be accessed from Buena Vista Street, Lincoln Street, and Carlos Street. The MWSD water tanks on the southeastern portion of the site are accessed by this unpaved portion of Buena Vista Street.

2.3.5 Existing Utilities

2.3.5.1 Potable Water

MWSD supplies potable water to the project site and Moss Beach.[19] The MWSD water system includes raw (untreated) water and treated water storage facilities. Water is conveyed to MWSD's customers through a network of pipes approximately 150,000 feet long ranging in diameter from 2 to 16 inches, two booster pump stations, and 28 pressure regulating valve stations.[20]

The 10-foot-wide MWSD easement that bisects the project parcel contains water lines, including an 8-inch water line extending from both Sierra Street and Buena Vista Street through the project site to the fenced MWSD facilities. A 10-inch water line extends from Carlos Street to the MWSD facilities.

[17] SWCA. 2023. Cypress Point Affordable Housing Community Project Biological Impact Report. Included as Appendix D.
[18] Pyatok Architects. 2022. Cypress Point Family Community. Coastal Development Permit Submittal. Pyatok Architects.
[19] MWSD. 2017. Map of Service Area. Available at: https://mwsd.montara.org/about/map-of-service-area. Accessed March 20, 2023.
[20] MWSD. 2017. *2017 Water System Master Plan*. pp 95 of 163. Available at: https://mwsd.montara.org/assets/uploads/documents/MWSD_2017%20Master%20Plan%20Update_Rev17_082417_Full.pdf. Accessed May 15, 2023.

2.3.5.2 Wastewater

MWSD provides wastewater collection for Montara and Moss Beach and would serve the project site. The wastewater collection system is composed of approximately 125,000 linear feet of gravity sewage collection system, 13 major pump stations, 28 MWSD-maintained individual house pumps, and 28,600 linear feet of force main pipes.[21] MWSD is a member of the Sewer Authority Mid-Coastside, which provides municipal wastewater treatment for the City of Half Moon Bay, Granada Sanitary District, and MWSD.[22]

Although wastewater lines are located within Carlos Street, there is no existing wastewater infrastructure on the project site.

2.3.5.3 Stormwater

There is no existing stormwater infrastructure on the project site. Stormwater percolates on-site, with excess surface flows draining toward Carlos Street and 16th Street. Stormwater ultimately discharges to Montara Creek within the James V. Fitzgerald Area of Specific Biological Significance watershed.

2.3.5.4 Refuse and Recycling

MWSD contracts with Recology of the Coast for trash pickup, recycling, and waste hauling in Moss Beach. Solid waste is collected and transferred to Ox Mountain Sanitary Landfill in Half Moon Bay.[23] MWSD and Recology would be designated suppliers to the project site and would provide refuse and recycling service.

2.3.5.5 Electricity and Natural Gas

Pacific Gas and Electric Company (PG&E) provides natural gas and electricity to unincorporated San Mateo County through existing infrastructure. There is a 10-foot-wide easement for PG&E facilities under the unpaved road on the southwestern portion of the project site. The easement runs northeast-southwest diagonally along the southwest corner of the MWSD tanks and continues east along a proposed access loop. The project site contains some existing electrical infrastructure but no natural gas infrastructure. Natural gas would not be used during project operation.

2.4 PROJECT OBJECTIVES

MidPen seeks to achieve the following objectives by undertaking the proposed project to provide affordable housing on the coastal portion of San Mateo County:

1. Provide a significant number of low-income affordable housing units in a vibrant, safe, well-designed community that respects the coastal character of the region, consistent with the San Mateo County Housing Element Adequate Site Inventory.
2. Provide affordable housing in the region at cost-effective densities that are competitive for financing.

[21] MWSD, 2017. *2017 Water System Master Plan*.

[22] Sewer Authority Mid-Coastside. 2022. Available at: https://samcleanswater.org/. Accessed March 20, 2023.

[23] Stevens Consulting. 2018. Public Services and Utilities. Section 7.3 Solid Waste. July 2018.

3. Address housing needs of households, families, and workers in the Midcoast and surrounding region.
4. Provide housing for a diverse range of low-income workers and families.
5. Improve the jobs/housing balance and jobs/housing fit in the region by providing affordable dwelling units near coastal jobs.
6. Provide informal recreational opportunities for residents in the region and the general public by providing access to a trail on undeveloped portions of the site.
7. Be consistent with the character of the surrounding neighborhood by adhering to the existing development guidelines to the extent feasible.

2.5 PROJECT CHARACTERISTICS

2.5.1 Proposed Local Resident Selection

All units, except for the manager's apartment, would be affordable to households earning up to 80% of the Area Median Income. In addition, the project proposes to include a preference for individuals who live and/or work in the region for 75% of the units. An agreement between the County Department of Housing and Moss Beach Associates, L.P. (No. 79000-21-R076201E), states that 52 of the 71 units shall be "Local Preference Units." Eligible households are those that include at least one member who lives or works in the city of Pacifica, the city of Half Moon Bay, and/or the unincorporated County region between the city of Pacifica and the city of Half Moon Bay, or the Greater Moss Beach Region. This preference structure increases chances for individuals who meet these criteria to live in this development, although it does not restrict individuals who do not live and/or work in the area from being accepted. Additionally, 18 of the 71 units would be reserved for agricultural workers.[24] Based on the most recent available data from the 2019 U.S. Census Bureau, there are 12,177 jobs located in the County's coastal region (Princeton, Miramar, El Granada, Montara, and Moss Beach) and the neighboring coastal cities of Pacifica and Half Moon Bay. Among these jobs, 7,892 (64.8%) are held by individuals commuting from outside this area. In total, 2,839 of these jobs require commutes between 10 and 24 miles, and 3,033 additional jobs require commutes of 25 miles or more.[25]

2.5.2 Proposed Project Facilities

The project proposes the development of 70 affordable housing units and one manager's unit, contained in 16 two-story buildings and a single-story community building for a total of 66,738 square feet (Figure 2.5-1). The project includes six different building layouts and unit configurations, ranging in height from 23 to 28 feet.

The project would cluster the residential units toward the northwestern corner of the site, retaining the forested open space on the northernmost portion of the site, and leaving room for landscaping and public trails to the south and east. The project does not include changes to the two existing water tanks on the site (see Figure 2.5-1).

Building materials would include wood-look cement board siding in shades of dark red and brown and grey composite shingle roofing materials (Figure 2.5-2).

[24] Email. Personal communication between Serena Ip and Erica Rippe. July 14, 2023.

[25] U.S. Census Bureau. 2019. Quickfacts: San Mateo County, California. Available at: https://www.census.gov/quickfacts/sanmateocountycalifornia. Accessed January 23, 3023.

2.5.2.1 Dwelling Units

There would be 63,374 square feet of residential housing configured within six different, two-story building types and containing 71 residential units, which would house approximately 213 residents, based on occupancy rates at other properties owned or managed by MidPen. The project would provide a mixture of one-, two-, and three-bedroom units, including a combination of two-story townhouses[26] and Americans with Disabilities Act (ADA)-accessible one-story flats. Each unit would have bicycle parking and one assigned parking space. Building characteristics for all proposed building types (residential and community buildings) are shown in Table 2.5-1 and Figure 2.5-3 through Figure 2.5-8.

Table 2.5-1. Building Characteristics

Building Type	Number of Buildings	Units	Square Feet (includes covered exterior areas)	Maximum Height
Building A	1	16 one-bedroom flats	9,182	27 feet 10 inches
Building B	1	5 two-bedroom flats 2 three-bedroom flats	6,630	27 feet 11 inches
Building C1	4	4 two-bedroom flats	3,691	27 feet 9 inches
Building C2	1	4 two-bedroom flats	3,692	27 feet 6 inches
Building D	8	2 three-bedroom townhomes	2,258	27 feet 0 inches
Building E	1	12 two-bedroom flats	11,042	27 feet 9 inches
Community Building	1	N/A	3,364	23 feet 5 inches
Total	**17**	16 one-bedroom units 37 two-bedroom units 18 three-bedroom units 1 community building	**66,735**	

Note: N/A = not applicable.

[26] The main difference between a townhouse and an apartment or flat is the structural organization. Townhouses are typically free-standing and may share a wall with an adjacent unit. Typically, an apartment is a unit in a larger building that encompasses a community inside one building.

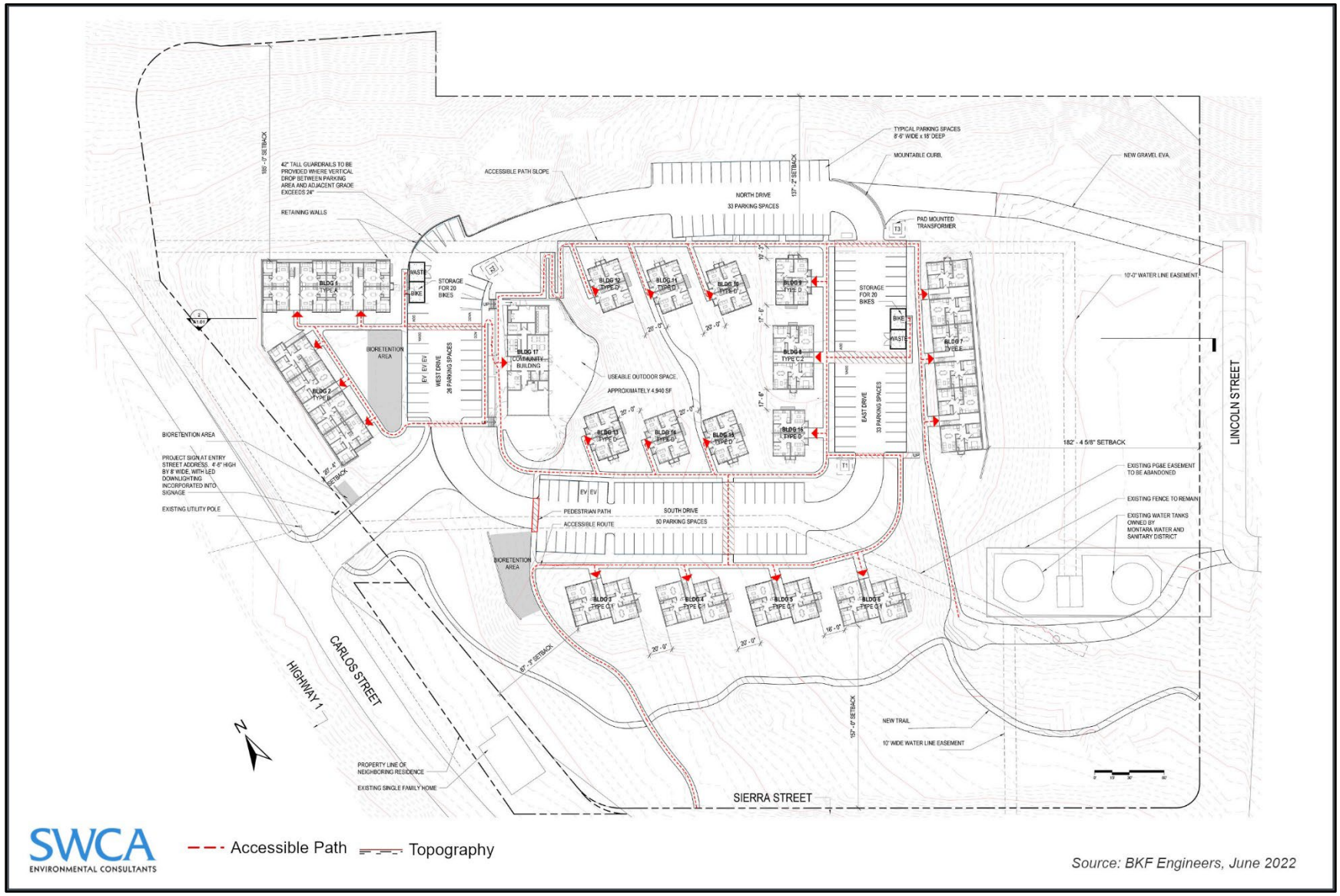
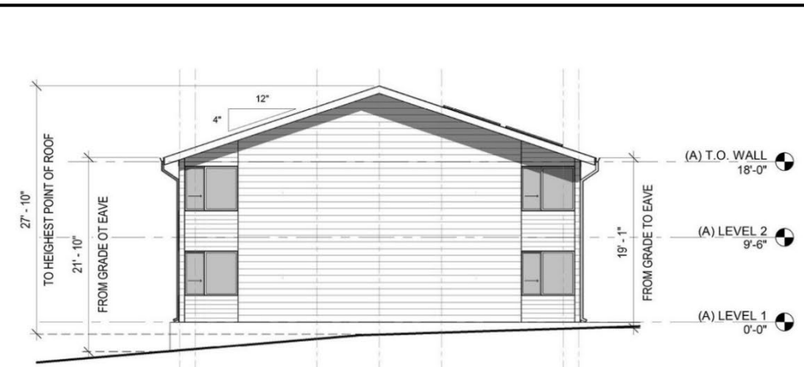


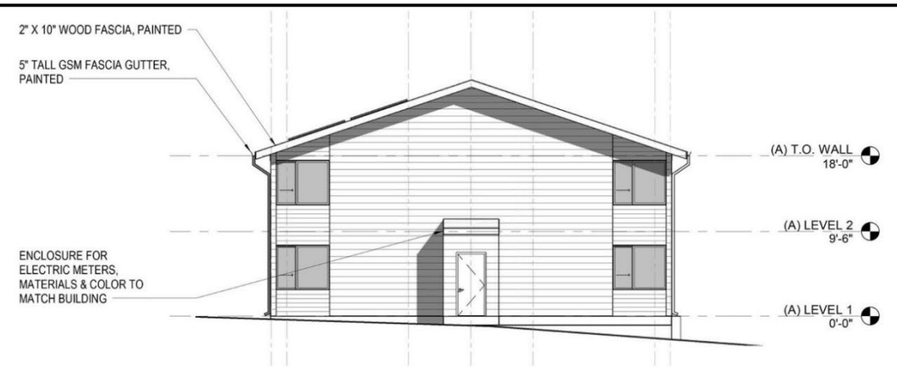
Figure 2.5-1. Project site plan.



Figure 2.5-2. Building materials.



BUILDING TYPE A - WEST ELEVATION
NOT TO SCALE



BUILDING TYPE A - EAST ELEVATION
NOT TO SCALE



BUILDING TYPE A - SOUTH ELEVATION
NOT TO SCALE

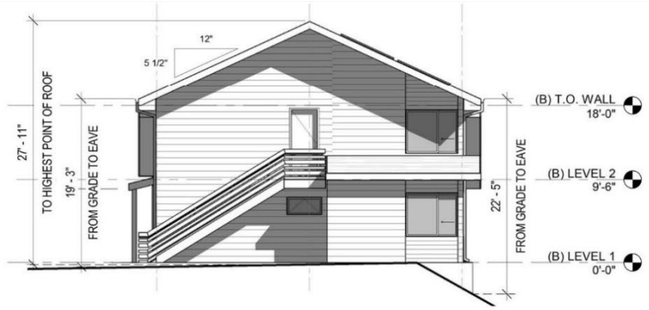


BUILDING TYPE A - NORTH ELEVATION
NOT TO SCALE

Source: Building Type A - Elevations, Sheet A4.02 Cypress Point Affordable Housing Community Project Design Plans (Revised 24 June 2022), By: MIDPEN HOUSING, Designed By: PYATOK

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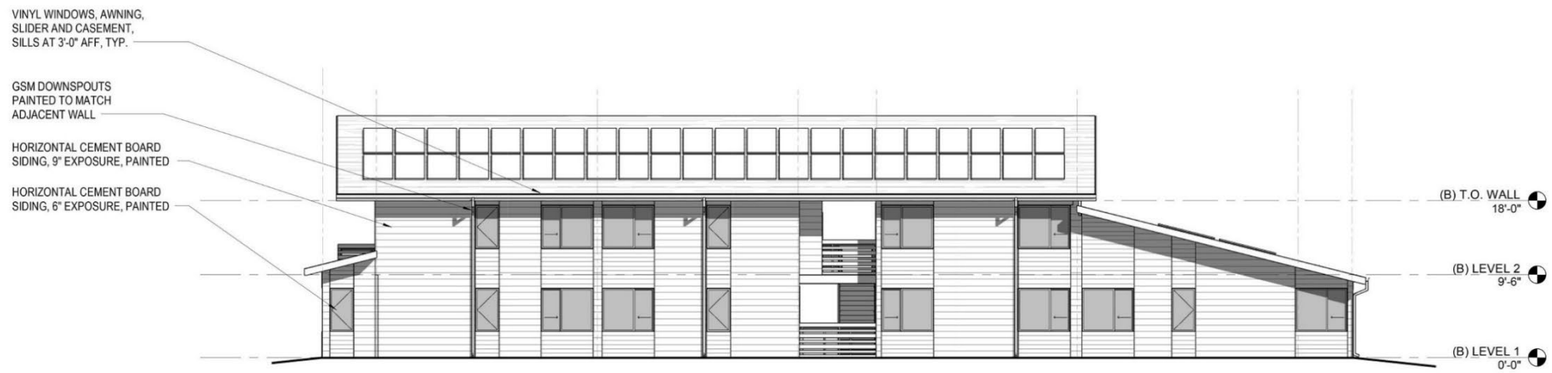
Figure 2.5-3. Building Type A.



BUILDING TYPE B - NORTH ELEVATION
NOT TO SCALE



BUILDING TYPE B - SOUTH ELEVATION
NOT TO SCALE



BUILDING TYPE B - WEST ELEVATION
NOT TO SCALE



BUILDING TYPE B - EAST ELEVATION
NOT TO SCALE

Source: Building Type B - Elevations, Sheet A4.04 Cypress Point Affordable Housing Community Project Design Plans (Revised 24 June 2022), By: MIDPEN HOUSING, Designed By: PYATOK

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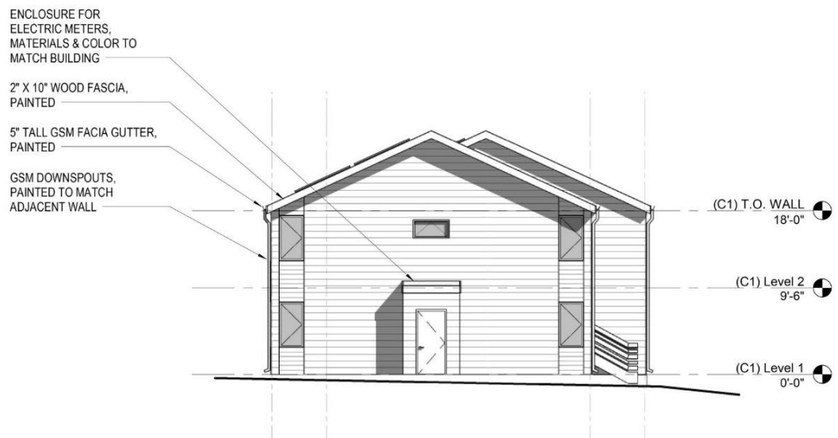
Figure 2.5-4. Building Type B.



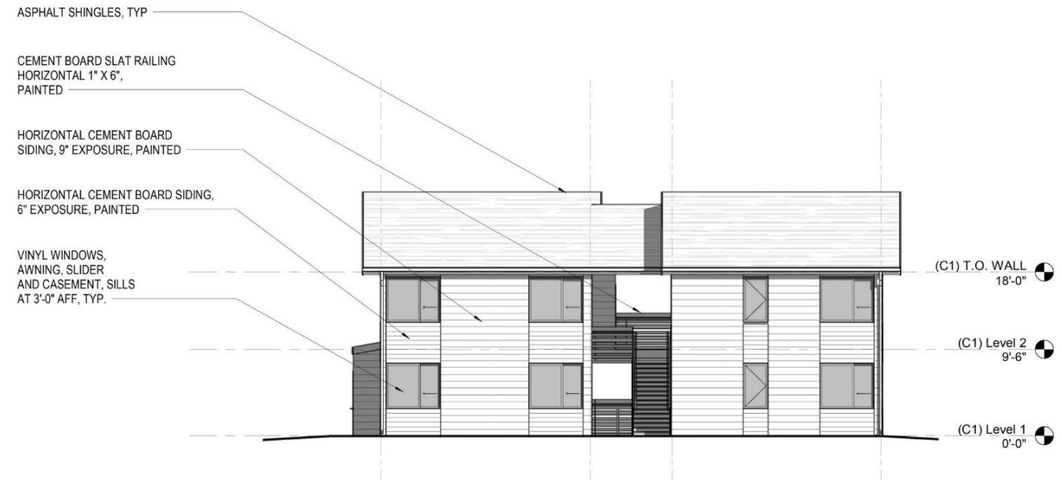
BUILDING TYPE C1 - WEST ELEVATION
NOT TO SCALE



BUILDING TYPE C1 - SOUTH ELEVATION
NOT TO SCALE



BUILDING TYPE C1 - EAST ELEVATION
NOT TO SCALE

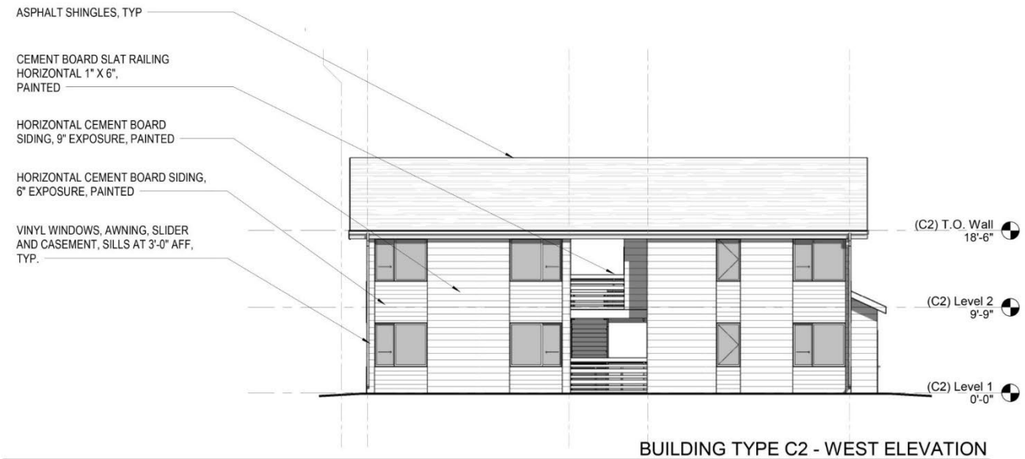


BUILDING TYPE C1 - NORTH ELEVATION
NOT TO SCALE

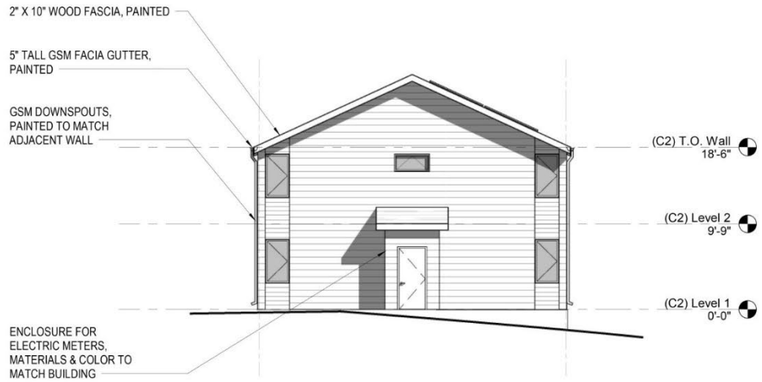
Source: Building Type C1 - Floor Plans and Elevations, Sheet A4.05 Cypress Point Affordable Housing Community Project Design Plans (Revised 24 June 2022), By: MIDPEN HOUSING, Designed By: PYATOK

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Figure 2.5-5. Building Type C1.



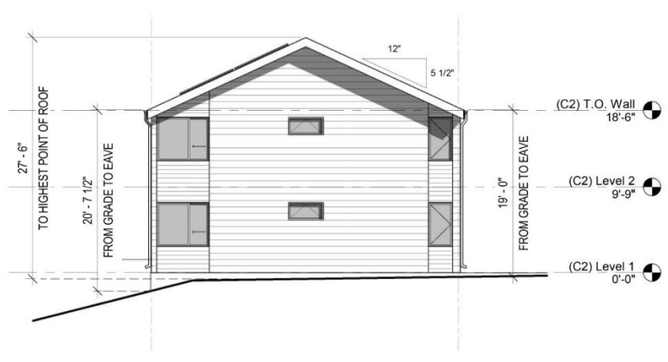
BUILDING TYPE C2 - WEST ELEVATION
NOT TO SCALE



BUILDING TYPE C2 - SOUTH ELEVATION
NOT TO SCALE



BUILDING TYPE C2 - EAST ELEVATION
NOT TO SCALE



BUILDING TYPE C2- NORTH ELEVATION
NOT TO SCALE

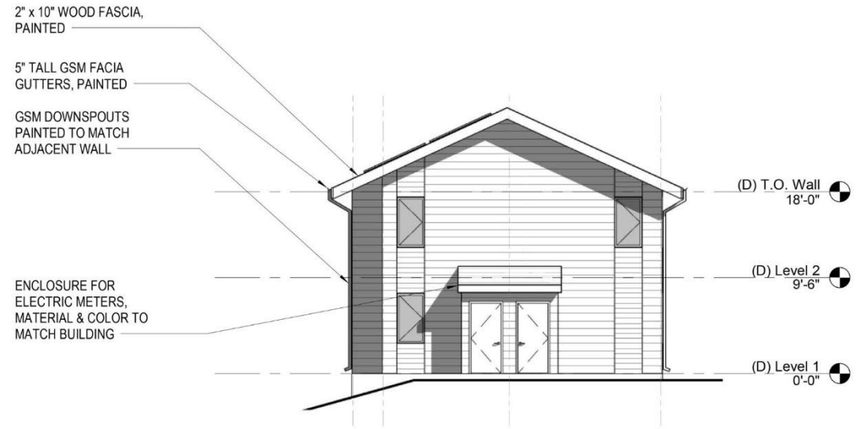
Source: Building Type C2 - Floor Plans and Elevations, Sheet A4.06 Cypress Point Affordable Housing Community Project Design Plans (Revised 24 June 2022). By: MIDPEN HOUSING, Designed By: PYATOK

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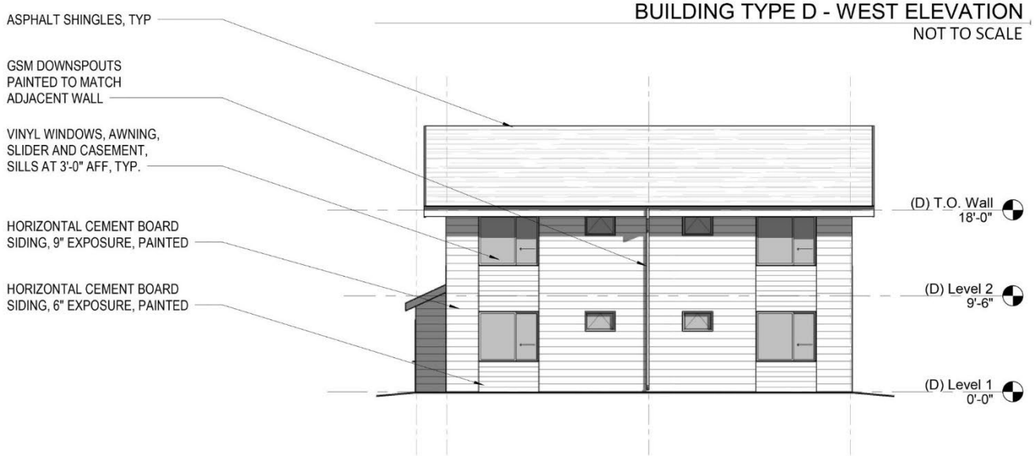
Figure 2.5-6. Building Type C2.



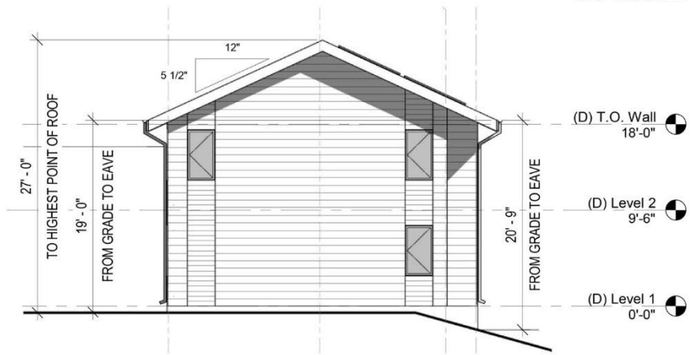
BUILDING TYPE D - WEST ELEVATION
NOT TO SCALE



BUILDING TYPE D - SOUTH ELEVATION
NOT TO SCALE



BUILDING TYPE D - EAST ELEVATION
NOT TO SCALE



BUILDING TYPE D - NORTH ELEVATION
NOT TO SCALE

Source: Building Type D - Floor Plans and Elevations, Sheet A4.07 Cypress Point Affordable Housing Community Project Design Plans (Revised 24 June 2022). By: MIDPEN HOUSING. Designed By: PYATOK

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Figure 2.5-7. Building Type D.



BUILDING TYP E - NORTH ELEVATION
NOT TO SCALE



BUILDING TYP E - SOUTH ELEVATION
NOT TO SCALE



BUILDING TYP E - WEST ELEVATION
NOT TO SCALE



BUILDING TYP E - EAST ELEVATION
NOT TO SCALE

Source: Building Type E - Floor Plans and Elevations, Sheet A4.09 Cypress Point Affordable Housing Community Project Design Plans (Revised 24 June 2022). By: MIDPEN HOUSING, Designed By: PYATOK

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Figure 2.5-8. Building Type E.

2.5.2.2 Community Building and Amenities

The project would also involve construction of a 3,364-square-foot community building in the western portion of the project site, on the inner side of an access loop (described below). The community building would contain an office for residential and leasing services, laundry facilities, maintenance and storage areas, a meeting room, computer room, and kitchen (Figure 2.5-9).

A children's play area would be constructed adjacent to the community building with play structures for children between ages 2 and 12 years. A barbeque and picnic area south of the community building and a scenic overlook and picnic area at the southeast corner of the development would also be constructed. Three areas of synthetic turf between Building A and Building B and adjacent to the community building to the east and south would provide areas for outdoor recreation (Figure 2.5-10).

The project would have a fenced community garden north of the community building with raised planting beds and a compost area. A network of pedestrian pathways linking residential buildings and community facilities and amenities throughout the project site would be available for recreational use by both residents and the general public. The pathways would be privately maintained public open space. These pathways would include new unpaved pedestrian trails along the southern side of the property that connect to a driveway on Carlos Street (described below) and follow the alignment of an existing trail in the southeast corner of the site. A concrete multi-modal path from the driveway south to Sierra Street would be constructed (see Figure 2.5-10).

2.5.3 Parking, Circulation, and Access

Vehicular ingress/egress to and from the project site would be provided by a new 28-foot-wide single driveway on Carlos Street on the western boundary of the site (Figure 2.5-11). The entrance driveway would split into an access loop that circles the residential and community building areas. In addition to the main entrance, there would be an emergency access route from Lincoln Street to the northeast corner of the project.

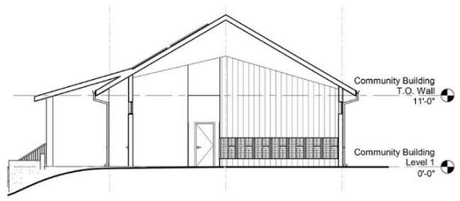
The project includes a total of 142 vehicular parking spaces in four separate parking areas, forming a loop around the central core of apartment buildings. Of these 142 spaces, there would be six designated ADA parking spaces, and 36 would be electric vehicle parking spaces (Figure 2.5-1). The project also includes 21 electric vehicle-capable parking spaces for both low power charging receptacles and Level 2 Electric Vehicle Supply Equipment to meet the California Green Building Code requirements and the County's current Building Regulations.

There are no designated motorcycle parking spaces, vehicle loading, or drop-off spaces planned.
In addition to vehicle parking, there would be two secure bicycle parking enclosures on the east and west sides of the central driveway. These enclosures would each contain space for up to 20 bicycles. There would also be bicycle racks available in most of the building types and adjacent to the community building.

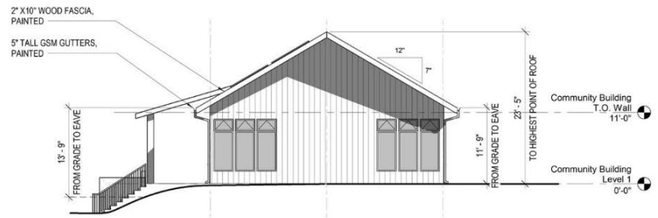
2.5.5 Site Design and Pedestrian Circulation

The following site design and pedestrian circulation improvements are proposed by the project sponsor as part of the project:

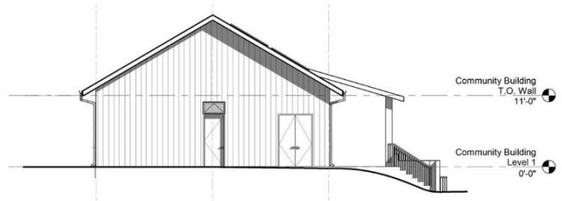
- **Carlos Street**
  - **Sidewalk**: The project sponsor will add a sidewalk on the east side of Carlos Street south of the proposed project driveway entrance to connect with the existing sidewalk on the north side of Sierra Street.
  - **Revise Pavement Marking and Signage at Site Entrance**: The project sponsor will revise the site plan for the driveway entrance at Carlos Street to include pavement markings and signage to alert drivers exiting the site onto Carlos Street to be aware of traffic at the intersection. To ensure compliance with this recommended improvement measure the project sponsor shall submit updated site plans as part of the building permit process.
- **Sierra Street/Stetson Street**
  - **Sidewalk**: The project sponsor will clear/plane existing sidewalk on north side of Sierra Street east of Carlos Street that that fronts project site.
  - **Curb Ramp and Crosswalk**: The project sponsor will add a curb ramp and high visibility crosswalk with advanced yield markings (2) and yield signs (2) for pedestrians to cross Sierra Street to Stetson Street at the T-intersection of Sierra and Stetson streets.
  - **One-Way Stop**: The project sponsor will add a one-way stop sign on the northbound approach to Stetson Street.
- **On-Site Circulation**
  - **Higher Visibility Crossings:** The project sponsor will include high visibility crossings to support bicycling and walking as safe modes of transportation.
  - **Signage and Pavement Markings**: The project sponsor will add signage and pavement markings to make drivers aware of bicyclists and pedestrians, especially ahead of road crossings around the site to alert drivers to yield and at the road crossings associated with the multiple parking areas along the loop road.
  - **Speed Humps**: The project sponsor will install speed humps to maintain low on-site vehicular speed.
  - **Sidewalk Widening**: The project sponsor will construct the on-site sidewalk network wider than a 4-foot width in order to accommodate bicyclists and pedestrians separate from the roadway with vehicles.
  - **Wayfinding Signage**: The project sponsor will strengthen the connection between site and the larger pedestrian and bicycle network to facilitate access to transit through implementation of features such as wayfinding signage.



COMMUNITY BUILDING - SECTION
NOT TO SCALE



COMMUNITY BUILDING - SOUTH ELEVATION
NOT TO SCALE



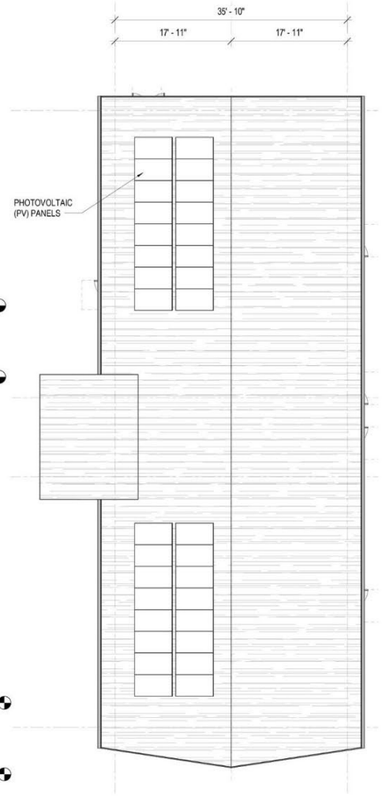
COMMUNITY BUILDING - NORTH ELEVATION
NOT TO SCALE



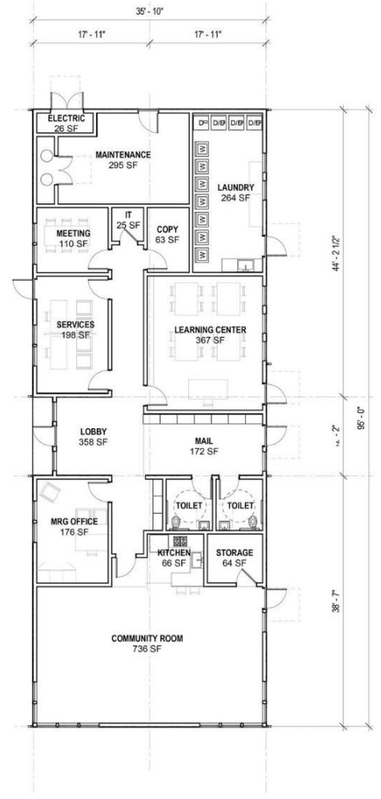
COMMUNITY BUILDING - EAST ELEVATION
NOT TO SCALE



COMMUNITY BUILDING - WEST ELEVATION
NOT TO SCALE



COMMUNITY BUILDING - ROOF PLAN
NOT TO SCALE



COMMUNITY BUILDING - FLOOR PLAN
NOT TO SCALE

Source: Community Building - Floor Plans and Elevations, Sheet A4.10 Cypress Point Affordable Housing Community Project Design Plans (Revised 24 June 2022), By: MIDPEN HOUSING, Designed By: PYATOK

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Figure 2.5-9. Community building.



Figure 2.5-10. Project landscaping and amenities.

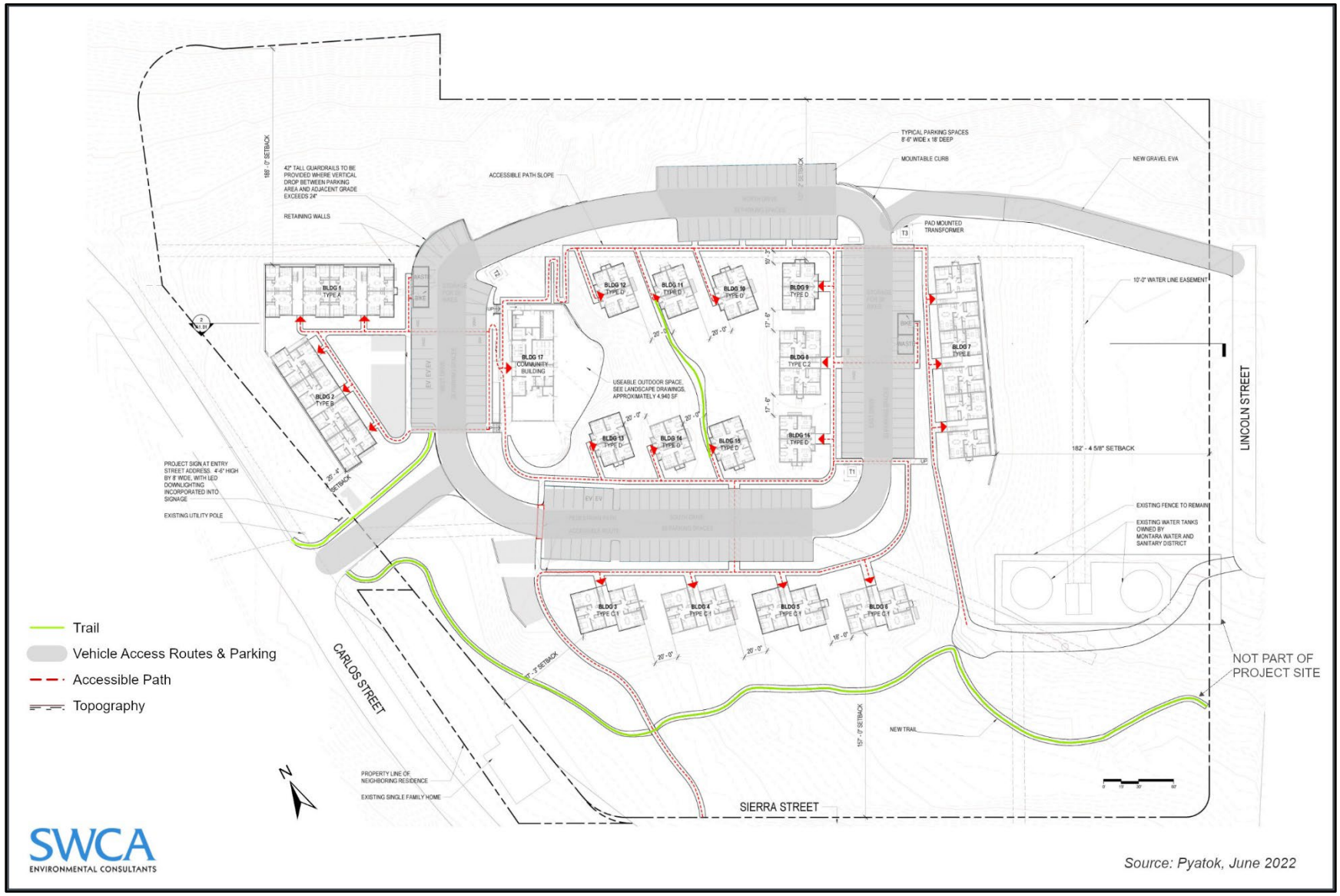


Figure 2.5-11. Site access and circulation.

2.5.6 Landscaping

The project proposes development of approximately 5 acres of the 11.02-acre site for the Cypress Point Housing Development. Thick vegetation covers the majority of the project site. The vegetation on-site is a variety of grassland, coastal scrub, and ruderal species. The project includes retention of vegetation adjacent to Carlos Street and Sierra Street along the perimeter of the site and the forested open space on the northern boundary of the site for project screening. The forested area along the northern boundary of the project site primarily contains Monterey cypress (*Cupressus macrocarpa*) and Monterey pine (*Pinus radiata*). The project would retain approximately 193 of the existing trees on the site and remove approximately 295 trees.[27] Of the 295 trees proposed to be removed, approximately 190 are considered Significant or Heritage.[28] Tree Protection Zones would be defined and marked prior to construction to protect each tree to be preserved during construction. The project would plant approximately 190 trees throughout the project site (see Figure 2.5-10). These trees would be caged for the first year to protect them from herbivores, and irrigated until established as evidenced by vigorous top growth in the spring. The project would replant disturbed slopes with native or low-water groundcover and shrubs, and/or seed them with red fescue and California poppy, for erosion control. Approximately 4,533 square feet of bioretention basins would be planted with water tolerant species.

In order to ensure the efficient use of water, the landscaping elements to be added to the site would be irrigated with a permanent automated irrigation system and include all parts compatible with a remote- or satellite-controlled system. Vegetation would be selected that is low maintenance, water conserving, native to the project site, or adapted for local conditions.

2.5.7 Utilities

2.5.7.1 Potable Water

The project site is served by the MWSD. The project would extend water lines to new project facilities for potable water and fire water supply, as well as for irrigation of landscaping. The proposed water line would extend from the existing MWSD tanks along the existing 10-foot ROW along the eastern and northern parts of the project. New domestic water and fire water lines would be located in the access loop and parking areas, with individual connections to each building.

2.5.7.2 Wastewater

The project construction includes the installation of new wastewater pipelines that connect the project site to the existing MWSD sewer lines on Carlos Street. These new wastewater pipelines would be located in the access loop and parking areas, with individual connections to each building. Construction of wastewater improvements would be routed to provide setbacks between new facilities and existing water and wastewater pipelines, and to avoid other existing utilities. The proposed wastewater connections and improvements would comply with Chapter 4.24, Sewer Connections, of the County Ordinance Code and Sanitary Sewer Standard Details and Specifications, in addition to the MWSD Code.

2.5.7.3 Stormwater

The project includes installation of a new connection to the existing storm drain main on Carlos Street, which ultimately outfalls to Montara Creek. Additional proposed stormwater infrastructure for the project

[27] MidPen. 2023a. *BIO-1 Response*. Data Request #2 Response. MidPen.
[28] HortScience | Bartlett Consulting. 2022. Arborist Report, Cypress Point. HortScience | Bartlett Consulting.

consists of new storm drain lines ranging in diameter from 12 inches to 21 inches, inlets at low points throughout the hardscape and landscape areas, access-holes at junction areas, building downspout connections, and cleanouts and bioretention basins designed to comply with the development's dual requirements of stormwater treatment and hydromodification management (HM) requirements. Stormwater runoff on the project would be collected by overland flow to three stormwater bioretention basins in the western portion of the project site.

The project includes construction of approximately 3.29 acres (143,254 square feet) of impervious surface areas and anticipates utilizing bioretention areas as the main best management practice (BMP) treatment strategy for Municipal Regional Permit (MRP) and HM compliance (Figure 2.5-12). The project site is divided into four drainage management areas (DMAs) based on flow patterns. The required and provided bioretention area for each DMA is shown in Table 2.5-2. The new drainage stormwater system would transport stormwater runoff to three bioretention areas on the western portion of the site. The bioretention areas would be of sufficient size to contain peak flows from a 2-hour, 10-year storm event, as required by the MRP and HM.

Table 2.5-2. Drainage Management Areas

Drainage Management Areas	Total Area (square feet)	Impervious Area (square feet)	Pervious Area (square feet)	Bioretention Area Required (square feet)	Bioretention Area Provided (square feet)
DMA 1	111,973	64,093	45,529	2,150	2,351
DMA 2	109,233	73,263	33,988	1,950	1,982
DMA 3	8,188	4,902	3,086	161	200
DMA 4	19,652	996	18,656	0	0
Total	**249,046**	**143,254**	**101,259**	**4,261**	**4,533**

2.5.7.4 Refuse and Recycling

The project would include waste, recycling, and organics containers in two separate enclosures in the east and west parking areas (see Figure 2.5-1). In addition, the project would include the construction of a community garden with a compost area.

2.5.7.5 Electricity

Public utility lines would be extended throughout the site. The existing PG&E easement runs northeast-southwest diagonally along the southwest corner of the MWSD tanks and continues east along the proposed access loop. This easement would be abandoned, and the project would include a new 10-foot-wide easement following the driveway and parking areas, with individual electrical extensions to each building. Overhead utility lines would be trenched in open space areas and within the scenic corridor.

The project includes construction of solar panels on rooftops of all buildings which would fulfill the majority of the electricity demand for the project. The project would not include any natural gas appliances or heating.

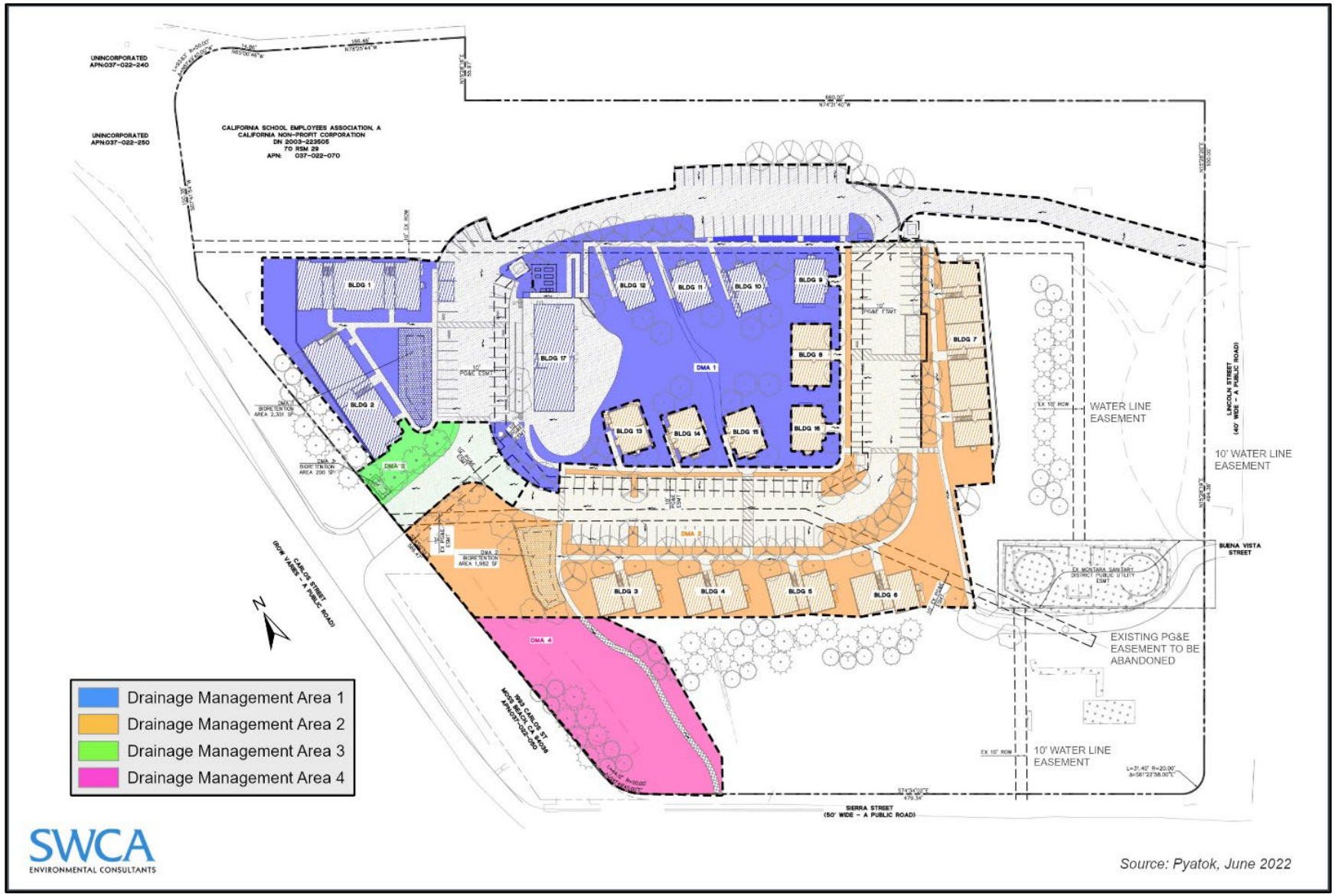


Figure 2.5-12. Drainage management areas.

2.5.8 Sustainability Features

The project includes installation of rooftop solar panels, water-efficient appliances, including high-efficiency washers with a water factor of 5 or less, toilets that use less than 1.6 gallons per flush in all residential units, and metering or self-closing faucets in all non-residential lavatories. The project's irrigation system would include an automatic weather-based controller, manual shut-off valves, matched precipitation rate sprinkler heads, a proper setback from non-permeable surfaces, and separate valves for different hydrozones. It would be designed to prevent runoff, low head drainage, and overspray.

2.5.9 Environmental Commitments from Project Sponsor

The project includes the following environmental commitments which the project sponsor, MidPen Housing Corporation has committed to:

1. Defensible Space: For wildfire protection, a 30-foot fire break area and a 100-foot reduced fuel zone surrounding the development would be implemented. This defensible space is required pursuant to San Mateo County's Local Hazard Mitigation Plan and PRC 4291.[29]
2. Construction Practices for Energy Conservation: MidPen Housing Corporation (the project sponsor) has also committed to the following construction actions that would reduce the energy consumption from project construction.
    - Preserve a portion of the site as undeveloped land.
    - Make best efforts to use at least 10 percent local building materials.
    - Recycle or reuse at least 50 percent of construction waste or demolition materials.
3. Operational Energy Saving Features: The project shall be developed in accordance with the minimum requirements of one or more of the following programs to provide a framework for healthy, efficient, carbon and cost-saving green buildings: Leadership in Energy & Environmental Design (LEED); Green Communities; Passive Housing; Living Building Challenge; National Green Building Standard, or the GreenPoint Rated program.
4. Transportation Demand Management (TDM): The TDM strategies include measures that would promote transit or ridesharing education, bicycle amenities, and infrastructure improvements to support active transportation. MidPen has committed to the implementation of the following required and additional TDM measures identified in the City/County Association of Governments (C/CAG) TDM Checklist for a Residential (Multi-Family) Land Use: Small Project (see Appendix E.3):
    - Measure 2 – Orientation, Education, Promotional Programs and/or Materials (*Required*)
    - Measure 3 – TDM Coordinator/Contact Person (*Required*)
    - Measure 6 – Transit or Ridesharing Passes/Subsidies (*Required*)
    - Measure 8 – Secure Bicycle Storage (*Required*)
    - Measure 9 – Design Streets to Encourage Bike/Ped Access (*Required*)
    - Measure 11 – Family-Supportive Amenities (*Additional*)
    - Measure 22 – Active Transportation Subsidies (*Additional*)
    - Measure 23 – Gap Closure (*Additional*)
    - Measure 24 – Bike Repair Station (*Additional*)

[29] San Mateo County. 2021. Multijurisdictional Local Hazard Mitigation Plan. Prepared for County of San Mateo Department of Emergency Management. Available at: https://www.smcgov.org/media/53471/download?inline=. Accessed May 2023.

2.6 CONSTRUCTION

The project would disturb a total of 4.35 acres during construction. These construction activities would occur over an approximately 18-month period, in six phases. Construction activities are anticipated to commence in December 2024 and terminate in June 2026. These phases and associated durations are described in more detail in Table 2.6-1. Construction activities would generally occur Monday to Friday from 7:00 a.m. to 6:00 p.m. Weekend and off-hour work would be avoided.

In Phase I, Demolition, project construction would include removal of the existing impervious surface of approximately 1 acre which is equivalent to 20,840 cubic yards (CY).[30] Concrete foundations would be hauled to a recycling facility in Half Moon Bay. Approximately 295 trees would also be removed as part of this phase, and chipped and dispersed on-site.[31]

During Phase II, Site Preparation, project construction would include site clearing and leveling. Building materials would be transported to the site.

During Phase III, Grading, construction would include approximately 9,507 CY of cut, and approximately 9,881 CY fill. In total, the project would require 19,388 CY of grading. Approximately 7,381 CY of soil would be imported to the site, and no soil would be hauled off-site. The haul route would be from Highway 1 south to the project site via Carlos Street.

In Phase IV, Building Construction, work would include importation of building materials for residential buildings and the community building. An estimated 425 tons of waste and 85 haul trips would be required for all project buildings during this phase.[32] All buildings would be constructed using slab-on-grade foundations. In total, the project would add approximately 3.29 acres (143,254 square feet) of impervious surface areas to the site. During this phase, roadway construction and utility work would be completed. This would include the digging of utility trenches, surveying, excavation, off-haul to subgrade and level base rock for building foundations. Hydrostatic testing, flushing, and watermain connections would be tested and connected.

During Phase V, Paving, would encompass the construction activities associated with paving including paving of on-site parking and roads, as well as on-site concrete work (curb, gutter, flatwork, etc.).

During Phase VI, Finishing, work would include finishing activities, architectural coatings, final landscaping, and removal of temporary fencing and erosion control paving of on-site parking and roads, as well as on-site concrete work (curb, gutter, flatwork, etc.).

Different construction phases would require varying numbers of construction personnel. There would be an average of 30 construction workers on the site per day, and up to 60 workers at peak times.[33] The estimated equipment, duration of work, and personnel requirements by construction activity are presented in Table 2.6-1.

The project includes various construction traffic control measures to avoid a substantial increase in construction-period traffic congestion. A Construction Traffic Control Plan would be submitted to the County Traffic Engineer prior to the start of construction and would include traffic control measures in

[30] MidPen. 2023b. 23_0504 SWCA Cypress Point EIR Data Request – additional responses. MidPen.
[31] Illingworth and Rodkin. 2023. *Cypress Point Affordable Housing Project, San Mateo County, California (17-158) Noise Assessment Update of Proposed Tree Removal Activities.* May 19, 2023.
[32] MidPen, 2023b.
[33] MidPen, 2023b.

order to ensure traffic safety during all construction phases. The traffic control devices may involve signage, use of delineators, flashing arrows, and/or temporary lane lines at the discretion of the County Traffic Engineer.

The Construction Traffic Control Plan would also include the following elements:

- Provisions for advanced notification (signage) of the proposed detour routes and coordination with emergency service providers.
- Identified locations for contractor parking on-site for the duration of the construction period so that parking does not affect the operation of local roads.
- Prohibition of construction truck trips to and from the site during peak traffic morning and afternoon peak hours for purposes of transporting cut and fill.
- In the event of lane closures due to deliveries, adequate number of flaggers and the appropriate signage to ensure the safe passage of vehicles, bicyclists, and pedestrians.

Table 2.6-1. Anticipated Construction Schedule, Trips, and Equipment

Phase (Duration)	Equipment Used			Daily Vehicle Trips
	Type	Number	Hours/Day	
1. Demolition 12/1/2024–1/17/2025 (35 working days)	Tractors/Loaders/Backhoes	5	8	40 one-way worker trips 6 one-way vendor trips 60 one-way haul truck trips 2 miles of on-site truck travel
	Concrete/Industrial Saws	2	8	
	Excavators	5	8	
2. Site Preparation 1/18/2025–2/15/2025 (20 working days)	Rubber-Tired Dozers	2	5	40 one-way worker trips 6 one-way vendor trips 300 one-way haul truck trips 2 miles of on-site truck travel
	Tractors/Loaders/Backhoes	3	8	
3. Grading 2/16/2025–4/05/2025 (35 working days)	Scrapers	2	8	40 one-way worker trips 6 one-way vendor trips 18 one-way haul truck trips 2 miles of on-site truck travel
	Compactor	1	8	
	Dump/Tenders	1	8	
	Off-Highway Truck	1	8	
	Graders	1	8	
	Rubber-Tired Dozers	1	8	
4. Building Construction 3/1/2025–3/29/2026 (280 working days)	Cranes	1	7	78 one-way worker trips 8 one-way vendor trips 20 one-way haul truck trips 3 miles of on-site truck travel
	Forklifts	3	8	
	Generator Sets	1	8	
	Tractors/Loaders/Backhoes	3	7	
	Welders	1	8	

Phase (Duration)	Equipment Used			Daily Vehicle Trips
	Type	Number	Hours/Day	
5. Paving 3/2/2026–6/20/2026 (80 working days)	Pavers	3	8	40 one-way worker trips 6 one-way vendor trips 2 one-way haul truck trips 2 miles of on-site truck travel
	Tractors/Loaders/Backhoes	1	8	
	Rollers	2	8	
	Grader	1	1	
	Off-Highway Truck	1	8	
	Scraper	1	1	
	Compactor	1	1	
6. Finalization 5/10/2026–6/20/2026 (30 working days)	Air Compressors	1	6	10 one-way worker trips 2 one-way vendor trips 0 one-way haul truck trips 1 mile of on-site truck travel

Notes: For the parameters that are not provided in the table (e.g., equipment horsepower and load factor, on-road trip lengths), CalEEMod defaults were used.

2.7 PROJECT APPROVALS (REQUESTED ACTIONS AND REQUIRED PERMITS)

Various permitting requirements would need to be met prior to implementation of the proposed project. Table 2.7-1 summarizes federal, state, and local permits that may be required for the project and the agencies that are expected to use the EIR in their decision-making and permitting processes.

Table 2.7-1. Agency Permit Requirements

Agency	Approval/Permit Required
County of San Mateo Planning and Building Department	Building Permits
County of San Mateo Planning and Building Department	Certificate of Occupancy
County of San Mateo Planning and Building Department	General Plan Amendment from Medium-High Density Residential to Medium Density Residential
County of San Mateo Planning and Building Department	CEQA Document Certification
County of San Mateo Planning and Building Department	Design Review
County of San Mateo Planning and Building Department	Coastal Development Permit
County of San Mateo Fire Department	Fire Code compliance
Bay Area Regional Water Quality Control Board	National Pollution Discharge Elimination System Permit with storm water pollution prevention plan
County of San Mateo Department of Environmental Heath	Hazardous materials business plans
County of San Mateo Public Works Department, Engineering and Resource Protection Division	Plan check
County of San Mateo Public Works Department, Engineering and Resource Protection Division	Encroachment Permit
County of San Mateo Planning and Building Department	Grading Permit

CHAPTER 3. ENVIRONMENTAL IMPACTS ANALYSIS

IMPACT OVERVIEW

This chapter addresses the physical environmental effects of the Cypress Point Affordable Housing Community Project (proposed project) and project variants. This introduction presents the general format of the environmental analysis in each environmental topic section. It provides a general description of the approach to the project's analysis of environmental impacts, including cumulative projects that are considered in the cumulative impact analyses. This chapter also describes the existing environmental conditions of the 11.02-acre project site.

This environmental impact report (EIR), including the initial study (see EIR Appendix B), analyzes the physical environmental impacts associated with implementation of the proposed project. The analysis includes consideration of environmental impacts associated with both construction and operation of the proposed project, as appropriate for the particular resource topic.

SCOPE OF ANALYSIS

Initial Study Topics

The County of San Mateo (County) Planning and Building Department distributed a Notice of Preparation (NOP) of an EIR and Notice of Public Scoping Meeting on December 9, 2022, announcing its intent to prepare an EIR, including an initial study, and to solicit comments from the public about the scope of this EIR (the NOP is presented in EIR Appendix A). The initial study (see EIR Appendix B) determined that project-specific and cumulative impacts for certain resource topics would not require additional analysis in the EIR because the proposed project or project variants would have no impact, less-than-significant impact, or less-than-significant with mitigation incorporated impact (see Thresholds of Significance subsection below for definitions of the levels of significance). Additional analysis is not required for the following topics:

- Agriculture and Forestry Resources (all topics)
- Biological Resources (habitat conservation plans topic only)
- Cultural Resources (all topics)
- Energy (all topics)
- Geology and Soil (wastewater disposal topic only)
- Hazards and Hazardous Materials (schools and aviation-related topics only)
- Mineral Resources (all topics)
- Noise (aviation-related topics only)
- Population and Housing (all topics)
- Public Services (all topics)
- Recreation (all topics)
- Tribal Cultural Resources (all topics)

Refer to the initial study in EIR Appendix B for a discussion and the impact analysis of the proposed project or project variants concerning these resource topics.

Environmental Impact Report Topics

As determined and guided by findings of the initial study (see EIR Appendix B), the proposed project or project variants could result in potentially significant impacts in the following topic areas:

- Aesthetics (all topics)
- Air Quality (all topics)
- Biological Resources (all topics except habitat conservation plans)
- Geology and Soil (all topics except wastewater disposal)
- Greenhouse Gas Emissions and Climate Change (all topics)
- Hazards and Hazardous Materials (all topics except those related to schools and aviation)
- Hydrology and Water Quality (all topics)
- Land Use and Planning (all topics)
- Noise (all topics except those related to aviation)
- Public Services
- Transportation (all topics)
- Utilities and Service Systems (all topics)
- Wildfire (all topics)

These topics are analyzed in this chapter. Comments on the NOP submitted by mail and email and made at the public scoping meeting are briefly discussed in EIR Chapter 1, Introduction. The NOP comments related to the proposed project's physical environmental impacts were considered in preparing this analysis and are addressed under the relevant environmental topics in this chapter and Appendix A.

FORMAT OF ENVIRONMENTAL TOPIC SECTIONS

Each environmental topic considered in this chapter includes a discussion of the following:

- Existing Conditions
- Regulatory Setting
- Thresholds of Significance
- Impact Assessment and Methodology
- Impacts and Mitigation Measures
- Cumulative Impacts

An overview of the general organization and the information included in these sections is provided below.

Existing Conditions

This subsection describes the existing conditions at the project site and in the project site vicinity. As provided in the California Environmental Quality Act (CEQA) Guidelines Section 15125(a), existing conditions are generally defined as the physical environmental conditions that exist at the time an NOP is published, or if no NOP is published, at the time the environmental analysis is commenced. Thus, the existing conditions for the proposed project are the conditions present at the time the NOP was published on December 9, 2022. Existing conditions serve as the baseline physical setting for the project site and its surroundings at the beginning of the environmental review process (e.g., existing traffic conditions and noise environment). The analysis of environmental impacts is focused on adverse physical changes that could result from implementation of the proposed project, which is described in the Impacts and Mitigation Measures subsection for each topic.

Regulatory Setting

This subsection describes the relevant federal, state, and local regulatory requirements that are directly applicable to the environmental topic being analyzed. The overview of regulations for each environmental topic is organized by agency including applicable federal, state, regional, and local (county) policies. The County General Plan policies, goals, and actions relevant to each environmental topic are detailed in this subsection.

Thresholds of Significance

This subsection begins with a description of the significance criteria. The thresholds used to evaluate each environmental topic are based on the County of San Mateo Initial Study Checklist Appendix G of the State CEQA Guidelines. All impacts in the EIR have been classified according to the following criteria:

> *No Impact:* No adverse physical changes (or impacts) to the environment are expected.
>
> *Less than Significant:* Impact that would not exceed the defined significance criteria or would be eliminated or reduced to a less-than-significant level through compliance with existing local, state, and federal laws and regulations.
>
> *Less than Significant with Mitigation:* Impact that is significant but reduced to a less-than-significant level through implementation of the identified mitigation measure(s).
>
> *Significant and Unavoidable:* Impact that exceeds the defined significance criteria and cannot be eliminated or reduced to a less-than-significant level through compliance with existing local, state, and federal laws and regulations and for which there are no feasible mitigation measures.

The term *significance* is used throughout the EIR to characterize the magnitude of the projected impact. For this EIR, a significant impact is a substantial or potentially substantial change to resources in the project site or the area adjacent to the project. In the discussions of each issue area, thresholds are identified that are used to distinguish between significant, less than significant with mitigation, less than significant, and no impacts.

Impacts and Mitigation Measures

Impacts are numbered and shown in bold, italics type; the corresponding mitigation measures are also numbered; and the significance after mitigation is identified for each significant impact. The Impact

Assessment and Methodology subsection explains the parameters, assumptions, and data used in the analysis.

This subsection describes the physical environmental impacts (i.e., the changes to baseline physical environmental conditions) that could result from implementation of the proposed project, as well as any mitigation measures that could avoid, eliminate, or reduce identified significant impacts. Where applicable, both construction and operational impacts are analyzed, as well as project-specific and cumulative impacts. This section begins with a listing of the significance criteria as "Thresholds of Significance" used by the County Planning and Building Department to determine whether an impact is significant.

Under the Impacts and Mitigation Measures subsection, each project-level impact begins with an impact statement that reflects one or more of the applicable significance criteria. Some significance criteria may be combined in a single impact statement, if appropriate. Each impact statement is identified by a subject area abbreviation (e.g., NO for Noise and Vibration) and an impact number (e.g., 1, 2, 3) for a combined alpha-numeric code (e.g., Impact NO-1, Impact NO-2).

CEQA Guidelines Section 15126.4 directs preparers of an EIR to describe feasible measures that could minimize significant adverse impacts. Mitigation measures are developed to avoid, minimize, rectify, reduce, or eliminate an impact or compensate for an impact resulting from project implementation. CEQA Guidelines Section 15041 grants authority to the lead agency to require feasible changes in any or all activities involved in a project to substantially lessen or avoid significant effects on the environment. Feasible mitigation measures have been included in this chapter for specific environmental impacts where applicable.

When potentially significant impacts are identified, mitigation measures are presented that would avoid, eliminate, or reduce significant adverse impacts of the project. All mitigation measures are required as conditions of project approval. Each mitigation measure has the same coding as the impact statement to which it corresponds, with an "MM" in front of the code to signify it is a mitigation measure (e.g., mitigation measure MM-AQ-1 corresponds to impact AQ-1). If there is more than one mitigation measure for the same impact statement, the mitigation measures are numbered with a lowercase letter suffix (e.g., mitigation measures MM-CR-1a and MM-CR-1b). When identified mitigation measures do not reduce the impact to a less-than-significant level, CEQA requires the development of a range of feasible project alternatives to address the significant and unavoidable impact.

Improvement measures are recommended actions, agreed to by the project applicant, which would reduce or avoid impacts found to be less than significant. Identification of improvement measures is not required under CEQA, but they are often presented in environmental documents to inform decision-makers of additional actions that could improve the proposed project by reducing the magnitude of less-than-significant effects. Improvement measures are designated with an "I" to signify "improvement measure," the topic code, and a letter (e.g., improvement measures I-TR-A, I-TR-B).

APPROACH TO CUMULATIVE IMPACT ANALYSIS

The CEQA Guidelines require that an EIR discuss the cumulative impacts of a project. CEQA Guidelines Section 15355 defines cumulative impacts as follows:

> "Cumulative Impacts" refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or number of separate projects.
> The cumulative impact from several projects is the change in the environment which results from

> the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

The discussion of cumulative impacts should reflect the severity of impact and their likelihood of occurrence, but the discussion need not provide as much detail as provided for effects attributable to the project alone (CEQA Guidelines Section 15130 (b)). The discussion should be guided by the standards of practicality and reasonableness and should focus on the cumulative impacts to which the identified other projects contribute, rather than the attributes of other projects which do not contribute to the cumulative impact.

This EIR, including the initial study, discusses the cumulative impacts analyzed for each environmental resource topic and the proposed project's contribution to these cumulative impacts, if any. Two approaches to a cumulative impact analysis are provided in CEQA Guidelines Section 15130(b)(1): (a) "the analysis can be based on a list of cumulative projects producing closely related impacts that could combine with those of a project;" or (b) "a summary of projections contained in a general plan or related planning document can be used to determine cumulative impacts." A list-based approach refers to "a list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside of the control of the agency" (CEQA Guidelines Section 15130(b)(1)(A)). A projections-based approach refers to "a summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions" (CEQA Guidelines Section 15130(b)(1)(B)).

The analysis of cumulative impacts by environmental resource topic involves:

1. determining the cumulative context or geographic scope and location of the cumulative projects relative to the affected resource's setting;
2. assessing the potential for project impacts to combine with those of other projects, including the consideration of the nature of the impacts and the timing and duration of implementation of the proposed and cumulative projects;
3. determining the significance of the cumulative impact; and
4. assessing whether the project's contribution to a significant cumulative effect is considerable.

CEQA does not prescribe the use of one specific approach to analyzing cumulative impacts. The rationale used to determine an appropriate list of projects considered in an individual project's cumulative analysis is explained in the discussion of cumulative impacts for each environmental topic in this EIR.

Cumulative impacts are presented in a separate subsection following each topic's project-level impact analysis. Cumulative impact statements are numbered consecutively with a combined alpha-numeric code that starts with "C" to signify it as a cumulative impact. For example, C-TR-1 refers to the first cumulative impact for Transportation and Circulation.

Projects Included in Cumulative Conditions Scenario

Table 3-1 presents a list of cumulative projects located within a 0.25-mile radius of the project site. These projects are considered in the various cumulative analyses for environmental resource topics that use a list-based approach to determine, for example, the potential for impacts to combine based on the distance

from the project site and construction timelines, as available. These projects' locations are shown in Figure 3-1.

In addition to the development projects identified in Table 3-1, the following transportation project is considered part of the cumulative setting:

- Caltrans State Route 1 Multi-Asset Roadway Rehabilitation Project. This project is currently approved, with construction scheduled to begin in October 2024. Note that the October 2024 construction start date is before construction of the proposed project would begin. As of July 2023, San Mateo County has not received a CDP Application for this project. Much of the project is expected to be exempt from CDP permit requirements.

Other active projects in the project vicinity consist of minor modifications to existing buildings and residences, such as window replacements, installation of rooftop solar collection systems, and single-family home renovations. Given their minor scope, they would not combine with the proposed project in a way that could result in any cumulative impacts; therefore, they are not included in the cumulative context for any topic in the EIR.

Table 3-1. Cumulative Projects

Project	Map No. (Figure 3-1)	Residential Units	Lot Size	Commercial (square feet)	Distance from Project Site	Vehicle Parking Spaces	Height	Status as of July 2023
Etheldore Apartments 2385 Carlos Street Moss Beach (PLN2019-00143)[34]	1	8	0.47 acres 20,851 square feet	3,550 square feet residential	2,100 feet southeast	30	2 stories 36 feet	Proposed pre-application workshop held February 2020.
Big Wave North Parcel Alternative Project 350 Airport Street Half Moon Bay (PLN2013-00451)[35]	2	57 bedrooms 70,500 square feet	19.4 acres 845,064 square feet	5 buildings/ 189,000 square feet	2 miles south	554	2 stories 36.5 feet	Environmental review completed 2015.
Harbor Village RV Park 240 Capistrano Road Half Moon Bay (PLN2017-00320)[36]	3	–	3.36 acres 146,362 square feet	869 square feet	2.7 miles south	47	–	Building permit issued in November 2022.
Hyatt Hotel Expansion (Alternative 2) 1191 and 1200 Main Street Half Moon Bay[37]	4	102 hotel rooms 65,574 square feet	5 acres 217,800 square feet (1191 Main Street) 1.45 acres (1200 Main Street) 1.25-acre parcel on the northeast corner of State Route 1 (Seymour Street)	1,210-square-foot meeting room space	7.4 miles south	108	2 stories	Environmental review is in progress. Draft EIR public review ended September 2022.

[34] County of San Mateo. 2020. Ethledore Apartments Plan Set. Edward C. Love, Architect. Available at: https://www.smcgov.org/media/104301/download?inline=. Accessed April 20, 2023.
[35] County of San Mateo. 2023. Big Wave North Parcel Alternative Project. Available at: https://www.smcgov.org/planning/big-wave-north-parcel-alternative-project. Accessed April 20, 2023.
[36] County of San Mateo. 2023. Mitigated Negative Declaration for Harbor Village RV Park at 240 Capistrano Rd, Princeton. Available at: https://www.smcgov.org/planning/mitigated-negative-declaration-harbor-village-rv-park-240-capistrano-rd-princeton. Accessed April 20, 2023.
[37] The City of Half Moon Bay California. 2022. Project Proposal for Hyatt. Updated September 2022. Available at: https://www.half-moon-bay.ca.us/652/Project-Proposal-for-Hyatt. Accessed April 20, 2023.

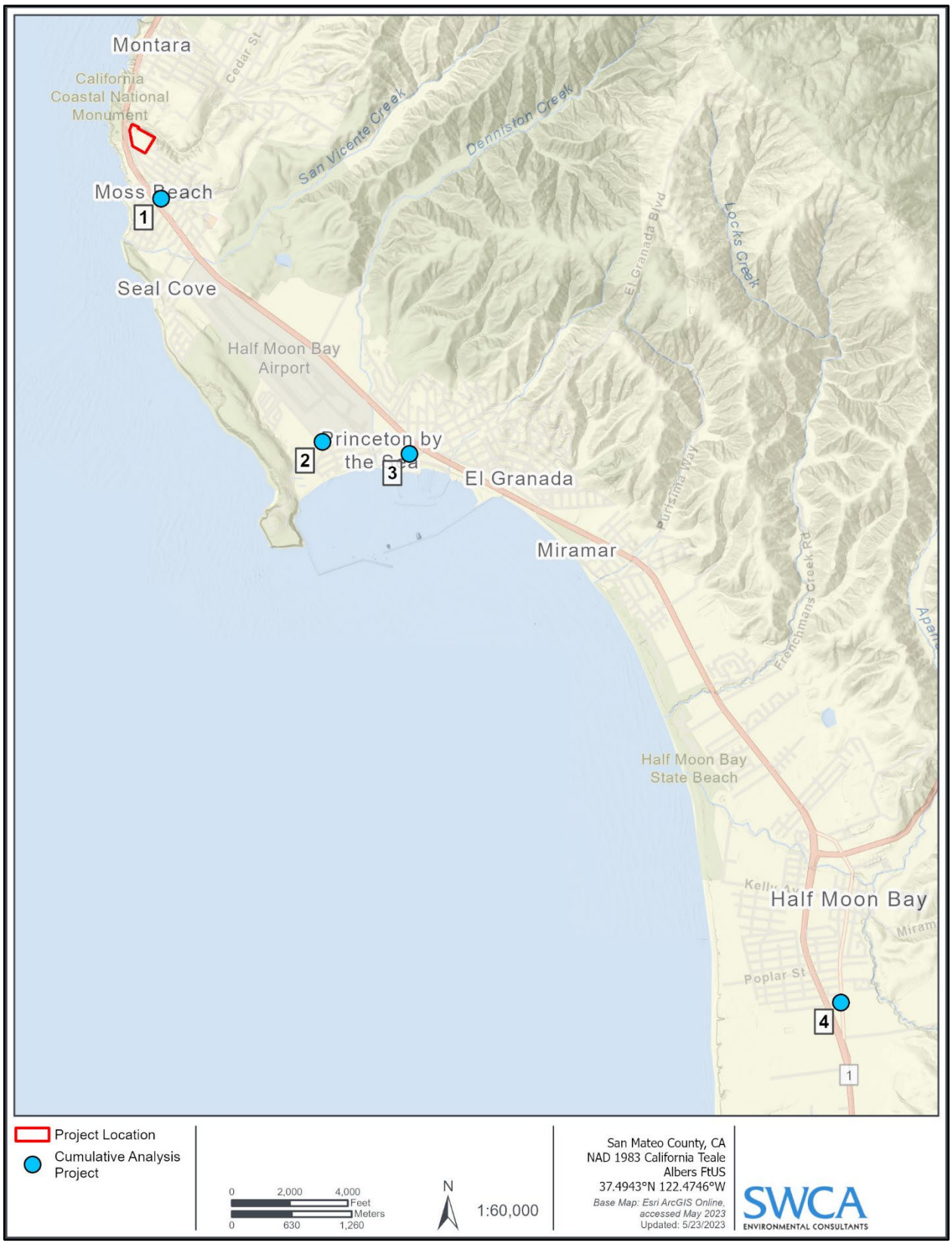


Figure 3-1. Cumulative projects.

3.1 AESTHETICS

Section 3.1 describes the potential impacts to visual character of the project site and its surroundings with development of the proposed project. Potential effects are evaluated relative to important visual features (e.g., scenic highways, scenic features) and the existing visual landscape and its users. Degradation of the visual character of a site is usually addressed through a qualitative evaluation of the changes to the aesthetic characteristics of the existing environment, and the project-related modifications that would alter the visual setting. This section includes information from the *Cypress Point Project, Aesthetics and Visual Resources Report* completed by Stevens Consulting, August 2020.[38]

3.1.1 Existing Conditions

This section discusses the existing visual character of the project site and its surroundings.

3.1.1.1 Visual Setting

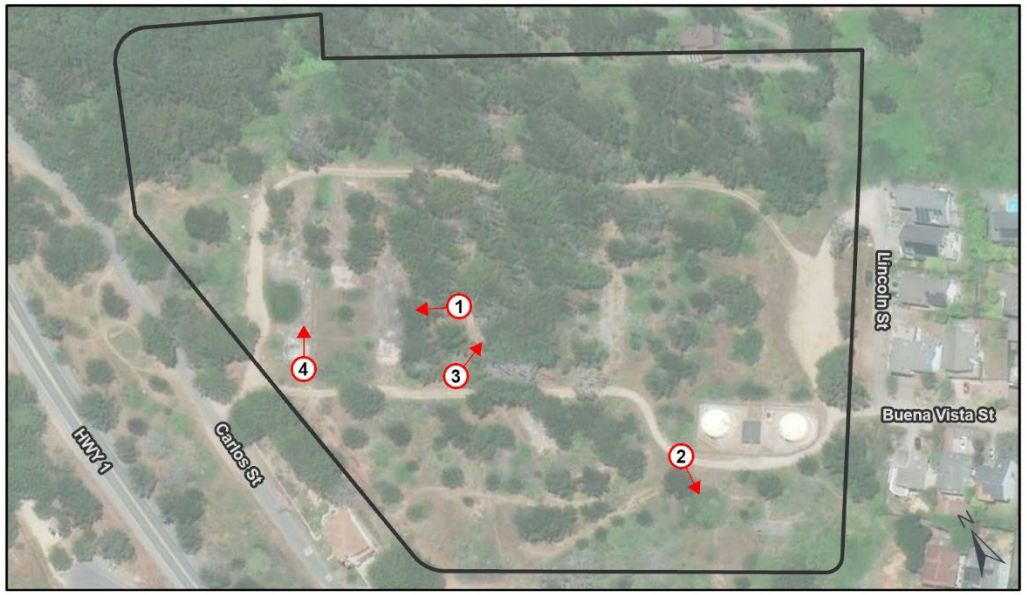
The San Mateo County coast is characterized by "a wide variety of colorful vegetation, richly textured rolling hills, soaring mountains and many dramatic, often magnificent views."[39] Seventy-four percent of County of San Mateo (County) land, primarily in the area west of Interstate 280 (I-280), is in agricultural, watershed, open space, wetlands, or parks use. The Pacific Ocean, sea cliffs and beaches, abundant natural resources, rolling green foothills, stands of old redwoods, and creeks characterize western San Mateo County, providing many areas with high visual quality.

The area in the vicinity of the project site is characterized by hillsides covered with stands of Monterey cypress (*Cupressus macrocarpa*), and Monterey pine (*Pinus radiata*); buildings, including single-family residences; Montara Water and Sanitary District (MSWD) facilities; and the Point Montara Lighthouse and Hostel; as well as glimpses of coastline and the Pacific Ocean. Montara Creek lies north of and adjacent to the project site and passes under Highway 1 approximately 480 feet north of its intersection with Carlos Street. Farther to the north are the residential areas of Montara, and to the south and east are residential and commercial areas of Moss Beach.

The area of Montara–Moss Beach–El Granada is identified in the County General Plan as an urban community. This coastal community includes views of ocean, rocky hills, dense stands of mature eucalyptus trees and a sloped terrain and is "an extremely scenic area."[40] Housing styles in this area are architecturally diverse and range from single-family ranch and bungalow styles to very modern styles. There are various exterior construction materials and colors.

The project site is on a raised bluff above the Pacific Ocean at the northern end of the community of Moss Beach. The project site is composed of a somewhat hilly parcel with an elevation ranging from approximately 95 to 205 feet above mean sea level (amsl). Along the northern side of the site there is a moderately steep north-facing slope down to Montara Creek. There are localized flat areas near the central and eastern portions of the site which contain concrete foundations from previous development. The site is currently vegetated with dense trees and forest (primarily Monterey pine and Monterey cypress), nonnative grassland, and scrub (Figure 3.1-1).

[38] Stevens Consulting. 2020. *Cypress Point Project, Aesthetics and Visual Resources Report*. Stevens Consulting. August 2020.
[39] County of San Mateo. 1986. General Plan. Available at: https://www.smcgov.org/planning/general-plan. Accessed May 22, 2023.
[40] County of San Mateo, 1986.




1. View of foundation from central path looking northwest


2. View from Buena Vista Road at the western corner of water tanks facing south


4. View of foundation from western project frontage looking northeast


3. Looking east at a foundation wall in the center of the project site

SWCA ENVIRONMENTAL CONSULTANTS

Source: SWCA, 2023

Figure 3.1-1. Existing conditions on project site.

3.1.1.2 Visual Character

3.1.1.2.1 SCENIC HIGHWAYS

Scenic highways may be designated by the state or by local governments. Scenic corridors are defined as "the visual boundaries of the landscape abutting a scenic highway, and which contain outstanding views, flora, and geology, and other unique natural or man-made attributes and historical and cultural resources affording pleasure and instruction to the highway traveler."[41]

The project site is approximately 170 feet northeast of Highway 1 (Cabrillo Highway) at its closest point. Highway 1 is a state-eligible scenic highway from the southern border of the city of Half Moon Bay through the intersection with Highway 280 in Daly City.[42] In addition, Highway 1 is a designated County Scenic Highway from the northern border of the city of Half Moon Bay to the border of the city of Pacifica. The western one-third of the project site is located in the Cabrillo Highway County Scenic Corridor that extends from the northern border of the city of Half Moon Bay through the Devil's Slide area to San Pedro Point and the southern border of the city of Pacifica (Figure 3.1-2).[43]

Highway 1 in the vicinity of the project site runs through an embankment, the sides of which obstruct views on either side. Highway 1 is at an altitude of approximately 90 feet amsl. The project site in the vicinity of Highway 1 is at an altitude of approximately 126 feet amsl, approximately 35 feet higher than Highway 1. Views of the project site from Highway are obstructed by both embankments and trees (Figure 3.1-3).

3.1.1.2.2 SCENIC VISTAS

While the County General Plan and the County Local Coastal Program (LCP) do not define or identify scenic vistas, "scenic vistas" are generally defined as high-quality views displaying good aesthetic and compositional value that can be seen from public viewpoints and possess visual qualities of high value to a community. If the project substantially degrades the scenic landscape as viewed from public roads, or along particularly designated scenic routes, or from other public or recreation areas, this would be considered a potentially significant impact on the scenic vista.

The primary visual resources contributing to scenic vistas in the project vicinity are the Pacific Ocean, approximately 700 feet west of the project site; the Montara Creek riparian corridor, approximately 200 feet northeast of the project site; the coastal hills including Montara Mountain, approximately 1.75 miles northeast of the project site; and Devil's Slide, approximately 1.5 miles north of the project site. However, at several vantage points in the project vicinity, various surrounding topographic characteristics partially obstruct these vistas. Other visual resources along the Highway 1 corridor that contribute to scenic vistas often include views of the Pacific Ocean, the beach and shoreline, bluffs and cliffs including Devil's Slide, mature trees and other native vegetation, agricultural fields, and the hillsides and ridges inland from Highway 1 (see Figure 3.1-3).

[41] County of San Mateo. 2013. *Local Coastal Program Policies.* Chapter 8: Visual Resources. Available at: https://www.smcgov.org/planning/local-coastal-program#. Accessed April 6, 2023.
[42] California Department of Transportation. 2023. Scenic Highways. Available at: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed January 23, 2023.
[43] County of San Mateo. 2023. San Mateo County Scenic Corridors. Available at: ttps://www.smcgov.org/planning/san-mateo-county-scenic-corridors. Accessed January 23, 2023.

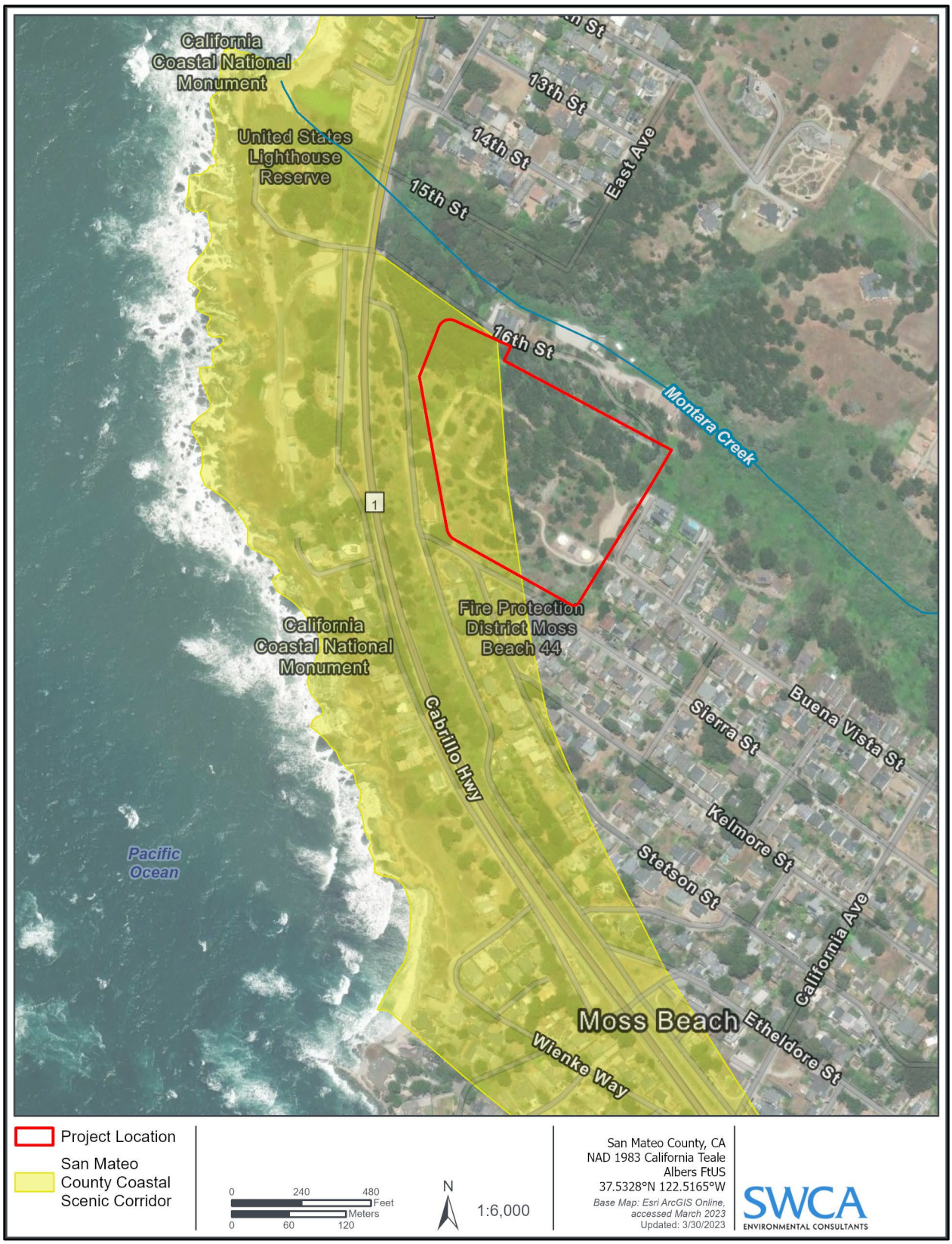


Figure 3.1-2. Highway 1 Scenic Corridor.

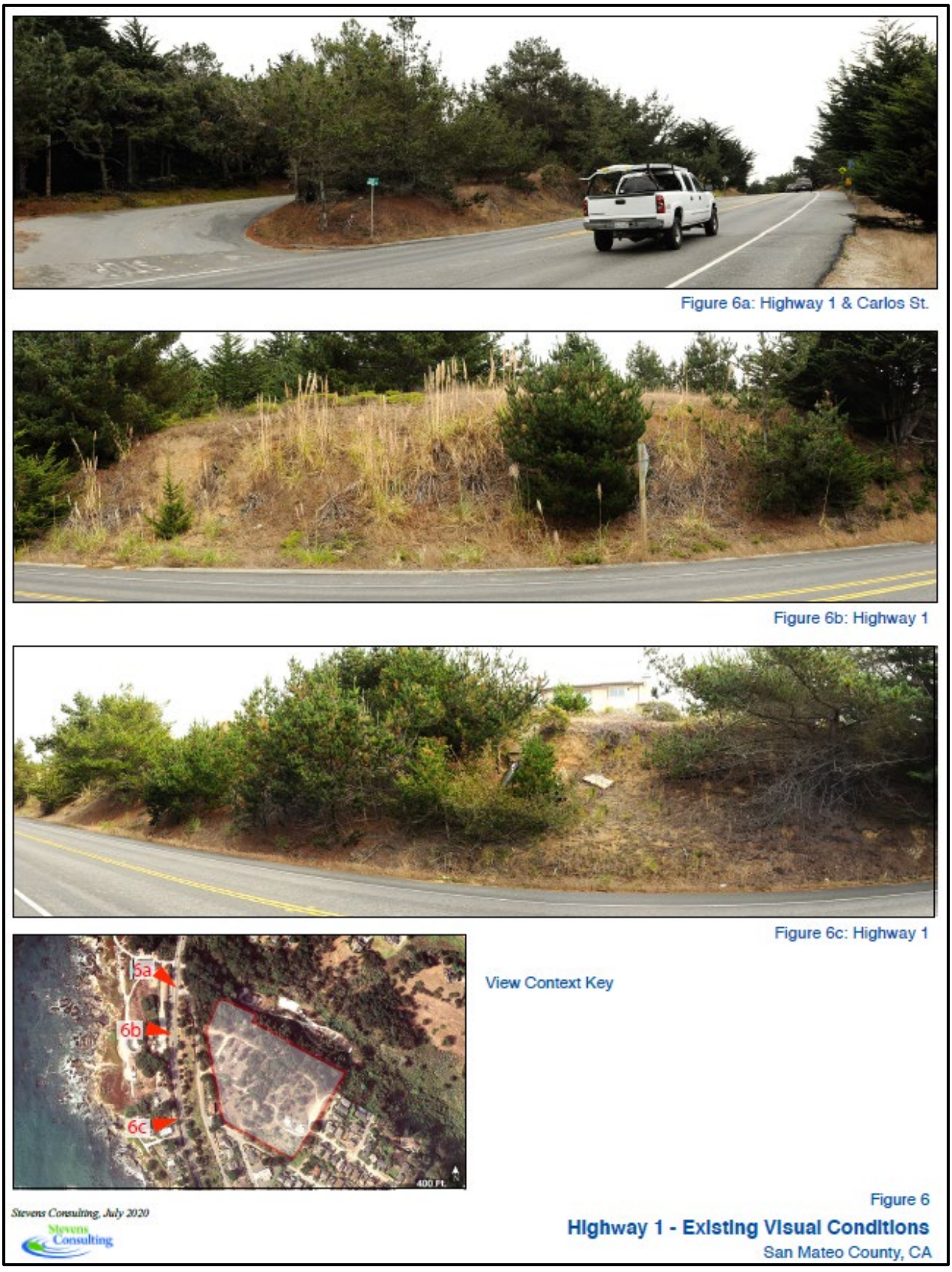


Figure 3.1-3. Highway 1 existing visual conditions.

The project site is located in a hilly area, the higher portion of which provides scenic vistas encompassing the ravine containing Montara Creek to the north, and the forested hills and ridgelines of the Coast Hills, including Montara Mountain and Devils Slide towards the north, and the Pacific Ocean towards the west. Many of the residences east and south of the site along Lincoln and Sierra Streets are oriented to the Pacific Ocean and feature decks and large windows to capture the view of the ocean. The project site is located west of Lincoln Street, between Lincoln Street and the Pacific Ocean, and south of Sierra Street.

The site is not visible from the MSWD driveway and parking lot located on the west side of Highway 1. This graveled driveway is also elevated above Highway 1. It is adjacent to the Point Montara Lighthouse Hostel and is used by hikers and dogwalkers as an unofficial part of the California Coastal Trail.

The County General Plan defines ridgelines as: "the tops of hills or hillocks normally viewed against background of other hills." Meanwhile, skylines are defined as: "the line where sky and land masses meet." Views to the east from portions of the project site include both ridgelines and skylines, but views from most of the site do not include these features, due to the presence of slopes and vegetation. The project site is lower in elevation when viewed from Lincoln Street and would not appear as a ridgeline or skyline to residences along Sierra Street south and east of the project. For viewers south of the project on Sierra Street, the project site would appear at a higher elevation; however, the site would not qualify as either a ridgeline or skyline.

3.1.1.2.3 SCENIC RESOURCES

In general, scenic resources are thought of as objects, natural or human-made, that are aesthetically pleasing to view (i.e., trees, rock outcroppings, and historic buildings within a State Scenic Highway). There are no rock outcroppings or historical structures located within or adjacent to the project site.

According to the County General Plan, visual resources are defined as: "those attractive visible elements of the natural and developed landscape, such as landforms, defined as: 'land adjacent to a scenic road right-of-way which, when seen from the road, provides outstanding views of natural landscapes and attractive man-made development.'" As further defined by the County General Plan, a scenic roadway is: "a designated travel route providing outstanding views of natural landscapes and attractive man-made development." The General Plan has designated several "scenic" roadways within San Mateo County.

Highway 1 is a County-designated scenic highway from Junipero Serra Freeway (Highway 280) to the northern limits of the city of Half Moon Bay and the project site is partially located within the Cabrillo Highway County Scenic Corridor. The portion of Highway 1 adjacent to the project site is not a state-designated scenic roadway but is eligible for such designation.[44]

3.1.1.2.4 EXISTING PROJECT SITE

The site is adjacent to an existing residential neighborhood, with single-family houses located to the east and south of the site. To the north is a steeply sloped wooded area leading to 16th Street and the ravine containing Montara Creek. To the west, across Carlos Street, is a steeply sloped embankment down to Highway 1. The Highway 1 corridor in the project vicinity is characterized by extensive evergreen vegetation and a substantial change in grade between the highway and the project site. The project would also be visible from a portion of the California Coastal Trail and the Montara Lighthouse Hostel.

[44] California Department of Transportation. 2019. California State Scenic Highway System Map. Available at: https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa. Accessed May 5, 2023.

The site is bounded by Carlos Street on the west, the Montara Creek canyon and 16th Street on the north, Lincoln Street on the east, and Sierra Street on the south. Except for a single residence at the northeast corner of Carlos Street and Sierra Street, there are no developed uses immediately adjacent to Carlos Street in the project vicinity (see Figure 2.2-2 in Chapter 2, Project Description). Beyond the wooded area to the north of the site are a few rural homes, and then another wooded area that separates this area from the developed community of Montara further to the north. Other than several rural residences, the ravine containing Montara Creek is undeveloped to the north and east of the site. Developed uses north of the project site include 16th Street and several rural, large-lot single-family residences. Residences along 16th Street are located at a substantially lower elevation within the canyon than the area of the project site to be developed, and dense vegetation between the project site and 16th Street provides additional visual screening of the site. Several residences are located to the east of Lincoln Street and at the base of Buena Vista Street, east of the project site. These residences are located at approximately the same elevation as the site's eastern boundary. Several residences with views of the project site are located south of Sierra Street. Additional residences with potential views of the site are located along the north and south sides of Sierra Street from the eastern project boundary to its intersection with Pearl Street, and along Buena Vista Street from Lincoln Street to slightly east of Montana Street. For most of the identified residences on Sierra Street and Buena Vista Street, intervening residences and vegetation obstruct views of the site.

Existing screening vegetation characterized by shrubs and trees is present on the site along its Carlos Street frontage, and along the slope down the Montara Creek canyon. Additional screening vegetation is present along and within the eastern area of the site west of Lincoln Street, and intermittently along the Sierra Street frontage.

Changes in grade and vegetation between the project site and residences along its Sierra Street frontage hinder direct views of the site, and these views are further impaired by intermittent vegetation.

3.1.1.2.5 LIGHT AND GLARE

Light spill is the exposure of properties adjacent to a project site to unwanted and/or misdirected light from project-related illumination. Light spill can emanate from the interior of structures through windows or from exterior sources, such as street lighting, security lighting, and landscape lighting.

Perceived glare is an unwanted and potentially objectionable sensation experienced by a person when looking directly into the light source of a lighting fixture, or from sunlight reflection off flat building surfaces, with glass typically having the highest degree of reflectivity.

The only existing sources of light and glare on the proposed project site are lights associated with the Montara Water and Sewer District (MWSD) storage tanks, which would remain undisturbed as part of the project; the remainder of the site is currently undeveloped and does not create light or glare sources. Existing residential development is located to the southeast, south, and southwest of the project site, which does produce some light at night. Other sources of light or glare within the vicinity of the project site are from the headlights or windshields of vehicles on adjacent roads.

3.1.2 Regulatory Setting

3.1.2.1 Federal

There are no applicable federal regulations for the proposed project.

3.1.2.2 State

3.1.2.2.1 CALIFORNIA COASTAL ACT (1976)

Article 6: Development, Section 30251 of the California Coastal Act states that:

> The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

3.1.2.3 Local

3.1.2.3.1 COUNTY OF SAN MATEO GENERAL PLAN (1986)

The following County General Plan (1986) policies and goals are relevant to the project:

Visual Quality

- **Goal 4.1a:** Protect and enhance the natural visual quality of San Mateo County.
- **Goal 4.1b:** Encourage positive visual quality for all development and minimize adverse visual impacts.
- **Goal 4.3:** Minimize the removal of visually significant trees and vegetation to accommodate structural development.
- **Policy 4.4:** Promote aesthetically pleasing development in rural and urban areas.
- **Policy 4.15:** Regulate development to promote and enhance good design, site relationships and other aesthetic considerations.
- **Policy 4.**22. Protect and enhance the visual quality of scenic corridors by managing the location and appearance of structural development.
- **Policy 4.29(a):** Preserve trees and natural vegetation except where removal is required for approved development or safety.
- **Policy 4.29b:** Replace vegetation and trees removed during construction wherever possible. Use native plant materials or vegetation compatible with the surrounding vegetation, climate, soil, ecological characteristics of the region and acceptable to the California Department of Forestry.
- **Policy 4.30(a):** Provide a smooth transition between development and adjacent forested or open space areas through the use of landscaping.
- **Policy 4.36a:** Maintain and, where possible, improve upon the appearance and visual character of development in urban areas.
- **Policy 4.36b:** Ensure that new development in urban areas is designed and constructed to contribute to the orderly and harmonious development of the locality.

- **Policy 4.47:** Institute special controls to regulate both site and architectural design of structures located within rural scenic corridors in order to protect and enhance the visual quality of select rural landscapes.
- **Policy 4.57(a):** Allow the removal of trees and natural vegetation when done in accordance with existing regulations.
- **Policy 4.57(b):** Prohibit the removal of more than 50% of the tree coverage except as allowed by permit.
- **Policy 4.60:** Minimize exterior lighting in scenic corridors and, where used, employ warm colors rather than cool tones and shield the scenic corridor from glare.
- **Policy 4.61(**a): Design and construct new roads, road improvements and driveways to be sensitive to the visual qualities and character of the scenic corridor, including such factors as width, alignment, grade, slope, grading and drainage facilities.
- **Policy 4.61(b):** Limit number of access roads connecting to a scenic road to the greatest extent possible.
- **Policy 4.61(c):** Share driveways where possible to reduce the number of entries onto scenic roads.
- **Policy 4.62:** Integrate paved areas with their site and landscape and/or screen them to reduce visual impact from the scenic corridor.
- **Policy 4.63:** Screen areas used for the storage of equipment, supplies or debris by fencing, landscaping or other means so they are not visible from scenic roadways, trails, parks, and neighborhoods.
- **Policy 4.64(a):** Install new distribution lines underground.
- **Policy 4.64(b):** Consider exceptions for certain circumstances including, but not limited to, financial hardship, topographic conditions or land use conflicts.

3.1.2.3.2 COUNTY OF SAN MATEO MIDCOAST LOCAL COASTAL PROGRAM (2013)

County policy states that "Public views within and from Scenic Corridors shall be protected and enhanced, and development shall not be allowed to significantly obscure, detract from, or negatively affect the quality of these views. Vegetative screening or setbacks may be used to mitigate such impacts. Development visible from Scenic Corridors shall be so located and designed as to minimize interference with ridgeline silhouettes."[45]

The following LCP (2014) policies and goals are relevant to the project:

- **Policy 8.5(a):** On lots bigger than 20,000 square feet require that new development be located on a portion of the parcel where the development is (1) least visible from State and County Scenic Roads and (2) least likely to significantly impact views from public viewpoints. Public viewpoints include but are not limited to coastal roads, roadside rests and vista points, recreation areas, trails, coastal accessways, and beaches.
- **Policy 8.5(b):** Require, including by clustering if necessary, that new parcels have building sites that are not visible from State and County Scenic Roads and will not significantly impact views

[45] County of San Mateo, 2023.

from other public viewpoints. If the entire property being subdivided is visible from State and County Scenic Roads or other public viewpoints, then require that new parcels have building sites that minimize visibility from those roads and other public viewpoints.

- **Policy 8.9(a-g):** Locate and design new development to minimize tree removal. Employ regulations of the Significant Tree Ordinance and Heritage Tree Ordinance to protect trees which meet the requirements of each. In addition, protect trees which are specifically selected for their visual prominence and their importance scenic qualities. Prohibit removal of trees in scenic corridors. Allow the removal of trees which are a threat to public health, safety and welfare.
- **Policy 8.10.** Replace vegetation removed during construction with plant materials compatible to surrounding vegetation and suitable to climate, soil, and ecological characteristics of the area.
- **Policy 8.12 (a)(2).** Apply the Design Review Zoning District, specifically design standards contained in Section 6565.17 and the design criteria set forth in the Community Design Manual.
- **Policy 8.13(a).** (1) Design structures that fit the topography of the site and do not require extensive cutting, grading or filling. (2) Employ the use of natural materials and colors that blend with the surroundings. (3) Use pitched roofs that are non-reflective (with the exception of solar panels). (4) Design structures that are in scale with their setting. (5) To the extent feasible, design development to minimize blocking views to or along the shoreline.
- **Policy 8.18(a).** Require that development (1) blend with and be subordinate to the environment and the character of the area where located, and (2) be as unobtrusive as possible and not detract from the natural, open space or visual qualities of the area including, but not limited to, siting, design, layout, size, height, shape, materials, colors, access and landscaping.

  The colors of exterior materials shall harmonize with the predominant earth and vegetative colors of the site. Materials and colors shall absorb light and minimize reflection. Exterior lighting shall be limited to the minimum necessary for safety. All lighting, exterior and interior, must be placed, designed and shielded so as to confine direct rays to the parcel where the lighting is located.
- **Policy 8.30** designates Coast Highway 1 north of Half Moon Bay as a County Scenic Road/Corridor.
- **Policy 8.32** defines regulations for Scenic Corridors in Urban Areas. This policy includes
  - Apply the regulations of the Design Review Zoning Ordinance,
  - Apply the Design Criteria of the Community Design Manual, and
  - Apply specific design guidelines for Moss Beach as set forth in the Urban Design Policies of the GP.

3.1.2.3.3 COUNTY OF SAN MATEO COMMUNITY DESIGN MANUAL (1976)

The County Community Design Manual[46] contains the following relevant goals and policies.

Structures and accessory structures should be located, designed, and constructed to retain and blend with the natural vegetation and natural land forms of the site (i.e., topography, rock outcroppings, ridgelines, tree masses, etc.), and should be complementary to adjacent neighborhood structures.

[46] County of San Mateo. 1976. *Community Design Manual*. Available at: https://www.smcgov.org/planning/community-design-manual. Accessed April 6, 2023.

Vegetation Preservation

- Structures should blend with the natural vegetative cover of the site and only that vegetation should be removed which is necessary for the construction of the structure;
- Structures should be designed around major trees or tree stands.

Landscaping

- Landscaping material should have an informal character and should provide a smooth transition between the development and adjacent open space areas;
- Only tree and plant materials native to the area should be used to assure against nonnative plant intrusion to reduce irrigation and maintenance requirements, and to minimize visual impact.

View Preservation

- Views should be preserved by limiting structure height. Introduced vegetation should be located so as to not block views from uphill structures or views from scenic corridors and vista points;
- Public views within and from scenic corridors should be protected and enhanced, and development should not be allowed to significantly obscure, detract from, or negatively affect the quality of these views. Visual screening or increased setbacks may be used to mitigate such impacts;
- Structures should be located to retain views of prominent scenic features, i.e., bodies of water, mountains, valleys, etc.

Open Space Preservation

- Structures should be sited to retain maximum open space and to reduce the visual impact in scenic open space areas;
- Where possible, structures should be clustered near existing natural and man-made vertical features such as tree masses, hills, and existing structures;

Cliffs and Bluffs

- Structures should be set back from bluffs and cliffs so as to not destroy natural land forms;
- Intrusion of structures into views from scenic areas should be minimized.

Accessory Structures

- Paved areas such as parking lots, driveways, sidewalks, etc., should be well integrated into the site, relate to existing and proposed structures and landscaped to reduce visual impact
- Small separate paved parking lots are preferred to large single paved lots
- Parking areas should be screened from residential areas and from scenic roadways
- Driveways should be shared when feasible to reduce curb cuts, especially along major arterials and scenic roads
- Paving materials used for pathways, sidewalks, driveways, and parking areas should be varied, textured, colored or patterned to add visual interest, especially where visible from above.

Scale

- Structures should relate in size and scale to adjacent buildings and to the neighborhood in which they are located.

3.1.2.3.4 COUNTY OF SAN MATEO ZONING CODE – DESIGN REVIEW OVERLAY

The County Zoning Code contains specific provisions pertaining to lighting, signage, building height, setbacks, and other design elements specific to the zoning designations of the project site. In San Mateo County, development and building improvements requiring a building permit are subject to review to determine their adherence with County standards, regulations, and policies. Compliance is ensured by conditions of approval attached to discretionary development permits.

The Community Design Manual (1976) includes, but is not limited to, siting and design measures as follows:

- Developments should be located and designed to retain and blend with natural vegetation and land forms, including minimizing grading, and retaining major trees and tree stands.
- Landscaping should be informal in nature and use native tree and plant materials.
- Views should be preserved by limiting building heights, and using visual screening and setbacks.
- Structures should be clustered and sited to retain maximum open space.
- Structures should be set back from bluffs and cliffs.
- Paved areas should be integrated into the site, landscaped to reduce visual impact, and use small separate parking lots. Parking areas should be screened from residential areas and scenic roadways.
- Underground utility lines should be required.
- Exterior colors and materials should blend with natural setting and surrounding neighborhoods; highly reflective surfaces and colors are discouraged.
- Use simple shapes, non-reflective surfaces for roofs, and a simple range of colors and materials to unify building design. Structures should relate in size and scale to adjacent buildings and to the surrounding neighborhood.

3.1.3 Thresholds of Significance

Pursuant to the California Environmental Quality Act (CEQA) Guidelines and the County of San Mateo CEQA checklist, the project would be considered to have a significant effect on aesthetics if the effects exceed the significance criteria described below:

1. Will the project have a substantial adverse effect on a scenic vista, views from existing residential areas, public lands, water bodies, or roads?
2. Will the project substantially damage or destroy scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
3. In non-urbanized areas, will the project substantially degrade the existing visual character or quality of public views of the site and its surroundings, such as significant change in topography or ground surface relief features, and/or development on a ridgeline? (Public views are those that

are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

4. Will the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?
5. Is the project adjacent to a designated Scenic Highway or within a state or County Scenic Corridor?
6. If the project is within a Design Review District, will it conflict with applicable General Plan or Zoning Ordinance provisions?
7. Will the project visually intrude into an area having natural scenic qualities?

Each of these thresholds is discussed under Section 3.1.5, Impacts and Mitigation Measures, below.

3.1.4 Impact Assessment and Methodology

The determinations of significance of project impacts are based on applicable policies, regulations, goals, and guidelines defined by CEQA and the County. In addition to comparing the project to relevant policies and standards, the aesthetic resources assessment identified which specific criteria contribute most to the existing quality of each view and if change would occur to those criteria as a result of the project. If a change in visual criteria was identified, this change was analyzed for its potential effect on the existing scenic character. This analysis was combined with the potential number of viewers, their sensitivities, and viewing duration in order to determine the overall level of impacts. Specifically, the project would be considered to have a significant effect on visual/aesthetic resources if the effects exceed the significance criteria described above.

A field reconnaissance of the project site and surrounding areas was conducted by Stevens Consulting and Pyatok Architects on October 17, 2017.[47] The purpose of the visit was to document existing visual conditions at the project site and views of the site from neighboring properties and from Highway 1. Numerous photographs were taken from vantage points at the project site and from areas surrounding the project site from which the site is visible, in order to analyze the representative views and the potential aesthetic impacts associated with the proposed project. Stevens Consulting and Pyatok Architects completed an aesthetics and visual resources report which included visual simulations from representative vantage points surrounding the site. This analysis uses some photographs and simulations from both documents to best show visual conditions at the project site as seen from representative vantage points. These photographs are not meant as an exhaustive collection of the views from all vantage points that include the project site, but instead are intended as representative views from within the project site as well as views of the site from the surrounding areas.

This section evaluates potential aesthetic impacts associated with implementation of the project, including impacts to scenic resources, views, visual character, and light and glare. The visual impacts of the proposed project were completed by evaluating the compatibility of the physical components of the proposed project with its surroundings land uses. Visual impacts are also analyzed through an examination of views and/or viewsheds, scenic resources, visual character, changes in light or glare, and compatibility with pertinent local policies.

[47] Pyatok Architects. 2017. *Aesthetics and Visual Resources Report*. Pyatok Architects. October 17.

3.1.5 Impacts and Mitigation Measures

Impact AES-1: Would the project have a substantial adverse effect on a scenic vista, views from existing residential areas, public lands, water bodies, or roads? (Less than Significant)

The project is designed to cluster development in the northwestern portion of the project site. Approximately one-half of the project site would be developed and landscaped. The remainder of the site would be unaltered, with the exception of the removal of hazardous trees and the improvement of existing pedestrian/bicycle paths open to the community. The majority of the forested areas on the northern portion of the site would be preserved (see Figure 2.5-10 in Chapter 2, Project Description).

Westerly scenic vistas seen from points east and southeast of the site are dominated by the Pacific Ocean, and the skyline at the western horizon. Viewers with direct views of western vistas that could be affected by implementation of the proposed project include residents of the three homes on Lincoln Street and two homes at the base of Buena Vista Street, and several residences on Sierra Street near the southeastern site boundary (Figure 3.1-4). As can be seen in Figure 3.1-4, Lincoln Street does not have a direct view of the Pacific Ocean, due to intervening topography and vegetation. Because the site would not be in the ocean viewshed for residences along Stetson Street or Carlos Street, there would be no potential for significant visual interference of ocean views for these viewers. As seen in Figure 3.1-4, new project structures would be partially screened by existing vegetation. Figure 3.1-4 does not include the additional landscaping proposed by the project (see Figure 2.5-10 in Chapter 2, Project Description), which would further screen new development from existing neighborhood views.

Scenic vistas to the east of the project site beyond Lincoln Street include both ridges and skylines, while the vistas to the west include coastal bluffs and the Pacific Ocean, all of which are identified by the General Plan as important aesthetic features. No sensitive viewing locations are west of the project site that would have views of the ridges and skylines to the east.

Sierra Street has an existing view of the project site from the southwest. Because the project site is elevated above Sierra Street, current views include hillsides or embankments and existing vegetation (Figure 3.1-5). Viewers from Sierra Street in the vicinity of Stetson Street would likely see parts of Buildings 3 through 6. These views would be intermittent as a result of the hill slope and intervening vegetation (see Figure 3.1-5). In addition, the project would plant evergreens to further screen these views (see Figure 2.5-10 in Chapter 2, Project Description). Figure 3.1-5 does not include the additional landscaping proposed by the project (see Figure 2.5-10), which would further screen new development from existing neighborhood views.

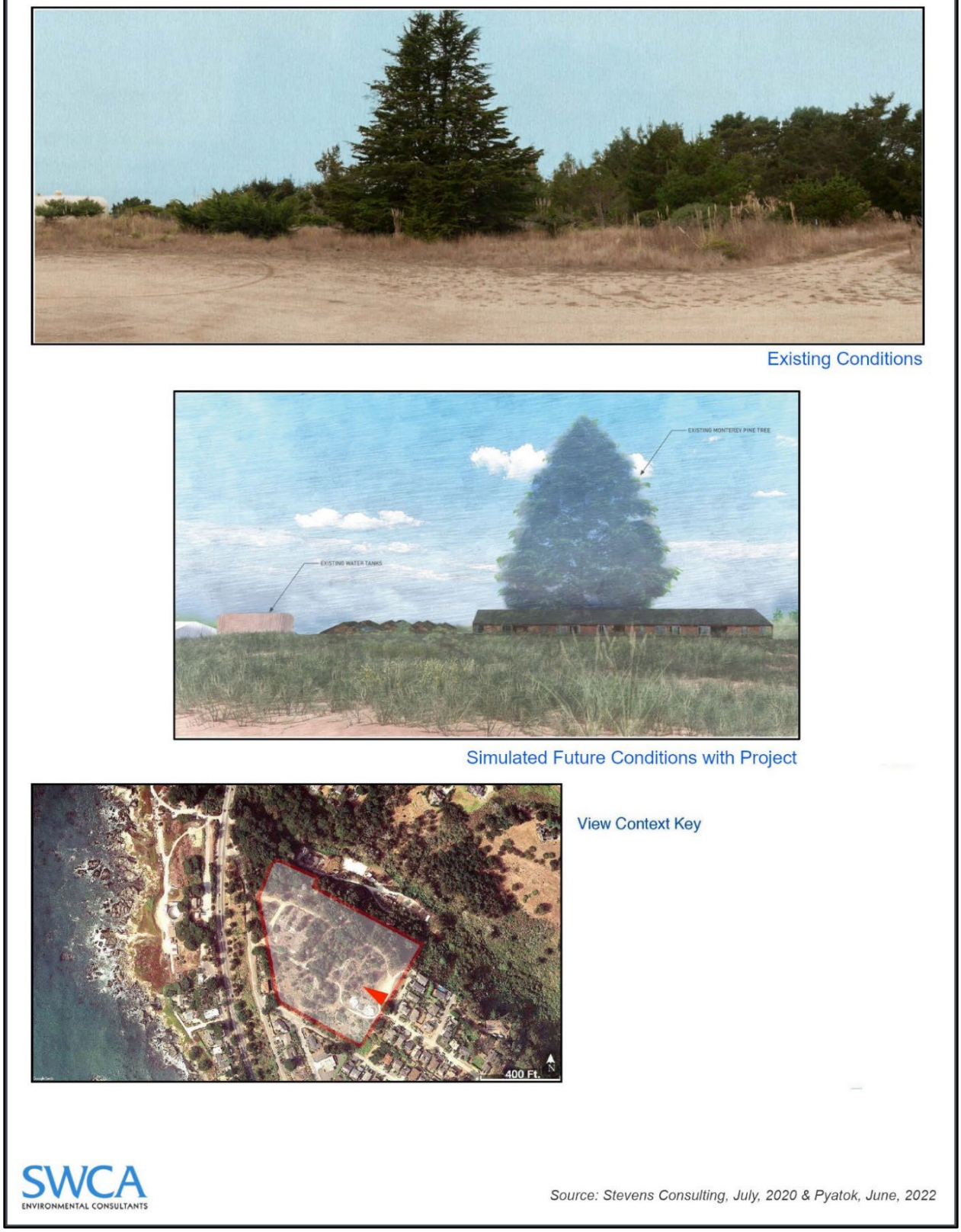


Figure 3.1-4. Before and after views, looking northwest from Lincoln Street.

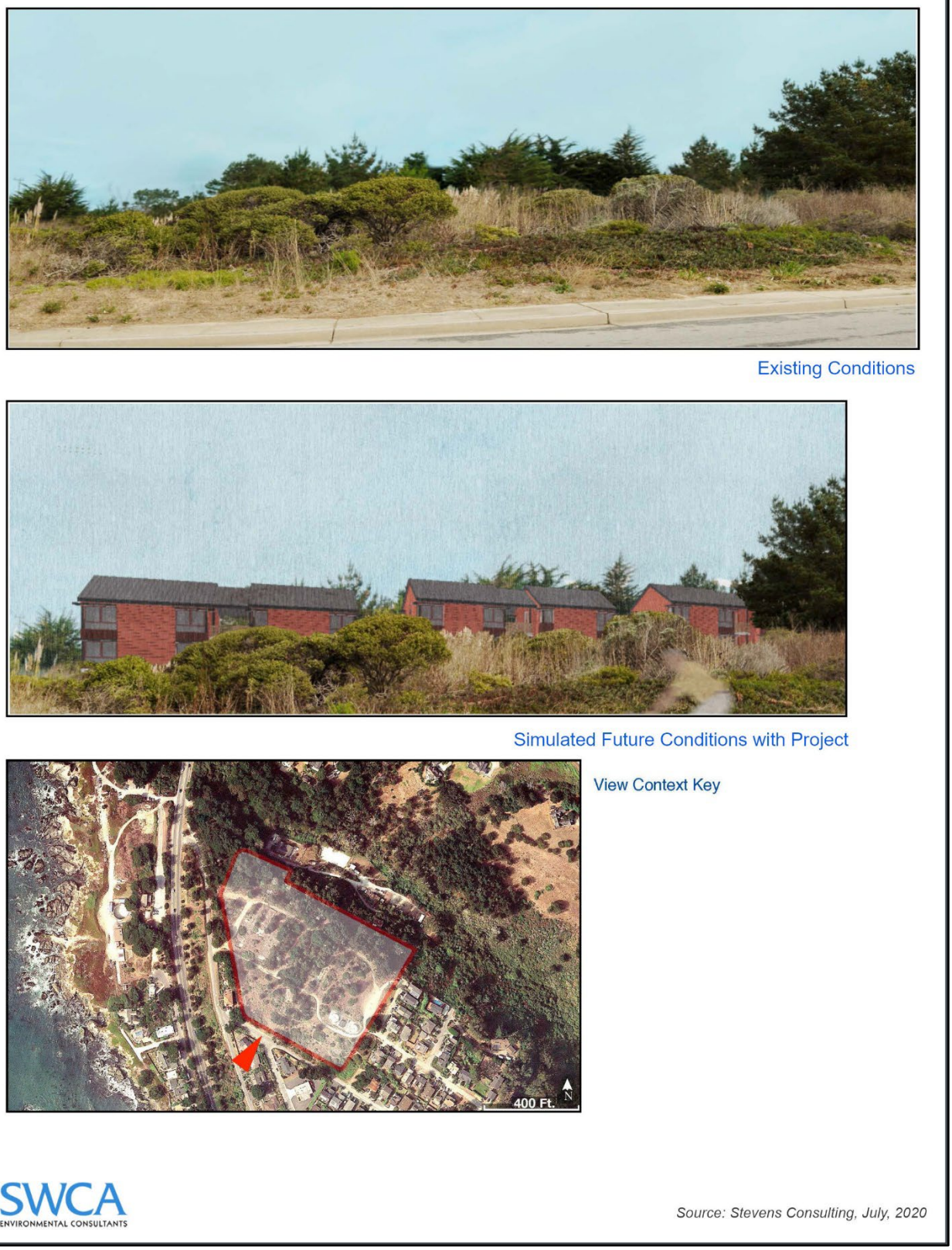


Figure 3.1-5. Before and after views, looking northeast from Sierra Street.

The project would be most visible from Carlos Street to the west of the project site. Carlos Street has embankments to the east and west that block scenic vistas. Existing views from Carlos Street include one residence, embankments, and existing vegetation. The project would be most visible from Carlos Street at the project entrance, where it would be visible to travelers on Carlos Street (Figure 3.1-6). These views would be somewhat shielded by new landscaping (see Figure 2.5-10 in Chapter 2, Project Description). Views of the project from the southern end of Carlos Street would include the project entrance and views of many of the project buildings (see Figure 3.1-6). As the project site is on the east side of Carlos Street, it would not block scenic vistas of the Pacific Ocean. The existing embankment on the east side of Carlos Street blocks views of scenic vistas of the mountains to the east, therefore the project would not block scenic vistas from Carlos Street. Landscaping would include additional trees planted between the project and the single residence on Carlos Street to shield the residence from views of the project (see Figure 2.5-10).

Views of the project site by travelers on Highway 1 are blocked by existing vegetation and changes in grade, neither of which would be modified by the proposed project. Together, vegetation and topography act to shield most of the project site from the view of travelers on Highway 1. In addition, screening vegetation would be planted as part of project landscaping (see Figure 2.5-10 in Section 2, Project Description) that would further screen views of Buildings 1 and 2 (the closest buildings to Highway 1) from view. Additional potential locations of sensitive viewers to the west include hikers on the California Coastal Trail. In the vicinity of the project, the California Coastal Trail is routed through the entrance drive of the MSWD office and then to Vallamar Street. Similar to the project site, the MWSD entrance drive is elevated above Highway 1. Portions of Buildings 1 and 2 are unlikely to be visible from the MSWD drive, as the buildings would be set back and screened by existing and newly planted trees and vegetation. Therefore, the views to the east across Highway 1 from this driveway and the California Coastal Trail would be blocked by changes in grade and existing vegetation, neither of which would be modified by the project at this location. Views from Highway 1 to the north and south of the project site include views of residential structures and neighborhoods in Montara and Moss Beach.

Other public viewpoints of the project site include Point Montara Lighthouse Hostel (0.15 mile northwest), Montara State Beach (0.70 mile northeast), and James V. Fitzgerald Marine Reserve (0.57 mile southwest). The project site is not visible from these public viewpoints due to intervening topography and vegetation.

As previously noted, the project site slopes down from east to west. The elevation of the project site ranges from approximately 80 to 190 feet amsl. With implementation of the proposed project, the site would be graded to develop building pads at elevations from 187 feet amsl for the buildings nearest the easterly site boundary to 158 feet amsl for buildings nearest Carlos Street. Within the developed area of the site, 16 two-story buildings with roof heights at a maximum of 28 feet, with a simple traditional roof shape and slope (4:12) would be constructed, as well as a one-story community building. Building materials include wood-look cement board siding in shades of dark red and brown and gray composite shingle roofing materials (see Figure 2.5-2 in Chapter 2, Project Description). The buildings would be clustered in the center of the site and screened by existing vegetation and new landscaping (see Figure 2.5-10).

Approximately one-half of the site would be developed, and the remainder would remain undeveloped. Building pad elevations for the buildings nearest to Lincoln Street would range from 183 to 187 feet amsl. All other building pad elevations on the site would be lower. Buildings nearest Carlos Street would be set back at the minimum of 20 feet from the property line. Buildings nearest Lincoln Street and Buena Vista Street would be set back approximately 230 feet from the nearest off-site residences on Lincoln or Buena Vista Streets. Within this setback area, existing trees would be retained, as would trees along the northerly site boundary (see Figure 2.5-10).

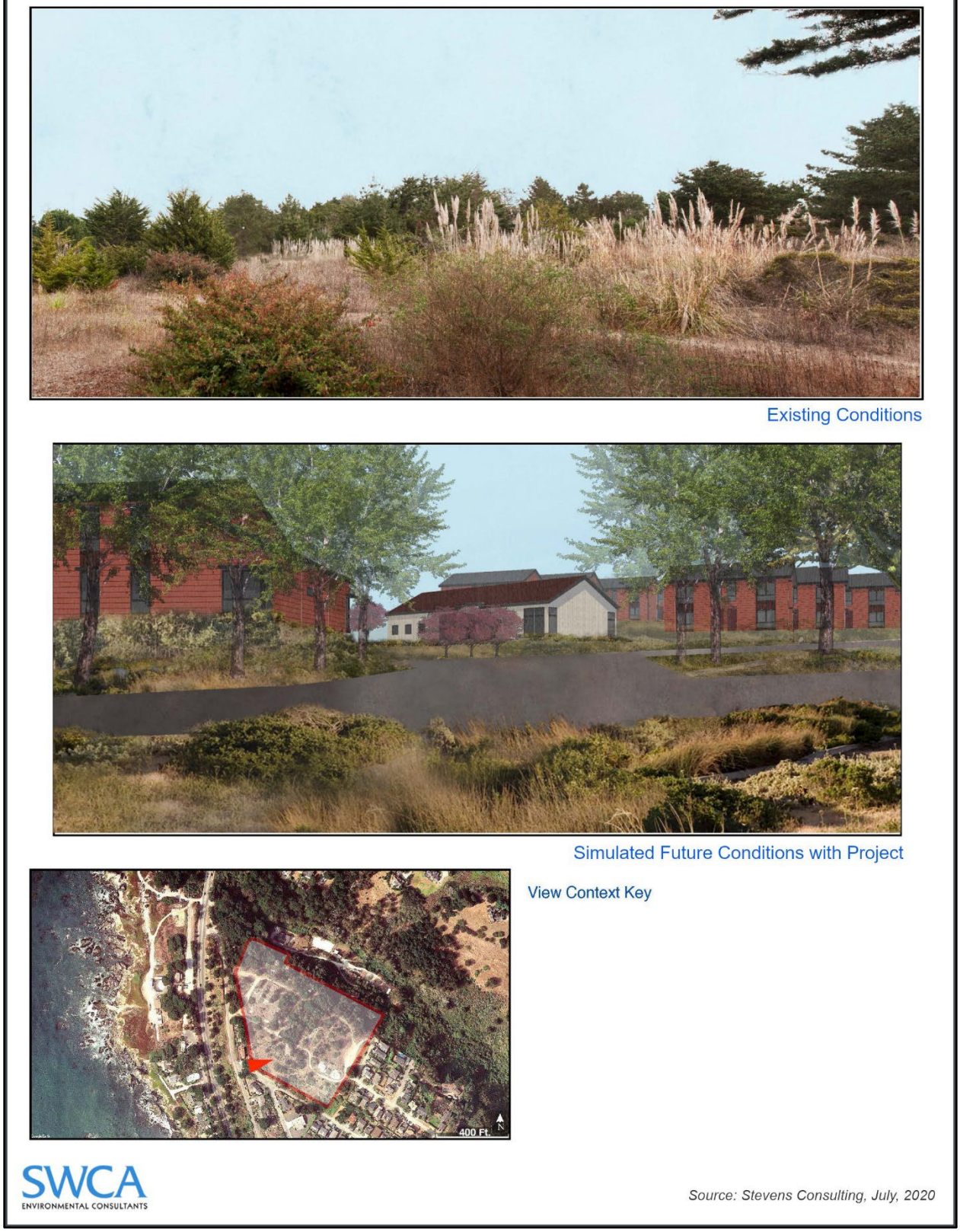


Figure 3.1-6. Before and after views, looking east from southwest corner of project site near Carlos Street.

The floor elevations for the existing residences along Lincoln Street and the base of Buena Vista Street range from 186 to 193 feet amsl (see Figure 3.1-4). As shown in Figure 3.1-4, the tops of project buildings would be visible from Lincoln Street, although they would be further screened by proposed landscaping. Views of approximately the top half of the two-story buildings would be visible from Sierra Steet in the vicinity of Stetson Street (see Figure 3.1-5). These would also be further screened by proposed landscaping. The simulations in these two figures do not include screening vegetation that would be planted as part of project landscaping (see Figure 2.5-10 in Chapter 2, Project Description). The project would be required to go through design review by the County which would ensure the project is visually compatible with surrounding development.

All other proposed buildings on the project site would be located at lower elevations and would be more distant from Lincoln and Buena Vista Street. Because of the change in elevation between on-site building pads, the distance of the buildings from surrounding viewpoints, intervening vegetation that would not be affected by the project, and proposed screening landscaping, vistas of the Pacific Ocean and surrounding hills would not be blocked with project implementation.

Although some of the buildings would be visible from surrounding areas, they would generally be lower in height than existing vegetation and would not interfere with views of the Pacific Ocean or other scenic vistas. The project is required to comply with the recommendations of the Design Review Committee. Therefore, the impact to scenic vistas would be less than significant. No mitigation is required.

Impact AES-2: Would the project substantially damage or destroy scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? (Less than Significant)

The project site is located approximately 160 feet east of Highway 1. There are no designated State Scenic Highways near the project site, however, Highway 1 is an eligible State Scenic Highway and a County-designated scenic highway, and the westerly third of the project site is within the Cabrillo Highway County Scenic Corridor (see Figure 3.1-2). There are no rock outcroppings or historic buildings on the project site. The existing concrete foundations are not eligible for historic status. While some trees on the project site would be removed through project implementation, the trees and vegetation around the perimeter of the site and on the northwestern edge, between Highway 1 and the area to be developed, would not be removed. The project includes a minimum of 20-foot building setbacks from Carlos Street on the western border of the site and larger setbacks along the north, east, and west property lines. The speed limit on Highway 1 in the vicinity of the project is 50 miles per hour. Buildings 1 and 2 would be closest to Highway 1 but are set back from the embankment and would be screened with both existing trees and new landscaping, therefore they are unlikely to be visible from Highway 1. If portions of the building were visible from Highway 1, travelers would only be exposed briefly due to travel speeds and the buildings would be elevated well above the usual line of sight due to the topography. Together, vegetation and topography would shield the project site from the view of travelers on Highway 1. Therefore, impacts related to damage to scenic resources from a state scenic highway would be less than significant. No mitigation is required.

Impact AES-3: Would the project in nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings, such as significant change in topography or ground surface relief features, and/or development on a ridgeline? (Public views are those that are experienced from publicly accessible vantage point.) In an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? (Less than Significant)

The site would be graded to develop building pads at elevations from 187 feet amsl for the buildings nearest the east site boundary to 158 feet amsl for buildings nearest Carlos Street. Building pads would be designed to step down and blend with existing topography, so changes to topography would be minimal. Approximately one-half of the site would be developed, and the remainder would remain undeveloped.

Development of the project as proposed would result in changes to the existing visual character of the site by replacing an existing undeveloped area with 16 residential buildings, a community building, parking lots, landscaping, and other improvements. No building would be more than two stories (maximum of 28 feet) tall. Buildings are designed to be low profile and would be a combination of two-story townhomes and one-story ADA-accessible flats. Buildings would be broken up into small groups of units to reduce bulking (see Figure 2.5-1 and Figures 2.5-3 through 2.5-8 in Chapter 2, Project Description). Existing vegetation along the perimeter of the proposed project would be retained and additional landscaping would include the addition of trees placed to screen the development. Open space areas would be maintained. Additional proposed landscaping would provide a buffer between the project and the existing residential uses along Carlos Street, Sierra Street, Stetson Street, Buena Vista Street, and Lincoln Street. All developed areas of the site would be set back from adjoining residences by a minimum of 167 feet (230 feet adjacent to Lincoln Street). The nearest project building would be set back approximately 60 feet from buildings north of the project entrance on Carlos Street. A proposed retaining wall would be set back approximately 53 feet from Carlos Street in this location.

Activities associated with construction of the project would be concentrated on the approximately 11-acre parcel, and would be visible to motorists, tourists, and residents. During construction, visual impacts would include the presence of workers, temporary structures, construction equipment, and vehicles at the project site. The project is adjacent to a public roadway (Carlos Street) that is primarily used by residents, as well as Highway 1, but some screening is provided due to topography and existing vegetation.

Although the existing visual character of the site would be altered by implementation of the project, the change would not result in conditions causing significant visual degradation. Site grading and fill to construct building pads, roadways, and parking areas, or install utilities would not be visible or apparent from areas outside of the project site. The only site features visible to viewers from surrounding areas would be the proposed buildings themselves. As noted above, the buildings would be set back at a minimum of 20 feet from the property line so that their apparent mass would be reduced (see Figure 3.1-5). Furthermore, the project site would represent an additional residential use within an already developed residential area that already includes many two-story buildings.

Development on-site would be subject to the policies of the County General Plan, the County LCP, and Section 6565.17 of the County Zoning Code. The project would be required to comply with all applicable County visual quality policies, which "promote and enhance good design, site relationships, and other aesthetic considerations," and "promote visually attractive development." To ensure compliance with County visual resource policies, the project would be subject to review by the Coastside Design Review Committee.

The project would be consistent with LCP and County General Plan policies and zoning codes. The project is designed to minimize alteration of the natural landforms and be visually compatible with

surrounding areas. It would cluster development, increase setbacks, minimize grading, and retain the majority of trees on the site. Approximately 295 trees are proposed to be removed as part of project activities, including approximately 190 Significant or Heritage Trees.[48] The project has been designed to fit the topography and use smaller buildings with a maximum height of 28 feet to reduce massing, per the County LCP. Consistent with the County Community Design Manual, and Zoning and General Plan Designations, the project is designed to include use of natural colors and materials and non-reflective materials, including wood-look cement board siding in shades of dark red and brown and gray composite shingle roofing materials (see Figure 2.5-2 in Chapter 2, Project Description). The project is in the Highway 1 Scenic Corridor and is designed to not be visible from Highway 1, in compliance with the LCP. Access roads and parking areas would be integrated into the site, with multiple small parking lots around a ring road, and screened with landscaping. All new distribution lines would be underground. Landscaping with native tree and plant materials would have an informal character and be used to screen the project and reduce visual impacts.

In summary, proposed on-site uses would be sited with large setbacks from Carlos, Sierra, Buena Vista, and Lincoln Streets, approximately one-half of the project site would remain in open space, and existing (except for the removal of dead or diseased) vegetation would be maintained to screen the project from adjacent viewers. Landscaping would include additional screening trees. Furthermore, the project would be subject to future design review and would comply with all applicable design standards and guidelines. With implementation of the proposed site plan, the project would not result in a substantial degradation to the visual character of the project site and would be consistent with County regulations. This impact would be less than significant.

Impact AES-4: Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? (Less than Significant)

The proposed project would introduce additional sources of lighting and reflective surfaces to the project site. Building materials include wood-look cement board siding in shades of dark red and brown and gray composite shingle roofing materials (see Figure 2.5-2 in Chapter 2, Project Description). New lighting sources would include outdoor street lighting and security lighting, indoor lighting, and light generated by vehicle headlights. Lighting would be used as a design tool to highlight architectural elements and landscaping. Lighting would also provide security and safety in parking areas, service passages, and common areas of the project. A detailed lighting plan is not available at this time. However, the project would be in compliance with LCP Policy 8.18(a), "Exterior lighting shall be limited to the minimum necessary for safety. All lighting, exterior and interior, must be placed, designed and shielded so as to confine direct rays to the parcel where the lighting is located."

While glare could occur from sunlight reflecting off windows and/or solar panels, windows would be mostly screened by existing and new vegetation and would be unlikely to be significant. Solar panels are designed to absorb as much sunlight as possible and are constructed of dark-colored (usually blue or black) materials and covered with anti-reflective coatings. Modern solar panels reflect as little as 2% of incoming sunlight, about the same as water.[49] The projects solar panels would be roof mounted. As such, they would be screened by vegetation but likely would be partially visible from Sierra Street and Carlos Street. They would not be visible from Lincoln Street because the panels would be west facing, or from Highway 1 due to intervening topography and vegetation. The combination of anti-reflective coatings and

[48] HortScience | Bartlett Consulting. 2022. Arborist Report, Cypress Point. HortScience | Bartlett Consulting. July 1.

[49] Meister Consultants Group. 2014. *Solar and Glare.* Available at: https://icma.org/sites/default/files/306952_Solar%20PV%20and%20Glare.pdf. Accessed April 24, 2023.

screening of solar panels by vegetation would result in less than significant impacts related to glare from solar panels.

Prior to the approval of final project plans, the applicant would be required to submit a detailed lighting plan to the County for review and approval by the Community Development Director, consistent with County requirements. The lighting plan shall prohibit light spillover across property lines and limit lighting to the minimum necessary for security and exterior lighting purposes, as determined by the Community Development Director. All lighting shall be designed to be compatible with surrounding development. The project shall not propose light sources that are atypical of the surrounding environment.

Reflective glass or other glaring building materials shall be discouraged. The exterior of the proposed building shall be constructed of non-reflective materials such as, but not limited to, high-performance tinted non-reflective glass, metal panel, and pre-cast concrete or cast in-place or fabricated wall surfaces.

The project would not introduce new sources of light or glare on the project site that would be incompatible with the areas surrounding the project site or which would pose a safety hazard. Therefore, this impact would be less than significant. No mitigation is required.

Impact AES-5: Would the project be adjacent to a designated Scenic Highway or within a State or County Scenic Corridor? (Less than Significant)

The project is not adjacent to the State or County Scenic Highway. As discussed in Impact AES-2, the Project would be located approximately 160 feet east of Highway 1 and would be partially located within the Highway 1 County Scenic Corridor. However, the project would be separated from Highway 1 by two embankments (for Highway 1 and Carlos Street), clustered on-site, and set back from the embankment edge. Existing vegetation and new landscaping would be used to further screen the project from view from Highway 1. Therefore, this impact would be less than significant.

Impact AES-6: If within a Design Review District, would the Project conflict with applicable General Plan or Zoning Ordinance provisions? (Less than Significant)

The project is located in the Design Review Zoning District for the Coastal Zone and subject to the County Community Design Manual (1976), Special Design Guidelines for the Montara–Moss Beach–El Granada–Miramar coastal area, and the requirements of the Design Review Committee. As discussed under Impact AES-3, above, the project would be consistent with LCP policies, General Plan policies and Zoning Ordinance provisions.

As part of the project, the applicant would submit detailed design, materials, and landscaping plans to the County for review and approval by the Community Development Director, consistent with County requirements. The plans submitted do not conflict with any applicable General Plan or Zoning Ordinance provisions and the impact is less than significant.

Impact AES-7: Would the project visually intrude into an area having natural scenic qualities? (Less than Significant)

The project site is a vacant parcel within a neighborhood surrounded by existing single-family homes. Scenic resources on the site consist of native and nonnative trees, shrubs, and other vegetation. Other features of the site include concrete foundations of buildings from the former military use of the site. Several of the foundations have been vandalized by graffiti. Several dirt roads and path cross the site. In addition, two water storage tanks maintained by the MWSD are located within the boundaries of the project, although they are not a part of the proposed development.

Much of the vegetation of the site would be preserved during development and approximately half of the site would be maintained as open space during operation. Except for the removal of dead or diseased trees and shrubs, vegetation adjacent to 16th Street, Sierra Street, and Lincoln Street would be maintained to maximize screening. Additional perimeter vegetation may be removed along Carlos Street to accommodate the project driveway.

The project would be concentrated in the center of the site, near the existing concrete foundations. Due to changes in grade and dense vegetation, adjacent viewpoints from 16th Street, Carlos Street, and Sierra Street offer partial views. Views from upper Sierra Street, Buena Vista Street, and Lincoln Street tend to be mid-range, and the site is not entirely visible. As discussed in Impact AES-3, site grading and fill to construct building pads, roadways, and parking areas, or install utilities would not be apparent from areas outside of the project site. The only site features visible to viewers from surrounding areas would be the proposed buildings. As noted above, the buildings would be substantially set back from adjacent viewers, have a natural color scheme, and be screened with landscaping so that their apparent mass would be reduced.

While the project represents an intensification of use on the site, strategies to screen and lessen the visual impact have been incorporated into project design. Due to increased setback, screening potential, and clustering of development, the impacts are considered less than significant, and no mitigation is required.

3.1.6 Cumulative Impacts

Impact C-AES-1: Would the impacts of the proposed project, in combination with other past, present, and reasonably foreseeable future projects, contribute to a cumulative impact related to aesthetics? (Less than Significant)

The proposed project's potential contribution to cumulative impacts on aesthetic resources is evaluated in the context of past, present, and reasonably foreseeable probable future development expected in San Mateo County. Aesthetics impacts are dependent upon the location of users, the breadth of the viewshed, and the contiguousness of scenic vistas, views, character, and sources of light and glare. Further, the County evaluates aesthetic impacts in comparison to the potential for conflict with General Plan policies and Zoning Ordinance provisions and intrusion into scenic qualities. As discussed above, the project site is located in an area of the San Mateo Coast that is characterized by both residential areas and important visual resources, including the Pacific Ocean. The California Coastal Trail, Montara State Beach, Fitzgerald Marine Reserve, Montara Lighthouse Hostel and Highway 1 have been identified as Public Viewpoints because of views from those locations of the Pacific Ocean and coastal hills.

All cumulative projects would be subject to consistency with applicable general plan policies and Zoning Ordinance provisions, including LCP goals and policies. The nearest cumulative project is located 0.05 mile to the southeast. None of the cumulative projects would be visible from the project site, therefore the proposed project would not cumulatively contribute to localized cumulative impacts on existing visual character, scenic vistas, or natural scenic qualities, or result in cumulative light or glare impacts (see Figure 3.0-1). Three of the development projects—the Etheldore Apartments, Harbor Village RV Park, and Hyatt Hotel Expansion—would be visible from Highway 1. The Etheldore Apartments would be visible from Highway 1 but would be part of an existing residential area. The Harbor Village RV Park and Hyatt Hotel Expansion would also be visible and would contribute to the prominence of tourism and its infrastructure in the area. The Caltrans State Route 1 Multi-Asset Roadway Rehabilitation Project would make various roadway rehabilitation improvements to Highway 1. However, since the proposed project would not be visible from Highway 1 it would not cumulatively contribute to visual impacts in a scenic highway corridor. The Big Wave project would be visible from the Pillar Point Bluff Trail, which is a portion of the California Coastal Trail, however, since the proposed project would not be

visible from the California Coastal Trail, no cumulative impact would occur. None of the projects on the cumulative list would be visible from the other identified public viewpoints, due to both distance and topography (see Figure 3.0-1), therefore no cumulative impact would occur. Therefore, cumulative impacts on aesthetic resources would be less than significant. The proposed project would not substantially contribute to a significant cumulative impact. No mitigation is required.

3.2 AIR QUALITY

This section describes the existing air quality in the project site and evaluates the potential environmental impacts of the construction and operation of the proposed project. This section describes the environmental setting, including the regulatory framework and the existing air quality setting and baseline conditions, and identifies mitigation measures, if required, that would avoid or reduce significant impacts.

This evaluation is based on the methodology recommended by the Bay Area Air Quality Management District (BAAQMD) for project-level review. The analysis focuses on air pollution from regional emissions and localized pollutant concentrations from the buildout of the proposed project. Construction and operation criteria air pollutant emissions modeling was completed and relies on the conclusions in the following study:

- *Air Quality and Greenhouse Gas Technical Report*, 2023. SWCA Environmental Consultants (SWCA) (Appendix C)

A construction health risk assessment (HRA) was completed in 2018 by Illingworth & Rodkin,[50] with results and conclusions applicable to the current assessment. This report is included as Appendix A to the SWCA-prepared *Air Quality and Greenhouse Gas Technical Report* (see Appendix C).

3.2.1 Environmental Setting

3.2.1.1 San Francisco Bay Area Air Basin

The California Air Resources Board (CARB) has divided California into regional air basins according to topographic air drainage features. The San Francisco Bay Area Air Basin (SFBAAB), managed by the BAAQMD, comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties, as well as portions of Solano and Sonoma Counties. Air quality is determined by natural factors such as climate, topography, and meteorology, in addition to the presence of air pollution sources and ambient conditions.

The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, all of which distort normal wind flow patterns. The Coast Ranges split, resulting in a western coast gap, the Golden Gate, and an eastern coast gap, Carquinez Strait; these allow air to flow in and out of the SFBAAB and the Central Valley. The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below the surface because of the northwesterly flow produces a band of cold water off the California coast. The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold-water band, resulting in condensation and the presence of fog and stratus clouds along the Northern California coast. In the winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.

Summertime temperatures in the SFBAAB are determined in large part by the effect of differential heating between land and water surfaces. On summer afternoons, the temperatures at the coast can be 35 degrees Fahrenheit (°F) cooler than temperatures 15 to 20 miles inland; at night, this contrast usually

[50] Illingworth & Rodkin. 2018. *Cypress Point Affordable Housing Project Air Quality & Greenhouse Gas Emissions Assessment*. June 29, 2018.

decreases to less than 10°F. In the winter, the relationship between the minimum and maximum temperatures is reversed. During the daytime, the temperature contrast between the coast and inland areas is small, whereas at night the variation in temperature is large.

The SFBAAB is characterized by moderately wet winters and dry summers. Winter rains (November–March) account for about 75% of the average annual rainfall. The amount of annual precipitation can vary greatly from one part of the SFBAAB to another, even within short distances. In general, total annual rainfall can reach 40 inches in the mountains, but it is often less than 16 inches in sheltered valleys. During rainy periods, ventilation (rapid horizontal movement of air and injection of cleaner air) and vertical mixing (an upward and downward movement of air) are usually high; therefore, pollution levels tend to be low (i.e., air pollutants are dispersed more readily into the atmosphere rather than accumulating under stagnant conditions). However, during the winter, frequent dry periods do occur, where mixing and ventilation are low and pollutant levels build up.

BAAQMD divides the SFBAAB into subregions with distinct climate and topographic features. The proposed program area is in the Peninsula Subregion of the SFBAAB.

3.2.1.2 Air Pollutants of Concern

3.2.1.2.1 CRITERIA AIR POLLUTANTS

Pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state laws under the federal Clean Air Act and California Clean Air Act. The pollutants emitted into the ambient air by stationary and mobile sources are categorized as primary and/or secondary pollutants. Primary air pollutants are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO_x), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, nitrogen dioxide (NO_2), PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that ambient air quality standards (AAQS) have been established for them. ROG and NO_x are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and NO_2 are the principal secondary pollutants. Table 3.2-1 summarizes the potential health effects associated with the criteria air pollutants.

Table 3.2-1. Criteria Air Pollutant Health Effects Summary

Pollutant	Effect on Health	Sources
CO	Chest pain in heart patients Headaches, nausea Reduced mental alertness Death at very high levels	Any object that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
O_3	Cough, chest tightness Difficulty taking a deep breath Worsened asthma symptoms Lung inflammation	Atmospheric reaction of organic gases with NO_x in sunlight
NO_2	Increased response to allergens Aggravation of respiratory illness	Same as CO sources
PM_{10} and $PM_{2.5}$	Hospitalizations for worsened heart diseases Emergency room visits for asthma Premature death	Cars and trucks (particularly diesel) Fireplaces and woodstoves Windblown dust from overlays, agriculture, and construction

Pollutant	Effect on Health	Sources
SO_2	Aggravation of respiratory disease (e.g., asthma and emphysema) Reduced lung function	Combustion of sulfur-containing fossil fuels, smelting of sulfur-bearing metal ores, and industrial processes
Pb	Behavioral and learning disabilities in children	Contaminated soils

Source: California Air Resources Board, 1998.

- O_3 is a strong-smelling, pale blue, reactive, toxic chemical gas consisting of three oxygen atoms. It is a secondary pollutant formed in the atmosphere by a photochemical process involving the sun's energy and O_3 precursors. These precursors are mainly NO_x and volatile organic compounds (VOCs). The maximum effects of precursor emissions on O_3 concentrations usually occur several hours after they are emitted and many miles from the source. Meteorology and terrain play major roles in O_3 formation, and ideal conditions occur during summer and early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. O_3 exists in the upper atmosphere O_3 layer (stratospheric O_3) and at the Earth's surface in the troposphere (O_3). The O_3 that the U.S. Environmental Protection Agency (EPA) and the CARB regulate as a criteria air pollutant is produced close to the ground level, where people live, exercise, and breathe. Ground-level O_3 is a harmful air pollutant that causes numerous adverse health effects and is thus considered "bad" O_3. Stratospheric, or "good" O_3 occurs naturally in the upper atmosphere, where it reduces the amount of ultraviolet light (i.e., solar radiation) entering the Earth's atmosphere. Without the protection of the beneficial stratospheric O_3 layer, plant and animal life would be seriously harmed.

  O_3 in the troposphere causes numerous adverse health effects; short-term exposures (lasting for a few hours) can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. These health problems are particularly acute in sensitive receptors such as the sick, the elderly, and young children.

- NO_2 is a brownish, highly reactive gas that is present in all urban atmospheres. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide (NO), which is a colorless, odorless gas. NO_x plays a major role, together with VOCs, in the atmospheric reactions that produce O_3. NO_x is formed from fuel combustion under high temperature or pressure. In addition, NO_x is an important precursor to acid rain and may affect both terrestrial and aquatic ecosystems. The two major emissions sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers. NO_2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections.

- CO is a colorless, odorless gas formed by the incomplete combustion of hydrocarbon, or fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, such as the project site, automobile exhaust accounts for most CO emissions. CO is a nonreactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions—primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, which is a typical situation at dusk in urban areas from November to February. The highest levels of CO typically occur during the colder months of the year, when inversion conditions are more frequent. In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport

oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions.

- SO_2 is a colorless, pungent gas formed primarily from incomplete combustion of sulfur-containing fossil fuels. The main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels. SO_2 is an irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. When combined with particulate matter, SO_2 can injure lung tissue and reduce visibility and the level of sunlight. SO_2 can also yellow plant leaves and erode iron and steel.
- Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. PM_{10} is 10 microns or less in diameter and is about ⅐ the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. $PM_{2.5}$ is 2.5 microns or less in diameter and is roughly ⅛ the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., from motor vehicles and power generation and industrial facilities), residential fireplaces, and woodstoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides (SO_x), NO_x, and VOCs.

  $PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances such as Pb, sulfates, and nitrates can cause lung damage directly or be absorbed into the bloodstream, causing damage elsewhere in the body. Whereas PM_{10} tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper into the lungs and damage lung tissue. Suspended particulates also damage and discolor surfaces on which they settle and produce haze and reduce regional visibility.

  People with influenza, people with chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death as a result of breathing particulate matter. People with bronchitis can expect aggravated symptoms from breathing in particulate matter. Children may experience a decline in lung function due to breathing in $PM_{2.5}$ and PM_{10}.
- Pb in the atmosphere occurs as particulate matter. Sources of Pb include leaded gasoline; the manufacturing of batteries, paints, ink, ceramics, and ammunition; and secondary Pb smelters. Prior to 1978, mobile emissions were the primary source of atmospheric Pb. Between 1978 and 1987, the phaseout of leaded gasoline reduced the overall inventory of airborne Pb by nearly 95%. With the phaseout of leaded gasoline, secondary Pb smelters, battery recycling, and manufacturing facilities are becoming Pb-emissions sources of greater concern. Prolonged exposure to atmospheric Pb poses a serious threat to human health. Health effects associated with exposure to Pb include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level Pb exposures during infancy and childhood. Children are highly susceptible to the effects of Pb.

- VOCs are typically formed from the combustion of fuels and/or released through evaporation of organic liquids. Some VOCs are also classified by the State as toxic air contaminants (TACs). While there are no specific VOC ambient air quality standards, VOCs are a prime component (along with NO_x) of the photochemical processes by which such criteria pollutants as O_3, NO_2, and certain fine particles are formed. They are, thus, regulated as "precursors" to the formation of those criteria pollutants.

3.2.1.2.2 TOXIC AIR CONTAMINANTS

TACs refer to a diverse group of "non-criteria" air pollutants that can affect human health but have not had AAQS established for them. This is not because they are fundamentally different from the pollutants discussed above, but because their effects tend to be local rather than regional. TACs are identified by federal and state agencies based on a review of available scientific evidence. In the state of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act, Assembly Bill (AB) 2588, was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere. The law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hot spots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years.

The federal TACs are air pollutants that may cause or contribute to an increase in mortality or serious illness, or may pose a hazard to human health, although there are no ambient standards established for TACs. Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or other acute (short-term) or chronic (long-term) health problems. For TACs that are known or suspected carcinogens, the CARB has consistently found that there are no levels or thresholds below which exposure is risk-free. Individual TACs vary greatly in the risks they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another. For certain TACs, a unit risk factor can be developed to evaluate cancer risk. For acute and chronic health effects, a similar factor, called a hazard index (HI), is used to evaluate risk. TACs are identified and their toxicity is studied by the California Office of Environmental Health Hazard Assessment (OEHHA). Examples of TAC sources include industrial processes, dry cleaners, gasoline stations, paint and solvent operations, and fossil fuel combustion sources. The TAC that is relevant to the implementation of the project is diesel particulate matter (DPM).

DPM was identified as a TAC by the CARB in August 1998[51]. DPM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled vehicles contribute approximately 40% of the statewide total, with an additional 57% attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources contribute about 3% of emissions and include shipyards, warehouses, heavy-equipment repair yards, and oil and gas production operations. Emissions from these sources are from diesel-fueled internal combustion engines. Stationary sources that report DPM emissions also include heavy construction, manufacturers of asphalt paving materials and blocks, and diesel-fueled electrical generation facilities.

Exposure to DPM can have immediate health effects. DPM can have a range of health effects including irritation of eyes, throat, and lungs, and can cause headaches, lightheadedness, and nausea. Exposure to

[51] California Air Resources Board (CARB). 1998. Report to the Air Resources Board on the Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, Part A Exposure Assessment (as approved by the Scientific Review Panel).

DPM also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks. Children, the elderly, and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to fine-particle pollution. In California, DPM has been identified as a carcinogen.

While not a TAC, $PM_{2.5}$ 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). Diesel exhaust is the predominant TAC in air in urban areas and is estimated to contribute more than 85% of a 2006 inventory of Bay Area cancer risk from TACs[52]. According to CARB, diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of the 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.

3.2.1.3 Existing Conditions

3.2.1.3.1 LOCAL AIR QUALITY

Air pollutant emissions are generated in the local vicinity by stationary and area-wide sources, such as commercial and industrial activity, space and water heating, landscape maintenance, consumer products, and mobile sources primarily consisting of automobile traffic. Area-wide sources are the primary source of pollutants in the local vicinity.

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project site have been documented and measured by the BAAQMD. BAAQMD has 24 permanent monitoring stations located around the Bay Area. The nearest station is the Redwood City–897 Barron Avenue Monitoring Station, which monitors O_3, NO_2, and $PM_{2.5}$. Data from this monitoring station are summarized in Table 3.2-2. The data show violations of the state and federal O_3 standards and federal $PM_{2.5}$ standard. In recent years, California has been plagued by an unprecedented number of wildfires that have produced dense palls of smoke in the Bay Area. The air quality data collected by BAAQMD in Table 3.2-2 include exceptional events, including wildfires. The national and state criteria pollutants and the applicable ambient air quality standards are listed in Table 3.2-3 below.

Table 3.2-2. Summary of Ambient Air Quality Monitoring Summary

Pollutant		Year		
		2019	2020	2021
O_3	Maximum 1-hour concentration (ppm)	0.083	0.098	0.085
	Days exceeding CAAQS (0.09 ppm)	0	1	0
	Maximum 8-hour concentration (ppm)	0.077	0.077	0.063
	Days exceeding NAAQS (0.07 ppm)	2	1	0
	Days exceeding CAAQS (0.07 ppm)	2	1	0
NO_2	Maximum 1-hour concentration (ppb)	0.0549	0.0459	0.0405
	Days exceeding CAAQS (0.18 ppm)	0	0	0

[52] Bay Area Air Quality Management District (BAAQMD). 2014. Health Impact Analysis of Ultrafine Particulate Matter in the San Francisco Bay Area. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/research-and-modeling/estimating-public-health-and-monetary-impacts-of-ufpm-in-the-bay-area-final_12182014.pdf?la=en&rev=6e866d25899d4487850a6bd0b2caecf9. Accessed June 1, 2023.

Pollutant		Year		
		2019	2020	2021
$PM_{2.5}$	Maximum 24-hour concentration (µg/m^3)	29.5	124.1	30.1
	Days exceeding NAAQS (35 µg/m^3)	0	9	0

Source: CARB[53]

Notes: µg/m^3 = micrograms per cubic meter; CAAQS = California Ambient Air Quality Standards; NAAQS = National Ambient Air Quality Standards; ppb = parts per billion; ppm = parts per million

Data for O_3, NO_2, and $PM_{2.5}$ was obtained from the Redwood City–897 Barron Avenue monitoring station.

BAAQMD also provides data that show the areas in the SFBAAB that have elevated pollution levels and are identified as "impacted areas." Based on BAAQMD's Community Risk Evaluation Program maps, the project site is not within an "impacted area."

3.2.1.3.2 SENSITIVE RECEPTORS

Some population groups, including children, the elderly, and acutely and chronically ill persons (especially those with cardiorespiratory diseases), are considered more sensitive to air pollution than others. A sensitive receptor is a person in the population who is particularly susceptible to health effects due to exposure to an air contaminant. The following are land uses where sensitive receptors are typically located:

- Schools, playgrounds, and childcare centers
- Long-term healthcare facilities
- Rehabilitation centers
- Convalescent centers
- Hospitals
- Retirement homes
- Residences

Sensitive receptors (residences) are located adjacent to the north, east, and south of the project site, with additional residences located southwest of the site. Implementation of the proposed project would not result in the long-term operation of any emission sources that would adversely affect nearby sensitive receptors. Short-term (18-month) construction activities could result in temporary increases in pollutant concentrations. The construction-related emissions would be short term and located at different locations within the project site. Although construction would occur over 18 months, construction at any one site would last for a much shorter time. The limited duration and limited quantities of construction emissions ensure that no individual receptor would be exposed to substantial pollutant concentrations. During construction, the BAAQMD best management practices (BMPs) would minimize construction impacts by reducing dust and exhaust emissions.

[53] CARB. 2023. Air Quality Data Statistics; Top Four Summary for Monitored data at Livermore Station. Available at: https://www.arb.ca.gov/adam/. Accessed June 1, 2023.

3.2.2 Regulatory Setting

3.2.2.1 Federal Regulations

3.2.2.1.1 AMBIENT AIR QUALITY STANDARDS

The federal Clean Air Act (CAA) was passed in 1963 by the U.S. Congress and has been amended several times. The 1970 federal CAA amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting national AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollution species. The California CAA, signed into law in 1988, requires all areas of the state to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CAAQS tend to be more restrictive than the National Ambient Air Quality Standards (NAAQS).

The NAAQS and CAAQS are the levels of air quality considered to provide a margin of safety in the protection of public health and welfare. They are designed to protect "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants, which are shown in Table 3.2-3. These pollutants are O_3, NO_2, CO, SO_2, PM_{10}, $PM_{2.5}$, and Pb. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 3.2-3. State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards	
			Primary	Secondary
O_3	1 hour	0.09 ppm (180 µg/m³)	–	Same as primary
	8 hours	0.070 ppm (137 µg/m³)	0.070 ppm (13 µg/m³)	
PM_{10}	24 hours	50 µg/m³	150 µg/m³	Same as primary
	Annual mean	20 µg/m³	–	
$PM_{2.5}$	24 hours	–	35 µg/m³	Same as primary
	Annual mean	12 µg/m³	12.0 µg/m³	15 µg/m³
CO	1 hour	20 ppm (23 µg/m³)	35 ppm (40 mg/m³)	–
	8 hours	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	–
NO_2	1 hour	0.18 ppm (339 µg/m³)	100 ppb (188 µg/m³)	–
	Annual mean	0.030 ppm (57 µg/m³)	0.053 ppm (100 µg/m³)	Same as primary
SO_2	1 hour	0.25 ppm (655 µg/m³)	75 ppb (196 µg/m³)	–
	3 hours	–	–	0.5 ppm (1,300 µg/m³)
	24 hours	0.04 ppm (105 µg/m³)	0.14 ppm	–
	Annual mean	–	0.030 ppm	–

Pollutant	Averaging Time	California Standards	National Standards	
			Primary	Secondary
Pb	30-day average	1.5 µg/m³	–	–
	Calendarquarter	–	1.5 µg/m³	Same as primary
	Rolling 3-monthaverage	–	0.15 µg/m³	Same as primary
Visibility reducing particles	8 hours	10-mile visibility standard, extinction of 0.23 per kilometer	No national standards	
Sulfates	24 hours	25 µg/m³		
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m³)		
Vinyl chloride	24 hours	0.01 ppm (265 µg/m³)		

Source: CARB[54]

Notes: µg/m^3 = micrograms per cubic meter; CAAQS = California Ambient Air Quality Standards; NAAQS = National Ambient Air Quality Standards; ppb = parts per billion; ppm = parts per million

Data for O_3, NO_2, and $PM_{2.5}$ was obtained from the Redwood City–897 Barron Avenue monitoring station.

3.2.2.2 State Regulations

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- AB 1493: Pavley Fuel Efficiency Standards. Pavley I is a clean-car standard that reduces emissions from new passenger vehicles (light-duty automobiles to medium-duty vehicles) from 2009 through 2016. In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025.
- Title 20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards. The 2006 Appliance Efficiency Regulations (20 CCR 1601–1608) were adopted by the California Energy Commission on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. This code reduces natural gas use by appliances.
- Title 24, Part 6, CCR: Building Energy Efficiency Standards. Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the California Energy Commission) in June 1977. This code reduces natural gas use from buildings.
- Title 24, Part 11, CCR: Green Building Standards Code. This code establishes planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. This code reduces natural gas use from buildings.
- Senate Bill (SB) 1078 and SB 107: Renewables Portfolio Standards. A major component of California's Renewable Energy Program is the renewables portfolio standard established under SBs 1078 (Sher) and 107 (Simitian). Under this standard, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1% in order to reach at least 20% by December 30, 2010.

[54] CARB. 2023. Air Quality Data Statistics; Top Four Summary for Monitored data at Redwood City Station. Available online: https://www.arb.ca.gov/adam/. Accessed June 1, 2023.

- Heavy-Duty (Tractor-Trailer) Greenhouse Gas (GHG) Regulation. The tractors and trailers subject to this regulation must either use EPA SmartWay-certified tractors and trailers or retrofit their existing fleet with SmartWay-verified technologies. The regulation applies primarily to owners of 53-foot or longer box-type trailers, including both dry-van and refrigerated-van trailers, and owners of the heavy-duty tractors that pull them on California highways. These owners are responsible for replacing or retrofitting their affected vehicles with compliant aerodynamic technologies and low-rolling-resistance tires. Sleeper-cab tractors, model years 2011 and later, must be SmartWay certified. All other tractors must use SmartWay-verified low-rolling-resistance tires. This rule has criteria air pollutant co-benefits.

3.2.2.2.1 TANNER AIR TOXICS ACT AND AIR TOXICS "HOT SPOT" INFORMATION AND ASSESSMENT ACT

In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the federal CAA (42 United States Code Section 7412[b]) is a TAC. Under State law, the California Environmental Protection Agency, acting through CARB, is authorized to identify a substance as a TAC if it is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets up a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate the best available control technology to minimize emissions for the substance. To date, CARB has established formal control measures for 11 TACs that are identified as having no safe threshold.

Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform an HRA, and if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

CARB has promulgated the following specific rules to limit TAC emissions:

- 13 CCR Chapter 10, Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling
- 13 CCR Chapter 10, Section 2480, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools
- 13 CCR Section 2477 and Article 8, Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate

3.2.2.2.2 IDLING RESTRICTIONS

Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9 was adopted on May 2, 2008, and limits non-essential idling of fleets to no more than five consecutive minutes at any location. This idling restriction applies to all vehicles in California with a diesel-fueled or alternative

diesel-fueled off-road engine, unless a waiver provides sufficient justification that such idling is necessary. The airborne toxic control measure helps reduce public exposure to NO_X, DPM, and other criteria pollutant emissions from off-road, diesel-fueled vehicles.

3.2.2.3 Local Regulations

3.2.2.3.1 BAY AREA AIR QUALITY MANAGEMENT DISTRICT

The BAAQMD is the agency responsible for ensuring that the NAAQS and CAAQS are attained and maintained in the SFBAAB. It prepares air quality management plans to attain AAQS in the SFBAAB. The BAAQMD prepares O_3 attainment plans for the national O_3 standard and clean air plans for the California O_3 standard. The BAAQMD prepares these air quality management plans in coordination with Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) to ensure consistent assumptions about regional growth.

3.2.2.3.2 BAY AREA AIR QUALITY MANAGEMENT DISTRICT 2017 CLEAN AIR PLAN

The BAAQMD adopted the 2017 "Clean Air Plan: Spare the Air, Cool the Climate" (2017 Clean Air Plan) on April 19, 2017.[55] The 2017 Clean Air Plan incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2017 Clean Air Plan serves as an update to the adopted Bay Area 2010 Clean Air Plan and continues to provide the framework for SFBAAB to achieve attainment of the CAAQS and NAAQS. The 2017 Clean Air Plan updates the Bay Area's O_3 plan, which is based on the "all feasible measures" approach to meet the requirements of the California CAA. It sets a goal of reducing health risk impacts to local communities by 20 percent between 2015 and 2020 and lays the groundwork for reducing GHG emissions in the Bay Area to meet the State's 2030 GHG reduction target and 2050 GHG reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following:

- Construct buildings that are energy efficient and powered by renewable energy.
- Walk, bicycle, and use public transit for most trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.
- Live a low-carbon lifestyle by purchasing low-carbon foods and goods in addition to recycling and putting organic waste to productive use.

A comprehensive multipollutant control strategy was developed to be implemented in the next 3 to 5 years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of O_3, particulate matter, TACs, and GHG from a full range of emission sources. These control measures cover the following sectors: 1) stationary (industrial) sources, 2) transportation, 3) energy, 4) agriculture, 5) natural and working lands, 6) waste management, 7) water, 8) super-GHG pollutants, and 9) buildings. The proposed control strategy is based on the following key priorities:

- Reduce emissions of criteria air pollutants and TACs from all key sources.

[55] Bay Area Air Quality Management District. 2017. *Final 2017 Clean Air Plan, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area*. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en. Accessed January 25, 2023.

- Reduce emissions of "super-GHGs" such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
  - Increase efficiency of the energy and transportation systems.
  - Reduce demand for vehicle travel, and high-carbon goods and services.
- Decarbonize the energy system.
  - Make the electricity supply carbon-free.
  - Electrify the transportation and building sectors.[56]

3.2.2.3.3 COMMUNITY AIR RISK EVALUATION PROGRAM

The BAAQMD Community Air Risk Evaluation program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor TACs in the Bay Area, primarily DPM. The last update to this program was in 2014. Based on findings of the latest report, DPM was found to account for approximately 85% of the cancer risk from airborne toxics. Carcinogenic compounds from gasoline-powered cars and light-duty trucks were also identified as significant contributors: 1,3-butadiene contributed 4% of the cancer risk-weighted emissions, and benzene contributed 3%. Collectively, five compounds—DPM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90% of the cancer risk attributed to emissions. All these compounds are associated with emissions from internal combustion engines. The most important sources of cancer risk-weighted emissions were combustion-related sources of DPM, including on-road mobile sources (31%), construction equipment (29%), and ships and harbor craft (13%). Overall, cancer risk from TAC dropped by more than 50% between 2005 and 2015, when emissions inputs accounted for state diesel regulations and other reductions.

The major contributor to acute and chronic non-cancer health effects in the SFBAAB is acrolein (C_3H_4O). Major sources of acrolein are on-road mobile sources and aircraft near freeways and commercial and military airports.[57] Currently CARB does not have certified emission factors or an analytical test method for acrolein. Since the appropriate tools needed to implement and enforce acrolein emission limits are not available, the BAAQMD does not conduct health risk screening analysis for acrolein emissions.[58]

3.2.2.3.4 ASSEMBLY BILL 617 COMMUNITY ACTION PLANS

AB 617 was signed into law in July 2017 to develop a new community-focused program to reduce exposure more effectively to air pollution and preserve public health in environmental justice communities. AB 617 directs CARB and all local air districts to take measures to protect communities disproportionally impacted by air pollution through monitoring and implementing air pollution control strategies.

On September 27, 2018, CARB approved BAAQMD's recommended communities for monitoring and emission reduction planning. The State approved communities for year 1 of the program as well as communities that would move forward over the next 5 years. Bay Area recommendations included all the Community Air Risk Evaluation areas, areas with large sources of air pollution (refineries, seaports,

[56] Bay Area Air Quality Management District. 2017.

[57] Bay Area Air Quality Management District (BAAQMD). 2006. Community Air Risk Evaluation Program, Phase I Findings and Policy Recommendations Related to Toxic Air Contaminants in the San Francisco Bay Area. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/ch/communities/ra/westoakland/care_p1_findings_recommendations_v2.pdf. Accessed June 1, 2023.

[58] BAAQMD. 2010, Air Toxics NSR Program, Health Risk Screening Analysis Guidelines. Available at: https://www.baaqmd.gov/~/media/files/engineering/air-toxics-programs/hrsa_guidelines.pdf. Accessed June 1, 2023.

airports, etc.), areas identified via statewide screening tools as having pollution and/or health burden vulnerability, and areas with low life expectancy.[59]

3.2.2.3.5 CITY/COUNTY ASSOCIATION OF GOVERNMENTS OF SAN MATEO

The City/County Association of Governments of San Mateo (C/CAG) is the designated congestion management agency for the county. C/CAG's congestion management plan identifies strategies to respond to future transportation needs, identifies procedures to alleviate and control congestion, and promotes countywide solutions. Pursuant to the EPA's transportation conformity regulations and the Bay Area Conformity State Implementation Plan[60] (also known as the Bay Area Air Quality Conformity Protocol), the congestion management plan is required to be consistent with the MTC planning process, including regional goals, policies, and projects for the regional transportation improvement program. MTC cannot approve any transportation plan, program, or project unless these activities conform to the State Implementation Plan.

3.2.2.3.6 PLAN BAY AREA 2050

MTC and ABAG adopted Plan Bay Area 2050[61] on October 21, 2021. Plan Bay Area provides transportation and environmental strategies to continue to meet the regional transportation-related GHG reduction goals of Senate Bill 375. Strategies to reduce GHG emissions include focusing housing and commercial construction in walkable, transit-accessible places; investing in transit and active transportation; and shifting the location of jobs to encourage shorter commutes. To achieve MTC's/ABAG's sustainable vision for the Bay Area, the Plan Bay Area land-use concept plan for the region concentrates most new population and employment growth in the region in priority development areas (PDAs). PDAs are transit-oriented, infill development opportunity areas within existing communities. An overarching goal of the regional plan is to concentrate development in areas where there are existing services and infrastructure rather than allocate new growth to outlying areas where substantial transportation investments would be necessary to achieve the per capita passenger vehicle, vehicle miles traveled (VMT), and associated GHG emissions reductions.

3.2.2.3.7 SAN MATEO COUNTY GENERAL PLAN

The General Plan is the County's vision for future development. It identifies goals, policies, and objectives to govern the physical development of the County. State law requires each city and county to adopt a General Plan with a minimum of seven elements: Land Use, Circulation, Housing, Conservation, Open-Space, Noise, and Safety. The San Mateo General Plan contains 17 chapters addressing each of the required elements and additional elements like transportation and climate element. Many of the general plan policies affect air quality and GHG emissions for the County. For example, the General Plan's Climate Change Element demonstrates San Mateo County's commitment to achieve energy efficiency and mitigate its impact on climate change by reducing GHG emissions consistent with state legislation. This element and the associated Community Climate Action Plan (CCAP) discussed below set goals, policies, and strategies to reduce air quality and environmental impacts.

County of San Mateo 2030 General Plan Policies relevant to air quality are provided below.

[59] BAAQMD. 2019, April 16, San Francisco Bay Area Community Health Protection Program. Available at: https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en. Accessed June 1, 2023.
[60] Plan Bay Area. 2021. Bay Area Conformity State Implementation Plan. Available at: https://www.planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_Air_Quality_Conformity_Report_October_2021.pdf. Accessed June 1, 2023.
[61] Plan Bay Area. 2021. Plan Bay Area 2050. Available at: https://www.planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_October_2021.pdf. Accessed June 1, 2023.

Applicable Building Energy Policies:

- Policy B-1: Transition to all-electric new constructions.
- Policy B-2: Convert existing buildings to all-electric.
- Policy B-3: Use microgrids to generate local renewable energy and improve resiliency.
- Policy B-4: Pursue integrated opportunities to address climate adaptation and mitigation.

Applicable Transportation Policies:

- Policy T-1: Increase electric vehicle adoption.
- Policy T-2: Encourage urban density and the revision of parking standards, and support bicycle and pedestrian-friendly planning.
- Policy T-3: Implement programs for shared transit that reduce VMT.

Applicable Waste and Consumption Policies:

- Policy W-1: Reduce construction materials and waste.
- Policy W-2: Reduce organics in the waste stream.
- Policy W-3: Reduce inorganic waste sent to landfills

Applicable Working Lands Policy Strategies:

- Strategy L-1: Identify new financing to scale carbon farming.
- Strategy L-2: Support technical assistance, education, and data collection efforts to scale climate beneficial agriculture.
- Strategy L-3: Secure access to key implementation infrastructure to advance climate beneficial agriculture.
- Strategy L-4: Address permitting barriers to implementing climate beneficial agricultural practices.
- Strategy L-5: Ensure agricultural lands are preserved for agricultural production.
- Strategy L-6: Support carbon sequestration and ecological restoration on natural lands.

Energy and Climate Change Element:[62]

Policy 3.1: Identify opportunities for new and existing development to incorporate on-site distributed energy resources into project design and construction.

Policy 3.2: Promote the production of appropriate off-site renewable energy for use in the unincorporated county.

Policy 4.1: Expand transit-oriented and mixed-use development that reduces reliance on vehicular travel.

Policy 4.2: Promote non-motorized and alternative travel.

Policy 5.1: Facilitate the expansion of infrastructure for alternative fuel vehicles.

[62] San Mateo County. San Mateo County General Plan Chapter 17 Climate Element. Available at: https://www.smcgov.org/media/73461/download?inline=. Accessed June 1, 2023.

3.2.2.3.8 COUNTY OF SAN MATEO 2022 COMMUNITY CLIMATE ACTION PLAN

The San Mateo County 2022 CCAP outlines priority actions to achieve a 45% reduction of GHG emissions over 1990 levels by 2030 and carbon neutrality by 2040. The CCAP streamlines the development process by meeting the BAAQMD's requirements for a Qualified GHG Reduction Strategy. The CCAP also supports the goals and policies of AB 32 –The California Global Warming Solutions Act of 2006. The County's strategies and actions are structured around four focus areas: building energy, transportation, waste, and working lands.[63]

County of San Mateo 2022 CCAP key strategies are provided below.

- Building Energy
  - Electrify 16% of existing buildings by 2030
  - Electrify 100% of existing buildings by 2040
  - Electrify 100% of newly constructed buildings
- Transportation
  - Construct 90 miles of additional bike lanes
  - Reduce vehicle miles traveled by 3%
  - Increase percentage of zero-emission passenger vehicles and equipment to 18% by 2030
  - Increase percentage of zero-emission passenger vehicles and equipment to 100% by 2040
- Waste and Consumption
  - Achieve an 18% reduction in organics in the waste stream by 2025
- Working Lands
  - Sequester 39,000 $MTCO_2e$ of carbon in soils and vegetation by 2030
  - Support ranchers and farmers to plan, implement, and scale climate-beneficial practices on the County's working lands
  - Increase resilience to climate change impacts; improve water quality and soil health; enhance and increase habitat for pollinators and wildlife

3.2.3 Thresholds of Significance

Pursuant to the State CEQA Guidelines, the project would be considered to have a significant effect on air quality if the effects exceed the significance criteria described below:

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state AAQS.
3. Expose sensitive receptors to substantial pollutant concentrations, as defined by the BAAQMD.
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Each of these thresholds is discussed under Section 3.2.5, Impacts and Mitigation Measures, below.

[63] San Mateo County. 2022. *Community Climate Action Plan*. Available at: https://www.smcgov.org/media/73456/download?inline=. Accessed June 1, 2023.

3.2.3.1 Regional Attainment Status

Depending on whether the applicable AAQS are met or exceeded, the air basin is classified on a federal and state level as being in "attainment" or "nonattainment." The EPA and CARB determine the air quality attainment status of designated areas by comparing ambient air quality measurements from state and local ambient air monitoring stations with the NAAQS and CAAQS (see Table 3.2-3). These designations are determined on a pollutant-by-pollutant basis. Consistent with federal requirements, an unclassifiable/unclassified designation is treated as an attainment designation. The SFBAAB is currently designated a nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS. Therefore, it is considered an "attainment/unclassified" area for all other pollutants.[64]

3.2.3.2 Regional Significance Criteria

The BAAQMD CEQA Air Quality Guidelines 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, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and GHG emissions. These thresholds are designed to establish the level at which the Applicant believed air pollution emissions would cause significant environmental impacts under CEQA. The BAAQMD regional significance criteria for projects that exceed the screening thresholds are shown in Table 3.2-4. Criteria for both the construction and operational phases of the project are provided.

Table 3.2-4. BAAQMD Regional (Mass Emission) Criteria Air Pollutant Significance Thresholds

Pollutant	Construction Phase	Operational Phase	
	Average Daily Emissions (pounds/day)	Average Daily Emissions (pounds/day)	Maximum Annual 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
PM_{10} and $PM_{2.5}$ fugitive dust	BMPs	None	None

Source: BAAQMD[65]

Projects that do not exceed the emissions in Table 3.2-4 would not cumulatively contribute to health effects in the SFBAAB. If projects exceed the emissions in Table 3.2-4, emissions would cumulatively contribute to the nonattainment status and would contribute to elevating health effects associated with these criteria air pollutants. Known health effects related to O_3 include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would further contribute to reducing possible health effects related to criteria air pollutants.

[64] EPA. 2023. Green Book. California Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants. Available at: https://www3.epa.gov/airquality/greenbook/anayo_ca.html. Accessed June 1, 2023.
[65] BAAQMD. 2017a. CEQA Guidelines. May. Available at: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_ guidelines_may2017-pdf.pdf?la=en. Accessed May 1, 2023.

However, for projects that exceed the emissions in Table 3.2-4, it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health effects cited above. The BAAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of air quality in the SFBAAB and at the present time, it has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health in order to address the issue raised in *Sierra Club v. County of Fresno (Friant Ranch, L.P.) (2018) California 5th District, Case No. S21978* (Friant Ranch).

O_3 concentrations are dependent upon a variety of complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground-level O_3 concentrations in relation to the NAAQS and CAAQS, it is speculative to link health risks to the magnitude of emissions exceeding the significance thresholds. To achieve the health-based standards established by the EPA, the air districts prepare air quality management plans that detail regional programs to attain the AAQS. However, if a project within the BAAQMD exceeds the regional significance thresholds, the project could contribute to an increase in health effects in the SFBAAB until the attainment standards are met in the SFBAAB.

3.2.3.3 CO Hotspots

Congested intersections have the potential to create elevated concentrations of CO, referred to as CO hotspots. The significance criteria for CO hotspots are based on the CAAQS for CO, which are 9.0 parts per million (ppm) (8-hour average) and 20.0 ppm (1-hour average). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology, the SFBAAB is in attainment of the CAAQS and NAAQS, and CO concentrations in the SFBAAB have steadily declined. Because CO concentrations have improved, the BAAQMD does not require a CO hotspot analysis if the following criteria are met:

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

3.2.3.4 Toxic Air Contaminants

The BAAQMD's significance thresholds for local community risk and hazard impacts apply to both the siting of a new source and to the siting of a new receptor. Local community risk and hazard impacts are associated with TACs and $PM_{2.5}$ because emissions of these pollutants can have significant health impacts at the local level. The proposed project would generate TACs and $PM_{2.5}$ during construction activities that could elevate concentrations of air pollutants at the nearby residential, daycare, and school-based sensitive receptors. The thresholds for construction-related local community risk and hazard impacts are the same as for project operations. BAAQMD has adopted screening tables for air toxics evaluation during construction. Construction-related TAC and $PM_{2.5}$ impacts should be addressed on a case-by-case

basis, taking into consideration the specific construction-related characteristics of each project and proximity to off-site and on-site receptors, as applicable.

Project-level emissions of TACs or $PM_{2.5}$ from individual sources that exceed any of the thresholds listed below are considered a potentially significant community health risk:

- An excess cancer risk level of more than 10 in 1 million, or a non-cancer (i.e., chronic or acute) HI greater than 1.0 would be a significant project contribution, and
- An incremental increase of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$) annual average $PM_{2.5}$ from a single source would be a significant project contribution, or
- Compliance with Qualified Community Risk Reduction Plan.

Cumulative sources represent the combined total risk values of each of the individual sources within the 1,000-foot evaluation zone. A project would have a cumulative considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius from the fence line of a source or location of a receptor, plus the contribution from the project, exceeds any of the following:

- An excess cancer risk level of more than 100 in 1 million or a chronic non-cancer HI (from all local sources) greater than 10.0, and
- 0.8 $\mu g/m^3$ annual average $PM_{2.5}$, or
- Compliance with Qualified Community Risk Reduction Plan.

In February 2015, OEHHA adopted HRA guidance that includes several efforts to be more protective of children's health. These updated procedures include the use of age sensitivity factors to account for the higher sensitivity of infants and young children to cancer causing chemicals, and age-specific breathing rate.[66]

3.2.3.5 Odors

The BAAQMD's thresholds for odors are qualitative based on the BAAQMD's Regulation 7, *Odorous Substances.* This rule places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Odors are also regulated under BAAQMD Regulation 1, Rule 1-301, *Public Nuisance*, which states that no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health, or safety of any such persons or the public, or which cause, or has a natural tendency to cause injury or damage to business or property. Under the BAAQMD's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors. The BAAQMD has established odor screening thresholds for land uses that have the potential to generate substantial odor complaints, including wastewater treatment plants, landfills or transfer stations, composting facilities, confined animal facilities, food manufacturing, and chemical plants. For a plan-level analysis, the BAAQMD requires:

- Identification of potential existing and planned location of odors sources.
- Policies to reduce odors.

[66] Office of Environmental Health Hazard Assessment (OEHHA). 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments 2015*. Available at: http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf. Accessed June 1, 2023.

3.2.4 Impact Assessment and Methodology

This air quality evaluation was prepared in accordance with the requirements of CEQA to determine if significant air quality impacts are likely to occur with the proposed project's construction and operations. The BAAQMD has published the CEQA Air Quality Guidelines, which provide local governments with guidance for analyzing and mitigating air quality impacts; these guidelines were used in this analysis. Regional emissions modeling was completed and analyzed as detailed below for both construction and operations. Localized emissions modeling was completed and analyzed as detailed below for construction.

3.2.4.1 Regional Emissions Modeling

Criteria air pollutant emissions modeling is included in Appendix C, *Air Quality and Greenhouse Gas Technical Report*, of this Draft EIR. The proposed project criteria air pollutant emissions inventory was modeled using the California Emissions Estimator Model (CalEEMod) Version 2022.1.1.13 and includes the following sectors:

- On-Road Transportation. Transportation emissions are based on project-specific trip estimates and the default CalEEMod vehicle emission rates for worker, vendor, and haul trucks during construction and operation.
- Area Sources. Area sources generated from use of consumer products, architectural coating, landscape maintenance equipment, and cleaning supplies during operations are based on CalEEMod Version 2022.1.1.13 default emission rates and the assumed square footage of the buildings. However, the project would not use natural gas for hearths, and emissions for the hearths are based on the emissions rates for electric hearths in CalEEMod.
- Energy. Criteria air pollutant emissions from energy use (electricity used for cooking, heating, etc.) during operations are based on the CalEEMod defaults for condo/townhouse land uses. However, the project would not use natural gas, and emissions for energy use are based on the emissions rates for electricity in CalEEMod. Additionally, buildings are assumed to comply with the latest Building Energy Efficiency Standards.
- Construction. Emissions modeling included emissions generated during the project which have been grouped into six phases in CalEEMod based on the types of equipment and workload: 1) demolition (including removal of the existing impervious surface of approximately 20,840 cubic yards and tree removal/wood chip dispersion); 2) site preparation (including site clearing, leveling, and transport of building materials); 3) grading (excavation, import approximately 7,500 cubic yards of fill); 4) building construction (including surveying, excavation/leveling for foundations, hydrostatic testing, watermain connections tested and connected, utility trenches, importation of building materials for residential buildings and the Community Building, all building construction); 5) paving (paving of on-site parking and roads and site concrete [curb, gutter, flatwork, etc.]); and 6) finishing (including finishing activities, architectural coatings, final landscaping, and removal of temporary fencing and erosion control). The project is within a 11.02-acre parcel, however, the total acreage involved for the Cypress Point Housing development is approximately 5 acres. Two CalEEMod land uses were used 'Residential – Condo/Townhouse' for the 71 dwelling units and 'Parking – Parking lot' for the 142 parking spots. This analysis includes quantification of construction and operation off-road equipment, fugitive dust, and on-road mobile sources, as well as the operational emissions for the affordable housing units.

  Modeling input data were based on this anticipated construction schedule and phasing. Construction equipment and usage required for each phase were obtained using CalEEMod

defaults for the land-use types which make up the project site, information provided by MidPen, and default parameters contained in the model for the project site (San Mateo County) and land uses. The construction duration is assumed to be approximately 18 months, from December 2024 until June 2026. Project construction would consist of different activities undertaken in phases, through to the operation of the project.

3.2.4.2 Localized Emissions Modeling

A construction HRA from TACs and $PM_{2.5}$ associated with construction equipment exhaust was prepared for the project in 2018 and is included in Appendix C of this Draft EIR. The 2018 HRA results and conclusions remain representative of the project's potential localized impact and the updated 2023 CalEEMod modeling. Sources evaluated in the HRA include off-road construction equipment and the on-road worker, vendor, and haul truck traffic near the project site. Modeling is based on the EPA's Industrial Source Complex Short Term (ISCST3) air dispersion modeling program and the latest HRA guidance from the OEHHA to estimate excess lifetime cancer risks, chronic non-cancer hazard indices, and the $PM_{2.5}$ maximum annual concentrations at the nearest maximum exposed off-site sensitive receptors and assumes 24-hour outdoor exposure with risks averaged over a 70-year lifetime.

DPM emissions were based on the CalEEMod construction runs, using annual exhaust PM_{10} construction emissions. The $PM_{2.5}$ emissions were taken from the CalEEMod output for total annual $PM_{2.5}$. The project was assumed to take place over 18 months. The off-site hauling emission rates were adjusted to evaluate localized emissions from the haul route within 0.5 mile of the project site. Construction emissions were modeled as occurring daily between 7 a.m. and 4 p.m., when most construction activity would occur.

Air dispersion modeling using the EPA's AMS/EPA Regulatory Model (AERMOD) program was conducted to assess the impact of emitted compounds on sensitive receptors. The model is approved by BAAQMD for estimating ground-level impacts from point and fugitive sources in simple and complex terrain. Meteorological data obtained from the BAAQMD for the nearest representative meteorological station (Fort Funston, San Francisco) were used to represent local weather conditions and prevailing winds.

3.2.5 Impacts and Mitigation Measures

Impact AQ-1: Would the project conflict with or obstruct implementation of the applicable air quality plan? (Less than Significant)

The 2017 Clean Air Plan is the current applicable regional Air Quality Plan (AQP) for the SFBAAB.[67] The primary goals of the 2017 Clean Air Plan are to protect public health and protect the climate, and the plan acknowledges that the BAAQMD's two stated goals of protection are closely related. As such, the 2017 Clean Air Plan identifies a wide range of control measures intended to decrease both criteria pollutants and GHG emissions. Whether the project would conflict with the 2017 Clean Air Plan can be determined if the project: 1) does not support the goals of the 2017 Clean Air Plan; 2) does not include applicable control measures from the 2017 Clean Air Plan; and 3) would disrupt or hinder implementation of control measures from the 2017 Clean Air Plan. The primary goals of the Bay Area 2017 Clean Air Plan are to: attain air quality standards; reduce population exposure and protect public health in the Bay Area; and reduce GHG emissions and protect the climate.

The control strategies of the 2017 Clean Air Plan include control measures in the following categories: Stationary Source, Transportation, Energy, Building, Agriculture, Natural and Working Lands, Waste

[67] BAAQMD. 2017

Management, Water, and Super-GHG Pollutants. The proposed project's compliance with each of these control measures is discussed below. The control measures are geared toward traditional land uses (e.g., residential, commercial, industrial uses) and buildings, but not all are applicable to individual projects. Below are the applicable measures to this project.

Transportation Control Measures. The BAAQMD identifies Transportation Control Measures as part of the 2017 Clean Air Plan to decrease emissions of criteria pollutants, TACs, and GHGs by reducing the demand for motor vehicle travel, promoting efficient vehicles and transit service, decarbonizing transportation fuels, and electrifying motor vehicles and equipment. The proposed project would provide housing near existing business, commercial, and employment centers in San Mateo County, reducing the demand for travel by single occupancy vehicles. In addition, the proposed project would install electric vehicle charging stations and parking stalls that can charge electric vehicles. Therefore, the proposed project would promote the use of zero emissions vehicles by the project residents and would promote initiatives to reduce vehicle trips and VMT by design as well as by implementing MM-TR-2 provided in Section 3.10, Transportation, of this EIR; see Section 3.10 for additional discussion. Therefore, the proposed project would not conflict with the identified Transportation and Mobile Source Control Measures of the 2017 Clean Air Plan.

Building Control Measures. The BAAQMD has authority to regulate emissions from certain sources in buildings, such as boilers and water heaters, but has limited authority to regulate the buildings themselves. Therefore, the strategies in the control measures for this sector focus on working with local governments that do have authority over local building codes to facilitate the adoption of best control practices and policies. The proposed project would be required to comply with the latest Title 24 standards of the CCR, established by the California Energy Commission, regarding energy conservation and green building standards. Therefore, the proposed project would not conflict with any of the Building Control Measures of the 2017 Clean Air Plan.

Waste Management Control Measures. The Waste Management Control Measures focus on reducing or capturing methane emissions from landfills and composting facilities, diverting organic materials away from landfills, and increasing waste diversion rates through efforts to reduce, reuse, and recycle. The proposed project would comply with local requirements for waste management (e.g., recycling and composting services). Therefore, the proposed project would be consistent with the Waste Management Control Measures of the 2017 Clean Air Plan.

The BAAQMD has established quantitative significance thresholds for construction and operational emissions at a level at which the cumulative impact of exceeding these thresholds would have an adverse impact on the SFBAAB's ability to attain or maintain air quality standards. The BAAQMD has established health and hazards thresholds to help protect public health. As discussed below, construction and operation of the proposed project would not result in the generation of criteria air pollutants or TACs that would exceed BAAQMD thresholds of significance. Therefore, the proposed project would not conflict with the 2017 Clean Air Plan goals.

As discussed above, the proposed project would generally implement the applicable measures outlined in the 2017 Clean Air Plan, including the Transportation Control Measures. Therefore, the proposed project would not disrupt or hinder implementation of a control measure from the 2017 Clean Air Plan. The development of the project's 71 residential units would improve the jobs/housing balance and jobs/housing fit by providing preference for those who live or work on the San Mateo Coast, redispersing existing county residences, and reducing distances traveled between work and home. The proposed project would not result in substantive employment growth; one on-site property manager is anticipated. As such, this impact would be less than significant.

Impact AQ-2: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard? (Less than Significant with Mitigation)

The BAAQMD's thresholds of significance represent the allowable emissions a project can generate without generating a cumulatively considerable contribution to regional air quality impacts. Therefore, a project that would not exceed the BAAQMD thresholds of significance on a project level also would not be considered to result in a cumulatively considerable contribution to these regional air quality impacts. The region is in nonattainment for federal and state O_3 standards, state PM_{10} standards, and federal and state $PM_{2.5}$ standards. Impacts related to construction and operation of the proposed project are addressed separately below.

Construction

The project implementation would generate emissions of criteria air pollutants during construction. The estimated unmitigated emissions from construction of the project are summarized in Table 3.2-5. The detailed assumptions and calculations, as well as CalEEMod outputs, are provided in Appendix C.

Table 3.2-5. Unmitigated Construction Emissions Summary

Construction Year	Unmitigated Construction Emissions Summary					
	ROG	NOx	CO	PM_{10}	$PM_{2.5}$	SO_2
Pollutant Emission (pounds per day)						
2024 peak daily emission	1.71	21.83	24.87	5.69	1.34	0.08
2025 peak daily emission	5.01	53.11	47.43	19.37	7.00	0.30
2026 peak daily emission	33.50	24.40	32.67	8.98	1.86	0.07
BAAQMD significance thresholds	54	54	N/A	82	54	N/A
Threshold exceeded?	No	No	N/A	No	No	N/A
Pollutant Emission (tons per year)						
2024 maximum annual	0.02	0.24	0.27	0.01	0.01	0.001
2025 maximum annual	0.24	2.70	2.97	0.08	0.29	0.01
2026 maximum annual	0.58	0.88	1.18	0.03	0.07	0.002
BAAQMD significance thresholds	10	10	N/A	15	10	N/A
Threshold exceeded?	No	No	N/A	No	No	N/A

Source: Emissions were quantified using CalEEMod version 2022.1.1.13.[68]

NA = Not applicable, no threshold

Model results (summer, winter, and annual) and assumptions are provided in Appendix C.

As Table 3.2-5 shows, estimated unmitigated construction emissions for all pollutants are below BAAQMD significance thresholds. The combined construction emissions from all components of the proposed project are below the recommended BAAQMD thresholds of significance. Therefore, project construction would have a less-than-significant impact. However, mitigation measures and BMPs have been included to further reduce localized impacts. The estimated mitigated emissions from construction of the project are summarized in Table 3.2-6.

[68] California Air Pollution Control Officers Association (CAPCOA). 2022. California Emission Estimator Model (CalEEMod) and User Guide. Version 2022.1.1.13. Available at: http://www.caleemod.com/. Accessed May 20, 2023.

Table 3.2-6. Mitigated Construction Emissions Summary

Construction Year	Mitigated Construction Emissions Summary					
	ROG	NOx	CO	PM_{10}	$PM_{2.5}$	SO_2
Pollutant Emission (pounds per day)						
2024 peak daily emission	1.71	21.83	24.87	3.30	1.08	0.08
2025 peak daily emission	5.01	53.11	47.43	10.80	4.19	0.30
2026 peak daily emission	2.80	24.40	32.67	3.92	1.35	0.07
BAAQMD significance thresholds	54	54	N/A	82	54	N/A
Threshold exceeded?	No	No	N/A	No	No	N/A
Pollutant Emission (tons per year)						
2024 maximum annual	0.02	0.24	0.27	0.04	0.01	0.001
2025 maximum annual	0.24	2.70	2.97	0.50	0.18	0.01
2026 maximum annual	0.58	0.88	1.18	0.14	0.05	0.002
BAAQMD significance thresholds	10	10	N/A	15	10	N/A
Threshold exceeded?	No	No	N/A	No	No	N/A

Source: Emissions were quantified using CalEEMod version 2022.1.1.13.[69]
NA = Not applicable, no threshold
Model results (summer, winter, and annual) and assumptions are provided in Appendix C.

As presented above, the project would not violate any air quality significance thresholds or contribute substantially to an existing or projected air quality violation. The impact is less than significant, and no mitigation is required. However, for all proposed projects, the BAAQMD recommends the implementation of BMPs, regardless of whether construction-related emissions exceed applicable thresholds of significance. In addition, several other basic measures to control dust and exhaust during construction are included as part of **Mitigation Measure (MM) AQ-2a and 2b**. As such, to ensure construction emission impacts are less than significant, the proposed project would apply the following mitigation measures during construction activities:

AQ-2 Mitigation Measure Recommendations

As discussed, the impact is less than significant, and no mitigation is required. However, the proposed project would apply the following mitigation measures during construction activities to further reduce impacts.

MM-AQ-2a Implement BAAQMD BMPs

During any construction period ground disturbance, the applicant shall ensure that the general contractor implements measures to control dust and exhaust. MidPen would include terms in all construction contracts related to the Cypress Point project that require contractors to implement the following BMPs:

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

[69] CAPCOA, 2022.

- 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.
- All roadways, driveways, and sidewalks shall be paved as soon as possible.
- Idling times shall be minimized either by shutting equipment off when not in use or by reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure in Title 13, Section 2485 of the CCR). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
- A publicly visible sign shall be posted with the telephone number and person to contact at the City regarding dust complaints. This person shall respond and take corrective action within 48 hours of a complaint or issue notification. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
- Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- 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.

Implementation of **MM-AQ-2a** would ensure that the recommended BAAQMD BMPs are instated, which the BAAQMD considers sufficient to reduce this impact to a level of less than significant.

To reduce localized impacts from DPM and $PM_{2.5}$ to less than significant, the HRA included **MM-AQ-2b** to lower diesel particulate matter exhaust emissions from construction equipment.

MM-AQ-2b Use Low Diesel Particulate Matter Exhaust Construction Equipment

Prior to initiating any construction activities, MidPen or their contractors shall develop a plan demonstrating that the off-road equipment used on-site to construct the project would achieve a fleet-wide average of at least 78% reduction in DPM emissions compared to the emissions calculated for the project without mitigation. One feasible plan to achieve this reduction would include the following: all mobile diesel-powered off-road equipment larger than 25 horsepower and operating on-site for more than 2 days shall meet, at a minimum, EPA particulate matter emissions standards for Tier 4 engines or equivalent. Note that the construction contractor could use other measures to minimize construction period DPM emissions to reduce the estimated cancer risk below the thresholds. The use of equipment that meets EPA Tier 2 standards and includes CARB-certified Level 3 Diesel Particulate Filters or alternatively fueled equipment (i.e., non-diesel) would meet this requirement. Other measures may be the use of added exhaust devices, or a combination of measures, provided that these measures are approved by the County and demonstrated to reduce community risk impacts to less than significant.

The effectiveness of proposed mitigation measures to reduce impacts related to community risk was evaluated by comparing DPM and $PM_{2.5}$ emissions between the unmitigated and mitigated CalEEMod runs and estimating mitigated risk values based on the unmitigated AERMOD run. Therefore, with mitigation, the computed maximum increased lifetime residential cancer risk from construction, assuming infant exposure, would be 7.3 in 1 million or less, and the maximum annual $PM_{2.5}$ concentration would be less than 0.1 $\mu g/m^3$. The cancer risk would be below the BAAQMD threshold of 10 in 1 million for cancer risk and the annual $PM_{2.5}$ concentration would be below the BAAQMD threshold of 0.3 $\mu g/m^3$.

After implementation of these recommended measures, the project would have a less-than-significant impact with respect to community risk caused by construction activities.

Operations

Project operations would generate VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from mobile sources, including vehicle trips, and area sources, including the use of consumer products, architectural coatings for repainting, and landscape maintenance equipment, water, waste, and energy sources. The estimated emissions from operation of the project are summarized in Table 3.2-7. Complete details of the emissions calculations are provided in Appendix C.

Table 3.2-7. Unmitigated Operational Emissions Summary

Operation Year 2027	Unmitigated Operational Emissions Summary					
	ROG	NOx	CO	PM_{10}	$PM_{2.5}$	SO_2
Pollutant Emission (pounds per day)						
Mobile	1.78	1.60	20.60	2.39	0.44	0.06
Area	2.05	0.039	4.03	0.001	0.002	0.0002
Energy	0	0	0	0	0	0
Total	**3.83**	**1.64**	**24.62**	**2.39**	**0.44**	**0.06**
BAAQMD significance thresholds	54	54	N/A	82	54	N/A
Threshold exceeded?	No	No	N/A	No	No	N/A
Pollutant Emission (tons per year)						
Mobile	0.28	0.29	3.08	0.39	0.07	0.01
Area	0.34	0.003	0.36	0.0001	0.0002	0.00002
Energy	0	0	0	0	0	0
Total	**0.62**	**0.30**	**3.44**	**0.39**	**0.07**	**0.01**
BAAQMD significance thresholds	10	10	N/A	15	10	N/A
Threshold exceeded?	No	No	N/A	No	No	N/A

Source: Emissions were quantified using CalEEMod version 2022.1.[70]

NA = Not applicable, no threshold

Model results (summer, winter, and annual) and assumptions are provided in Appendix C.

As Table 3.2-7 shows, estimated unmitigated operational emissions for all pollutants are below BAAQMD significance thresholds. Also, project operations would meet the BAAQMD CO hotspot analysis screening criteria regarding traffic volumes at any affected intersection. The project would be consistent with the C/CAG congestion management program.[71] Project-generated traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour and project-generated traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway). Therefore, the proposed project would not need a CO hotspot analysis. Therefore, based on the above criteria, the proposed project would have a less-than-significant impact related to CO hotspots.

[70] CAPCOA, 2022.

[71] C/CAG. 2021. Congestion Management Program. 2021 Available at: https://ccag.ca.gov/wp-content/uploads/2022/01/258-018-San-Mateo-CMP-Report_Final.pdf. Accessed July 24, 2023.

The combined construction emissions and combined operational emissions from all components of the proposed project are below the recommended BAAQMD thresholds of significance for all pollutants, including O_3, PM_{10}, and $PM_{2.5}$ for which the SFBAAB is currently designated nonattainment. Therefore, the project would not be anticipated to exceed any significance threshold and would have a less than significant cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state AAQS.

Impact AQ-3: Would the project expose sensitive receptors to substantial pollutant concentrations, as defined by the Bay Area Air Quality Management District? (Less Than Significant with Mitigation)

While criteria pollutants (such as particulate matter [PM_{10} and $PM_{2.5}$]) are a concern at the regional level, community risk impacts from TACs and annual $PM_{2.5}$ exposure to nearby sensitive receptors are also a localized concern. While the discussion under Impact AQ-2 above addresses particulate matter at the regional level, this impact addresses particulate matter at the localized level. Impacts related to increased community risk can occur either by introducing new sensitive receptors, such as residences, in proximity to existing sources of TACs or by introducing a new source of TACs with the potential to adversely affect existing sensitive receptors in the project vicinity.

The BAAQMD CEQA Air Quality Guidelines recommend using a 1,000-foot screening radius around a project site for purposes of identifying community health risk from siting a new sensitive receptor or a new source of TACs. Operation of the project is not expected to cause any localized emissions that could expose sensitive receptors to unhealthy air pollutant levels, because no stationary sources of TACs, such as generators, are proposed as part of the project. However, the proposed project would introduce new sensitive receptors to the area in the form of future residences, which could be exposed to existing sources of TACs. Project-related construction activity would temporarily generate dust and equipment exhaust that could affect nearby sensitive receptors that include residences.

This analysis therefore evaluates the following community risk impacts:

- Exposure of project residents to existing mobile sources of TACs;
- Exposure of project residents to existing stationary sources of TACs; and
- Exposure of nearby existing residences to project construction-related TACs.

Existing Mobile Sources of TACs

BAAQMD provides a Highway Screening Analysis tool that uses Google Earth to identify estimated risk and hazard impacts from highways throughout the Bay Area. Cancer risk, chronic and acute HI, and annual $PM_{2.5}$ values at various distances are estimated for different highway segments.[72] The tool uses the average annual daily traffic count, fleet mix and other modeling parameters specific to that segment of the highway. Impacts from traffic on SR-1 (Link 41, at 6 feet of elevation), which is 150 feet or greater west of the project site, were identified using this tool. The estimated cancer risk was adjusted using a factor of 1.3744 to account for new OEHHA guidance. This factor was provided by BAAQMD for use with their CEQA screening tools. The cancer risk at the project site was found to be 5.9 in 1 million, which is below the significance threshold of 10 in 1 million. The $PM_{2.5}$ concentration was found to be 0.06 $\mu g/m^3$, which is below the significance threshold of 0.3 $\mu g/m^3$, and the HI is 0.01, which is below the significance threshold of 1.0. This would be a less-than-significant impact, and no mitigation is required.

[72] Illingworth & Rodkin, 2018.

Existing Stationary Sources of TACs

The locations of any permitted stationary sources of air pollution near the project site were identified using BAAQMD's Stationary Source Risk and Hazard Analysis Tool,[73] a mapping tool that uses Google Earth. This tool identified the location of one stationary source and its estimated risk and hazard screening values. The risk values were then adjusted with the appropriate distance multiplier values provided by BAAQMD. The 2012 estimated risk values were adjusted using the factor of 1.3744.

- Plant 14546, which is an emergency back-up generator operated by Sewer Authority Mid-Coast, located at 16th Street and Cabrillo Highway, is approximately 450 feet northwest of the project site. At BAAQMD's direction, risk and $PM_{2.5}$ concentrations from the facility were adjusted based on BAAQMD's Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines. According to the BAAQMD screening data (and adjusted for the 450-foot distance and 2015 OEHHA methodology), this facility would result in an adjusted lifetime cancer risk of 2.9 in 1 million, $PM_{2.5}$ concentration of less than 0.01 $\mu g/m^3$, and a less than 0.01 HI, which would all be below BAAQMD thresholds of significance. This would be a less-than-significant impact, and no mitigation is required.

Community risk impacts on project residents from combined sources are reported in the HRA, and as shown, risk from combined operational TAC sources at the project site would be below the BAAQMD cumulative thresholds of 100 in 1 million and 0.8 $\mu g/m^3$, respectively.[74] The HI would also be cumulatively less than significant. This would be a less-than-significant impact, and no mitigation is required.

Project Construction-Related TACs

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 BMPs are employed to reduce these emissions. MM-AQ-2a would implement BAAQMD-required BMPs.

Construction equipment and associated heavy-duty truck traffic also generates diesel exhaust, which is a known TAC. Construction exhaust emissions may pose community risks for sensitive receptors such as nearby residents. The primary community risk impact issues associated with construction emissions are cancer risk and exposure to $PM_{2.5}$. Diesel exhaust poses both a potential health and nuisance impact to nearby receptors. A community risk assessment of the project construction activities was conducted to evaluate potential health effects on sensitive receptors at these nearby residences from construction emissions of DPM and $PM_{2.5}$. The closest sensitive receptors to the project site are located adjacent to the north, east, and south sides of the project site. Emissions and dispersion modeling were conducted to predict the off-site DPM concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

[73] BAAQMD. 2023. Stationary Source Screening Map. Available at: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3. Accessed June 1, 2023.
[74] Illingworth & Rodkin, 2018.

In 2018, CalEEMod-calculated construction emissions were input to the EPA ISCST3 dispersion model with project and receptor coordinates and meteorological data. DPM and $PM_{2.5}$ concentrations at modeled receptor locations were then used to estimate community risk impacts (cancer risk, annual $PM_{2.5}$ concentration, and HI) from project construction using the detailed methodology contained in the HRA.[75]

The 2018 CalEEMod model estimated total annual PM_{10} exhaust emissions (assumed to be DPM) from off-road construction equipment and from on-road vehicles (haul truck travel during demolition, worker travel, and vendor deliveries during construction). An average trip length of 0.5 mile was used to represent vehicle travel while at or near the construction site. It was assumed that these emissions from on-road vehicles traveling at or near the site would occur at the construction site. In 2018, total emissions of PM_{10} exhaust from all stages of project construction were estimated to be 0.217 tons (434 pounds). Total emissions of $PM_{2.5}$ emissions from all stages of project construction were estimated to be 0.289 tons (578 pounds). In 2023, the CalEEMod model was updated using the most recent version of CalEEMod and project assumptions. The 2023 total emissions of PM_{10} exhaust from all stages of project construction and total miles traveled were estimated to be 0.123 tons (246 pounds). When including total emissions of PM_{10} exhaust from all stages of project construction and emissions emitted within 0.5 miles of the project, PM_{10} exhaust emissions were estimated to be 0.116 tons (232 pounds). The total $PM_{2.5}$ emissions from all stages of project construction and total miles traveled were estimated to be 0.243 tons (486 pounds). When including total $PM_{2.5}$ emissions from all stages of project construction and emissions emitted within 0.5 miles of the project, $PM_{2.5}$ emissions were estimated to be 0.173 tons (346 pounds). The current CalEEMod-estimated emissions are similar to the 2018 Report[76] CalEEMod-estimated emissions used in the EPA ISCST3 dispersion model. Therefore the 2018 Report annual DPM and $PM_{2.5}$ concentrations at neighboring residences from construction activities during the expected 2018 to 2019 construction period calculated using the EPA ISCST3 dispersion model are used to determine significance in this analysis. All modeling assumptions and details are provided in Appendix C.

The maximum concentrations occurred at a residence adjacent to the northern boundary of the project site at the 1.5-meter receptor height. Using the maximum annual modeled DPM concentrations, the maximum increased cancer risk at the location of the maximally exposed individual (MEI) was calculated using BAAQMD-recommended methods. The cancer risk calculations are based on applying the BAAQMD-recommended age sensitivity factors to the TAC concentrations. Age sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. BAAQMD-recommended exposure parameters were used for the cancer risk calculations. To be conservative, infant and adult exposures were assumed to occur at all residences through the entire construction period. Results of this assessment indicate that the maximum increased residential cancer risks would be 45.9 in 1 million for an infant exposure and 0.8 in 1 million for an adult exposure. The maximum residential excess cancer risk would be above the significance threshold of 10.0 in 1 million, so this impact would be significant. Implementation of **MM-AQ-2a** and **MM-AQ-2b** would reduce this impact to less than significant.

The maximum modeled annual $PM_{2.5}$ concentration, which is based on combined exhaust and fugitive dust emissions, was 0.41 $\mu g/m^3$. This maximum annual $PM_{2.5}$ concentration would be above the BAAQMD significance threshold of greater than 0.3 $\mu g/m^3$. The location of the receptor with the maximum $PM_{2.5}$ concentration is the same as where the maximum TAC impact would occur. Implementation of **MM-AQ-2a** and **MM-AQ-2b** would reduce this impact to less than significant.

[75] Illingworth & Rodkin, 2018.
[76] Illingworth & Rodkin. 2018.

The maximum modeled annual residential DPM concentration (i.e., from construction exhaust) was 0.16 µg/m^3. The maximum computed HI based on this DPM concentration was 0.03, which is lower than the BAAQMD significance criterion of an HI greater than 1.0. This would be a less-than-significant impact, and no mitigation is required.

The cumulative impacts of TAC emissions from three sources (construction of the project, the nearby stationary source, and traffic on SR-1) on the construction MEI are summarized in Table 3.2-4 of the 2018 Report[77] and show that the sum of impacts from combined sources at the construction MEI would be below the BAAQMD threshold, and therefore would be less than significant.

Without the implementation of mitigation measures, the project would have a significant impact with respect to community risk caused by project construction activities, since the estimated cancer risk and $PM_{2.5}$ concentrations are above the single source thresholds of 10.0 per 1 million for cancer risk and a concentration of greater than 0.3 µg/m^3 for the annual $PM_{2.5}$. Implementation of MM-AQ-2a and MM-AQ-2b would reduce this impact to less than significant. The HRA in Appendix C includes the emission calculations and source information used in the modeling and the cancer risk calculations, as well as the updated CalEEMod assumptions and emissions.

MM-AQ-2a requires that during any construction period ground disturbance, MidPen or their contractors shall ensure that measures to control dust and exhaust are implemented in compliance with the BAAQMD best management practices. For all proposed projects, the BAAQMD recommends the implementation of BMPs, regardless of whether construction-related emissions exceed applicable thresholds of significance.

MM-AQ-2b requires that prior to initiating any construction activities, MidPen or their contractors shall develop a plan demonstrating that the off-road equipment used on-site to construct the project would achieve a fleet-wide average of at least 78% reduction in DPM emissions compared to the emissions calculated for the project without mitigation (434 pounds of DPM emissions). There are several options outlined in the mitigation measure including: all mobile, diesel-powered off-road equipment larger than 25 horsepower and operating on-site for more than 2 days shall meet, at a minimum, EPA particulate matter emissions standards for Tier 4 engines or equivalent; the use of equipment that meets EPA Tier 2 standards and includes CARB-certified Level 3 Diesel Particulate Filters; or alternatively fueled equipment (i.e., non-diesel). The first mitigated CalEEMod model in Appendix C uses Tier 4 interim engines for all mobile, diesel-powered off-road equipment larger than 25 horsepower and operating on-site for more than 2 days which reduced DPM by 69%. The second mitigated CalEEMod model uses Tier 2 standards and includes CARB-certified Level 3 Diesel Particulate Filters for all mobile, diesel-powered off-road equipment larger than 25 horsepower and operating on-site for more than 2 days which reduced DPM by 78%.

Therefore, implementation of **MM-AQ-2a** and **MM-AQ-2b** would reduce this impact to less than significant.

Impact AQ-4: Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? (Less than Significant)

The project would not be a source of any odors during operations. However, if objectionable odors are experienced by neighbors or residents, they can make a complaint to the San Mateo County Health Environmental Health Services.[78] During construction, a limited number of diesel engines would be

[77] Illingworth & Rodkin. 2018.

[78] San Mateo County Health Environmental Health Services. 2023. Report a Problem Online Complaint Form. Available at: https://ehesubmit.smchealth.org/servlet/guest?service=0&formId=87&saveAction=2&enterprise=9. Accessed June 1, 2023.

operated on the project site for limited durations. Diesel exhaust and VOCs from these diesel engines would be emitted during construction of the proposed project, which are objectionable to some; however, the duration of construction activities is expected to last approximately 18 months, emissions would disperse rapidly from the project site, and diesel exhaust odors would be consistent with existing vehicle odors in the area. Considering this information, construction and operation of the proposed project would not create other emissions or odors adversely affecting a substantial number of people; impacts would be less than significant.

3.2.6 Cumulative Impacts

Impact C-AQ-1: Would the impacts of the proposed project, in combination with other past, present, and reasonably foreseeable future projects, contribute to a cumulative impact related to air quality? (Less than Significant)

The cumulative setting for air quality includes the SFBAAB. The SFBAAB is designated as a nonattainment area for state standards of O_3, PM_{10}, and $PM_{2.5}$ and federal standards of O_3 and $PM_{2.5}$; an attainment and serious maintenance area for federal PM_{10} standards; and unclassified or attainment for all other pollutants. Cumulative growth in population and vehicle use could inhibit efforts to improve regional air quality and attain the AAQS. The BAAQMD CEQA Air Quality Guidelines do not include separate significance thresholds for cumulative construction and operational emissions. However, with respect to regional air pollution, the development of the project would improve the jobs/housing balance and jobs/housing fit by providing preference for those who live or work on the San Mateo Coast, redispersing existing county residences and reducing distances traveled between work and home. Therefore, the project would not affect the 2017 Clean Air Plan population forecasts. As described in the threshold discussion above, the project would also be consistent with the appropriate 2017 Clean Air Plan control measures, which are provided to reduce air quality emissions for the entire Bay Area region. Additionally, the previous threshold discussion addresses cumulative impacts and demonstrates that the project would not exceed the applicable BAAQMD thresholds for construction or operations.
The BAAQMD CEQA Air Quality Guidelines note that the nature of air emissions is largely a cumulative impact. As a result, no single project is sufficient in size by itself to result in nonattainment of AAQS. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. Consistency with the 2017 Clean Air Plan control measures would ensure that the project would not cumulatively contribute to air quality impacts in the SFBAAB; therefore, impacts would be less than significant.

3.3 BIOLOGICAL RESOURCES

This section evaluates potential impacts to biological resources resulting from implementation of the project. The evaluation of biological resources is based on the following technical studies:

- *Biological Impact Report for the Cypress Point Affordable Housing Community Project, Moss Beach, San Mateo County, California*, SWCA Environmental Consultants (SWCA), 2023 (Appendix D).[79]
- *Arborist Report, Cypress Point, Moss Beach, CA,* HortScience | Bartlett Consulting, 2022 (Appendix E).[80]

The biological impact report (BIR) included an extensive literature search of the 2-mile area surrounding the project site, followed by a field survey conducted on April 3, 2023. The field survey included the project site and a 200-foot buffer surrounding the site (biological survey area [BSA]).

3.3.1 Existing Conditions

The proposed project is located on an 11.02-acre parcel adjacent to the northeast corner of Carlos and Sierra Streets in the unincorporated community of Moss Beach, San Mateo County, California. The topography within the project site is generally flat and gently slopes westward toward the Pacific Ocean. Elevations within the project site range from approximately 95 to 205 feet above mean sea level. The project site consists of developed uses, including neighboring residences and roadways, water tanks and an associated maintenance structure operated by Montara Water and Sanitary District (MWSD), concrete remnants of military facilities that are scattered throughout the project site, and dirt access roads that travel around the perimeter of the project site, and undeveloped land dominated by a mix of native and non-native vegetation.

3.3.1.1 Vegetation and Wildlife

Vegetative communities on the project site are classified as Monterey cypress–Monterey pine woodland stands (*Hesperocyparis macrocarpa–Pinus radiata* Forest and Woodland Semi-Natural Alliance), perennial rye grass fields, coyote brush scrub, and urban/developed.

3.3.1.1.1 MONTEREY CYPRESS–MONTEREY PINE WOODLAND STANDS

Monterey cypress–Monterey pine woodland stands are characterized by a predominance of Monterey cypress (*Hesperocyparis macrocarpa*), Canary Island pine (*Pinus canariensis*), Aleppo pine (*Pinus halepensis*), Italian stone pine (*Pinus pinea*), and Monterey pine (*Pinus radiata*) in the tree canopy along with coast wattle (*Acacia cyclops*) and eucalyptus (*Eucalyptus* spp.) species. This vegetation community is naturalized on the coast and is often planted as trees, groves, and windbreaks.[81] It occurs throughout the project site with dense cover occurring through the central and along the northern and eastern survey perimeters (Figure 3.3-1).

[79] SWCA Environmental Consultants (SWCA). 2023. *Biological Impact Report for the Cypress Point Affordable Housing Community Project, Moss Beach, San Mateo County, California.* Half Moon Bay, California: SWCA Environmental Consultants.
[80] HortScience | Bartlett Consulting. 2022. *Arborist Report, Cypress Point, Moss Beach, CA.* Half Moon Bay, California: HortScience | Bartlett Consulting.
[81] Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. *A Manual of California Vegetation, Second Edition*. Sacramento, California: California Native Plant Society.

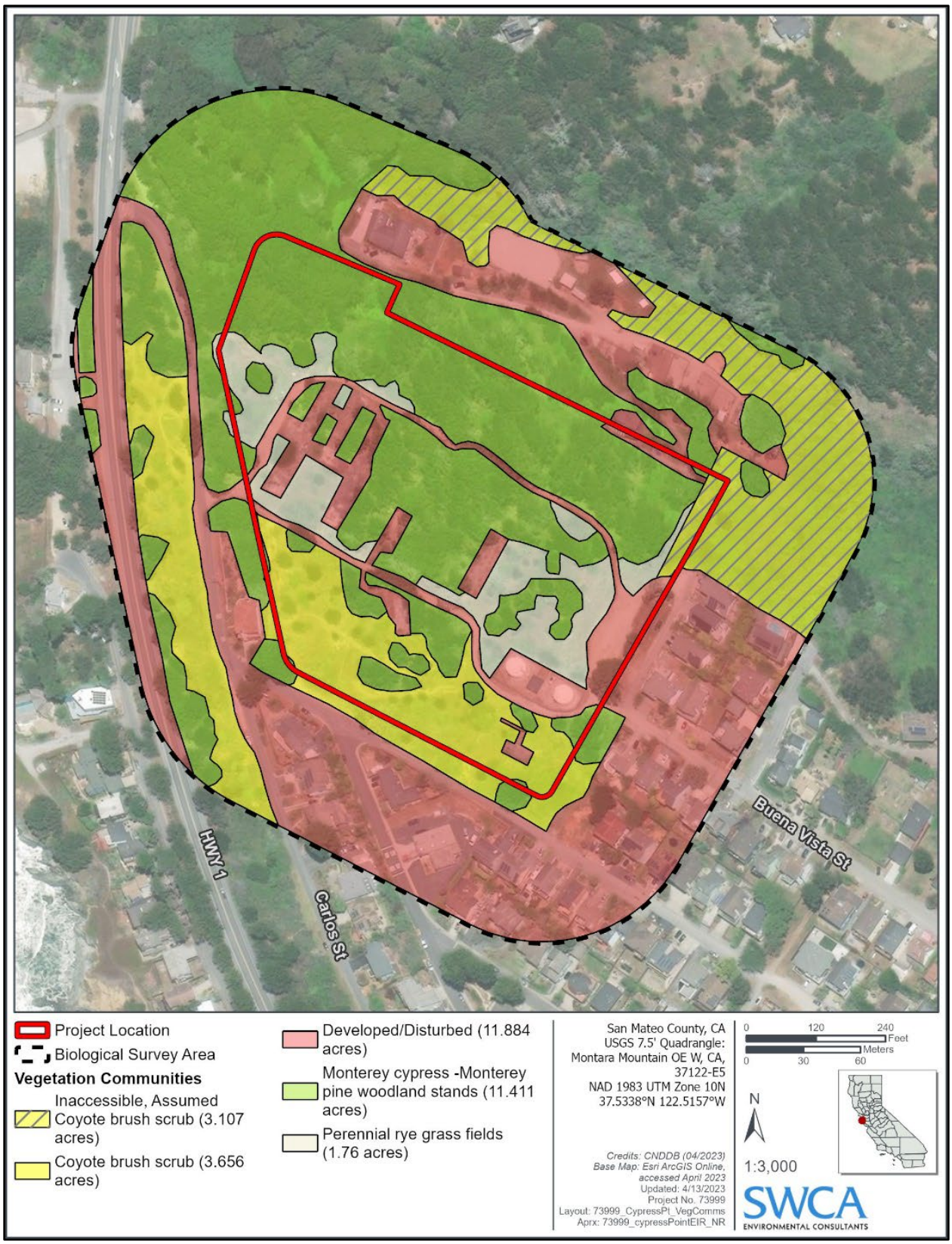


Figure 3.3-1. Vegetation communities.

3.3.1.1.2 COYOTE BRUSH SCRUB

The coyote brush scrub community occurs throughout the project site, primarily in the areas where there are gaps in the tree canopy. On the project site, coyote brush (*Baccharis pilularis*) is dominant with cotoneaster (*Cotoneaster coriaceus*), poison oak (*Toxicodendron diversilobum*), California blackberry (*Rubus ursinus*), ocean spray (*Holodiscus discolor*), red elderberry (*Sambucus racemosa*), and pampas grass (*Cortaderia selloana*) along the western extent of the project site and southwestern extent of the surrounding area (see Figure 3.3-1).

3.3.1.1.3 PERENNIAL RYE GRASS FIELDS

The perennial rye grass fields community occurs primarily along the northwest and southern perimeters of the project site and is dominated by perennial rye grass, wild oats (*Avena fatua*), ripgut brome (B*romus diandrus*), four seeded vetch (*Vicia tetrasperma*), and soft chess (*Bromus hordeaceus*). Other species observed in this community include Bermuda buttercup (*Oxalis pes-capre*), wild radish (*Raphanus sativus*), rattle snake grass (*Briza maxima*), limited cover of prairie June grass (*Koeleria macrantha*), and common dandelion (*Taraxacum californicum*). Along the southeastern extent of the project site, limited patches of spreading rush (*Juncus patens*), little-robin (*Geranium purpureum*), bird's foot trefoil (*Lotus corniculatus*), and common cat's ear (*Hypochaeris radicata*) are present (see Figure 3.3-1).

3.3.1.1.4 DEVELOPED/DISTURBED

Developed/disturbed areas within the project site include remnants of concrete structures from previous military uses distributed throughout the site. Two water towers and an associated maintenance hut occur in the southeastern portion of the project site. Unpaved, dirt maintenance roads traverse the perimeter of the project site. This habitat type also occurs on the eastern, southern, and western sides surrounding the project site and includes Lincoln, Buena Vista, and Carlos Streets. Disturbed areas throughout the project site are dominated by invasive plant species, including French broom (*Genista monspessulana*), cape ivy (*Delairea odorata*), pride of madeira (*Echium candicans*), borage (*Borago officinalis*), fairy stonecrop (*Crassula multicava*), longleaf wattle (*Acacia longifolia*), and periodic ice plant (*Carpobrotus edulis*) mats. Occasional native species occur within this community and include California bee plant (*Scrophularia californica*), California mugwort (*Artemisia douglasiana*), common yarrow (*Achillea millefolium*), and pacific sanicle (*Sanicula crassicaulis*).

The site has a variety of habitats that support wildlife species that live in grassland, urban, and forested environments. Several bat species are known to occur in the region. The forested portions of the site located near or in drainages like the Monterey cypress–Monterey pine woodland stand in the northern portion of the project site, provide habitat for a variety of wintering and migrating birds, and the forest overstory provides nesting habitat for raptors.

3.3.1.2 Special-Status Species

Based on the existing biological conditions in and adjacent to the project site, a review of relevant literature, the known occurrences of special-status species in the area, and SWCA biologists' local knowledge of the region, 10 special-status plant species and eight special-status animal species were identified as having potential to occur within the project site (see Appendix D).

Of the 10 special-status plant species considered for potential occurrence, the BSA has a moderate to high potential to support one special-status plant species—Choris's popcorn flower (*Plagiobothrys chorisianus* var. *chorisianus*). Of the remaining nine species, four species—coastal marsh milkvetch (*Astragalus pycnostachyus* var. *pycnostachyus*), Coast yellow leptisiphon *(Leptosiphon croceus),* San Francisco owl's-clover *(Triphysaria floribunda),* and Ornduff's meadowfoam (*Limnanthes douglasii* ssp.

ornduffii)—were determined to have no potential to occur due to lack of suitable habitat, soils, or elevation requirements. Five species—Blasdale's bent grass (*Agrostis blasdalei*), Hickman's cinquefoil (*Potentilla hickmanii*), Kellogg's horkelia (*Horkelia cuneata* var. *sericea*), perennial goldfields (*Lasthenia californica* ssp. *macrantha*), and rose leptosiphon (*Leptosiphon rosaceus*)—have low potential to occur within the BSA due to a lack of high-quality suitable habitat and the absence of recent occurrences within the 2-mile records search (see Appendix D).

Of the eight special-status animal species identified, one—California red-legged frog (*Rana draytonii*)—was determined to have moderate potential to occur within the project site and BSA. Of the remaining seven species, the following four were determined to have low potential to occur: western bumblebee (*Bombus occidentalis*), monarch butterfly (*Danaus plexippus*), saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*), and San Francisco garter snake (*Thamnophis sirtalis tetrataenia*). Three species—San Bruno elfin butterfly (*Callophrys mossii bayensis*), foothill yellow-legged frog (*Rana boylii*), and American badger (*Taxidea taxus*)—were determined to be absent from the project site and BSA due to a lack of suitable foraging and/or breeding habitat, aestivating habitat, life history, and/or other biotic considerations (see Appendix D). The remaining species were determined to have either low potential or no potential to occur and are not further discussed in this section.

3.3.1.2.1 CHORIS'S POPCORN FLOWER

Choris's popcorn flower (California Rare Plant Rank [CRPR] 1B.2) is a special-status plant species that was determined to have a moderate potential to occur on the project site due to suitable mesic coastal scrub habitat. Choris's popcorn flower is an annual herb in the borage family (*Boraginaceae*) that blooms from March to June. It typically occurs in mesic areas in coastal prairie, chaparral, northern coastal scrub, and wetland riparian areas, at elevations ranging from 20 to 525 feet.[82, 83, 84] Vegetation communities within the project site that could potentially support this species are limited to coyote brush scrub and perennial rye grass fields. Although the April 2023 field survey was conducted during the bloom window (March through June), no Choris's popcorn flower was observed on the project site.

3.3.1.2.2 CALIFORNIA RED-LEGGED FROG

California red-legged frog, a federally threatened species and California Department of Fish and Wildlife (CDFW) Species of Special Concern (SSC), occurs in various different habitat types, depending on its life cycle stage. Breeding areas include aquatic habitats, such as lagoons, streams, and natural and humanmade ponds. The species prefers aquatic habitats with little or no flow, the presence of surface water to at least early June, surface water depths to approximately 2 feet, and the presence of emergent vegetation (e.g., cattails, bulrush). During periods of wet weather, some individuals may make overland dispersals through adjacent upland habitats of distances up to 1 mile.[85] Upland habitats, including small mammal burrows and woody debris, can also be used as refuge during the summer if water is scarce or unavailable.[86] California red-legged frogs typically travel between sites and are unaffected by topography

[82] Baldwin, B., D. Goldman, D. Keil, R. Patterson, and T. Rosatti (editors). 2012. *The Jepson Manual: Vascular Plants of California*. 2nd ed. Berkeley, California: University of California Press.
[83] Calflora. 2023. Information on California plants for education, research and conservation (Calflora). Berkeley, California. Available at: https://www.calflora.org/. Accessed March 30, 2023.
[84] California Native Plant Society. 2023. *Manual of California Vegetation Online*. California Native Plant Society. Available at: http://cnps.org/. Accessed March 30, 2023.
[85] U.S. Fish and Wildlife Service. 2002. *Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*)*. Portland, Oregon: U.S. Fish and Wildlife Service.
[86] Jennings, M.R., and M.P. Hayes. 1994. *Amphibian and Reptile Species of Concern in California*. Sacramento, California: California Department of Fish and Game.

and vegetation types during migration. Dispersal habitat makes it possible for California red-legged frog to locate to new breeding and non-breeding sites and is crucial for conservation of the species.

Seven California red-legged frog occurrences have been recorded within 2 miles of the project site between 2006 and 2019.[87] The closest California Natural Diversity Data Base (CNDDB) occurrence (2012) was recorded approximately 0.7 mile north of the project site. While no suitable aquatic breeding habitat was observed on-site, potentially suitable upland dispersal habitat for this species is present within the project site. Additionally, Montara Creek, which is located approximately 250 feet north of the project site and immediately north of the project site, may provide marginally suitable aquatic dispersal habitat during wet season periods of inundation. Although there is potentially suitable upland dispersal habitat within the project site, this species is more likely to utilize higher-quality suitable aquatic and non-breeding habitat within and adjacent to Montara Creek where there is also more woody debris available for refugia. In addition, the project site does not provide a suitable overland route to other aquatic breeding sites and no small mammal burrows were observed within the project site. California red-legged frog was not observed in the project site during the April 2023 field survey.

3.3.1.3 Critical Habitat

There is no federally listed critical habitat on the project site or Biological Survey Area. However, there is U.S. Fish and Wildlife Service (USFWS) federally designated critical habitat for California red-legged frog (a federally threatened species and CDFW SSC) approximately 1.1 miles east of the project site in and surrounding San Vicente Creek, which flows south of the project site toward the Pacific Ocean (Figure 3.3-2).

3.3.1.4 Nesting Migratory Passerine Birds and Raptors

The BSA contains suitable nesting and foraging habitat for avian species protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFGC) Sections 3503 and 3513 during the typical nesting season (February 15–September 15). Suitable nesting and foraging habitats would include the non-native grassland areas, shrubs, and trees within and adjacent to the project site. Nesting is unlikely outside of the typical nesting season, although some avian species may forage year-round near the site. No nesting birds were observed during the field survey, which occurred during the typical nesting season.

3.3.1.5 Wildlife Habitat and Movement Corridors

Suitable migration habitat for amphibians, reptiles, birds, and mammals are present along the Pacific Ocean coastline to the west of the BSA. In addition, migrating raptors are known to occur in the area adjacent to the project site, especially during the fall. However, there are no known migratory corridors that intersect the BSA. The project site is bordered by urban and residential development to the east and south and Highway 1 to the west. Riparian corridors adjacent to the BSA to the north and south are more likely to be used by wildlife traveling through the surrounding area.

[87] SWCA, 2023.

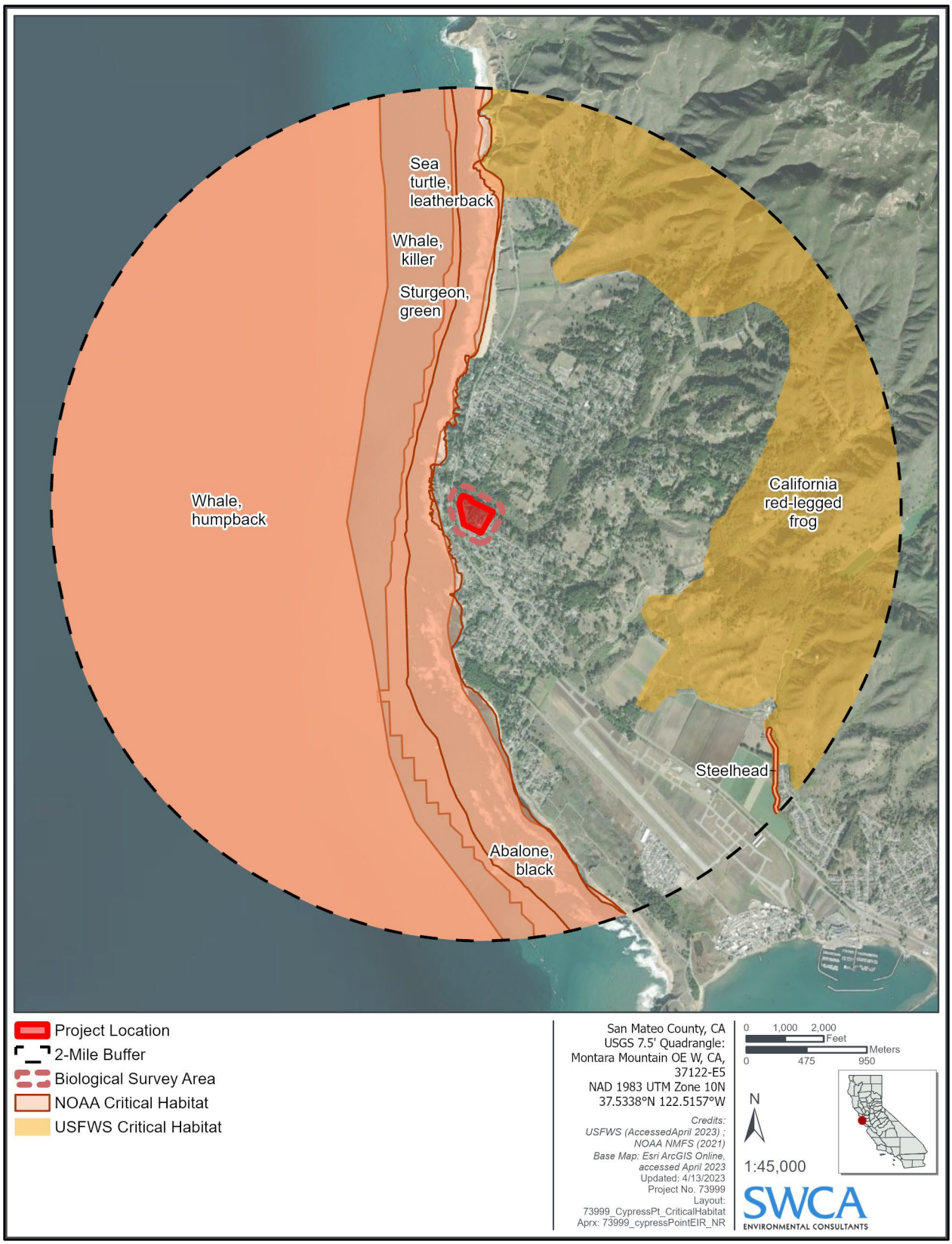


Figure 3.3-2. Critical habitat map.

3.3.1.6 Sensitive Habitat

As mentioned previously, coyote brush scrub and perennial rye grass field communities on the project site may provide moderately suitable upland dispersal habitat for California red-legged frog. However, these vegetation communities within the project site are unlikely to be considered a Sensitive Habitat by the County of San Mateo (County) given the surrounding development (i.e., fragmentation of habitat) that diminishes the dispersal habitat value.

Riparian habitat associated with Montara Creek exists north of the BSA; however, no riparian habitat is located within the BSA. No other Sensitive Habitats, as defined by the San Mateo County Local Coastal Program (LCP) Policies 7.1 through 7.14, were observed within the project site.[88]

3.3.1.7 Heritage and Significant Trees

HortScience | Bartlett Consulting prepared an *Arborist Report* in July 2022 for the proposed project. The *Arborist Report* identified and assessed 488 trees with trunks greater than 6 inches in diameter on the project site. These included 303 Monterey pines, 181 Monterey cypress, three Italian stone pine, and one myoporum (*Myoporum laetum*). The report assessed all trees with a trunk diameter greater than 6 inches on-site and made recommendations for tree removal and maintenance.[89] Approximately half of the trees were in poor condition and 14% of the trees were in good condition. Trees were also rated for suitability for preservation based on health, structural integrity, age and longevity, and species response to construction impacts and change. This analysis showed that 26 trees had a high suitability, 107 trees had a moderate suitability, and 344 trees had a low suitability for preservation. Based on a review of the development plans and tree suitability for preservation, 295 trees were identified and recommended for removal and 193 trees were recommended for preservation.

3.3.1.8 Marine and Wildlife Reserves

The project site is not located within 200 feet of a marine or wildlife reserve. The closest marine or wildlife reserve to the project site is the Fitzgerald Marine Reserve, which is located approximately 0.63 mile south of the project site.

3.3.1.9 Wetlands and Waters

A formal wetland delineation was not conducted for the project. However, no potentially jurisdictional waters or wetlands were observed during the field investigation. Montara Creek is located approximately 250 feet north of the project site and immediately north of the BSA. In addition, Vicente Creek is located approximately 0.6 mile south of the project site.

3.3.2 Regulatory Setting

3.3.2.1 Federal Regulations and Guidelines

3.3.2.1.1 ENDANGERED SPECIES ACT

The federal Endangered Species Act (ESA) of 1973 (United States Code [U.S.C.] Title 16, Sections 1531–1544), as amended, protects plants, fish, and wildlife that are listed as endangered or threatened by

[88] County of San Mateo. 2013. *Local Coastal Program Policies.* Available at: https://www.smcgov.org/planning/local-coastal-program. Accessed March 30, 2023.
[89] HortScience | Bartlett Consulting, 2022.

the USFWS or the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries). Section 9 of the ESA prohibits the "take" of listed fish and wildlife, where "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (Code of Federal Regulations [CFR] Title 50, Section 17.3). For plants, this statute prohibits removing, possessing, maliciously damaging, or destroying any listed plant under federal jurisdiction and removing, cutting, digging up, damaging, or destroying any listed plant in knowing violation of State law (16 U.S.C. 1538).

The ESA allows for issuance of incidental take permits to private parties either in conjunction with a habitat conservation plan (HCP) or as part of a Section 7 consultation (which is discussed in the following paragraph). Under Section 10 of the ESA, a private party may obtain incidental take coverage by preparing an HCP to cover target species within the project site, identifying impacts to the covered species, and presenting the measures that will be undertaken to avoid, minimize, and mitigate such impacts.

Under Section 7 of the ESA, federal agencies are required to consult with USFWS and/or NOAA Fisheries, as applicable, if their actions—including permit approvals or funding—may affect a federally listed species (including plants) or designated critical habitat. If the project is likely to adversely affect a species, the federal agency will initiate formal consultation with USFWS and/or NOAA Fisheries and issue a biological opinion as to whether a proposed agency action(s) is likely to jeopardize the continued existence of a listed species (jeopardy) or adversely modify critical habitat (adverse modification). As part of the biological opinion, USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity, provided that the action will not jeopardize the continued existence of the species or adversely modify designated critical habitat.

3.3.2.1.2 MIGRATORY BIRD TREATY ACT

The MBTA (16 U.S.C. Section 703, Supp. I, 1989) prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The trustee agency that addresses issues related to the MBTA is USFWS. Migratory birds protected under this law include all native birds and certain game birds (e.g., turkeys and pheasants), though most non-native birds are excluded from MBTA protection.[90] This act encompasses whole birds, parts of birds, and bird nests and eggs. The MBTA protects active nests from destruction and all nests of species protected by the MBTA, whether active or not, cannot be possessed. An active nest under the MBTA, as described by the U.S. Department of the Interior in its April 16, 2003, Migratory Bird Permit Memorandum, is one having eggs or young. Nest starts, prior to egg laying, are not protected from destruction. All native bird species occurring in the program area are protected by the MBTA. Program activities will include measures to avoid take of birds protected by the MBTA.

3.3.2.1.3 CLEAN WATER ACT

Areas meeting the regulatory definition of "waters of the United States" (jurisdictional waters) are subject to the jurisdiction of U.S. Army Corps of Engineers (USACE) under provisions of Section 404 of the 1972 Clean Water Act (Federal Water Pollution Control Act) (CWA) and Section 10 of the 1899 Rivers and Harbors Act (described below). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, and

[90] USFWS. 2023. Migratory Bird Treaty Act of 1918. Available at: www.fws.gov/law/migratory-bird-treaty-act-1918. Accessed June 2023.

all other waters that are indistinguishably part of such bodies of water. Wetlands on non-agricultural lands are identified using the USACE *Wetlands Delineation Manual*.[91]

Construction activities within jurisdictional waters are regulated by USACE. The placement of fill into such waters must comply with permit requirements of USACE. No USACE permit would be effective in the absence of state water quality certification under CWA Section 401. The State Water Resources Control Board (SWRCB) is the state agency, together with the Regional Water Quality Control Boards (RWQCBs), charged with implementing water quality certification in California.

3.3.2.2 State Regulations and Guidelines

3.3.2.2.1 PORTER-COLOGNE WATER QUALITY CONTROL ACT

The California SWRCB works in coordination with the nine RWQCBs to preserve, protect, enhance, and restore water quality. Each RWQCB makes decisions related to water quality for its region, and may approve, with or without conditions, or deny projects that could affect waters of the state. Their authority comes from the CWA and the State's Porter-Cologne Water Quality Control Act (Porter-Cologne). Porter-Cologne broadly defines waters of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state." Because Porter-Cologne applies to any water, whereas the CWA applies only to certain waters, California's jurisdictional reach overlaps and may exceed the boundaries of waters of the United States. For example, Water Quality Order No. 2004-0004-DWQ states that shallow waters of the state include headwaters, wetlands, and riparian areas. Where riparian habitat is not present, such as may be the case at headwaters, jurisdiction is taken to the top of bank.

On April 2, 2019, the SWRCB adopted the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures). In these new guidelines, riparian habitats are not specifically described as waters of the state but instead as important buffer habitats to streams that do conform to the State Wetland Definition. The Procedures describe riparian habitat buffers as important resources that may both be included in required mitigation packages for permits for impacts to waters of the state, as well as areas requiring permit authorization from the RWQCBs to impact.

Pursuant to the CWA, projects that are regulated by the USACE must also obtain a Section 401 Water Quality Certification permit from the RWQCB. This certification ensures that the proposed project will uphold state water quality standards. Because California's jurisdiction to regulate its water resources is much broader than that of the federal government, proposed impacts on waters of the state require Water Quality Certification even if the area occurs outside of USACE jurisdiction. Moreover, the RWQCB may impose mitigation requirements even if the USACE does not, for example for riparian habitats which are buffers to waters of the state. Under Porter-Cologne, the SWRCB and the nine regional boards also have the responsibility of granting CWA National Pollutant Discharge Elimination System (NPDES) permits and Waste Discharge Requirements for certain point-source and non-point discharges to waters. These regulations limit impacts on aquatic and riparian habitats from a variety of urban sources.

Any activities within the proposed program area that affect waters of the United States or waters of the state would require Section 401 Water Quality Certification and/or Waste Discharge Requirements from the RWQCB. Most wetland and open water features in the proposed program area are considered both waters of the United States and waters of the State. It is possible that some features, such as ditches, that are not considered waters of the United States may be subject to the jurisdiction of the San Francisco Bay RWQCB as waters of the state.

[91] US Army Corps of Engineers. 1987. *Wetlands Delineation Manual*. Available at: www.lrh.usace.army.mil/Portals/38/docs/USACE%2087%20Wetland%20Delineation%20Manual.pdf. Accessed June 2023.

3.3.2.2.2 CALIFORNIA ENDANGERED SPECIES ACT

The California Endangered Species Act (CESA) (CFGC Chapter 1.5, Sections 2050-2116) prohibits the take of any plant or animal listed or proposed for listing as rare (plants only), threatened, or endangered. In accordance with the CESA, CDFW has jurisdiction over state-listed species. CDFW regulates activities that may result in "take" of individuals listed under the Act (i.e., "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of "take" under the CFGC. CDFW has interpreted "take" to include the "killing of a member of a species which is the proximate result of habitat modification." If program activities would result in take of a state-listed species, an incidental take permit would be required through Section 2081 consultation with CDFW.

SSC is a category conferred by the CDFW to fish and animal species that meet the state definition of threatened or endangered, but have not been formally listed (e.g., federally or state-listed species), or are considered at risk of qualifying for threatened or endangered status in the future based on known threats. SSC is an administrative classification only, but these species should be considered "special-status" for the purposes of the California Environmental Quality Act (CEQA) analysis (see Section 3.3.1.1, Special-Status Plant Species, and Section 3.3.1.2, Special-Status Animal Species).

3.3.2.2.3 CALIFORNIA FISH AND GAME CODE

The CFGC includes regulations governing the use of, or impacts on, many of the state's fish, wildlife, and sensitive habitats.

CDFW exerts jurisdiction over the bed and banks of rivers, lakes, and streams according to provisions of Sections 1601–1603 of the CFGC. Section 1602 of the CFGC requires a Streambed Alteration Agreement for the fill or removal of material within the bed and banks of a watercourse or water body and for the removal of riparian vegetation.

Certain sections of the CFGC describe regulations pertaining to certain animal species. For example, CFGC Sections 3503, 3513, and 3800 (and other sections and subsections) protect native birds, including their nests and eggs, from all forms of take. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by CDFW. Raptors (i.e., eagles, falcons, hawks, and owls) and their nests are specifically protected in California under CFGC Section 3503.5. Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." All native bird species that occur in the proposed program area are protected by the CFGC. Projects may be required to take measures to avoid impacts on nesting birds under CFGC Sections 3503, 3513, and 3800.

The Fully Protected Species Statute (CFGC Section 4700) provides that fully protected species may not be taken or possessed at any time. Furthermore, the CDFW may authorize take of fully protected species only in very limited circumstances, such as for necessary scientific research.

Nongame mammals are protected by CFGC Section 4150, and other sections of the code protect other taxa. Native mammals and other species in the program area are also protected by the code.

The Native Plant Protection Act (NPPA) of 1977 (CFGC Sections 1900–1913) includes provisions that prohibit the take of endangered or rare native plants. The CDFW administers the NPPA and generally regards as rare many plant species with a CRPR of 1A, 1B, 2A, and 2B in the California Native Plant

Society (CNPS) Rare Plant Inventory.[92] In addition, sometimes CRPR 3 and 4 plants are considered if the population has local significance in the area and is impacted by the project. Section 191(b) of the CFGC includes a specific provision to allow for the incidental removal of endangered or rare plant species, if not otherwise salvaged by CDFW, within a right-of-way to allow a public utility to fulfill its obligation to provide service to the public.

3.3.2.3 Local Regulations and Guidelines

3.3.2.3.1 CALIFORNIA COASTAL ACT AND SAN MATEO COUNTY LOCAL COASTAL PROGRAM

The California Coastal Act (CCA) of 1976 governs the decisions made by the California Coastal Commission (CCC) regarding issues such as shoreline public access and recreation, terrestrial and marine habitat protection, water quality, commercial fisheries, and development within the California coastal zone. Development within the coastal zone requires either a Coastal Development Permit (CDP) or CDP Exemption from the CCC or from a local government with a CCC-certified LCP.

The project is located within the coastal zone in San Mateo County. The San Mateo County LCP was approved by the County Board of Supervisors and CCC in 1980.[93] In April 1981, the County assumed responsibility for implementing the CCA in the unincorporated areas of San Mateo County, including issuance of CDPs. For a permit to be issued, the development must comply with the policies of the LCP and those ordinances adopted to implement the LCP. Specific policies of the CCA that are relevant to protection of biological resources include the following:

Section 30231. Biological productivity; water quality. The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Section 30233. Diking, filling or dredging; continued movement of sediment and nutrients.

(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following: (1) new or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities; (2) maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launch ramps; (3) in open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structure pilings for public recreational piers that provide public access and recreational opportunities; (4) incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines; (5) mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas; (6) restoration purposes; (7) nature study, aquaculture, or similar resource dependent activities.

[92] SWCA, 2023.
[93] County of San Mateo, 2013.

(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for these purposes to appropriate beaches or into suitable longshore current systems.

(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary. Any alteration of coastal wetlands identified by the Department of Fish and Game, including, but not limited to, the 19 coastal wetlands identified in its report entitled "Acquisition Priorities for the Coastal Wetlands of California", shall be limited to very minor incidental public facilities, restorative measures, nature study, commercial fishing facilities in Bodega Bay, and development in already developed parts of south San Diego Bay, if otherwise in accordance with this division.

Section 30240. Environmentally sensitive habitat areas; adjacent developments.

(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas and shall be compatible with the continuance of those habitat and recreation areas.

The County LCP provides the following definition for Sensitive Habitats (Policy 7.1):

> . . . any area in which plant or animal life or their habitats are either rare or especially valuable and any area which meets one of the following criteria: (1) habitats containing or supporting "rare and endangered" species as defined by the State Fish and Game Commission, (2) all perennial and intermittent streams and their tributaries, (3) coastal tide lands and marshes, (4) coastal and offshore areas containing breeding or nesting sites and coastal areas used by migratory and resident water-associated birds for resting areas and feeding, (5) areas used for scientific study and research concerning fish and wildlife, (6) lakes and ponds and adjacent shore habitat, (7) existing game and wildlife refuges and reserves, and (8) sand dunes.
>
> Sensitive habitat areas include, but are not limited to, riparian corridors, wetlands, marine habitats, sand dunes, sea cliffs, and habitats supporting rare, endangered, and unique species.

The County LCP provides the following protection for Sensitive Habitats (Policy 7.3):

> a. Prohibit any land use or development which would have significant adverse impact on sensitive habitat areas.
>
> b. Development in areas adjacent to sensitive habitats shall be sited and designed to prevent impacts that could significantly degrade the sensitive habitats. All uses shall be compatible with the maintenance of biologic productivity of the habitats.

The County LCP defines riparian buffer zones as follows (Policy 7.11):

> On both sides of riparian corridors, from the "limit of riparian vegetation" extend buffer zones 50 feet outward for perennial streams and 30 feet outward for intermittent streams.

Policies of the San Mateo County LCP take precedence over San Mateo County General Plan policies for property located in the Coastal Zone. Actions taken by counties or municipalities within the coastal zone

may be appealed to the CCC only under defined circumstances (specified in PRC Section 30603). The CCC also retains permit authority in certain limited areas, such as tidelands and submerged lands (CCA Section 30519(b)). Development must also comply with other provisions of the County Code and Ordinances, such as zoning, building, and health regulations.

3.3.2.3.2 SAN MATEO COUNTY HERITAGE TREE ORDINANCE

Heritage Trees include two classes of trees. Class 1 includes any tree or grove of trees designated by a resolution of the County Board of Supervisors. Class 2 trees include the following species and sizes: bigleaf maple *(Acer macrophyllum*, 36 inches in diameter at breast height [dbh]), madrone (*Arbutus menziesii*, 48 inches dbh), golden chinquapin (*Chrysolepsis chrysophylla*, 20 inches dbh), Santa Cruz cypress (*Cupressus abramsiana*, all trees), Oregon ash (*Fraxinus latifolia*, 12 inches dbh), tan oak (*Lithocarpus densiflorus*, 48 inches dbh), Douglas fir (*Pseudosuga menziesii*, 60 inches dbh), coast live oak (*Quercus agrifolia*, 48 inches dbh), canyon live oak (*Quercus chrysolepsis*, 40 inches dbh), Oregon white oak (*Quarcus garryana*, all trees), black oak (*Quercus kellogii*, 32 inches dbh), interior live oak (*Quercus wislizenii*, 40 inches dbh), valley oak (*Quercus lobata*, 48 inches dbh), blue oak (*Quercus douglasii*, 30 inches dbh), California bay or laurel (*Umbellularia californica*, 48 inches dbh), California nutmeg (*Torreva californica*, 30 inches dbh), and redwood (*Sequoia sempervirens*, 84 inches dbh).

The 2016 Heritage Trees Ordinance requires submittal of an existing tree plan, including (1) an arborist's report of all significant or heritage trees to be removed, and (2) a Tree Protection Plan for all trees to be preserved.[94] Permits must be acquired for all regulated trees to be removed. The Planning Commission will act upon any tree removal in a scenic corridor. Significant trees to be removed must be replaced with 3 or more trees, as determined by the Community Development Director.

3.3.2.3.3 SAN MATEO COUNTY SIGNIFICANT TREE ORDINANCE

The 2016 Significant Tree Ordinance governs the cutting of significant trees and tree communities and requires the replacement of significant tree communities on public and private property within the unincorporated area of the county.[95] Cutting or removal of a significant tree requires a permit from the County. The County defines significant trees as "any live woody plant rising above the ground with a single stem or trunk of a circumference of thirty-eight inches (38") or more measured at four and one half feet (4 ½') vertically above the ground or immediately below the lowest branch, whichever is lower, and having the inherent capacity of naturally producing one main axis continuing to grow more vigorously than the later axes."[96]

The Significant Tree Ordinance governs the cutting of significant trees and tree communities and requires the replacement of significant trees communities on public and private property within the unincorporated area of the County.[97] Section 12024 of the County Municipal Code requires the replacement of significant indigenous and exotic trees at a 3:1 ratio.[98]

[94] County of San Mateo. 2016a. *Regulation of Removal and Trimming of Heritage Trees on Public and Private Property.* Available at: https://www.smcgov.org/planning/tree-regulations. Accessed May 5, 2023
[95] County of San Mateo. 2016b. *Significant Tree Ordinance of San Mateo County.* Available at: https://www.smcgov.org/planning/tree-regulations. Accessed May 5, 2023
[96] County of San Mateo. 1986. Part Three of Division VIII of the San Mateo County Ordinance Code. Available at: https://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/Significant%20Tree%20Ordinance.pdf.
[97] County of San Mateo, 2016b.
[98] County of San Mateo, 2016b.

Under Section 12,020.1, permits are not required for tree cutting which has been authorized by the Planning Commission, Design Review Committee, or Community Development Director as part of a permit approval process in which the provisions of this ordinance have been applied and considered.

Under Section 12,020.4, applicants seeking planning or building permits (including grading or demolition permits) must submit an Existing Tree Plan consistent with the required site plan to assess impacts to existing trees that may occur from the proposed development, and to establish tree protection measures for activity occurring within the dripline of a significant or heritage tree. The Existing Tree Plan must include the following:

- Property lines and easements;
- The locations of existing trees or groups of trees, including driplines with each tree numbered, and identified by trunk diameter at breast height (DBH), with an "X" through each tree proposed for removal, including on-site trees and trees adjacent to the project site, with driplines overhanging the project site;
- A table listing each tree by number, DBH, genus, species, and common name;
- For Demolition permits, show the building footprint for the structure to be removed;
- The footprint of any existing or new structures, including additions;
- The location of existing and proposed site utilities, including water, sewer, drainage, gas, underground electrical, voice/data, septic field, well head, or other;
- An Arborist's report is required for significant or heritage trees proposed for removal on the basis of poor health, potential hazard, or when a significant or heritage tree(s) is proposed to remain, but new development would encroach within the dripline of the tree(s);
- The Arborist's report shall assess the tree condition for all significant or heritage trees, and any measures necessary to protect trees on-site during demolition or construction. Tree protection measures shall comply with San Mateo County's tree protection requirements;
- For development within a tree dripline, the report shall assess potential tree survival and longevity, and special measures needed to protect any such trees during construction.

Existing Tree Plans shall NOT include:

- Proposed Landscaping
- Topographic Lines
- Finished Floor Elevations

Under Section 12,024(a), for projects not in the Residential Hillside/Design Review (RH/DR) District, replacement of trees removed shall be in a manner and quantity prescribed by the Community Development Director.

3.3.3 Thresholds of Significance

The determinations of significance of project impacts are based on applicable policies, regulations, goals, and guidelines defined by CEQA Guidelines Appendix G, as modified by the County of San Mateo.

Specifically, the project would be considered to have a significant effect on biological resources if the effects exceed the significance criteria described below:

1. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.
2. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS.
3. Would the project 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.
4. Would the project 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.
5. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (including the County Heritage and Significant Tree Ordinances).
6. Would the project conflict with the provisions of an adopted HCP, Natural Community Conservation Plan, or other approved local, regional, or state HCP?
7. Would the project be located inside or within 200 feet of a marine or wildlife reserve?
8. Would the project result in loss of oak woodlands or other non-timber woodlands?

Each of these thresholds is discussed under Section 3.3.5, Impacts and Mitigation Measures.

3.3.4 Impact Assessment and Methodology

The impact assessment for this project is based on the BIR prepared by SWCA (see Appendix D). The BIR included a desktop review, literature search, and field survey of the project site, including areas within a 200-foot buffer of the project site, as well as a review of applicable federal, state, and local regulations governing biological resources. Project effects related to biological resources were compared against LCP policies and County ordinances for consistency.

3.3.5 Impacts and Mitigation Measures

Impact BIO-1: Would the project have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? (Less than Significant with Mitigation)

The project has potential to impact one special-status plant species and one special-status wildlife species.

Choris's Popcorn Flower

Potential project impacts to special-status plants include direct removal during construction activities or incidental impacts through project activities such as vehicle impacts. The project site has suitable mesic coastal scrub habitat to support Choris's popcorn flower. No Choris's popcorn flower was observed at the time of the April 2023 field survey, which was conducted during the blooming period for this species.

Vegetation communities within the BSA that could potentially support this species are limited to coyote brush scrub and perennial rye grass fields. Portions of the project work area are anticipated to occur in coyote brush scrub and perennial rye grass field vegetation communities that may support Choris's popcorn flower.

Therefore, a preconstruction survey for this species, during the appropriate bloom period of March to June, is recommended. With implementation of avoidance and minimization measures, including preconstruction survey and special-status plant avoidance, provided in **Mitigation Measure MM-BIO-1g**, no Project impacts to Choris's popcorn flower are anticipated. Therefore, the implementation of **MM-BIO-1g** would reduce a potentially significant impact to this special-status species to a less-than-significant level.

California Red-legged Frog

Potential impacts to special-status wildlife from project activities include direct impact to individuals from construction activities (i.e., direct mortality from vehicle interactions); direct impacts to special-status species habitat such as required cover or nesting areas via vegetation removal; direct mortality from chemical spills; or indirect impacts to wildlife via noise disturbance.

California red-legged frog occurs in various different habitat types, depending on its life cycle stage. There is moderate potential for dispersing California red-legged frog to occur in the project site and surrounding area during the wet season (October 15–May 31), and low potential for the species to occur in the project site during the dry season (June 1–October 15).

The project includes daily preconstruction surveys initially, initial presence of a biological monitor, and installation of wildlife fencing. In addition, project mitigations include environmental awareness training, Standard biological mitigation measures **MM-BIO-1b through MM-BIO-1f** would prohibit touching wildlife, require proper trash disposal, require inspection of construction materials for wildlife, and minimize access routes and vegetation removal. In addition, **MM-BIO-1h and MM-BIO-1i**, include preconstruction surveys for California red-legged frog, the presence of a biological monitor during initial ground-disturbing activities, and installation of wildlife exclusion fencing. Therefore, the implementation of **MM-BIO-1a through MM-BIO-1f, MM-BIO-1h, and MM-BIO-1i** would reduce a potentially significant impact to this special-status species to a less-than-significant level.

The project shall comply with all of the following relevant measures. These measures have been developed based on measures identified in the BIR:

MM-BIO-1 The following general measures shall be implemented during the project:

a) Prior to the start of the project, all construction crew members, including the project stormwater inspector, will attend an environmental awareness training presented by a qualified biologist. A training brochure describing special-status species, project avoidance and minimization measures, key contacts, and potential consequences of impacts to special-status species and potentially jurisdictional features will be distributed to the crew members during the training. During the training the qualified biologist will review with the project stormwater inspector the requirement of weekly inspection of wildlife exclusion fencing as described in MM-BIO-1m. Trainees will sign an environmental training attendance sheet.

b) If any animals are encountered during project activities, said animals shall be allowed to leave the work area unharmed. Animals shall not be picked up or moved in any way.

c) During project activities, all trash that may attract predators shall be properly contained, removed, and disposed of regularly. Following construction, trash/construction debris shall be removed from work areas.

d) Construction materials, including, but not limited to, wooden pallets, best management practices (BMPs), equipment, or other materials, that are left on the ground for more than 24 hours shall be inspected before and during moving of the materials to prevent potential impacts to animals that may have utilized the materials as a temporary refuge. Plastic pipes, if used, shall be covered with material to prevent animals from entering the pipes.

e) The number of access routes, number and size of staging areas, and total area of the activity shall be limited to the minimum necessary to complete the project, and their boundaries shall be clearly demarcated.

f) Disturbance to vegetation shall be kept to the minimum necessary to complete the project activities. To minimize impacts to vegetation, a qualified biologist shall work with the contractor to designate the work area and any staging areas and clearly delineate areas that shall be avoided with exclusion fencing (e.g., high-visibility orange construction fencing, silt fence, ERTEC fencing, or other similar material).

The following measure shall be implemented to minimize impacts to special-status plant species:

a) Prior to the start of construction, a preconstruction survey for Choris's popcorn flower shall be conducted during the appropriate blooming period. Choris's popcorn flower occurrences within 50 feet of the project work areas shall be flagged for avoidance by the Project. If the Project cannot avoid impacts to this species, the Project Proponent shall consult with the CDFW on appropriate measures and/or actions to protect or salvage the plant(s) prior to beginning construction.

The following measures shall be implemented to minimize impacts to special-status amphibians and reptiles:

a) A qualified biological monitor shall be present during all initial ground-disturbing activities, including grubbing and/or vegetation removal and installation of the wildlife exclusion fence.

b) A preconstruction survey for California red-legged frog shall be conducted within the project site immediately prior to ground disturbance. If no individuals are detected, then construction-related activities may proceed provided project avoidance and minimization measures in this document are adhered to. If adults are present in the construction area, work shall be stopped until individuals are allowed to disperse on their own volition, or the species is relocated by a qualified biologist with permission to handle California red-legged frog.

c) Disturbance to vegetation shall be kept to the minimum necessary to complete the project activities. To minimize impacts to vegetation, a qualified biologist shall work with the contractor to designate the work area and any staging areas and clearly delineate areas that shall be avoided with exclusion fencing (e.g., high-visibility orange construction fencing, silt fence, ERTEC fencing, or other similar material).

d) Ground-disturbing construction activities (e.g., grubbing or grading) should occur during the dry season (June 1–October 15) to facilitate avoidance of California red-legged frog. Regardless of the season, no ground-disturbing activities shall occur within 24 hours following a significant rain event (greater than ¼ inch in a 24-hour period). Following a significant rain event and the 24-hour drying-out period, a qualified biologist would conduct a preconstruction survey for California red-legged frog prior to the restart of any project ground-disturbing activities.

e) To avoid impacts to California red-legged frog and other sensitive wildlife species, a wildlife exclusion fence (e.g., silt fence, ERTEC fencing, or other similar material) shall be installed around the perimeter of the Project, at the discretion of the qualified biologist.

f) The wildlife exclusion fence shall be inspected by a qualified biologist or project stormwater inspector, who has received environmental awareness training from a qualified biologist, on a weekly basis to ensure that the fence is functioning as intended throughout the duration of construction activities that may impact California red-legged frog (e.g., ground disturbance, materials staging/parking required on the north side of the project site). Removal of the wildlife exclusion fence may be conducted at the discretion of a qualified biologist if ground disturbance activities have been completed and remaining Project activities would not impact California red-legged frog (i.e., only interior site build out activities remain).

Therefore, implementation of **MM-BIO-1a through MM-BIO-1m** would reduce potential impacts to sensitive or special-status species to less-than-significant levels.

Impact BIO-2: Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? (No Impact)

Riparian woodland habitat is found 250 feet north of the project site along Montara Creek. Montara Creek is located approximately 250 feet north of the project site and immediately north of the BSA. However, no riparian habitat or other Sensitive Habitats, as defined by the San Mateo County LCP Policies 7.1 through 7.14, were observed within the BSA or the project site. Monterey cypress–Monterey pine woodland stands, perennial rye grass fields, coyote brush scrub, and urban/developed habitats located on the project site are not categorized as Sensitive Habitats.

The LCP identifies a buffer area for riparian corridors of 50 feet outward from the limit of riparian vegetation for perennial streams. The biological survey extended 250 feet out from the project site and did not identify any riparian vegetation within that 250-foot radius. No project activities would take place in the buffer area north of the project site. Therefore, project activities would not take place within the 50-foot riparian buffer zone for perennial streams established in the LCP, and the project would not directly impact riparian vegetation. Therefore, there is no impact to riparian habitat or other sensitive natural communities, and no mitigation is necessary.

Impact BIO-3: Would the project 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? (Less Than Significant with Mitigation)

No potentially jurisdictional waters or wetlands were observed during the field investigation. Montara Creek is a perennial stream located approximately 250 feet north of the project site and immediately north of the BSA. As discussed under Impact BIO-2, above, project activities would not take place within the 50-foot riparian buffer zone for perennial streams established in the LCP.

Impacts to Montara Creek could include damage to water quality if runoff contaminated with sediment or chemicals were allowed to enter Montara Creek.

Project construction would be under the jurisdiction of the San Francisco Bay Regional Municipal Regional Permit.[99] The project would implement construction BMPs as required by the Municipal Regional Permit, to prevent contaminated runoff from leaving the site or entering Montara Creek. Project

[99] San Francisco Bay Regional Water Quality Control Board. 2022. *Municipal Regional Stormwater NPDES Permit. Order No. R2-2022-0018. NPDES Permit No. CAS612008.* Available at: https://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2022/R2-2022-0018.pdf>. Accessed May 15, 2023.

operation includes a new stormwater system connecting to the County stormwater infrastructure. Stormwater runoff on the project would be collected by overland flow to three stormwater bioretention basins designed to comply with the development's dual requirements of stormwater treatment and hydromodification management (HM) requirements. The bioretention areas would be sufficient to contain peak flows from a 2-hour, 10-year storm event, as required by the municipal regional permit and HM. Therefore, stormwater during operation would not enter Montara Creek and no impact would occur.

Stormwater runoff from excavation, grading, and construction activities could impact water quality in Montara Creek. Standard conditions of approval for all CDPs in the County include all stormwater quality BMPs required by the SMCWPPP (see EIR Section 3.7, Hydrology and Water Quality). All construction activities would be required to implement BMPs to comply with the SMCWPPP and project SWPPP, which would prevent sediment-laden runoff and/or pollutants from entering the riparian area or Montara Creek. In addition, **MM-BIO-3a through MM-BIO-3e**, which would require management of exposed soils and vehicle fueling and maintenance, would further reduce these less-than-significant impacts.

MM-BIO-3 Implement the following BMPs to prevent erosion and sedimentation to Montara Creek:

a) **Adhere to BMPs.** Regardless of the season, construction shall adhere to SWRCB BMPs, and no ground-disturbing activities shall occur within 24 hours following a significant rain event (defined as greater than ¼ inch in a 24-hour period).

b) **Permanently Protect Exposed Surfaces.** Before completion of the project, all exposed or disturbed surfaces shall be permanently protected from erosion with reseeding and landscaping.

c) **Cover and Secure Spoils.** All spoils, such as dirt, excavated material, debris, and construction-related materials, generated during project activities shall be placed within the limits of the designated construction area. Spoils shall be covered or secured to prevent sediment from escaping. Once the spoil pile is no longer active, it shall be removed from the work area and disposed of lawfully at an appropriate facility.

d) **Stabilize Soils and Use BMPs.** All exposed soils in the work area resulting from project activities shall be stabilized immediately following the completion of work to prevent erosion. Erosion and sediment control BMPs, such as silt fences, straw hay bales, gravel or rock-lined drainages, water check bars, and broadcast straw, can be used. BMPs shall be made of certified weed-free materials. Straw wattles, if used, shall be made of biodegradable fabric (e.g., burlap) and free of monofilament netting. At no time shall silt-laden runoff be allowed to enter any drainages or other sensitive areas.

e) **Do Not Fuel Near Drainages.** All fueling and maintenance of vehicles and other equipment and staging areas shall occur at least 100 feet from any drainages and other water features. Crew members shall ensure that contamination of habitat does not occur during such operations. Prior to the onset of work, the construction contractor shall prepare a plan to be approved by the County before construction begins to allow a prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and the appropriate measures to take should a spill occur.

Impact BIO-4: Would the project 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? (Less than Significant with Mitigation)

The project has the potential to impact nesting birds, including their eggs or young, covered under the MBTA and CFGC. Suitable nesting and foraging habitats include the non-native grassland areas, shrubs,

and trees within and adjacent to the project site. Nesting is unlikely outside of the typical nesting season, although some avian species may forage year-round near the site.

Impacts to nesting birds could include disruption or failure of active nests from nearby construction activity, removal of active nests during construction, or direct mortality of eggs or nestlings. The project would remove approximately 295 trees from the project site and would trim other trees. Removal of trees during the nesting season could remove or damage migratory bird or raptor nests, which would be a potentially significant impact. Under **MM-BIO-4**, the project would conduct nesting bird surveys for any tree removal or trimming during the nesting season, and the project would be modified as necessary to avoid impacting nesting birds. With implementation of **MM-BIO-4**, this impact would be reduced to a less-than-significant level with mitigation incorporated.

Suitable migration habitat for amphibians, reptiles, birds, and mammals are present along the Pacific Ocean coastline to the west of the BSA. In addition, migrating raptors are known to occur in the area adjacent to the project site, especially during the fall. However, there are no known migratory corridors that intersect the BSA. The BSA is bordered by urban and residential development to the east and south and Highway 1 to the west. Riparian corridors adjacent to the BSA to the north and south are more likely to be utilized by wildlife traveling through the surrounding area. The BSA contains moderately suitable upland dispersal habitat for California red-legged frog and is likely utilized by common wildlife species. However, because the BSA is contained within residential and urban development, the project is not expected to interfere substantially with the movement of any native resident or migratory animals or impede the use of native wildlife nursery sites.

MM-BIO-4 **Conduct Nesting Bird Surveys.** If project activities, including grass mowing and tree trimming/removal, are conducted during nesting bird season (February 15–September 15), preconstruction nest surveys shall be conducted in and near the project site (within 250 feet for large raptors and 100 feet for all other birds) by a qualified biologist within 7 days of the start of construction. If nesting birds are identified during the preconstruction survey, then the project shall be modified (i.e., a no-work exclusion buffer of appropriate size [to be determined by the qualified project biologist] shall be erected around active nests) and/or delayed as necessary to avoid impacts to the identified nests, eggs, and/or young.

Impact BIO-5: Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (including the County Heritage and Significant Tree Ordinances)? (Less then Significant with Mitigation)

The County has both a Heritage Tree Ordinance and a Significant Tree Ordinance. Impacts to heritage or significant trees could occur if heritage or significant trees were to be removed without the appropriate permits, or if heritage or significant trees removed were not replaced as agreed upon with the Community Development Director. The Significant Tree Ordinance (2016) governs the cutting of significant trees and tree communities and requires the replacement of significant tree communities on public and private property within the unincorporated area of the County. Section 12 of Part Three of Division VII of the San Mateo County Ordinance Code defines *significant trees* as having a trunk circumference of 38 inches or greater (12-inch diameter). Significant trees cannot be removed except with a permit or, if the tree removal is part of a grading or building permit, with authorization from the Planning Commission, Design Review Committee, or Community Development Director.[100]

[100] HortScience | Bartlett Consulting. 2022. *Arborist Report, Cypress Point, Moss Beach, CA*, July 1, 2022.

Significant impacts could include: [101]

1. Unauthorized removal of significant or heritage trees;
2. Damage to significant or heritage trees identified to remain;
3. Replacement or replanting in a manner not approved by the County; and
4. Failure of replacement trees though inadequate maintenance.

The project would remove 295 trees out of the total 488 on the project site. All trees within the grading area will be removed. In addition, 40 of the 61 trees within 30 feet of the planned grading area will be removed, either because grading will impact the trees' roots or because the trees are in poor condition. The remaining 21 trees would be likely to have some impact to their root systems but are considered to be far enough away and healthy enough to survive some root damage. Most of the 193 trees to be preserved on the site are more than 30 feet from the planned grading area.

Based on the County definition of significant trees, 348 trees were identified by the *Arborist Report* as significant. As noted in Section 3.3.1.7, the *Arborist Report* concluded that only 14% of the trees surveyed were in good condition.[102] No heritage or public trees were identified during the course of the arborist's evaluation. Of the 295 trees proposed to be removed, approximately 190 are considered significant trees.[103]

The project would comply with all measures required by the Significant Tree Ordinance, including but not limited to, the following.

- The project arborist shall attend a preconstruction meeting with the general contractor and grading contractor and discuss tree protection requirements.
- Significant trees to be removed and retained would be clearly marked by the contractor and project arborist and protected during construction.
- The proposed project would establish tree protection zones as required by the ordinance, which would be isolated with protective fencing and signage approved by the project arborist.
- Prior to construction, the preconstruction site inspection would be conducted by the County Planning and Building Department to ensure tree protection measures are in place.
- All construction activities would be excluded from tree protection zones and no materials, tools, debris, excess soil, chemicals, or waste products would be stored or disposed of within these zones.
- All trenching near existing trees would hand dug, and if any roots larger than 2 inches in diameter need to be cut, any root cutting would be undertaken by an arborist and documented.
- Any pruning would be done under the direction of the project arborist and unauthorized pruning would not be allowed. Temporary irrigation will be provided to trees in the fenced-off area.

With the measures discussed above, project construction would not conflict with the Significant Tree Ordinance and this impact would be less than significant.

[101] San Mateo County. 2016. *Significant Tree Ordinance of San Mateo County.* Available at: https://www.smcgov.org/planning/tree-regulations. Accessed May 5, 2023.
[102] HortScience | Bartlett Consulting, 2022.
[103] HortScience | Bartlett Consulting, 2022.

The Significant Tree Ordinance requires replanting for significant trees removed during construction. For the proposed project, replacement of trees removed shall be in a manner and quantity prescribed by the Community Development Director. The project would plant approximately 195 replacement trees throughout the project site. The applicant would work with the Community Development Director to develop a tree replacement plan that includes approval of the quantity and location of proposed tree replacements and a maintenance plan for replacement trees. Tree replacement is consistent with Community Development Director's expectation and site conditions. As required by the Significant Tree Ordinance, the maintenance plan would be required for between 2 and 5 years, as determined by the Community Development Director. With the implementation of replanting and maintenance for removed significant trees, operation of the project would not conflict with the Significant Tree Ordinance and this impact would be less than significant.

In addition, under MM-BIO-5 implementation of the following measures recommended by the *Arborist Report* would further reduce this to a less-than-significant impact.

MM-BIO-5: Tree Replacement and Maintenance Plan

a) Plans affecting the trees should be reviewed by the consulting arborist with regard to tree impacts. These include, but are not limited to, site plans, improvement plans, utility and drainage plans, grading plans, landscape and irrigation plans, and demolition plans.

b) Route underground services including utilities, sub-drains, water, or sewer around the Tree Protection Zone. For design purposes, the Tree Protection Zone trees shall be defined as the tree dripline.

c) Any herbicides placed under paving materials must be safe for use around trees and labeled for that use.

d) Do not lime the subsoil within 50 feet of any tree. Lime is toxic to tree roots.

e) As trees withdraw water from the soil, expansive soils may shrink within the root area. Therefore, foundations, footings, and pavements on expansive soils near trees should be designed to withstand differential displacement.

f) Fences are to remain until all grading and construction is completed. Where demolition must occur close to trees, such as removing curb and pavement, install trunk protection devices such as winding silt sock wattling around trunks or stacking hay bales around tree trunks.

g) Trees to be removed shall be felled so as to fall away from Tree Protection Zone and avoid pulling and breaking of roots of trees to remain. If roots are entwined, the Consulting Arborist may require first severing the major woody root mass before extracting the trees, or grinding the stump below ground.

h) All contractors shall conduct operations in a manner that will prevent damage to trees to be preserved.

i) Any brush clearing required within the Tree Protection Zone shall be accomplished with hand-operated equipment.

j) All grading within the dripline of trees shall be done using the smallest equipment possible. The equipment shall operate perpendicular to the tree and operate from outside the Tree Protection Zone. Any modifications must be approved and monitored by the consulting arborist.

k) If injury should occur to any tree during construction, it should be evaluated as soon as possible by the consulting arborist so that appropriate treatments can be applied.

Maintenance of Impacted Trees:

a) Preserved trees will experience a physical environment different from that pre-development. As a result, tree health and structural stability should be monitored. Occasional pruning, fertilization, mulch, pest management, replanting and irrigation may be required.

b) Provisions for monitoring both tree health and structural stability following construction must be made a priority. Inspect trees annually and following major storms to identify conditions requiring treatment to manage risk associated with tree failure.

Impact BIO-6: Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (No Impact)

There are no HCPs, Natural Community Conservation Plans, or other approved local, regional, or state HCPs that govern the project site. Therefore, the project would not conflict with any conservation plan and no impact would occur.

Impact BIO-7: Would the project be located inside or within 200 feet of a marine or wildlife reserve? (No Impact)

The nearest marine or wildlife reserve is Fitzgerald Marine Reserve, located approximately 0.6 mile southwest of the project site. Therefore, the project would not be located within 200 feet of a marine or wildlife reserve and no impact would occur.

Impact BIO-8: Would the project result in loss of oak woodlands or other non-timber woodlands? (Less than Significant)

The project site is zoned PUD-140/CD and surrounded by roadways, residential land uses, and open space. It is not located on forest land, timberland, timberland zoned, or timberland production as noted in **Initial Study Section 2.2, Agriculture and Forestry Resources** (see Appendix B). Although there are trees on-site, the groves are interspersed by previous development including concrete foundations. The project would require removal of approximately 295 Monterey cypress and Monterey pine trees and planting of 195 trees at the approval of the Community Development Director, per the San Mateo County Significant Tree Ordinance. Of the 193 significant trees to be removed, the *Arborist Report* rated 99 of them in poor health (1 or 2 on the health scale), 70 were rated in moderate health (3 on the health scale), 20 were rated in good health (4 on the health scale), and 1 was rated in very good health (5 on the health scale).[104] In addition to tree replacement, the project would retain the largest grove of the trees located along the northern perimeter of the site. Therefore, the impact related to the loss of non-timber woodlands would be less than significant.

3.3.6 Cumulative Impacts

Impact C-BIO-1: Would the impacts of the proposed project, in combination with other past, present, and reasonably foreseeable future projects, contribute to a cumulative impact related to biological resources? (Less than Significant)

The analysis of cumulative impacts on biological resources uses the projection method by incorporating the growth forecasts and cumulative impact conclusions of the program environmental impact report (EIR) for the Plan Bay Area 2040. The Plan Bay Area 2040 EIR evaluated the potential effects of

[104] HortScience | Bartlett Consulting, 2022.

implementing urban development and transportation projects identified by the Plan for the nine-county San Francisco Bay Area, including San Mateo County.[105] As identified in the EIR, although relatively little development was forecast for the San Mateo coast through 2040, projected development within the Bay Area, including San Mateo County, would result in adverse cumulative effects to the following biological resources:

- Plant and animal species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW, the USFWS, or the NOAA Fisheries;
- Designated critical habitat for federally listed plant and wildlife species;
- Riparian habitat, federally protected wetlands as defined by Section 404 of the CWA (including marsh, vernal pool, coastal), or other sensitive natural communities identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
- Reductions in the habitat of a fish or wildlife species; a drop in fish or wildlife populations below self-sustaining levels; elimination of a plant or animal community; or a reduction in the number or restriction in the range of an endangered, rare, or threatened species.

Within the Midcoast area, the EIR identified the following sensitive biological resources: California red-legged frog; Steelhead – Central Coast Evolutionarily Significant Unit, Contra Costa Goldfields; and the Sugarloaf Mountain – Montara Mountain Essential Connectivity Area.

As discussed above, the proposed project would not have a significant impact on any biological resources. Potential impacts for two special-status species that may occur on the project site would be mitigated to less than significant, as would potential off-site impacts to Montara Creek. The site does not contain any environmentally sensitive habitat areas or migration corridors. The habitat that does exist on the site is of low quality. Further, measures have been identified to mitigate for any potential impacts to significant trees, and nesting raptor or migratory bird species, should any be identified during preconstruction surveys.

Therefore, the proposed project would not make a cumulatively considerable contribution to any identified cumulative impact on biological resources because the impacts of the proposed project on biological resources are minor, the project would not affect any of the sensitive resources identified for the Midcoast area, and project specific effects would be further reduced by the implementation of identified mitigation measures. The proposed project would not make a cumulatively considerable contribution to the significant cumulative impacts to the biological resources cited above, and no additional mitigation would be required.

[105] Metropolitan Transportation Commission and Association of Bay Area Governments. 2017. *Plan Bay Area 2040. Final. Adopted July 26, 2017.* Available at: http://2040.planbayarea.org/files/2020-02/Final_Plan_Bay_Area_2040.pdf. Accessed June 2023.

3.4 GEOLOGY AND SOILS

This section describes the potential impacts to the geology and soils of the project site with development of the proposed project. Potential effects are evaluated relative to important geologic features (e.g., coastal bluffs, paleontological resources) and the existing geology of the landscape. Impacts on the geology and soils of a site are usually addressed through an evaluation of the project-related subsurface changes to the existing environment, and the modifications that would alter the stability of the geologic or soil conditions. This section includes information from the following sources:

- *Geotechnical Investigation Cypress Point Family Community 16th and Carlos Streets Moss Beach, California* report completed by Rockridge Geotechnical on June 28, 2022.[106] (Appendix F)
- *Cultural Resource Evaluation of the Cypress Point Project in Moss Beach, County of San Mateo* completed by Archaeological Resource Management (ARM) on June 1, 2018.[107] (Appendix G)

3.4.1 Existing Conditions

3.4.1.1 Topography

3.4.1.1.1 REGIONAL SETTING

The project site is located within the Coast Ranges Geomorphic Province of California, which are northwest-trending valleys and ridges bounded on the east by the Great Valley and on the west by the Pacific Ocean. The Coast Ranges consist of a series of relatively low mountain ranges (typically between 2,000 and 4,000 feet above mean sea level [amsl]) that extend north from Point Conception to the California-Oregon border. The topography associated with the Coast Ranges is dominated by irregular rock outcrops of the landslide-prone rocks of the Franciscan Complex. The valleys and ridges of the Coast Ranges are formed by folds and faults that resulted from the collision of the Farallon plate and North American plate and subsequent strike-slip faulting along the San Andreas Fault system.

3.4.1.1.2 LOCAL SETTING

The project site is located within hillside terrain along the northwest flank of the northwest-trending Santa Cruz Mountain Range within the Coast Ranges. Terrain within the project site consists of dense vegetation and soil and rock hillside.

Ground surface elevation within the project site ranges from approximately 90 feet amsl along the northern edge of the site to about 205 feet amsl along the eastern edge. The site slopes up gently to moderately to the east-northeast except for a north-facing slope along the northern boundary of the site, which slopes moderately down to the north, and some localized flat areas near the center and eastern portions of the site. The steeply sloped wooded area along the northern boundary leads to a ravine containing Montara Creek. A steep slope is located to the west across Carlos Street and leads down to Highway 1.

[106] Rockridge Geotechnical. 2022. *Geotechnical Investigation Cypress Point Family Community 16th And Carlos Streets Moss Beach, California.* Rockridge Geotechnical.
[107] ARM. 2018. *Cultural Resource Evaluation of the Cypress Point Project in Moss Beach, County of San Mateo.* Archaeological Resource Management. June 1.

3.4.1.2 Site Geology and Subsurface Conditions

3.4.1.2.1 REGIONAL SETTING

The geologic units in the project site vicinity are mapped as Quaternary (1.6 million years ago [mya] to recent) alluvial fan (Qf) and marine terrace deposits and Cretaceous (145 to 65 mya) Montara Mountain granitic rocks (Kgr) of the Salinian Complex.[108]

3.4.1.2.2 LOCAL SETTING

Soils on the project site are classified by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) Web Soil Survey as Typic Argiustolls, loamy-Urban land association, 5 to 15 percent slopes.[109] The geotechnical site investigations further characterize the soil as 3.5 feet of undocumented fill consisting of medium stiff sandy clay or medium dense clayey sand with varying amounts of gravel in localized areas of the site.[110] Beneath the fill is stiff to hard clay and sandy clay interbedded with medium dense to very dense clayey sand and sand with clay that extends to the top of bedrock, where encountered, or to the maximum depths explored.

The western portion of the project site contains granitic bedrock at depths of greater than 17.5 feet below ground surface (bgs) while the eastern part of the site contains granitic bedrock as shallow as 4.5 feet bgs and on marine terrace deposits (Qmt). The project site is underlain by a relatively steeply westward dipping bedrock surface that bisects the site from north to south and is overlain by shallow (4.5 to 8.5 feet bgs) terrace deposits in the eastern part and thicker (greater than 17 feet bgs) terrace deposits in the western part of the project site. The relatively steeply dipping bedrock surface is a buried and eroded paleo-sea cliff that is separating two different-age marine terrace surfaces.[111]

3.4.1.3 Seismicity

Seismicity is the geographic and historical distribution of earthquakes, including their frequency, intensity, and distribution. Seismic hazards include surface rupture, ground shaking, liquefaction, landslides, subsidence, expansive soils, and soil erosion.

Faults are fractures in the crust of the earth along which land on one side has moved relative to land on the other side. Most faults are the result of repeated displacements over a long period of time. A fault trace is the line on the earth's surface defining the fault. Faults are classified as active, potentially active, and inactive based on criteria developed by the California Geological Survey (CGS). An active fault is generally one that has experienced surface displacement within the Historic period (within the last 150 years) or the Holocene period (within the last 11,000 years). A potentially active fault has experienced displacement within the Quaternary period (during the last 1.6 million years), which includes the categories Late Quaternary and Undifferentiated Quaternary. Inactive faults are those that have not experienced movement in the last 1.6 million years.

The project is located within a region characterized by high seismic activity, dominated by the San Andreas, San Gregorio, and Hayward Faults. The San Andreas Fault system is approximately 40 feet wide in the Bay Area and extends nearly 800 miles from the Salton Sea in Imperial County to Cape

[108] Rockridge Geotechnical, 2022.
[109] NRCS. 2023. Web Soil Survey. Available at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed May 5, 2023.
[110] Rockridge Geotechnical, 2022.
[111] Rockridge Geotechnical, 2022.

Mendocino in Humboldt County. The San Gregorio Fault extends for about 143 miles from the Big Sur region south of Monterey Bay northward to where it merges with the San Andreas Fault system near Bolinas Bay north of San Francisco.

There are multiple faults within 20 miles of the project site. The closest fault is the Seal Cove Fault, the onshore strand of the San Gregorio Fault, located approximately 0.4 mile to the south. The San Andreas Fault is 2.1 miles west and the Hayward Fault is 16.3 miles east. There are two additional faults categorized as Latest Quaternary within 20 miles of the project site: Monte Vista-Shannon (7 miles southeast) and San Gregorio (10.5 miles west). Active and potentially active faults within 20 miles of the project site are shown on Figure 3.4-1.

3.4.1.3.1 FAULT RUPTURE

Fault (surface) ruptures are generally considered to be more likely along active faults. Alquist-Priolo Fault zones are buffers around historically active faults that have been determined to be especially prone to surface fault rupture.[112] CGS policy is to delineate a boundary from 200 to 500 feet wide on each side of the known fault trace based on the location precision, complexity, or regional significance of the fault. If a proposed building site lies within an Alquist-Priolo earthquake fault zone, a geologic fault rupture investigation must be performed. The investigation must demonstrate that the site is not threatened by surface displacement from the fault before development permits can be issued. The nearest active fault to the project site is the Seal Cove part of the San Gregorio Fault system located approximately 0.4 mile south.[113]

3.4.1.3.2 GROUND SHAKING

During a seismic event, the region may be subjected to high levels of ground shaking due to the proximity of active faults in the region. All active faults in the vicinity of the project site are capable of generating significant ground shaking during a seismic event. Several parameters control the extent of ground shaking, including the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions. Researchers estimated that the probability of at least 1 moment magnitude (Mw) greater than or equal to 6.7 earthquake occurring in the greater San Francisco Bay Area during a 30-year period (starting in 2014) is 72%.[114] The highest probabilities are assigned to sections of the Hayward (South), Calaveras (Central), and North San Andreas (Santa Cruz Mountains) Faults. The respective probabilities are approximately 25%, 21%, and 17%.

3.4.1.3.3 LIQUEFACTION

Liquefaction occurs when saturated, loose materials (e.g., sand or silty sand) are weakened and transformed from a solid to a near-liquid state due to increased pore water pressure. The increase in pressure is caused by strong ground motion from an earthquake. The susceptibility to liquefaction is a function of depth, density, groundwater level, and magnitude of an earthquake. Liquefaction-related phenomena can include lateral spreading, ground oscillation, flow failure, loss of bearing strength, subsidence, and buoyancy effects. For liquefaction to occur, the soil must be saturated (i.e., shallow groundwater) and relatively loose. Liquefaction more often occurs in areas underlain by young alluvium where the groundwater table is higher than 50 feet bgs.

[112] California Department of Conservation. 2023. Alquist-Priolo Earthquake Fault Zones. Available at: https://www.conservation.ca.gov/cgs/alquist-priolo. Accessed April 20, 2023.
[113] Rockridge Geotechnical, 2022.
[114] Rockridge Geotechnical, 2022.

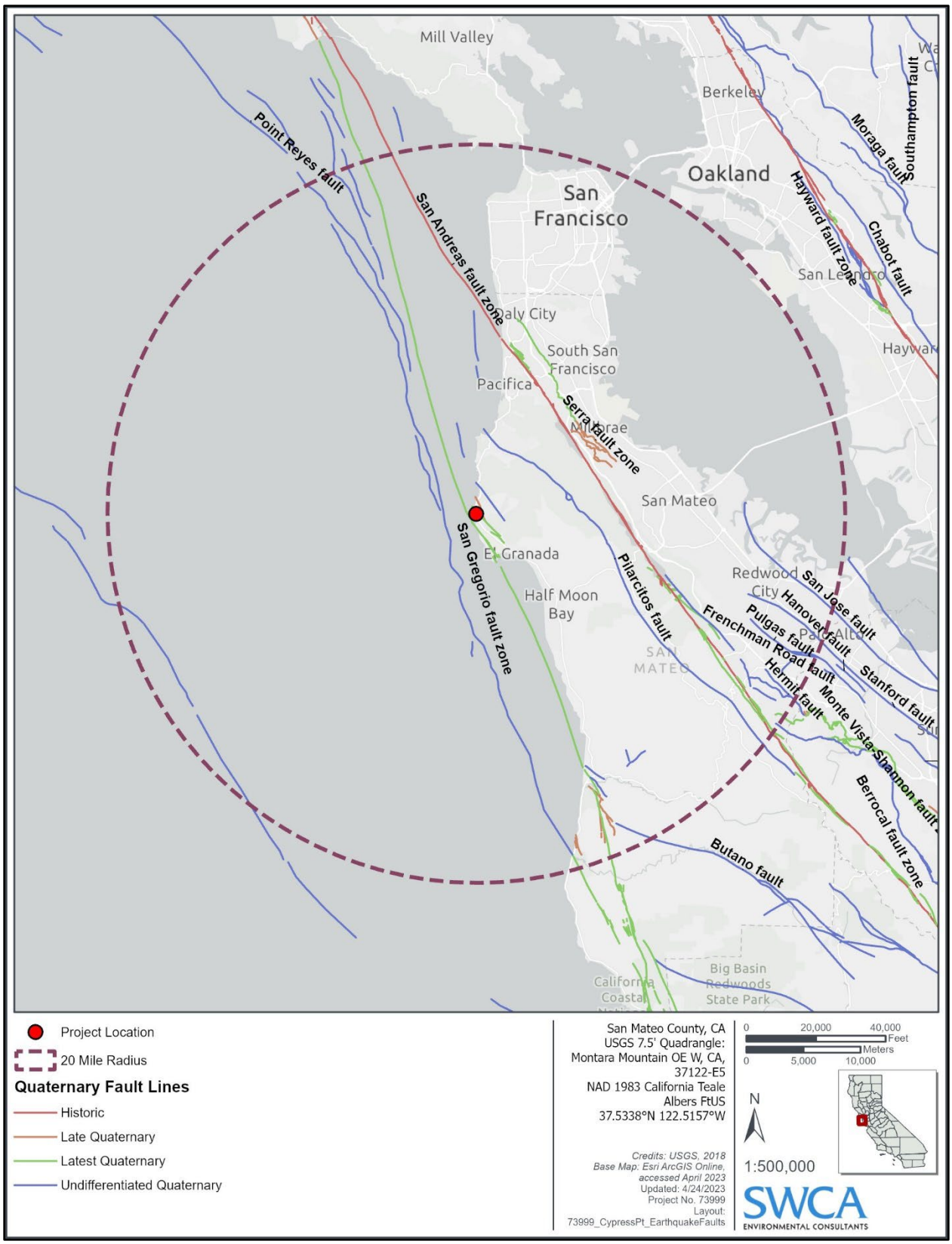


Figure 3.4-1. Quaternary fault lines.

The project site is underlain by stiff to very stiff cohesive soil and medium dense to dense clayey sand and sand with clay that is not susceptible to liquefaction because of its cohesion and/or its high relative density.[115] Further, it appears the depth to groundwater is more than 30 feet bgs. The project site is located within the "Very Low" and "Low" liquefaction susceptibility areas as shown in the Hazard Viewer map from the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) map.[116]

3.4.1.3.4 SLOPE STABILITY AND LANDSLIDES

Landslides are defined as the movement of rock, debris, or earth masses down a slope. Landslide events include rock falls, topples, slides, spreads, and debris flows. Causes of landslides include rainfall, earthquakes, volcanic activity, groundwater changes, and alteration of a slope by human-made construction activities.

The soils on the project site are rated as severely limited for soil erosion.[117] The project site does not contain evidence of landslides, slope instability, or erosional issues. However, according to the Hazard Viewer map from ABAG[118] and the Planning and Building Map Viewer from the County of San Mateo (County),[119] the ravine to the north of the project boundary is susceptible to rainfall and seismic–induced landslide hazards (Figure 3.4-2).

3.4.1.3.5 EXPANSIVE SOILS

Expansive soils generally result from specific clay minerals that expand in volume when saturated and shrink in volume when dry. The presence of this soil type can damage structures when expansion and contraction of soil crack rigid building materials (i.e., concrete, wood, drywall) if the potentially expansive soils were not considered during project design and construction.

The soils on the project site have limited shrink-swell potential.[120]

3.4.1.4 Paleontological Resources

Paleontology is a multidisciplinary science that combines elements of geology, biology, chemistry, and physics to understand the history of life on Earth. Paleontological resources, or fossils, are the remains, imprints, or traces of once-living organisms preserved in rocks and sediments. These include mineralized, partially mineralized, or un-mineralized bones and teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains. Paleontological resources include not only the fossils, but also the physical characteristics of the fossils' associated sedimentary matrix.

[115] Rockridge Geotechnical, 2022.
[116] MTC and ABAG. 2021. Hazard Viewer Map. Available at: https://mtc.maps.arcgis.com/apps/webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8. Accessed May 4, 2023.
[117] NRCS, 2023.
[118] MTC and ABAG, 2021.
[119] County of San Mateo. 2023a. Planning and Building Map Viewer. Available at: https://gis.smcgov.org/Html5Viewer/Index.html?configBase=https://gis.smcgov.org/Geocortex/Essentials/REST/sites/publicplanning_sql/viewers/HTML52110/virtualdirectory/Resources/Config/Default. Accessed May 5, 2023.
[120] NRCS, 2023.

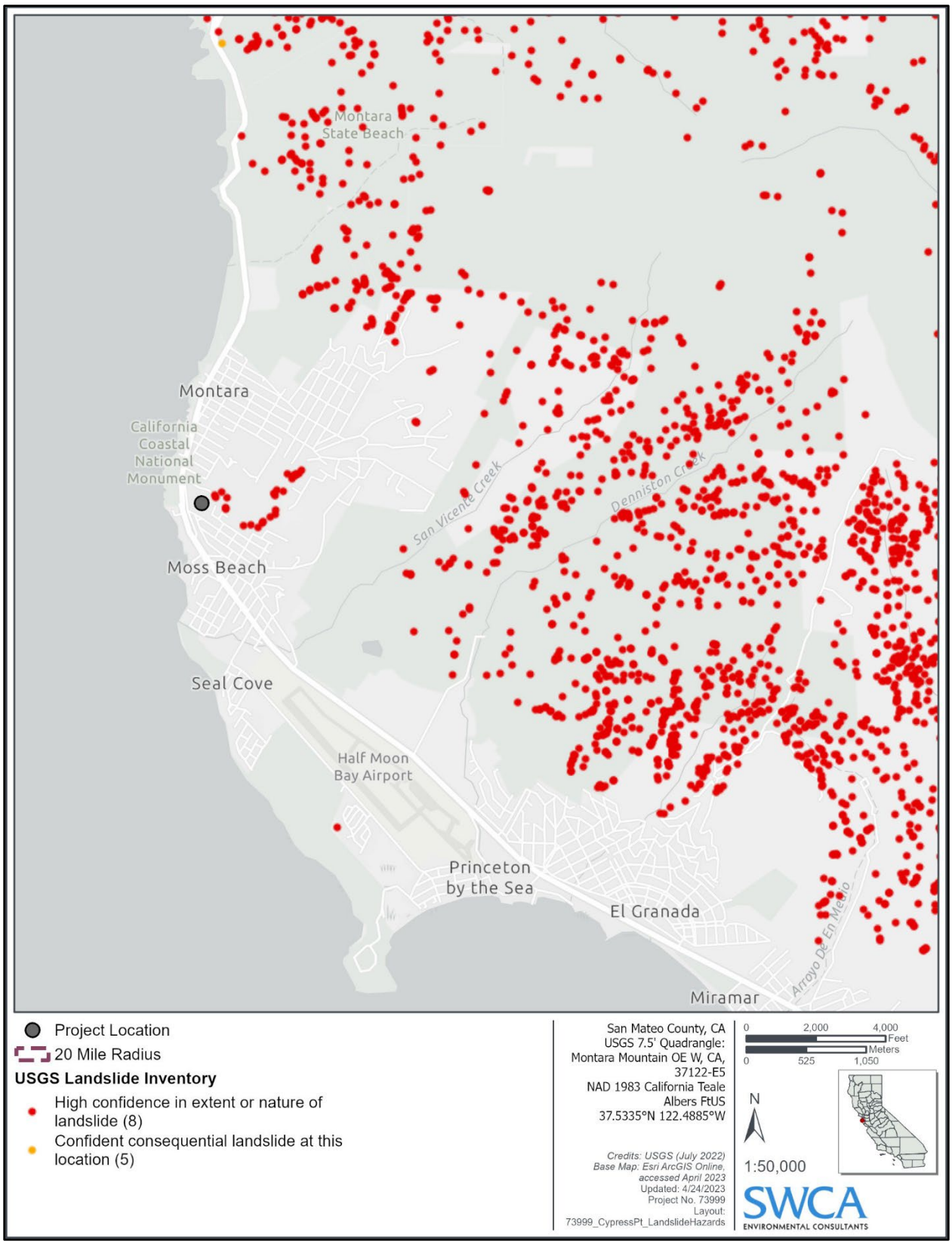


Figure 3.4-2. U.S. Geological Survey landslide inventory.

To assess any potential impacts the proposed project may have on paleontological resources, a museum records search was requested from the online records database of the University of California Museum of Paleontology, and a review of the relevant scientific literature was conducted.[121] These data were used to assess the potential of each geologic unit present in the project site to preserve fossil resources, following the paleontological potential rankings of the Society of Vertebrate Paleontology (SVP).

The project site has Pleistocene marine terrace deposits underlain by Cretaceous granitic rocks.[122] The granitic rocks do not contain paleontological resources, but these resources are present in the Pleistocene marine terrace deposits. Both the records search and the review of relevant scientific literature revealed no paleontological resources within the project site. The records search revealed nine localities containing unnamed late Pleistocene deposits within San Mateo County. The closest locality is approximately 3 miles south of the project site.

3.4.2 Regulatory Setting

3.4.2.1 Federal Regulations

3.4.2.1.1 CLEAN WATER ACT

Under Clean Water Act (CWA) Section 402 (33 United States Code [U.S.C.] 1251 et seq.), the National Pollutant Discharge Elimination System (NPDES) controls water pollution (including from soil and sediment erosion) by regulating sources of pollution to waters of the U.S. The CWA is implemented on a state and local level in California primarily by the State Water Resources Control Board and the nine Regional Water Quality Control Boards (RWQCBs), collectively.

The San Mateo Countywide Water Pollution Prevention Program is a partnership of the City/County Association of Governments, each incorporated city and town in San Mateo County, and the County. The Municipal Regional Stormwater NPDES Permit was issued by the San Francisco Bay RWQCB in compliance with the *Water Quality Control Plan, San Francisco Bay Basin* (Basin Plan)[123]. The City/County Association of Governments shares one common NPDES Permit.

Participating agencies (including the County) must comply with the provisions of the countywide permit by ensuring that new development and redevelopment mitigate, to the maximum extent practicable, water quality impacts to stormwater runoff during the construction and operation periods of projects. Projects disturbing more than 1 acre of land during construction are also required to file a Notice of Intent with the RWQCB to be covered under the State NPDES General Construction Permit for discharges of stormwater associated with construction activity. A stormwater pollution prevention plan (SWPPP) must be developed and implemented for each site covered by the General Construction Permit and include best management practices (BMPs) that would reduce impacts on surface water quality from soil erosion. Additionally, private or public projects that create and/or replace 10,000 or more square feet of impervious surface must implement low-impact development treatment measures to control stormwater. For more information about the NPDES Permit, see State Regulations and Local Regulations in Section 3.7.2, Regulatory Setting, within Section 3.7, Hydrology and Water Quality.

[121] ARM, 2018.

[122] ARM, 2018.

[123] San Francisco Bay Regional Water Quality Control Board. 2019. *Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin.* Available at: https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/planningtmdls/basinplan/web/docs/BP_all_chapters.pdf. Accessed March 22, 2023.

3.4.2.2 State Regulations

3.4.2.2.1 SEISMIC HAZARD MAPPING ACT

In accordance with Public Resources Code (PRC) Chapter 7.8, Division 2, the California Department of Conservation, CGS is directed to delineate seismic hazard zones through the Seismic Hazards Zonation Program. The purpose of the act is to reduce the threat to public health and safety and to minimize the loss of life and property by identifying and mitigating seismic hazards, such as those associated with strong ground shaking, liquefaction, landslides, other ground failures, or other hazards caused by earthquakes.

City, county, and state agencies are directed to use seismic hazard zone maps developed by CGS in their land-use planning and permitting processes. In accordance with the Seismic Hazards Mapping Act, site-specific geotechnical investigations must be performed before permitting most urban development projects within seismic hazard zones.

3.4.2.2.2 WATER QUALITY CONTROL PLAN FOR THE SAN FRANCISCO BAY REGION

Under CWA Section 402 (33 U.S.C. 1251 et seq.), the NPDES controls water pollution by regulating sources of pollution to waters of the U.S. Under the NPDES Permit, construction projects must develop an erosion and sediment control plan (ESCP) and have it approved by the local land agency before issuing grading or building permits. The ESCP must include BMPs necessary to prevent erosion of unstable or denuded areas and stabilize disturbed bare-earth areas.

3.4.2.2.3 ALQUIST-PRIOLO EARTHQUAKE FAULT ZONING ACT

The Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act; California PRC Section 2621 et seq.) was passed to reduce the risk to life and property from surface faults in California. The Alquist-Priolo Act prohibits construction of most types of structures intended for human occupancy directly on or across the surface traces of active faults and strictly regulates construction in the corridors along active faults (earthquake fault zones). It also defines criteria for identifying active faults, giving legal weight to terms such as “active,” and establishes a process for reviewing building proposals in and adjacent to earthquake fault zones. Under the Alquist-Priolo Act, faults are zoned and construction along or across them is strictly regulated if they are “sufficiently active” and “well defined.” Before a project can be permitted, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults.

3.4.2.2.4 CALIFORNIA BUILDING CODE

Title 24 of the California Building Codes (specifically Title 24 California Code of Regulations [CCR], Part 2) specifies standards for geologic and seismic hazards other than surface faulting. The State of California provides minimum standards for building design through the California Building Code. The California Building Code is based on the International Building Code, which is used widely throughout the United States (generally adopted on a state-by-state or district-by-district basis) and has been modified for conditions within California.

In 2023, the 2022 revised version of the California Building Code took effect. Chapter 16 of the California Building Code contains definitions of seismic sources and the procedure used to calculate seismic forces on structures. Chapter 18 provides requirements for conducting geotechnical site investigations including investigations of soil, water table, rock strata, excavation sites, seismic design, grading and filling hazards, and foundation drainage.

3.4.2.2.5 CALIFORNIA PUBLIC RESOURCES CODE

California PRC, Section 5097.5 states that "no person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor." As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.

3.4.2.3 Local Regulations

3.4.2.3.1 COUNTY OF SAN MATEO GENERAL PLAN

Chapter 2, Soil Resources, of the 1986 County General Plan discusses the existing soil resources and opportunities to protect soil resources. The County periodically updates goals and policies to support the 1986 General Plan and provides updates on the County Planning and Building Department website. The County most recently updated the policies in 2013.[124] The current list of updated goals and policies that are relevant to soils, geology, and geotechnical hazards are:

- **Goal 2.2 Minimize Soil Erosion:** Minimize soil erosion through application of appropriate conservation practices.
    - **Policy 2.17 Regulate Development to Minimize Soil Erosion and Sedimentation:** Regulate development to minimize soil erosion and sedimentation; including, but not limited to, measures which consider the effects of slope, minimize removal of vegetative cover, ensure stabilization of disturbed areas and protect and enhance natural plant communities and nesting and feeding areas of fish and wildlife.
    - **Policy 2.20 Regulate Location and Design of Development in Areas With Productive Soil Resources:** Regulate location and design of development in a manner which is most protective of productive soil resources, including, but not limited to, measures which require clustering of structures.
    - **Policy 2.21 Protect Productive Soil Resources Against Soil Conversion:** Regulate land use and subdivision of productive soil resources and encourage appropriate management practices to protect against soil conversion. Regulations should place priorities according to the relative productive characteristics of the resource.
    - **Policy 2.23 Regulate Excavation, Grading, Filling, and Land Clearing Activities Against Accelerated Soil Erosion:** Regulate excavation, grading, filling, and land clearing activities to protect against accelerated soil erosion and sedimentation.
    - **Policy 2.25 Regulate Topsoil Removal Operations Against Accelerated Soil Erosion:** Regulate topsoil removal operations to protect against accelerated soil erosion and sedimentation through measures which ensure slope stabilization and surface drainage control.

[124] County of San Mateo. 2023b. General Plan Policies: Goals for Implementation of the General Plan. Available at: https://www.smcgov.org/planning/general-plan-policies. Accessed May 5, 2023.

- **Goal 15.3 Incorporate Information on Natural Hazards into Land Use and Development Decisions:** Integrate data on natural hazards into review of land use and development proposals in order to identify hazardous areas, potential constraints to development and/or appropriate mitigation measures.
  - **Policy 15.9 Designation of Geotechnical Hazard Areas:** Designate as Geotechnical Hazard Areas those areas that meet the definition of geotechnical hazards, including but not limited to:
    - The areas illustrated on the Natural Hazards map as Alquist-Priolo Special Studies Zones, Tsunami and Seiche Flooding Areas, Coastal Cliff Stability Areas, and Areas of High Landslide Susceptibility.
    - Any additional area delineated by other investigations, mapped in greater detail, and/or considered to be hazardous by the County Department of Public Works, including but not limited to areas delineated on the Geotechnical Hazards Synthesis maps, maps prepared by U.S.G.S. and other appropriate sources.
  - **Policy 5.12 Locating New Development in Areas Which Contain Natural Hazards:**
    - As precisely as possible, determine the areas of the County where development should be avoided or where additional precautions should be undertaken during review of development proposals due to the presence of natural hazards.
    - Give preference to land uses that minimize the number of people exposed to hazards in these areas.
    - Determine appropriate densities and development.
    - Require detailed analysis of hazard risk and design of appropriate mitigation when development is proposed in these areas, including assessment of hazardous conditions expected to be exacerbated by climate change, such as increased risks of fire, flooding, and sea level rise.
  - **Policy 15.20 Review Criteria for Locating Development in Geotechnical Hazard Areas:**
    - Avoid the siting of structures in areas where they are jeopardized by geotechnical hazards, where their location could potentially increase the geotechnical hazard, or where they could increase the geotechnical hazard to neighboring properties.
    - Wherever possible, avoid construction in steeply sloping areas (generally above 30%).
    - Avoid unnecessary construction of roads, trails, and other means of public access into or through geotechnical hazard areas.
    - In extraordinary circumstances when there are no alternative building sites available, allow development in geotechnically hazardous and/or steeply sloping areas when appropriate structural design measures to ensure safety and reduce hazardous conditions to an acceptable level are incorporated into the project.
  - **Policy 15.21 Requirement for Detailed Geotechnical Investigations:**
    - In order to more precisely define the scope of the geotechnical hazards, the appropriate locations for structures on a specific site and suitable mitigation measures, require an adequate geotechnical investigation for public or private development proposals located: (1) in an Alquist-Priolo Special Studies Zone, or (2) in any other area of the County where an investigation is deemed necessary by the County Department of Public Works.
    - In order to minimize economic impacts on applicants for development and avoid duplication of information, use the existing information base when the Department of Public Works or appropriate County agency determines that it is adequate.

- **Policy 15.24 Incorporate Geotechnical Concerns During Review of Proposals for New Development:** Incorporate geotechnical concerns into the review of proposals for new development through measures including but not limited to: (1) regulation of land use and limitation of density; (2) siting and design of roads, grading, utilities, improvements and structures; (3) requiring site-specific geotechnical investigations where appropriate and conformance to the recommendations of those investigations; (4) conformance to defined hazardous areas design criteria; and (5) conformance with established building code requirements.

3.4.2.3.2 COUNTY OF SAN MATEO LOCAL HAZARD MITIGATION PLAN

In 2021, a partnership of 36 local governments and special districts in San Mateo County issued the 2021 Multijurisdictional Local Hazard Mitigation Plan (LHMP), a large regional and cross-jurisdictional effort to plan for the reduction of risk from natural and human-made disasters. The LHMP assesses hazard vulnerabilities and identifies mitigation actions that jurisdictions will pursue to reduce the level of injury, property damage, and community disruption that might otherwise result from such events. The LHMP addresses natural and human-caused hazards, including flooding, drought, wildfire, landslides, severe weather, terrorism, cyber threats, pandemic, and the impact of climate change on hazards, as well as other hazards.

3.4.2.3.3 COUNTY OF SAN MATEO EXCAVATING, GRADING, FILLING, AND CLEARING REGULATIONS

Chapter 8, Division VII of the San Mateo County Ordinance Code is titled Regulations for Excavating, Grading, Filling, and Clearing on Lands in Unincorporated San Mateo County. This ordinance requires a grading permit for activities involving grading (Section 8602.1) and a land clearing permit for removal of vegetation when:

- The land area to be cleared is 5,000 square feet or greater, within any two-year period except in County Scenic Corridors where vegetation removal is greater than 1,000 square feet;
- Existing slopes are greater than 20 percent; or
- (c) The land area to be cleared is in any sensitive habitat or buffer zone as identified in the County General Plan" (Section 8602.2).

Section 8605.1 of the ordinance requires an ESCP that conforms to standards as detailed in the Grading Permit Performance Standards Handbook. Section 8605.2 states that standards in the Grading Permit Performance Standards Handbook are to apply to all aspects of the proposed grading and are intended to be operational during all stages of development, and Section 8605.3 requires that geotechnical reports be prepared by a professional geotechnical consultant under the direction of a soils engineer and an engineering geologist in accordance with the current Minimum Standards for Geotechnical Reports and the Grading Permit Performance Standards Handbook.

3.4.2.3.4 COUNTY OF SAN MATEO LOCAL COASTAL PROGRAM

The Local Coastal Program provides policies regarding development and project design standards in the coastal zone of San Mateo County.[125]

[125] County of San Mateo. 2013. Local Coastal Program. Available at: https://www.smcgov.org/planning/local-coastal-program. Accessed May 20, 2023.

9.8 Regulation of Development on Coastal Bluff Tops

a. Permit bluff and cliff top development only if design and setback provisions are adequate to assure stability and structural integrity for the expected economic life span of the development (at least 50 years) and if the development (including storm runoff, foot traffic, grading, irrigation, and septic tanks) will neither create nor contribute significantly to erosion problems or geologic instability of the site or surrounding area.

b. Require the submittal of a site stability evaluation report for an area of stability demonstration prepared by a soils engineer or a certified engineering geologist, as appropriate, acting within their areas of expertise, based on an on-site evaluation. The report shall consider:

(1) Historic, current and foreseeable cliff erosion, including investigation of recorded land surveys and tax assessment records in addition to the use of historic maps and photographs where available, and possible changes in shore configuration and transport.

(2) Cliff geometry and site topography, extending the surveying work beyond the site as needed to depict unusual geomorphic conditions that might affect the site and the proposed development.

(3) Geologic conditions, including soil, sediment and rock types and characteristics in addition to structural features such as bedding, joints, and faults.

(4) Evidence of past or potential landslide conditions, the implications of such conditions for the proposed development, and the potential effects of the development on landslide activity.

(5) Wave and tidal action, including effects of marine erosion on sea cliffs.

(6) Ground and surface water conditions and variations, including hydrologic changes caused by the development (e.g., introduction of sewage effluent and irrigation water to the groundwater system; alterations in surface drainage).

(7) Potential effects of seismic forces resulting from a maximum credible earthquake.

(8) Effects of the proposed development including siting and design of structures, septic system, landscaping, drainage, and grading, and impacts of construction activity on the stability of the site and adjacent area.

(9) Any other factors that may affect slope stability.

(10) Potential erodibility of site and mitigating measures to be used to ensure minimized erosion problems during and after construction (i.e., landscaping and drainage design).

c. The area of demonstration of stability includes the base, face, and top of all bluffs and cliffs. The extent of the bluff top considered should include the area between the face of the bluff and a line described on the bluff top by the intersection of a plane inclined at a 20º angle from the horizontal passing through the toe of the bluff or cliff, or 50 feet inland from the edge of the cliff or bluff, whichever is greater.

d. Prohibit land divisions or new structures that would require the need for bluff protection work.

9.10 Geological Investigation of Building Sites

Require the County Geologist or an independent consulting certified engineering geologist to review all building and grading permits in designated hazardous areas for evaluation of potential geotechnical

problems and to review and approve all required investigations for adequacy. As appropriate and where not already specifically required, require site specific geotechnical investigations to determine mitigation measures for the remedy of such hazards as may exist for structures of human occupancy and/or employment other than those considered accessory to agriculture as defined in Policy 5.6.

"Hazards areas" and "hazards" are defined as those geotechnical hazards shown on the current Geotechnical Hazards Synthesis Maps of the General Plan and the LCP Hazards Maps. A copy of the report of all geologic investigations required by the California Division of Mines and Geology shall be forwarded to that agency.

3.4.3 Thresholds of Significance

The determinations of significance of project impacts are based on applicable policies, regulations, goals, and guidelines defined by the California Environmental Quality Act and the County. Specifically, the project would be considered to have a significant effect on geology and soils if the effects exceed the following significance criteria:

1. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
    a. 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.
    b. Strong seismic ground shaking?
    c. Seismic-related ground failure, including liquefaction and differential settling?
    d. Landslides?
    e. Coastal cliff/bluff instability or erosion?
2. Would the project result in substantial soil erosion or the loss of topsoil?
3. Would the project 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?
4. Would the project 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?
5. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?
6. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Each of these thresholds is discussed under Section 3.4.5, Impacts and Mitigation Measures.

3.4.4 Impact Assessment and Methodology

Geologic and seismic information for the project site was derived from various sources and compiled in this chapter to develop a comprehensive understanding of the potential constraints and hazards associated with project construction and operation. Sources of pertinent information include regional geologic and hazard maps prepared by the CGS, U.S. Geological Survey, NRCS, Redwood City, and the California

Department of Conservation, all of which reflect the most up-to-date understanding of regional geology and seismicity.

In addition, geologic and seismic analysis relied on the site-specific geotechnical investigation, provided by Rockridge Geotechnical.[126] The analysis also considers existing regulations that apply to geotechnical design and construction, including the California Building Code. Through compliance with the existing codes and ordinances, the project would be required to demonstrate compatibility with the subsurface geology and local seismic conditions before issuing building permits.

3.4.5 Impacts and Mitigation Measures

Impact GEO-1: Would the project 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 (Less Than Significant)

The active Seal Cove part of the San Gregorio Fault system lies approximately 0.4 mile south of the project site. Several subsidiary splays of the Seal Cove Fault have been mapped sub-parallel and to the northeast of Seal Cove Fault that project toward the site from the southeast; however, the CGS has concluded that these subsidiary splays are not Holocene active and extensive trench studies to the southeast of the site suggest that these fault traces do not strike through the site.[127]

Historically, ground surface displacements closely follow the trace of geologically young faults. The site is not within an earthquake fault zone, as defined by the Alquist-Priolo Act, and no known active or potentially active faults exist on-site. Therefore, the risk of fault offset and consequent secondary ground failure at the project site from a known active fault is very low. Impacts would be less than significant.

ii. Strong seismic ground shaking? (Less Than Significant)

The project site is located in the San Francisco Bay Area, which is considered one of the most seismically active regions in California. As described in Section 3.4.1.3, the seismicity of the project site is governed by the activity of the nearby San Gregorio Fault, although ground shaking from future earthquakes on the San Andreas and Hayward Faults would also be felt at the site. The intensity of earthquake ground motion at the site will depend upon the characteristics of the generating fault, distance to the earthquake epicenter, and magnitude and duration of the earthquake. However, a large earthquake on one of the nearby faults would likely cause strong to very strong ground shaking at the project site.

The proposed project would be designed and constructed in accordance with the 2022 California Building Code, as adopted in the Division VII (Building Regulations) of the County Ordinance Code.[128] Among many seismic requirements, the California Building Code requires foundations and structures to be designed and constructed to withstand the ground motions (i.e., peak ground accelerations) that have a 10% chance of being exceeded in 50 years (equivalent to a $^{1}/_{475}$ annual chance of being exceeded). The 2022 California Building Code and standard geotechnical engineering practice require identifying seismic design parameters to inform all earthwork requirements, foundation designs, retaining walls, and

[126] Rockridge Geotechnical, 2022.
[127] Rockridge Geotechnical, 2022.
[128] County of San Mateo, Board of Supervisors. 2023c. Ordinance No. 4873. Available at: https://www.smcgov.org/media/101471/download?inline=. Accessed May 5, 2023.

concrete/building material specifications. Seismic design parameters and recommendations for the project are described in the project-specific geotechnical site investigation.[129]

The project would not create the potential for or exacerbate existing conditions related to seismic ground shaking over existing conditions. Compliance with the California Building Code and recommendations contained in the geotechnical investigation would ensure the project does not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking, and impacts would be less than significant.

iii. Seismic-related ground failure, including liquefaction and differential settling? (Less Than Significant)

The project site is located within the "Very Low" and "Low" liquefaction susceptibility areas as shown in the ABAG Hazard Viewer map and is therefore outside a hazard area.[130] The site-specific geotechnical investigation concluded that due to the composition, cohesion, high density, and depth to groundwater, the project site is not susceptible to liquefaction. Therefore, the potential for seismic-related ground failure related to liquefaction is considered low,[131] and impacts would be less than significant.

iv. Landslides? (Less Than Significant)

The project site is in an area where the cliff stability level is designated as high.[132] However, construction of the project would disturb approximately 5 acres of the 11-acre project site. The site-specific geotechnical investigation concluded the potential for landslides at the project site under both static and seismic conditions is low due to the lack of evidence of historical slope instability on-site, the high shear strength of the soil, weathered bedrock underlying the site, and the apparent absence of any significant seepage on the slope faces. Further, the geotechnical investigation contains site-specific recommendations for site preparation and grading, foundation and retaining wall design, and seismic design. Recommendations from the geotechnical investigation related to landslides and instability include drainage of surface water away from buildings to prevent water ponding and subsurface water collection, the dimensions of spread footing foundations and retaining walls, and inclusion of capillary moisture break and water vapor retarder beneath the concrete floor slabs. Compliance with the 2022 California Building Code and the recommendations contained in the geotechnical investigation would ensure the project does not impact landslides or slope stability at the site or in the surrounding area. Therefore, impacts would be less than significant.

v. Coastal cliff/bluff instability or erosion? (Less Than Significant)

Refer to discussion under Impact GEO-1.iv above.

Impact GEO-2: Would the project result in substantial soil erosion or the loss of topsoil? (Less Than Significant)

Construction

Project construction would remove approximately 1 acre of existing impervious surfaces on-site, totaling approximately 20,840 cubic yards of concrete and 295 trees. Construction would excavate approximately

[129] Rockridge Geotechnical, 2022.
[130] MTC and ABAG, 2021.
[131] Rockridge Geotechnical, 2022.
[132] San Mateo County. Undated. San Mateo County General Plan Natural Hazards Attachment J. Available at: https://www.smcgov.org/media/127161/download?inline=. Accessed June 20, 2023.

9,506 cubic yards of soil, and approximately 9,881 cubic yards of fill would need to be imported to meet the total fill requirement of 19,388 cubic yards.

The project would be required to implement a County-approved ESCP and SWPPP, per the requirements of the San Francisco Bay RWQCB Municipal Regional Stormwater NPDES Permit and the San Mateo Countywide Stormwater Pollution Prevention Program.[133] These plans would include construction-related pollution prevention measures and BMPs to control erosion and sedimentation impacts and stabilize disturbed bare-earth areas. The project also includes a Site Management Plan, which outlines the presence of contaminants of potential concern. The Site Management Plan outlines measures to minimize dust control, stormwater runoff, and tracking of soil off-site. Section 3.7, Hydrology and Water Quality, provides additional information about ESCP, SWPPP, and Municipal Regional Stormwater NPDES requirements and related permits.

Areas of the project site disturbed by grading during construction would be protected against erosion during rainfall events. The bare portions of cut and fill slopes would be planted with deep-rooted, fast-growing vegetation before winter and the rainy season. As described in the geotechnical investigation and the ESCP, the finished surface would be covered with appropriate erosion matting, hydro-seeded, or another BMP to prevent silt from entering storm drains during and after construction.

With implementation of the ESCP, NPDES, and the recommendations within the geotechnical investigation, construction of the project would not result in substantial soil erosion or the loss of topsoil, and impacts would be less than significant.

Operation

Construction of the project's new buildings and hardscape improvements would increase impervious surfaces on-site by approximately 143,254 square feet. The addition of impervious surfaces would prevent surface water infiltration into the ground and could increase the stormwater runoff volume and rate compared to existing conditions, which could in turn accelerate soil erosion and loss of topsoil if stormwater was conveyed onto adjacent undeveloped land. However, as described in Section 3.7, Hydrology and Water Quality, the project site would be divided into four drainage management areas for stormwater control, which would contain inlets at low points throughout the hardscape and landscape areas (see Figure 2.5-12). Per recommendations included in the geotechnical site investigation, to control stormwater runoff and reduce the potential for water ponding adjacent to the buildings, the project would include roof downspouts, and ground surfaces adjacent to the buildings would have a specific gradient to direct water into drainage facilities.

Three of the drainage management areas would include bioretention areas that direct runoff into the permanent drainage improvements, including two catch basins that lead into a storm drain within Carlos Street. Runoff generated by the project site would be minimized by implementing all site-specific designs stipulated in future geotechnical site investigation recommendations and complying with the future Municipal Regional Stormwater NPDES Permit, as applicable.

Since the project also includes a system of drainage swales that are designed to control and redirect runoff away from undeveloped surfaces subject to erosion, operation of the project would not result in substantial soil erosion or the loss of topsoil, and impacts would be less than significant.

[133] County of San Mateo. 2023c. *Erosion and Sediment Control Plan Requirements*. Available at: https://www.smcgov.org/planning/erosion-and-sediment-control-plan-requirements. Accessed May 5, 2023.

Impact GEO-3: Would the project 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? (Less Than Significant)

A significant impact related to an unstable geologic unit or soil typically occurs if a project is built in an unstable area without proper site preparation or design features that provide adequate building foundations, thus posing a hazard to life and property. The project is not located on a geologic unit or soil that is unstable or would become unstable as a result of the project. The site-specific geotechnical investigation contains recommendations and design parameters to ensure that the project has suitable foundations and stability. Impacts related to geologic units or soil instability would be less than significant.

Impact GEO-4: Would the project 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? (Less Than Significant)

The project site is considered to have a low to moderate potential of being located on expansive soils. The site is underlain by stiff cohesive soil, dense clayey sand, and sand with clay that extends to the top of bedrock.[134] The site has low plasticity, and therefore, low expansion potential. The project would not exacerbate existing site soil conditions in regard to expansive soils and impacts would be less than significant.

Impact GEO-5: Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? (No Impact)

See Appendix B, Initial Study, Section 2.7, Geology and Soils. The proposed project would not require the use of septic or other alternative disposal wastewater systems. There would be no impact.

Impact GEO-6: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (Less Than Significant with Mitigation Incorporated)

Project-related ground disturbance, such as grading, in previously undisturbed sediments could result in a significant impact on paleontological resources if construction were to impact sediments with high paleontological sensitivity. Although there are no mapped paleontological resources on-site, the Pleistocene marine terrace deposits are paleontologically sensitive.

The project site has Pleistocene marine terrace deposits underlain by Cretaceous granitic rocks.[135] The granitic rocks do not contain paleontological resources, but the Pleistocene marine terrace deposits have the potential to contain resources. In the event of an accidental discovery, **MM-GEO-1** would be implemented to reduce potential impacts on paleontological resources to a less-than-significant level:

GEO-1 Accidental Discovery of Paleontological Resources

> In the event that paleontological resources are exposed during project work, regardless of the location or geologic units in which the fossils are found, work in the immediate vicinity of the find must stop until a Qualified Professional Paleontologist (Qualified Paleontologist/Project

[134] Rockridge Geotechnical, 2022.
[135] ARM, 2018.

Paleontologist/Principal Paleontologist), who meets or exceeds the SVP definition, can evaluate the significance of the find. Ground-disturbing activities may continue in other areas outside an appropriate buffer, usually 50 feet. If the paleontologist determines the discovery to be significant, the fossil(s) shall be salvaged.

Therefore, implementation of **MM-GEO-1** would reduce impacts to less than significant with mitigation incorporated.

3.4.6 Cumulative Impacts

Impact C-GEO-1: Would the impacts of the proposed project, in combination with other past, present, and reasonably foreseeable future projects, contribute to a cumulative impact related to geology and soils? (Less than Significant)

Geologic and soils hazards are largely site-specific and localized. The cumulative projects could require various levels of excavation or cut and fill, which would affect local geologic conditions. However, the cumulative projects would also be subject to the regulatory requirements for geotechnical review and would be required to comply with local and state building codes. In addition, site-specific geotechnical review would reduce each cumulative project's impacts associated with geology and seismic safety, and site-specific design features would be developed, when necessary, based on site conditions. Similar to the proposed project, cumulative projects in the project site vicinity would be subject to these mandatory seismic safety standards and design review procedures, if applicable. Compliance with these standards and procedures would ensure that the effects from nearby cumulative projects would be less than significant. The proposed project would not substantially contribute to a significant cumulative impact. No mitigation is required.

3.5 GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

This section describes the existing greenhouse gas (GHG) emissions in the area of the project site and evaluates the potential environmental consequences of construction and operation of the proposed project. Additionally, this chapter describes the environmental setting, including regulatory framework and the existing GHG setting and baseline conditions, and identifies mitigation measures, if required, that would avoid or reduce significant impacts. This evaluation is based on the methodology recommended by the Bay Area Air Quality Management District (BAAQMD). GHG emissions modeling was completed and relies on the conclusions in the following study:

- *Air Quality and Greenhouse Gas Technical Report*, SWCA Environmental Consultants (SWCA), 2023.[136] (Included as Appendix C)

Project effects related to GHG emissions and climate change were compared against county and state regulations for consistency.

3.5.1 Environmental Setting

Global climate change refers to the changes in average climatic conditions on Earth as a whole, including changes in temperature, wind patterns, precipitation, and storms. Global warming, a related concept, is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades. There is a general scientific consensus that global climate change is occurring, caused in whole or in part by increased emissions of GHGs that keep the Earth's surface warm by trapping heat in the Earth's atmosphere, in much the same way as glass traps heat in a greenhouse. The Earth's climate is changing because human activities, primarily the combustion of fossil fuels, are altering the chemical composition of the atmosphere through the buildup of GHGs. GHGs are released by the combustion of fossil fuels, land clearing, agriculture, and other activities, and lead to an increase in the greenhouse effect. While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy.

Regarding the adverse effects of global warming, as reported by Assembly Bill (AB) 2538: "Global warming poses a serious threat to the economic well-being, public health, natural resources and the environment of California." Over the past few decades, the energy intensity of the national and state economies has been declining due to the shift to a more service-oriented economy. California ranked fifth lowest among the states in carbon dioxide (CO_2) emissions from fossil fuel consumption per unit of gross state product. However, in terms of total CO_2 emissions, California is second only to Texas in the nation and is the 16th largest source of climate change emissions in the world, exceeding most nations.

3.5.1.1 GHG Background

GHGs include CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Carbon is the most abundant GHG. Other GHGs are less abundant but have higher global warming potential than CO_2. Thus, emissions of other GHGs are frequently expressed in the equivalent mass of CO_2, denoted as CO_2e. Forest fires, decomposition, industrial processes, landfills, and consumption of fossil fuels for power generation, transportation, heating,

[136] SWCA. 2023. *Air Quality and Greenhouse Gas Technical Report.* San Francisco, CA (office): SWCA Environmental Consultants.

and cooking are the primary sources of GHG emissions. The primary GHGs attributed to global climate change are described below.

- CO_2: In the atmosphere, carbon generally exists in its oxidized form, as CO_2. Natural sources of CO_2 include the respiration (breathing) of humans, animals, and plants; volcanic outgassing; decomposition of organic matter; and evaporation from the oceans. Anthropogenic sources of CO_2 include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. Anthropogenic sources of CO_2 amount to over 30 billion tons per year, globally.[137] Natural sources release substantially larger amounts of CO_2. Nevertheless, natural removal processes, such as photosynthesis by land and ocean-dwelling plant species, cannot keep pace with this extra input of human-made CO_2, and, consequently, the gas is building up in the atmosphere.
- CH_4: When organic matter decomposes in environments lacking sufficient oxygen, CH_4 is produced. Natural sources include wetlands, termites, and oceans. Decomposition occurring in landfills accounts for most human-generated CH_4 emissions in California and in the United States as a whole. Agricultural processes such as intestinal fermentation, manure management, and rice cultivation are also significant sources of CH_4 in California.
- N_2O: GHG N_2O is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for most natural source emissions. N_2O is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion produce N_2O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in California.
- HFCs, PFCs, and SF_6: HFCs are primarily used as substitutes for ozone-depleting substances regulated under the Montreal Protocol (1987), an international treaty that was approved on January 1, 1989, and was designed to protect the ozone layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for ozone depletion. PFCs and SF_6 are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no primary aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry leads to greater use of PFCs.

The magnitude of the impact on global warming differs among the GHGs. The effect each GHG has on climate change is measured as a combination of the volume of its emissions, and its global warming potential (GWP). GWPs are one type of simplifies index based upon radiative properties used to estimate the potential future impacts of emissions of different gases upon the climate system, expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG emissions are typically measured in terms of pounds or tons of CO_2 equivalents (CO_2e). GWP are based on a number of factors, including the radiative efficiency (heat-absorbing ability) of each gas relative to that of CO_2, as well as the decay rate of each gas (the amount removed from the atmosphere over a given number of years) relative to that of CO_2. The larger GWP, the more that a given gas warms the Earth compared to CO_2 over that time period. HFCs, PFCs, and SF_6 have a greater "global warming potential" than CO_2. In other words, these other GHGs have a greater contribution to global warming than CO_2 on a per-mass basis. However, CO_2 has the greatest impact on global warming because of the relatively large quantities of CO_2 emitted into the atmosphere.

[137] Friedlingstein, P., M.W. Jones, M. O'Sullivan, R.M. Andrew, D.C.E. Bakker, J. Hauck, C. Le Quéré, et al. 2022. Global Carbon Budget 2021. Available at: essd-14-1917-2022.pdf. Accessed June 1, 2023

A summary of the atmospheric lifetime and GWP of selected gases is presented in Table 3.5-1. As indicated in this table, GWPs range from 1 to 23,500 based on IPCC assessment reports. IPCC has released three assessment reports (AR4, AR5, and AR6) with updated GWPs, however, California Air Resources Board (CARB) reports the statewide GHG inventory using the AR4 GWPs, which is consistent with international reporting standards. By applying the GWP ratios, project-related equivalent mass of CO_2, denoted as CO_2e emissions, can be tabulated in metric tons per year.

Table 3.5-1. Global Warming Potentials

GHG	GWP Values for 100-year Time Horizon		
	AR4*	AR5	AR6
CO_2	1	1	1
CH_4	25	28	Fossil origin – 29.8 Non-fossil origin – 27.2
N_2O	298	265	273
Select HFCs	124–14,800	4–12,400	–
SF_6	22,800	23,500	–

Sources: IPCC (2007, 2013).[138], [139]

* For consistency with the U.S. Environmental Protection Agency (EPA) and its inventory of GHG reporting, we have represented values from AR4 of the IPCC report in this report.

For approximately 1,000 years before the Industrial Revolution, the amount of GHGs in the atmosphere remained relatively constant. During the twentieth century, however, scientists observed a rapid change in the climate and the quantity of climate change pollutants in the Earth's atmosphere, which is attributable to human activities. The recent sixth assessment report (AR6) of the IPCC summarizes the latest scientific consensus on climate change. It finds that atmospheric concentrations of CO_2 have increased by 50% since the industrial revolution and continue to increase at a rate of 2 parts per million each year. By the 2030s, and no later than 2040, the world will exceed 1.5 degrees Celsius warming.[140] These recent changes in the quantity and concentration of climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants. In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic time frame but within a human lifetime.

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are hard to predict. Projections

[138] Intergovernmental Panel on Climate Change (IPCC). 2007. IPCC Fourth Assessment Report: Climate Change 2007 (AR4): The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Table 2.14. Available at: https://www.ipcc.ch/site/assets/uploads/2018/02/ar4-wg1-chapter2-1.pdf. Accessed June 1, 2023.

[139] IPCC. 2013. IPCC Fifth Assessment Report: Climate Change 2013 (AR5): The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Available at: https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_all_final.pdf. Accessed June 1, 2023.

[140] CARB. 2022. 2022 Scoping Plan Update. Available at: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents#:~:text=The%202022%20Scoping%20Plan%20Update%20focuses%20on%20outcomes,energy%20security%2C%20environmental%20justice%2C%20and%20public%20health%20priorities. Accessed June 1, 2023.

of climate change depend heavily upon future human activity. Therefore, climate models are based on different emission scenarios that account for historical trends in emissions and on observations of the climate record that assess the human influence of the trend and projections for extreme weather events. Climate change scenarios are affected by varying degrees of uncertainty—for example, on the magnitude of the trends for:

- Warmer and fewer cold days and nights over most land areas.
- Warmer and more frequent hot days and nights over most land areas.
- An increase in frequency of warm spells/heat waves over most land areas.
- An increase in frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) over most areas.
- Larger areas affected by drought.
- Intense tropical cyclone activity increases.
- Increased incidence of extreme high sea level (excluding tsunamis).

3.5.2 Regulatory Setting

3.5.2.1 Federal Regulations

The Supreme Court of the United States (SCOTUS) ruled in Massachusetts v. Environmental Protection Agency, 127 South Court 1438 (2007), that CO_2 and other GHGs are pollutants under the federal Clean Air Act (CAA), which the U.S. Environmental Protection Agency (EPA) must regulate if it determines they pose an endangerment to public health or welfare. SCOTUS did not mandate that the EPA enact regulations to reduce GHG emissions. Instead, SCOTUS found that the EPA could avoid taking action if it found that GHGs do not contribute to climate change or if it offered a "reasonable explanation" for not determining that GHGs contribute to climate change.

On April 17, 2009, the EPA issued a proposed finding that GHGs contribute to air pollution that may endanger public health or welfare. On April 24, 2009, the proposed rule was published in the Federal Register under Docket ID No. EPA-HQ-OAR-2009~0171. The EPA stated that high atmospheric levels of GHGs "are the unambiguous result of human emissions and are very likely the cause of the observed increase in average temperatures and other climatic changes." The EPA further found that "atmospheric concentrations of greenhouse gases endanger public health and welfare within the meaning of Section 202 of the Clean Air Act." The findings were signed by the EPA Administrator on December 7, 2009. The final findings were published in the Federal Register on December 15, 2009. The final rule was effective on January 14, 2010. While these findings alone do not impose any requirements on industry or other entities, this action is a prerequisite to regulatory actions by the EPA, including, but not limited to, GHG emissions standards for light-duty vehicles. In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (e.g., large stationary sources) to report GHG emissions data. Facilities that emit 25,000 metric tons CO_2e (MT CO_2e) per year are required to submit an annual report.

On July 20, 2011, the EPA published its final rule deferring GHG permitting requirements for CO_2 emissions from biomass-fired and other biogenic sources until July 21, 2014. Environmental groups challenged the deferral. In September 2011, EPA released an "Accounting Framework for Biogenic CO_2

Emissions from Stationary Sources,"[141] which analyses accounting methodologies and suggests implementation for biogenic CO_2 emitted from stationary sources.

On April 4, 2012, the EPA published a proposed rule to establish, for the first time, a new source performance standard for GHG emissions. Under the proposed rule, new fossil fuel–fired generating units larger than 25 megawatts are required to limit emissions to 1,000 pounds of CO_2 per megawatt-hour on an average annual basis, subject to certain exceptions.

Pursuant to its authority under the CAA, the EPA has been developing regulations for new, large, stationary sources of emissions, such as power plants and refineries. Under former President Obama's 2013 Climate Action Plan, the EPA was directed to develop regulations for existing stationary sources as well. On June 19, 2019, the EPA issued the final Affordable Clean Energy rule which became effective on August 19, 2019. The Affordable Clean Energy rule was crafted under the direction of President Trump's Energy Independence Executive Order. It officially rescinds the Clean Power Plan rule issued during the Obama Administration and sets emissions guidelines for states in developing plans to limit CO_2 emissions from coal-fired power plants.

The federal government issued new Corporate Average Fuel Economy (CAFE) standards in 2012 for model years 2017 to 2025, which required a fleet average of 54.5 miles per gallon in 2025. However, on March 30, 2020, the EPA finalized the updated CAFE and GHG emissions standards for passenger cars and light trucks and established new standards, covering model years 2021 through 2026, known as the Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021 to 2026. However, a consortium of automakers and the State of California have agreed on a voluntary framework to reduce emissions that can serve as an alternative path forward for clean vehicle standards nationwide. Automakers who agreed to the framework are Ford, Honda, BMW of North America, and Volkswagen Group of America. The framework supports continued annual reductions of vehicle GHG emissions through the 2026 model year, encourages innovation to accelerate the transition to electric vehicles, and provides industry the certainty needed to make investments and create jobs. This commitment means that the auto companies party to the voluntary agreement will only sell cars in the United States that meet these standards.

On April 17, 2022, the EPA issued emission rules for oil production and natural gas production and processing operations, which are required by the CAA under Title 40 of the Code of Federal Regulations Parts 60 and 63. The final rules include the first federal air standards for natural gas wells that are hydraulically fractured, along with requirements for several other sources of pollution in the oil and gas industry that currently are not regulated at the federal level.

To regulate GHGs from passenger vehicles, the EPA issued an endangerment finding. The finding identifies emissions of six key GHGs—CO_2, CH_4, N_2O, HCFCs, PFCs, and SF_6— that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the proposed project's GHG emissions inventory because they constitute the majority of GHG emissions and, per BAAQMD guidance, they are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory.

[141] EPA. 2014. Accounting Framework for Biogenic CO_2 Emissions from Stationary Sources. Available at: https://www.epa.gov/sites/default/files/2016-08/documents/framework-for-assessing-biogenic-co2-emissions.pdf. Accessed June 1, 2023

3.5.2.2 State Regulations

3.5.2.2.1 EXECUTIVE ORDER S-3-05, EXECUTIVE ORDER B-30-15, AND EXECUTIVE ORDER B-55-18

In 2005, the governor issued Executive Order (EO) S-3-05, establishing statewide GHG emissions reduction targets, as well as a process to ensure the targets are met. The order directed the Secretary of the California Environmental Protection Agency to report every 2 years on the State's progress toward meeting the governor's GHG emission reduction targets. The statewide GHG targets established by EO S-3-05 are as follows:

- By 2010, reduce GHG emissions to 2000 emission levels,
- By 2020, reduce GHG emissions to 1990 emission levels, and
- By 2050, reduce GHG emissions to 80% below 1990 levels.

EO B-30-15, issued by Governor Brown in April 2015, established an additional statewide policy goal to reduce GHG emissions 40% below their 1990 levels by 2030. Reducing GHG emissions by 40% below 1990 levels in 2030 and by 80% below 1990 levels by 2050 (consistent with EO S-3-05) aligns with scientifically established levels needed in the United States to limit global warming below 2 degrees Celsius.

The State Legislature adopted equivalent 2020 and 2030 statewide targets in the California Global Warming Solutions Act of 2006 (also known as AB 32) and Senate Bill (SB) 32, respectively, both of which are discussed below. However, the legislature has not yet adopted a target for the 2050 horizon year. As a result of EO S-3-05, the California Action Team (CAT), led by the Secretary of the California Environmental Protection Agency, was formed. The CAT is made up of representatives from a number of state agencies and was formed to implement global warming emission reduction programs and to report on the progress made toward meeting statewide targets established under the EO. The CAT reported several recommendations and strategies for reducing GHG emissions and reaching the targets established in the EO.

The CAT stated that "smart" land use is an umbrella term for strategies that integrate transportation and land-use decisions. Such strategies generally encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors. These strategies develop more efficient land-use patterns within each jurisdiction or region to match population increases, workforce, and socioeconomic needs for the full spectrum of the population. "Intelligent transportation systems" is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and the movement of people, goods, and services.

EO B-55-18, issued by Governor Brown in September 2018, establishes a new statewide goal to achieve carbon neutrality as soon as possible, but no later than 2045, and achieve and maintain net negative emissions thereafter. Based on this EO, CARB would work with relevant state agencies to develop a framework for implementation and accounting that tracks progress toward this goal, as well as ensuring future scoping plans identify and recommend measures to achieve the carbon neutrality goal.

3.5.2.2.2 ASSEMBLY BILL 32, CALIFORNIA GLOBAL WARMING SOLUTION ACT

The California Global Warming Solutions Act of 2006 (also known as AB 32) commits the State to achieving the following:

- By 2010, reduce GHG emissions to 2000 GHG emission levels, and
- By 2020, reduce GHG emissions to 1990 levels.

To achieve these goals, which are consistent with the California CAT GHG targets for 2010 and 2020, AB 32 mandates that the CARB establish a quantified emissions cap, institute a schedule to meet the cap, implement regulations to reduce statewide GHG emissions from stationary sources consistent with the CAT strategies, and develop tracking, reporting, and enforcement mechanisms to ensure that reductions are achieved. In order to achieve the reductions, AB 32 requires CARB to adopt rules and regulations in an open, public process that achieves the maximum technologically feasible and cost-effective GHG reductions.

SB 32, signed September 8, 2016, updates AB 32 to include an emissions reduction goal for the year 2030. Specifically, SB 32 requires CARB to ensure that statewide GHG emissions are reduced to 40% below the 1990 level by 2030. The new plan, outlined in SB 32, involves increasing renewable energy use, imposing tighter limits on the carbon content of gasoline and diesel fuel, putting more electric cars on the road, improving energy efficiency, and curbing emissions from key industries.

3.5.2.2.3 CLIMATE CHANGE SCOPING PLAN

In 2008, CARB approved a Climate Change Scoping Plan, as required by AB 32. Subsequently, CARB approved updates of the Climate Change Scoping Plan in 2014 (First Update) and 2017 (2017 Update), with the 2017 Update considering SB 32 (adopted in 2016) in addition to AB 32.[142] The First Update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals (to the level of 427 million metric tons [MMT] CO_2e) defined in the original Scoping Plan. It also evaluates how to align the State's longer-term GHG reduction strategies with other State policy priorities, such as for policies for water, waste, natural resources, clean energy, transportation, and land use. In November 2022, the final 2022 Scoping Plan Update and Appendices was released. This 2022 Scoping Plan Update assesses progress toward the statutory 2030 target, while laying out a path to achieving carbon neutrality no later than 2045.[143] The 2022 Scoping Plan Update, focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

3.5.2.2.4 ASSEMBLY BILL 197

AB 197, signed September 8, 2016, is a bill linked to SB 32 that prioritizes efforts to reduce GHG emissions in low-income and minority communities. AB 197 requires the CARB to make available, and update at least annually on its website, the emissions of GHGs, criteria pollutants, and TACs for each facility that reports to CARB and air districts. In addition, AB 197 adds two members of the legislature to the CARB board as ex officio, non-voting members, and also creates the Joint Legislative Committee on

[142] CARB. 2017. 2017 Scoping Plan Documents. Available at: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2017-scoping-plan-documents. Accessed June 1, 2023.
[143] CARB, 2022. 2022 Scoping Plan. Available at: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents, Accessed June 1, 2023.

Climate Change Policies to ascertain facts and make recommendations to the legislature concerning the State's programs, policies, and investments related to climate change.

3.5.2.2.5 CAP-AND-TRADE PROGRAM

The 2008 Climate Change Scoping Plan identified a cap-and-trade program as one of the strategies for California to reduce GHG emissions. The cap-and-trade program is a key element in California's climate plan. It sets a statewide limit on sources responsible for 85% of California's GHG emissions and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The cap-and-trade rules came into effect on January 1, 2013, and apply to large electric power plants and large industrial plants. In 2015, fuel distributors, including distributors of heating and transportation fuels, also became subject to the cap-and-trade rules. At that stage, the program will encompass around 360 businesses throughout California and nearly 85% of the state's total GHG emissions. Covered entities subject to the cap-and-trade program are sources that emit more than 25,000 MT CO_2e per year. Triggering of the 25,000 MT CO_2e per year "inclusion threshold" is measured against a subset of emissions reported and verified under the California Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (Mandatory Reporting Rule).

Under the cap-and-trade regulation, companies must hold enough emission allowances to cover their emissions and are free to buy and sell allowances on the open market. California held its first auction of GHG allowances on November 14, 2012. California's GHG cap-and-trade system is projected to reduce GHG emissions to 1990 levels by the year 2020 and would achieve an approximate 80% reduction from 1990 levels by 2050.

3.5.2.2.6 ASSEMBLY BILL 1493 (PAVLEY I)

AB 1493, passed in 2002, requires the development and adoption of regulations to achieve the maximum feasible reduction in GHGs emitted by noncommercial passenger vehicles, light-duty trucks, and other vehicles used primarily for personal transportation in the state. CARB originally approved regulations to reduce GHG from passenger vehicles in September 2004, which took effect in 2009. On September 24, 2009, CARB adopted amendments to these regulations that reduce GHG emissions and new passenger vehicles from 2009 through 2016. Although setting emission standards on automobiles is solely the responsibility of the EPA, the federal CAA allows California to set state-specific emission standards on automobiles, and the State first obtained a waiver from the EPA. The EPA granted California that waiver until July 1, 2009. The comparison between the AB 1493 standards and the federal CAFE standards was completed by CARB, and the analysis determined the California emission standards were 16% more stringent through the 2016 model year and 18% more stringent for the 2020 model year. CARB is also committed to further strengthening these standards beginning with 2020 model year vehicles, to obtain a 45% GHG reduction in comparison to 2009 model years.

In March 2020, the EPA issued the SAFE Vehicles Rule which would roll back fuel economy standards and revoke California's waiver. Under this rule, EPA would amend certain average fuel economy and GHG standards for passenger cars covering model years 2021 through 2026. In September 2019, the EPA withdrew the waiver that had been previously provided in California for the State's GHG and Zero Emission Vehicle (ZEV) programs under Section 209 of the CAA. The withdrawal of the waiver became effective on November 26, 2019. In response, several states, including California, have a lawsuit challenging the withdrawal of the EPA waiver. These actions continue to be challenged in court. As noted above, on January 20, 2021, President Biden issued an EO directing all executive departments and agencies to take action, as appropriate, to address federal regulations and other actions taken during the last 4 years that conflict with the administration's climate and environmental justice goals, which include SAFE.

3.5.2.2.7 EXECUTIVE ORDER S-01-07 (CALIFORNIA LOW CARBON FUEL STANDARD)

EO S-01-07, the Low Carbon Fuel Standard (LCFS) (issued January 18, 2007), requires at least a 10% reduction in the carbon intensity of California transportation fuels by 2020. Regulatory proceedings and implementation of the LCFS was directed to CARB. CARB released a draft version of the LCFS in October 2008. The final regulation was approved by the Office of Administrative Law and filed with the Secretary of State on January 12, 2010; the LCFS became effective on the same day.

The 2017 update has identified LCFS as a regulatory measure to reduce GHG emission to meet the 2030 emissions target. In calculating statewide emissions and targets, the 2017 update assumed the LCFS would be extended to an 18% reduction in carbon intensity beyond 2020. On September 27, 2018, CARB approved a rulemaking package that amended the LCFS to relax the 2020 carbon intensity reduction from 10% to 7.5% and to require a carbon intensity reduction of 20% by 2030.

3.5.2.2.8 ADVANCED CLEAN CAR REGULATIONS

In 2012, CARB approved the Advanced Clean Cars program, a new emissions control program for model years 2015 through 2025. The components of the advanced clean car standards include the low-emission vehicle regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the ZEV regulation, which requires manufacturers to produce an increasing number of pure ZEVs, with provisions to also produce plug-in hybrid electric vehicles in the 2018 through 2025 model years period. In March 2017, CARB voted unanimously to continue with the vehicle GHG emission standards and the ZEV programs for cars and light trucks sold in California through 2025.

3.5.2.2.9 SENATE BILL 375

This bill requires CARB to set regional emissions reduction targets for passenger vehicles.
The metropolitan planning organization for each region must then develop a "Sustainable Communities Strategy" that integrates transportation, land use, and housing policies to plan how it will achieve the emissions target for its region. If the Sustainable Communities Strategy is unable to achieve the regional GHG emissions reductions targets, then the metropolitan planning organization is required to prepare an alternative planning strategy that shows how the GHG emissions reduction target can be achieved through alternative development patterns, infrastructure, and/or transportation measures.

As required under SB 375, CARB is required to update regional GHG emission targets every 8 years; the last update was formally adopted in March 2018. As part of the 2018 update, CARB has adopted a passenger vehicle-related GHG reduction target of 19% by 2035 for the Southern California Association of Governments (SCAG) region, which is more stringent than the previous reduction target of 13% for 2035.

3.5.2.2.10 SENATE BILL 97

This bill was enacted in 2007. SB 97 required the Governor's Office of Planning and Research to develop, and the Natural Resources Agency to adopt, amendments to the California Environmental Quality Act (CEQA) Guidelines addressing the analysis and mitigation of GHG emissions. Those CEQA Guidelines amendments clarified several points, including the following:

- Lead agencies must analyze the GHG emissions of proposed projects and must reach a conclusion regarding the significance of those emissions.
- When a project's GHG emissions may be significant, lead agencies must consider a range of potential mitigation measures to reduce those emissions.

- Lead agencies must analyze potentially significant impacts associated with placing projects in hazardous locations, including locations potentially affected by climate change.
- Lead agencies may significantly streamline the analysis of GHGs on a project level by using a programmatic GHG emissions reduction plan meeting certain criteria.
- CEQA mandates analysis of a proposed project's potential energy use (including transportation-related energy), sources of energy supply, and ways to reduce energy demand, including the use of efficient transportation alternatives.

As part of the administrative rulemaking process, the California Natural Resources Agency developed a Final Statement of Reasons explaining the legal and factual bases, intent, and purpose of the CEQA Guidelines amendments. The amendments to the CEQA Guidelines implementing SB 97 became effective on March 18, 2010. SB 97 applies to any environmental impact report (EIR), negative declaration, mitigated negative declaration, or other document required by CEQA, which has not been finalized.

3.5.2.2.11 BUILDING ENERGY EFFICIENCY STANDARDS

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the California Energy Commission) in June 1977 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for the consideration and possible incorporation of new energy efficiency technologies and methods. The 2019 Building Energy Efficiency Standards were adopted on May 9, 2018, and went into effect on January 1, 2020. The 2019 standards move toward cutting energy use in new homes by more than 50% and require the installation of solar photovoltaic systems for single-family homes and multi-family buildings of three stories or less. The 2019 standards focus on four key areas: 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to the exterior and vice versa); 3) residential and nonresidential ventilation requirements; and 4) nonresidential lighting requirements. Under the 2019 standards, nonresidential buildings are 30% more energy efficient than under the 2016 standards, and single-family homes are 7% more energy efficient. When accounting for the electricity generated by the solar photovoltaic system, single-family homes would use 53% less energy compared to homes built to the 2016 standards. Furthermore, on August 11, 2021, the California Energy Commission adopted the 2022 Building Energy Efficiency Standards, which were subsequently approved by the California Building Standards Commission in December 2021. The 2022 standards became effective and replaced the existing 2019 standards on January 1, 2023. The 2022 standards require mixed-fuel single-family homes to be electric-ready to accommodate replacement of gas appliances with electric appliances. In addition, the new standards also include prescriptive photovoltaic system and battery requirements for high-rise, multi-family buildings (i.e., more than three stories) and noncommercial buildings such as hotels, offices, medical offices, restaurants, retail stores, schools, warehouses, theaters, and convention centers.

3.5.2.2.12 CALGREEN

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The mandatory provisions of CALGreen became effective January 1, 2011, and were last updated in 2019. The 2022 CALGreen standards became effective on January 1, 2023.

3.5.2.3 Local Regulations

3.5.2.3.1 PLAN BAY AREA

Plan Bay Area is the Bay Area's Regional Transportation Plan/Sustainable Community Strategy. The 2050 blueprint to Plan Bay Area was adopted jointly by the Association of Bay Area Governments and the Metropolitan Transportation Commission in October 2021. The Plan Bay Area 2050 serves as a 30-year plan with 35 new strategies to provide a more equitable and resilient future for residents in the Bay Area. This regional plan aims for more affordable and accessible transportation, which will significantly decrease GHG emissions to meet the state mandate of a 19% reduction in per capita emissions by 2035.

3.5.2.3.2 BAY AREA CLEAN AIR PLAN

BAAQMD adopted the 2017 Clean Air Plan, Spare the Air, Cool the Climate on April 19, 2017 (2017 Clean Air Plan). The 2017 Clean Air Plan also lays the groundwork for reducing GHG emissions in the Bay Area to meet the state's 2030 GHG reduction target and 2050 GHG reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following:

- Construct buildings that are energy efficient and powered by renewable energy.
- Walk, bicycle, and use public transit for most trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.
- Live a low-carbon lifestyle by purchasing low-carbon foods and goods in addition to recycling and putting organic waste to productive use.[144]

A comprehensive multipollutant control strategy has been developed to be implemented in the next 3 to 5 years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, toxic air contaminants, and GHG from a full range of emission sources. These control measures cover the following sectors: 1) stationary (industrial) sources, 2) transportation, 3) energy, 4) agriculture, 5) natural and working lands, 6) waste management, 7) water, and 8) super-GHG pollutants. Overall, the proposed control strategy is based on the following key priorities:

- Reduce emissions of criteria air pollutants and toxic air contaminants from all key sources.
- Reduce emissions of "super-GHGs" such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
- Increase efficiency of the energy and transportation systems.
- Reduce demand for vehicle travel, and high-carbon goods and services.
- Decarbonize the energy system.
- Make the electricity supply carbon-free.
- Electrify the transportation and building sectors.

[144] Bay Area Air Quality Management District. 2017. Final 2017 *Clean Air Plan*, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area. https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en. Accessed June 1, 2023.

3.5.2.3.3 BAY AREA COMMUTER BENEFITS PROGRAM

Under BAAQMD Regulation 14, Model Source Emissions Reduction Measures, Rule 1, Bay Area Commuter Benefits Program, employers with 50 or more full-time employees within the BAAQMD are required to register and offer commuter benefits to employees. In partnership with the BAAQMD and the Metropolitan Transportation Commission, the rule's purpose is to improve air quality, reduce GHG emissions, and decrease the Bay Area's traffic congestion by encouraging employees to use alternative commute modes, such as transit, vanpool, carpool, bicycling, and walking. The benefits program allows employees to choose from one of four commuter benefit options including a pre-tax benefit, employer-provided subsidy, employer-provided transit, and alternative commute benefit.

3.5.2.3.4 COUNTY OF SAN MATEO 2020 CLIMATE ACTION PLAN

The San Mateo County 2022 Community Climate Action Plan (CCAP)[145] outlines priority actions to achieve a 45% reduction of GHG emissions over 1990 levels by 2030 and carbon neutrality by 2040. The CCAP streamlines the development process by meeting the BAAQMD's requirements for a Qualified GHG Reduction Strategy. The CCAP also supports the goals and policies of AB 32, California Global Warming Solutions Act of 2006. The County's strategies and actions are structured around four focus areas: building energy, transportation, waste, and working lands.

Buildings are the second largest contributor to GHG emissions in unincorporated areas of the County, accounting for 32% of all emissions. These emissions stem primarily from the use of natural gas in residential and commercial buildings.

Summary of Building Energy Policy strategies:

- Policy B-1: Transition to all-electric new constructions.
- Policy B-2: Convert existing buildings to all-electric.
- Policy B-3: Use microgrids to generate local renewable energy and improve resiliency.
- Policy B-4: Pursue integrated opportunities to address climate adaptation and mitigation.

Emissions in the transportation sector come from people driving vehicles (vehicle miles traveled [VMT]) on roads within the county. In 2017, this represented 40% of the County's emissions inventory and remains the largest contributor when compared to the other sectors. Reducing this emissions source will require reducing VMT as well as increasing the community adoption of electric vehicles (EVs). While making this change will require multijurisdictional action beyond the County's jurisdiction, and will rely upon individual behavior change, the County can still play a critical role. San Mateo County can facilitate EV adoption; build the necessary charging infrastructure to enable widespread EV use; increase access to jobs, goods, and services in neighborhoods; help its communities shift to active transportation (human-powered forms of transportation including walking, rolling, and biking); and work in partnership to enhance and improve public transit access and ridership.

Summary of Transportation Policy strategies:

- Policy T-1: Increase electric vehicle adoption.
- Policy T-2: Encourage urban density and the revision of parking standards, and support bicycle and pedestrian-friendly planning.

[145] San Mateo County. 2022. 2022 Community Climate Action Plan. Available at: https://www.smcgov.org/planning/community-climate-action-plan-ccap. Accessed June 1, 2023.

- Policy T-3: Implement programs for shared transit that reduce VMT.

Waste produced in unincorporated communities is sent to Ox Mountain Landfill where the organic materials decompose and produce methane, which is a GHG. Waste represents a smaller share of overall county emissions at 26%. There are measures designed to prevent materials from entering the landfill through source reduction and waste diversion actions such as reducing waste generated, reusing materials, composting organics, and recycling.

Summary of Waste and Consumption Policy strategies:

- Policy W-1: Reduce construction materials and waste.
- Policy W-2: Reduce organics in the waste stream.
- Policy W-3: Reduce inorganic waste sent to landfills.

Rangeland and cropland, including publicly and privately managed lands, comprise a large portion of the land base in California and in San Mateo County. These working lands have significant potential for sequestering carbon from the atmosphere, thus serving as a climate mitigation strategy. Active management of working lands can enhance the rate of carbon sequestration in soils and vegetation; therefore, carbon farming (i.e., the suite of practices that brings about more sequestration) has a critical role to play in helping San Mateo County develop resilience to climate change while simultaneously reducing atmospheric GHGs driving climate change.

Summary of Working Lands Policy strategies:

- Strategy L-1: Identify new financing to scale carbon farming.
- Strategy L-2: Support technical assistance, education, and data collection efforts to scale climate beneficial agriculture.
- Strategy L-3: Secure access to key implementation infrastructure to advance climate beneficial agriculture.
- Strategy L-4: Address permitting barriers to implementing climate beneficial agricultural practices.
- Strategy L-5: Ensure agricultural lands are preserved for agricultural production.
- Strategy L-6: Support carbon sequestration and ecological restoration on natural lands.

3.5.2.3.5 COUNTY OF SAN MATEO GENERAL PLAN

The General Plan[146] is the County's vision for future development. It identifies goals, policies, and objectives to govern the physical development of the County. State law requires each city and county to adopt a General Plan with a minimum of seven elements: Land Use, Circulation, Housing, Conservation, Open-Space, Noise, and Safety. The San Mateo General Plan contains 17 chapters addressing each of the required elements and additional elements like the transportation and climate element. Many of the General Plan policies affect air quality and GHG emissions for the County. For example, this General Plan Climate Change Element demonstrates San Mateo County's commitment to achieve energy efficiency and mitigate its impact on climate change by reducing GHG emissions consistent with state legislation.

[146] San Mateo County. 2022. San Mateo County General Plan. Available at: https://www.smcgov.org/planning/general-plan. Accessed June 1, 2023.

3.5.2.4 Existing Conditions and Inventories

Per the EPA's *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2020,*[147] total U.S. GHG emissions have decreased by 6.6% from 1990 to 2020. The largest source of GHG emissions from human activities in the United States is from burning fossil fuels for electricity, heat, and transportation. The latest national GHG emissions are for calendar year 2020, in which the total gross U.S. GHG emissions were reported at 5,981.4 MMT CO_2e. Emissions decreased from 2019 to 2020 by 543.4 MMT CO_2e and net emissions (including sinks) were 5,222.4 MMT CO_2e.

According to California's 2000–2019 GHG emissions inventory, California emitted 409.3 MMT CO_2e in 2019. The sources of GHG emissions in California include transportation, industrial uses, electric power production from both in-state and out-of-state sources, commercial and residential uses, agriculture, high global warming potential substances, recycling, and waste. The California GHG emission source categories (as defined in CARB's 2008 Scoping Plan) and their relative contributions in 2019 are presented in Table 3.5-2. Total GHG emissions in 2019 were approximately 22.9 MMT CO_2e less than 2016 emissions. Based on data presented, the 2016 statewide GHG inventory fell below 1990 levels, consistent with AB 32. The declining trend in GHG emissions, coupled with programs that will continue to provide additional GHG reductions going forward, demonstrates that California will continue to reduce emissions below the 2020 target of 431 MT CO_2e.

Table 3.5-2. California GHG Inventory

Parameter	Unit	Year				
		2015	2016	2017	2018	2019
Transportation	MMT CO_2e	166.2	169.8	171.2	169.6	166.1
	Percentage	38.5%	40.4%	41.2%	40.7%	40.6%
Electric power	MMT CO_2e	84.8	68.6	62.1	63.1	58.8
	Percentage	19.6%	16.3%	14.9%	15.2%	14.4%
Industrial	MMT CO_2e	90.3	89	88.8	89.2	88.2
	Percentage	20.9%	21.2%	21.4%	21.4%	21.5%
Commercial and residential	MMT CO_2e	38.8	40.6	41.3	41.4	43.8
	Percentage	9.0%	9.7%	9.9%	9.9%	10.7%
Agriculture	MMT CO_2e	33.5	33.3	32.5	32.7	31.8
	Percentage	7.8%	7.9%	7.8%	7.9%	7.8%
High GWP	MMT CO_2e	18.6	19.2	20	20.4	20.6
	Percentage	4.3%	4.6%	4.8%	4.9%	5.0%
Total	MMT CO_2e	432.2	420.5	415.9	416.4	409.3

Source: California GHG Inventory for 2000–2019[148]

[147] EPA. 2022. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2020. EPA 430-R-22-003. Available at: https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2020. Accessed June 1, 2023.
[148] CARB. 2021. Current California GHG Emission Inventory Data. 2000-2019 GHG Inventory. Available at: https://ww2.arb.ca.gov/ghg-inventory-data. Accessed May 2, 2023.

3.5.3 Thresholds of Significance

Pursuant to the State CEQA Guidelines, the project would be considered to have a significant effect on GHG emissions if the effects exceed the significance criteria described below:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?
3. Result in the loss of forestland or conversion of forestland to non-forest use, such that it would release significant amounts of GHG emissions, or significantly reduce GHG sequestering?
4. Expose new or existing structures and/or infrastructure (e.g., leach fields) to accelerated coastal cliff/bluff erosion due to rising sea levels?
5. Expose people or structures to a significant risk of loss, injury, or death involving sea level rise?
6. Place structures within an anticipated 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
7. Place within an anticipated 100-year flood hazard area structures that would impede or redirect flood flows?

Each of these thresholds is discussed under Section 3.5.5, Impacts and Mitigation Measures, below. Similar criteria to 6 and 7 are discussed in Section 3.7, Hydrology and Water Quality.

State CEQA Guidelines Section 15064.4 recommends that lead agencies quantify GHG emissions projects and consider several other factors that may be used to determine the significance of project-related GHG emissions, including the extent to which the project may increase or reduce GHG emissions, whether the project exceeds an applicable significant threshold, and the extent to which the project complies with the regulations or requirements adopted to implement a reduction or mitigation of GHG.

Section 15064.4 does not establish a threshold of significance. Lead agencies have the discretion to establish significance thresholds for their respective jurisdictions, and in establishing those thresholds, a lead agency may appropriately look at thresholds developed by other public agencies, or suggested by other experts, such as the California Air Pollution Control Officers Association (CAPCOA), as long as any threshold chosen is supported by substantial evidence (see State CEQA Guidelines Section 15064.7(c)). The State CEQA Guidelines also clarify that the events of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see State CEQA Guidelines Section 15130(f)). It is noted that the State CEQA Guidelines were amended in response to SB 97. In particular, the State CEQA Guidelines were amended to specify that compliance with the GHG emissions reduction plan renders a cumulative impact that is less than significant.

Per State CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found to be not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions" (14 CCR Section 15064(h)(3)). Put another way, State CEQA Guidelines Section 15064(h)(3)

allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with adopted programs, plans, policies, and/or other regulatory strategies to reduce GHG emissions.

Although GHG emissions can be quantified, CARB, BAAQMD, and the County have not adopted quantitative project-level significance thresholds for GHG emissions that would be applicable to the project. Per State CEQA Guidelines Section 15064.4(b), "in determining the significance of a project's greenhouse gas emissions, the lead agency should focus its analysis on the reasonably foreseeable incremental contribution of the project's emissions to the effects of climate change. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national or global emissions." When determining the significance of GHG impacts, lead agencies should consider the project's impact as compared to the existing environmental setting, whether the project exceeds a threshold of significance, and compliance with relevant GHG-related plans (see, for example, State CEQA Guidelines Section 15064.4(b)). Regarding the latter criterion, lead agencies should consider "the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions" (see, for example, State CEQA Guidelines Section 15183.5(b)). Per State CEQA Guidelines Section 15064.4(b)(3), such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of GHG emissions.

In April 2022, BAAQMD adopted the Justification Report: *CEQA Thresholds for Evaluating the Significance of Climate Impacts From Land Use Projects and Plans* (Justification Report).[149] Land-use development projects include residential, commercial, industrial, and public land-use facilities. Direct sources of emissions may include on-site combustion of energy, such as natural gas used for heating and cooking, emissions from industrial processes (not applicable for most land-use development projects), and fuel combustion from mobile sources. Indirect emissions are emissions produced off-site from energy production, water conveyance due to a project's energy use and water consumption, and non-biogenic emissions from waste disposal. Biogenic CO_2 emissions are not included in the quantification of a project's GHG emissions, because biogenic CO_2 is derived from living biomass (e.g., organic matter present in wood, paper, vegetable oils, animal fat, food, animal, and yard waste) as opposed to fossil fuels. BAAQMD identified in their Justification Report that projects that implement the following best management practices would contribute a proportionate share of what will be required to achieve the state's long-term climate goals, as described below:

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 VMT below the regional average consistent with the current version of the California Climate Change Scoping Plan or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's

[149] BAAQMD. 2022. Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-thresholds-2022/justification-report-pdf.pdf?la=en. Accessed May 2, 2023.

Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA.

B. OR, projects must be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

BAAQMD does not have thresholds of significance for construction-related GHG emissions, which are one-time, short-term emissions and therefore would not significantly contribute to the long-term cumulative GHG emissions impacts of the proposed project.

3.5.4 Impact Assessment and Methodology

This analysis quantifies the project's total annual GHG emissions from construction, taking into account any GHG emission reduction measures that would be incorporated into the project's design. However, given the lack of a formally adopted numerical significance threshold or a formally adopted local plan for reducing GHG emission applicable to this project, this analysis also evaluates the significance of the project's GHG emission by assessing the project's consistency with regulatory schemes and policies.

3.5.5 Impacts and Mitigation Measures

Impact GHG-1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (Less than Significant)

The proposed project is located in the San Francisco Bay Area Air Basin, which is regulated by the BAAQMD. Projects generate GHG emissions during construction and operation (e.g., mobile emissions, emissions from generation of electricity for operations), and projects must be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b). On April 20, 2022, the BAAQMD adopted changes to its thresholds for evaluating the significance of climate impacts from land-use projects and plans under CEQA. In place of numerical thresholds, the focus will be on the design of a project as well as building operations and transportation. At a minimum, building projects cannot include natural gas appliances or natural gas plumbing, and cannot result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and State CEQA Guidelines Section 15126.2(b). The project will not use natural gas and will not result in any wasteful, inefficient, or unnecessary energy usage per **Initial Study Section 2.6, Energy**.

As discussed in **Chapter 2, Project Description**, the project sponsor has committed to the implementation of the following required and additional Transportation Demand Management (TDM) measures identified in the C/CAG TDM Checklist for a Residential (Multi-Family) Land Use: Small Project and site design and pedestrian network improvements:

- M2 – Orientation, Education, Promotional Programs and/or Materials (*Required*)
- M3 – TDM Coordinator/Contact Person (*Required*)
- M6 – Transit or Ridesharing Passes/Subsidies (*Required*)
- M8 – Secure Bicycle Storage (*Required*)
- M9 – Design Streets to Encourage Bike/Ped Access (*Required*)
- M11 – Family-Supportive Amenities (*Additional*)
- M22 – Active Transportation Subsidies (*Additional*)

- M23 – Gap Closure (*Additional*)
- M24 – Bike Repair Station (*Additional*)

These TDM measures are intended to provide options to future residents and promote shifts from automobiles to transit and non-auto modes such as walking and bicycling. The project sponsor has also committed to the implementation of site design improvements to further enhance the on-site bicycle and pedestrian network and the connectivity of the site to the larger Moss Beach community, e.g., Sierra Street sidewalk improvements (see Chapter 2, Project Description). In addition to the proposed project characteristics (i.e., affordable housing and local preference agreement; C/CAG TDM measures incorporated as part of the project; and the additional pedestrian and bicycle network and transit stop improvements identified under **MM-TR-4b: Additional Transportation Demand Management Measures**, p. 3.10-42), the project sponsor may consider implementing C/CAG TDM Checklist Measure M4 for participation in Commute.org or Transportation Management Association Equivalent (see MM-TR-2 on p. 3.10.37). As discussed in **EIR Section 3.10, Transportation**, under **Impact TR-2**, the estimated VMT reduction associated with the TDM Measures, affordable housing, and the local preference agreement would not result in the VMT reductions needed to be at 15% below the County's significance threshold of 11.56 daily home-based VMT per capita by resident, which is 15% below the daily county average VMT. Therefore, the proposed project's VMT impact would remain significant and unavoidable with mitigation. However, the project will implement all feasible VMT reduction strategies and will comply with all other CCAP GHG reduction strategies (i.e., no natural gas in residential buildings, providing EV chargers, actions encouraging the communities shift to active transportation [human-powered forms of transportation including walking, rolling, and biking]). Specifically, the Project supports the following CCAP policies:

- B-1.1 Reach Code Implementation
- B-1.6 Energy Efficiency in New Construction
- B-1.7 Industry and Workforce Development
- B-2.1 Natural Gas Phase Out
- T-1.1 EV Charging Requirements
- T-2.2 Affordable Housing Near Transportation
- T-2.3 Traffic Calming and Complete Streets
- T-2.4 Transportation Demand Management Ordinance
- T-2.6 Transportation Improvements to Reduce VMT
- T-2.6 Active Transportation Plan Implementation
- T-2.7 Regional Coordination to Increase Multimodal Travel
- T-2.8 Bicycle Parking and Amenities
- W-2.1 Organics Diversion

Implementation of **MM-TR-2** and **MM-TR-4b** would ensure that the project would comply with the County's local GHG reduction strategies, which meets the criteria under State CEQA Guidelines Section 15183.5(b). Therefore, operation-related GHG emissions would be less than significant.

Impact GHG-2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (Less than Significant)

The CCAP was approved and adopted as an element of the San Mateo County General Plan in 2022. The CCAP outlines actionable items that, if successfully implemented, would achieve a 45% reduction of GHG emissions over 1990 levels by 2030 and carbon neutrality by 2040.

Construction

Construction of the project would result in GHG emissions, which are primarily associated with the use of off-road construction equipment, on-road vendor trucks, and worker vehicles. The BAAQMD does not have current GHG significance thresholds, however construction emissions were calculated and amortized over a 30-year project lifetime. The California Emissions Estimator Model (CalEEMod) was used to calculate the annual GHG emissions based on the construction scenario described. Construction of the project is anticipated to last a total of approximately 18 months. On-site sources of GHG emissions include off-road equipment and off-site sources including vendor trucks and worker vehicles. Table 3.5-3 presents construction emissions for the project from on-site and off-site emission sources.

Table 3.5-3. Estimated Annual Construction GHG Emissions

Construction Years	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
2024	80.20	0.01	0.008	82.99
2025	913.13	0.08	0.077	938.69
2026	278.74	0.02	0.012	282.96
Total				**1,304.64**
Amortized construction emissions				**43.5**

Source: SWCA[150] provided in Appendix C.

As shown in Table 3.5-3, the estimated total GHG emissions during construction would be approximately 1,305 $MTCO_2e$ over the construction period. Estimated project-generated construction emissions amortized over 30 years would be approximately 43.5 $MTCO_2e$ per year. As with project-generated construction criteria air pollutant emissions, GHG emissions generated during construction of the project would only occur when construction is active, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions.

Operations

Operation of the project would generate GHG emissions through motor vehicle trips to and from the project site, landscape maintenance equipment operation, energy use, solid waste disposal, and generation of electricity associated with water supply, treatment, distribution, and wastewater treatment. CalEEMod was used to calculate the annual GHG emissions based on the operational assumptions for the project.

The estimated operational project-generated GHG emissions from area sources, energy usage, motor vehicles, off-road and stationary sources, solid waste generation, water usage, and wastewater generation are shown in Table 3.5-4.

[150] SWCA, 2023.

Table 3.5-4. Estimated Annual Operational GHG Emissions

Construction Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Mobile	911.53	0.03	0.03	922.44
Area	1.79	0.0002	0.00002	1.80
Energy	32.59	0.005	0.0006	32.91
Water	2.36	0.08	0.002	5.06
Waste	4.88	0.49	0	17.07
Refrigeration	0	0	0	0.08
Total	953.15	0.61	0.03	979.36
Amortized construction emissions				**43.5**
Total operational + amortized construction GHGs				**1,022.87**

Source: CalEEMod. SWCA,[151] provided in Appendix C.
Note: These emissions reflect operational year 2027.

As shown in Table 3.5-4, estimated, annual project-generated GHG emissions would be approximately 979 MT CO_2e per year as a result of project operations only. After summing the amortized project construction emissions, total GHGs generated by the project would be approximately 1,023 MT CO_2e per year, which represents a less-than-significant impact.

The project is an affordable housing project which includes GHG reduction strategies described in **Chapter 2, Project Description**. The following strategies related to GHG reduction include installation of rooftop solar panels, EV charging spaces, and water-efficient appliances. There are no natural gas appliances or connections proposed as part of the project. Therefore, the project would not conflict with the policies, regulations, or guidelines in the General Plan, CCAP, Bay Area Clean Air Plan, or any other applicable plans and/or regulations adopted for the purposes of reducing GHG emissions. Furthermore, GHG emissions from the project would not generate substantial GHG emissions during construction or operation. Therefore, the project's operations would not conflict with approved or adopted GHG emissions plans and impacts would be considered less than significant.

Impact GHG-3: Result in the loss of forestland or conversion of forestland to non-forest use, such that it would release significant amounts of GHG emissions, or significantly reduce GHG sequestering? (Less than Significant)

The CalEEMod provides annual above- and below-ground biomass carbon accumulations for different land cover types and the air basin. The project is located in the San Francisco Air Basin and project activities would include the removal of approximately 295 trees, including 190 trees designated as Significant Trees in the County Code. The trees proposed to be removed during construction are categorized as conifer trees, which CalEEMod equates to 4.42 metric tons of carbon per acre per year that would be accumulated above- and below-ground.[152] While the project proposes the removal of approximately 295 trees, the Significant Tree Ordinance requires replanting for significant trees removed during construction. For the proposed project, replacement of trees removed shall be in a manner and quantity prescribed by the Community Development Director. The project would plant approximately 195 replacement trees throughout the project site. The Applicant would work with the Community

[151] SWCA, 2023.
[152] California Air Pollution Control Officers Association. 2022. CalEEMod Appendix G Tab 42. Available at: https://www.caleemod.com/user-guide. Accessed June 2023.

Development Director to develop a tree replacement plan that includes approval of the quantity and location of proposed tree replacements and a maintenance plan for replacement trees. Tree replacement is consistent with Director's expectation and site conditions. As required by the Significant Tree Ordinance, the maintenance plan would be required for between 2 and 5 years, as determined by the Community Development Director. With the implementation of replanting and maintenance for removed significant trees, operation of the project would not conflict with the Significant Tree Ordinance and impacts related to GHG sequestration would be less than significant.[153] See Section 3.3, Biological Resources, for a discussion of tree removal activities.

Impact GHG-4: Expose new or existing structures and/or infrastructure (e.g., leach fields) to accelerated coastal cliff/bluff erosion due to rising sea levels? (Less than Significant)

The project site is in an area where the cliff stability level is designated as high.[154] The site is approximately 95 feet above sea level and located approximately 750 feet east of the coastline. The significant setback and cliff stability designation would result in a less-than-significant impact regarding cliff or bluff erosion due to rising sea levels.

Impact GHG-5: Expose people or structures to a significant risk of loss, injury or death involving sea level rise? (Less than Significant)

The project proposes development of a residential housing development and would introduce approximately 213 residents to the project site. While the project would introduce new residents to the area, as noted in Impact GHG-4, the project site is adequately set back, and the cliff stability is designated as high. The impact is less than significant.

Impact GHG-6: Place structures within an anticipated 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, or that would impede or redirect flood flows? (No Impact)

Most of the project site is located outside a Federal Emergency Management Agency flood hazard zone. A small portion of the site along the northern boundary lies within the flood hazard Zone X associated with Montara Creek. However, the water surface elevation in Montara Creek is approximately 100 feet below the portion of the site planned for development. Although flood frequency and intensity could increase under future climate change conditions, given the topography, it is unlikely that the proposed project would impede anticipated 100-year flood flows during the potentially more frequent and severe flood events. No proposed structures would be located within the current 100-year flood hazard area, and while there is uncertainty regarding how future flooding may impact Montara Creek, the clustering of the proposed housing would likely ensure that if flood waters rise to meet the project site, there would be an adequate setback resulting in further avoidance of anticipated flood hazards.

Impact GHG-7: Place within an anticipated 100-year flood hazard area structures that would impede or redirect flood flows? (No Impact)

As stated in Impact GHG-6, most of the project site is located outside a Federal Emergency Management Agency flood hazard zone. A small portion of the site along the northern boundary lies within the flood

[153] San Mateo County. 2016. *Significant Tree Ordinance of San Mateo County.* Available at: https://www.smcgov.org/planning/tree-regulations. Accessed May 5, 2023

[154] San Mateo County. 1986. *Attachment J. Natural Hazards.* Available at: https://www.smcgov.org/media/127161/download?inline=. Accessed June 2023.

hazard Zone X associated with Montara Creek. However, the water surface elevation in Montara Creek is approximately 100 feet below the portion of the site planned for development. Although the flood frequency would increase, given the topography, it is unlikely that the proposed project would impede 100-year flood flows during more frequent and severe flood events. As noted in Impact GHG-6, no proposed structures would be located within anticipated flood hazard areas.

3.5.6 Cumulative Impacts

Impact C-GHG-1: Would the impacts of the proposed project, in combination with other past, present, and reasonably foreseeable future projects, contribute to a cumulative impact related to greenhouse gas emissions? (Less than Significant)

The analysis of a project's GHG emissions is inherently a cumulative impacts analysis because climate change is a global problem and the emissions from any single project alone would be negligible. Accordingly, the analysis above considers the potential for the project to contribute to the cumulative impact of a global climate change. Table 3.5-3 shows the estimated annual project-generated GHG emissions as a result of project construction and Table 3.5-4 shows the estimated, annual project-generated GHG emissions anticipated during operations. Given that the project would not conflict with any applicable reduction plans and policies and given that GHG emission impacts are cumulative in nature, the project's incremental contribution to cumulatively significant GHG emissions would be less than significant.

3.6 HAZARDS AND HAZARDOUS MATERIALS

This section describes existing hazards and hazardous material use in the project vicinity, identifies regulatory requirements, and assesses potential project-related impacts from hazards and hazardous materials. The section includes an analysis of the project's compatibility with environmental hazards and hazardous materials regulations. The County of San Mateo's (County's) General Plan, Local Coastal Program (LCP), Zoning Regulations, Half Moon Bay Airport Land Use Compatibility Plan (ALUCP), and contaminated site databases were reviewed for consistency with the project. Numerous evaluations of hazards and hazardous materials on the project site have been prepared, and were reviewed as part of the analysis, including the following reports:

- *Phase I Environmental Site Assessment Report, Carlos Street at Sierra Street, Moss Beach, San Mateo County, California 92038*, completed by AEI Consultants (AEI) on November 10, 2015 (Appendix H).[155]
- *Limited Phase II Subsurface Investigation, Carlos Street at Sierra Street, Moss Beach, San Mateo County, California 92038*, completed by AEI on February 15, 2016 (Appendix I).[156]
- *Draft Site Management Plan, Carlos Street at Sierra Street, Moss Beach, San Mateo County, California 92038*, completed by AEI on March 2, 2016 (Appendix J).[157]
- *Additional Subsurface Investigation and Water Well Evaluation, Carlos Street at Sierra Street, Moss Beach, San Mateo County, California 92038*, completed by AEI on February 20, 2018 (Appendix K).[158]
- *Water Well Sampling and Well Destruction, Project Number 350428, Cypress Point Development, Carlos Street at Sierra Street, Moss Beach, San Mateo County, California 92038*, completed by AEI on April 9, 2018 (Appendix L).[159]
- Environmental Site Investigation Responses to Comments.[160] Completed by AEI Consultants, August 11, 2020 (Appendix M).[161]
- *Wildfire and Evacuation Route Assessment for the Cypress Point Affordable Housing Community Project, Moss Beach, San Mateo County, California*, completed by SWCA Environmental Consultants (SWCA) in July 2023 (Appendix N).[162]

Project effects related to hazards and hazardous materials were compared against County and state regulations for consistency.

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[155] AEI Consultants. 2015. *Phase I Environmental Site Assessment Report, Carlos Street at Sierra Street, Moss Beach, San Mateo County, California 92038*. San Jose, California: AEI Consultants.

[156] AEI Consultants. 2016a. *Limited Phase II Subsurface Investigation, Carlos Street at Sierra Street, Moss Beach, San Mateo County, California 92038.* San Jose, California: AEI Consultants.

[157] AEI Consultants. 2016b. *Draft Site Management Plan, Carlos Street at Sierra Street, Moss Beach, San Mateo County, California 92038.* San Jose, California: AEI Consultants.

[158] AEI Consultants. 2018a. *Additional Subsurface Investigation and Water Well Evaluation, Carlos Street at Sierra Street, Moss Beach, San Mateo County, California 92038*. San Jose, California: AEI Consultants.

[159] AEI Consultants. 2018b. *Water Well Sampling and Well Destruction, Project Number 350428, Cypress Point Development, Carlos Street at Sierra Street, Moss Beach, San Mateo County, California 92038*. San Jose, California: AEI Consultants.

[160] Response to comments refers to a letter received from SWAPE during the Local Coastal Plan (LCP) amendment process. The SWAPE letter provides comments on several documents prepared by AEI relating to environmental due diligence and testing of the project site, including the February 20, 2018, *Additional Subsurface Investigation & Water Well Evaluation* report. The "Response to Comments" includes AEI's response to SWAPE and is included in the record.

[161] AEI Consultants. 2020. *Reponses to Comments*. San Jose, California: AEI Consultants.

[162] SWCA Environmental Consultants. 2023. *Wildfire and Evacuation Route Assessment for the Cypress Point Affordable Housing Community Project*. Half Moon Bay, California: SWCA Environmental Consultants.

3.6.1 Existing Conditions

In 1945, the project site was developed by the U.S. Navy as the Point Montara Artillery Training Station as a military training site, which included construction of barracks, offices, a mess hall, a library, a garage, a boiler room, an incinerator, a hanger, and a drill field. After World War II, the military abandoned the site and it was acquired by the Montara Elementary School District for the Farallone View Elementary School. Between 1968 and 1970, a fire destroyed the on-site buildings, leaving numerous slab-on-grade concrete foundations and retaining walls. The parcel has remained vacant since 1970.

3.6.1.1 Schools

The closest school to the project site is Farallone View Elementary School at 1100 Le Conte Avenue, Montara, California 94037, approximately 0.7 mile north of the project site in the community of Montara.

3.6.1.2 Airports

Airports in San Mateo County include San Francisco International Airport, Half Moon Bay Airport, and San Carlos Airport. The Half Moon Bay Airport is a public airport owned and operated by the County and located approximately 0.9 mile south of the project site.[163] The airport is subject to the ALUCP, as adopted by the City/County Association of Governments (C/CAG) in 2014.[164]

3.6.1.3 Hazardous Materials

Given the site's history, extensive site investigations have been completed. A description of each study and the findings are summarized below.

3.6.1.3.1 HAZARDOUS MATERIALS DATABASES

As of May 22, 2023, the project site is not listed on the State Water Resources Control Board (SWRCB) Geotracker[165] database, or the California Department of Toxic Substances Control (DTSC) Envirostor[166] database. These database reviews indicate that the proposed project is not located on a known hazardous materials site.

3.6.1.3.2 SITE INVESTIGATIONS

Phase I Environmental Site Assessment – November 10, 2015

A Phase I environmental site assessment (Phase I ESA)[167] found recognized environmental conditions (RECs) on-site which included the potential presence of lead-based paint in soils surrounding the building foundations, the "drill field," which may have been used for weaponry or as a shooting range, concrete pad areas potentially used for firefighter training, and an incinerator. In addition, during the planning

[163] County of San Mateo. 2023. Half Moon Bay Airport. Available at: https://www.smcgov.org/publicworks/half-moon-bay-airport. Accessed January 20, 2023
[164] City/County Association of Governments of San Mateo County (C/CAG), 2014. *Airport Land Use Compatibility Plan for the Environs of Half Moon Bay Airport*. Available at: https://ccag.ca.gov/wp-content/uploads/2014/10/HAF-ALUCP-Final.pdf. Accessed January 20, 2023.
[165] SWRCB. 2023. Geotracker database. Available at: https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=moss+beach%2C+ca. Accessed May 22, 2023.
[166] DTSC. 2023. Envirostor database. Available at: https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=moss+beach%2C+ca. Accessed May 22, 2023.
[167] AEI, 2015.

stages of the limited Phase II subsurface investigation,[168] a boiler room was noted and identified as a REC to be further investigated.

Draft Site Management Plan – March 2, 2015

The draft site management plan (SMP) was developed to address worker protection and environmental concerns during construction activities at the site. The SMP provides information regarding site-specific conditions and previous investigation results, a summary of known and potential environmental conditions and contaminants of potential concern, provisions for a site-specific health and safety plan (HASP), as well as odor, stormwater, and noise control plans for worker protection, guidelines for sampling and managing impacted or potential-impacted soils that may be encountered (contingency plan), notification(s) to appropriate regulatory agencies, and documentation of environmental conditions encountered during project construction activities.

Limited Phase II Subsurface Investigation – February 15, 2016

A limited Phase II subsurface investigation (Phase II investigation) was completed in February 2016.[169] The purpose of the investigation was to assess whether subsurface conditions (i.e., soil) beneath the property have been impacted by the historical on-site operations. Thirty-three borings were taken from across the project site. Concentrations of the various chemical constituents in soil were compared with their respective Regional Water Quality Control Board (RWQCB) environmental screening levels (ESLs) and U.S. Environmental Protection Agency (EPA) regional screening levels (RSLs) for regulatory screening levels. None of the detected chemicals were found to exceed their respective RWQCB ESLs and EPA RSLs except for lead detected within surface soils at two locations and arsenic detected at 1.5 feet below ground surface (bgs) at one location.

Additional laboratory analyses were run on soil samples obtained from 1.5 feet bgs to assess the vertical extent of lead-impacted soils at these two locations. Analytical results for the soil samples at 1.5 feet bgs showed lead concentrations below RWQCB and EPA screening levels.

Arsenic was detected at one location, but the detection is representative of naturally occurring asbestos and the concentration was typical for this type of soil found within the San Francisco Bay Area.

Analytical results from the Phase II investigation suggest that lead detected in soils could have originated from lead-based paint on former building exteriors. Analytical results also suggest that lead concentrations, where elevated, are localized and appear to be restricted to surface soils at the two identified locations. The vertical extent of lead-impacted soils at these two locations has been delineated on the basis of the lead concentrations not exceeding their RWQCB ESLs. The horizontal extent of lead-impacted soils at these two locations is undefined.

AEI recommended that a limited soil sampling program be performed to further assess the horizontal extent of lead-impacted surface soils around the two identified locations. AEI also recommended that the steel cover for the "upper well" be removed an experienced water well driller under subcontract to AEI to measure the well depth, as well as to determine if the well has been properly abandoned in accordance with the County's Environmental Health Services (EHS) regulations.

[168] AEI. 2016a.
[169] AEI. 2016a.

Additional Subsurface Investigation and Water Well Evaluation – February 20, 2018

An additional subsurface investigation and water well evaluation report was prepared based on the conclusions and recommendations presented in AEI's Phase II investigation report dated February 15, 2016 (described above). The purpose of the investigation was to assess the horizontal extent of lead-impacted soils around that exceeded RWQCB ESLs (Borings B-7 and B-21). Work included a limited drilling/confirmation sampling program and further inspection and evaluation of the existing water supply well for future abandonment purposes. The well was found to have not been properly abandoned in accordance with EHS regulations.

To determine the extent of the lead-impacted soil, six shallow borings were drilled during this investigation. The borings were positioned around two locations (Borings B-7 and B-21) where lead concentrations had been found to exceed applicable RWQCB ESLs during the previous investigation. Results showed concentrations of lead that were below applicable RWQCB ESLs except for one of the six locations. Because of this outlier, a statistical analysis was performed to establish a representative site-wide background concentration for lead, as well as to evaluate its potential human health risk in shallow soils. The calculated 95% adjusted gamma upper confidence limits for lead in shallow soils is 42.04 milligrams per kilogram, which is below its applicable RWQCB ESLs for both residential and construction worker scenarios. The investigation concluded that the lead concentrations in shallow soils across the site do not pose a significant potential human health risk relative to the planned development.

While no known environmental conditions have been identified, as a precautionary measure, it is recommended that the mitigations from the SMP prepared in 2015 be implemented to provide a framework for appropriately addressing potential environmental conditions, such as underground storage tanks (USTs) or other subsurface structures, that may be encountered during future development activities. Upon completion of the well evaluation, AEI did not recommend further investigation and no remedial action was required. AEI recommended that the existing well be properly destroyed in accordance with EHS regulations.

Water Well Sampling and Well Destruction – April 9, 2018

In 1986, two domestic water supply wells were installed on the project site and the permits were granted to the California School Employee Association.[170] Both wells were abandoned at an undetermined date. One well near the northern property boundary was discovered in 2015 during the Phase II investigation for the project. The second well was not found during site reconnaissance.

In 2018, AEI undertook water well sample and well destruction at the project site. A drilling permit was issued on February 9, 2018, from EHS for the well destruction. Utility clearance was completed on February 21, 2018. No underground utilities were found to be present around the existing well.

During well destruction activities, an old submersible pump blocked further drilling at approximately 350 feet bgs. The pump was likely left in place from when the well was installed in 1986. Because of this blockage, EHS was contacted for further direction, and approved destruction of the well at 350 feet bgs, instead of 400 feet. The well was cleared of debris, demolished, and sealed with cement at 350 feet bgs on March 7, 2018, in accordance with EHS requirements.[171] Further details of the well destruction can be found in the water well sampling and well destruction report.[172]

[170] AEI, 2015.
[171] AEI, 2018b.
[172] AEI, 2018b.

Groundwater sampling was performed prior to well destruction. The depth of the groundwater was approximately 54 feet below the top of the well casing. Elevated concentrations of petroleum hydrocarbons like diesel and motor oil were encountered, in addition to volatile organic compounds (VOCs). The concentrations of diesel and motor oil were attributed to the older submersible pump that had been left in the well for approximately 30 years. Submersible pumps are known to have seals, bearings, and oil-filled capacitors that contain petroleum-based greases, oil, and lubricants, all of which can leak and fail over time.

None of the detected VOCs were found to exceed their applicable RWQCB ESLs except for naphthalene, which was found at a concentration (1.9 micrograms per liter) slightly above its RWQCB ESL for direct exposure human health risk levels, including maximum contaminant level priority and human health risk based only levels.

Confirmation of well destruction and the well completion report were confirmed by EHS on June 11, 2018, via email. A copy of the confirmation email is included as Appendix F to the well destruction report.[173]

Response to Comments (Received during the 2020 LCP Amendment process) – August 11, 2020

AEI prepared a response to comments document upon receipt of a public comment letter from SWAPE (an environmental consulting firm) during the LCP Amendment process. The SWAPE letter outlined concerns in the February 20, 2018, *Additional Subsurface Investigation and Water Well Evaluation Carlos Street at Sierra Street, Moss Beach, San Mateo County, California 92038* (detailed above). The related to two concerns included: 1) the appropriate use of statistical analyses of lead test results, and 2) the relevance of the referenced terrestrial habitat ESL for lead published after issuance of the water well evaluation site analysis.[174]

With regards to statistical analysis, the response to comments letter reads:

> In accordance with the 'User's Guide: Derivation and Application of Environmental Screening Levels, Interim Final 2019' prepared by the San Francisco Bay RWQCB, the 95-percent upper confidence limit was used to estimate the exposure point concentration (EPC). It is appropriate to statistically estimate the EPC, and not use only the maximum-detected concentrations, since the site will be developed with multiple scattered buildings …that would be surrounded by landscaping and hardscape constituting the common area spaces around the buildings, which limits exposure to site soils. These units do not have private yards or gardens, nor are the units to be constructed on individual smaller lots or parcels as would occur for single family homes, condominium, or town-home developments. Therefore, in considering the theoretical exposure to soil by a given future resident, such exposure would be across the larger development, not concentrated in an individual smaller yard area where exposure to a localized "hot spot" would constitute a large fraction of the soil exposure. The project will not create an exceedance of the human health ESL for lead and further mitigation is not necessary.[175]

With regard to the terrestrial habit ESL, the response to comments letter reads:

> The Terrestrial Habit ESL for lead in soil was first published in the … ESLs issued in July 2019, after the issuance of the" Additional Subsurface Investigation & Water Well Evaluation."

[173] AEI, 2018b.
[174] AEI, 2020.
[175] AEI, 2020.

The RWQCB continues to provide guidance on how this Terrestrial Habitat ESL should be used. As outlined in Sec 8.0 of the ESL guidance document, it should be noted that the Terrestrial Habitat ESLs are not applicable to aquatic habitats (e.g., wetlands; ephemeral, intermittent or perennial streams; rivers and mudflats; ponds or lakes; vernal pools; marine intertidal areas). Following development, much of the soils will be improved with buildings and hardscape (Parking, walkways, etc.), including much of the area with the higher lead detections; essentially eliminating the exposure pathway in these areas. The project does include landscaped areas developed with typical imported topsoil, and landscaping. There will be minimal habitat for terrestrial animals or flora, and where there is habitat, site soils will be below imported topsoil, further limiting contact. The project does not create substantial habitat using soils of the site, therefore additional analysis or mitigation is not necessary.[176]

3.6.1.4 Emergency Access

Vehicular ingress/egress to the project site would be provided by a new 28-foot-wide single driveway on Carlos Street on the western boundary of the site, which exceeds the 20-foot road width requirement in the California Fire Code, Section 503.[177] In addition to the Carlos Street entrance, a 20-foot-wide emergency access route from Lincoln Street to the northeast corner of the project would be constructed.

Major roadways near the project site include Highway 1 and California Street. The project site can be accessed from the surrounding roadway network, including Carlos Street, Sierra Street, and Lincoln Street, located to the west, south, and east of the site, respectively. Emergency access onto the project site would be provided via Cabrillo Highway to Carlos Street, and via Lincoln Street.

3.6.1.5 Emergency Evacuation and Response

Evacuation routes are not specifically identified in San Mateo County. The County General Plan[178] states that "the County does not actively promote the preparation of disaster response plans for major fires that specify evacuation routes, identify areas that may be isolated, and define reconstruction policies." The General Plan also notes that evacuation of residents from remote areas could be problematic due to rural roads potentially being incapable of accommodating two-way traffic during an emergency and lack of secondary means of access to many remote parcels.[179] The County does have an Emergency Operations Plan (EOP)[180] (see further discussion under Section 3.6.2, Regulatory Setting), which establishes policies and procedures and assigns responsibilities to ensure the effective management of emergency operations within San Mateo County.

3.6.1.6 Wildland Fires

The project site is not located within a California Department of Forestry and Fire Protection (CAL FIRE)–designated very high, high, or moderate fire hazard severity zone (FHSZ).[181]

[176] AEI, 2020.
[177] SWCA, 2023.
[178] County of San Mateo. 2021. *County of San Mateo General Plan*. Available at: https://www.smcgov.org/planning/general-plan-policies. Accessed March 2023.
[179] County of San Mateo. 2021.
[180] San Mateo County Sheriff's Office. 2015. Emergency Operations Plan. Available at: https://hsd.smcsheriff.com/sites/default/files/downloadables/1%20-%20Emergency%20Operations%20Plan.pdf. Accessed April 2023.
[181] County of San Mateo. 2007. Very High Fire Hazard Severity Zones. Available at: https://www.smcgov.org/media/73036/download?inline=. Accessed June 2023.

The Coastside Fire Protection District (Coastside FPD) would provide fire protection services and emergency response on the project site. The Coastside FPD serves the City of Half Moon Bay; the communities of Montara, Moss Beach, Princeton, El Granada, and Miramar; and the surrounding unincorporated areas. Its service area covers approximately 50 square miles and serves a population of approximately 30,000 residents. In addition to traditional fire services, the Coastside FPD provides advanced life support, cliff rescue, water rescue, confined space rescue, and vehicle and residential lock-out services, responding to approximately 2,600 calls each year. These incidents include medical aid, fires and fire alarms, water rescue, cliff rescue, traffic accidents, odor investigations, hazardous materials, and public service assists.

Three fire stations operate within the Coastside FPD: Fire Station 44, located on Stetson Street in Moss Beach 1 block (approximately 300 feet) from the project site; Fire Station 40, located within the downtown area of the City of Half Moon Bay; and Fire Station 41, located within the unincorporated area of El Granada. Fire Station 40 serves as the Coastside FPD headquarters. Fire Station 44 (Moss Beach) would provide initial fire and emergency medical service response to the project site, and Fire Stations 41 (El Granada) and 40 (Half Moon Bay) would support the initial response, if needed.

Coastside FPD's response time goal is within 6 minutes 59 seconds of receiving a call. In an email to SWCA on May 11, 2023, the Coastside FPD Chief confirmed that response times are currently met throughout the service area.[182] The proximity of Fire Station 44 to the project site indicates that response times would meet the established goal.

The Coastside FPD has 32 paid positions, along with 11 volunteer firefighter positions. Paid positions include one assistant fire chief, one fire marshal, one deputy fire marshal, four battalion chiefs, and two administrative support positions. All stations are staffed with one fire captain and two fire apparatus engineers, one of which is a paramedic to provide advanced life support service. Shift personnel work a scheduled 3-day/72-hour workweek.

The Half Moon Bay Volunteer Fire Department (Volunteer Fire Department) is a volunteer division of the Coastside FPD. The Volunteer Fire Department has approximately 15 members and is under the direction of the fire chief. The number of volunteers reflects the current needs of the Volunteer Fire Department and is determined by the chief of the volunteer division. The objectives of the Volunteer Fire Department are to operate within the boundaries of the Coastside FPD as a supplemental force to the regular paid department, and to operate as a trained unit for both fire suppression and non-suppression situations.

3.6.1.7 Flood Hazards

Most of the project site is located outside a Federal Emergency Management Agency (FEMA) flood hazard zone. A small portion of the site along the northern boundary lies within the flood hazard Zone X associated with Montara Creek. However, the water surface elevation in Montara Creek is approximately 100 feet below the portion of the site planned for development.

[182] Personal communication between Coastside Fire Department Chief and Erica Rippe, dated May 11, 2023.

3.6.2 Regulatory Setting

3.6.2.1 Federal Regulations

3.6.2.1.1 NATIONAL FLOOD INSURANCE PROGRAM

FEMA is responsible for determining flood elevations and floodplain boundaries based on U.S. Army Corps of Engineers studies. FEMA is also responsible for distributing the flood insurance rate maps used in the National Flood Insurance Program (Title 42 United States Code [USC] Chapter 50, Section 4102). These maps identify the locations of special flood hazard areas, including 100-year floodplains. FEMA allows non-residential development in the floodplain; however, FEMA has criteria to "constrict the development of land which is exposed to flood damage where appropriate" and "guide the development of proposed construction away from locations which are threatened by flood hazards." Federal regulations governing development in a floodplain are set forth in 44 Code of Federal Regulations (CFR) 60, enabling FEMA to require municipalities that participate in the National Flood Insurance Program to adopt certain flood hazard reduction standards for construction and development in 100-year floodplains.

3.6.2.1.2 COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT (42 USC SECTION 9601 ET SEQ.)

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is intended to protect the public and the environment from the effects of past hazardous waste disposal activities and new hazardous material spills. Under CERCLA, the EPA has the authority to identify the parties responsible for hazardous materials releases and to ensure their cooperation in site remediation. CERCLA also provides federal funding (through the "Superfund") for the remediation of hazardous materials contamination. The Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499) amends some provisions of CERCLA and provides for a Community Right-to-Know program.

3.6.2.1.3 RESOURCE CONSERVATION AND RECOVERY ACT (42 USC SECTION 6901 ET SEQ.)

The Resource Conservation and Recovery Act (RCRA) was enacted in 1976 as an amendment to the Solid Waste Disposal Act to address the nationwide generation of municipal and industrial solid waste. RCRA gives EPA the authority to control the generation, transportation, treatment, storage, and disposal of hazardous waste, including underground storage tanks storing hazardous substances. RCRA also establishes a framework for the management of nonhazardous wastes. RCRA addresses only active and future facilities; it does not address abandoned or historical sites, which are covered by CERCLA (as described above).

3.6.2.1.4 OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

The Occupational Safety and Health Act created the Occupational Safety and Health Administration (OSHA) to ensure safe and healthful conditions for workers by setting and enforcing standards and by providing training, outreach, education, and assistance. To fulfill this purpose, OSHA develops and enforces mandatory job safety and health standards. These standards, codified in 29 CFR 1910, address issues that range in scope from walking and working surfaces, to exit routes and emergency planning, to hazardous materials and personal protective equipment (PPE). They include exposure limits for a wide range of specific hazardous materials, including pesticides, as well as requirements that employers provide PPE (i.e., protective equipment for eyes, face, or extremities; protective clothing, and respiratory

devices) to their employees wherever it is necessary (i.e., when required by the label instructions) (29 CFR 1910.132).

3.6.2.2 State Regulations

3.6.2.2.1 CALIFORNIA DEPARTMENT OF WATER RESOURCES

The California Department of Water Resources (DWR) is the state agency that studies, constructs, and operates regional-scale flood protection systems, in partnership with federal and local agencies. DWR also provides technical, financial, and emergency response assistance to local agencies related to flooding.

Several bills were signed by Governor Schwarzenegger in 2007, adding to and amending state flood and land use management laws. The laws contain requirements and considerations that outline a comprehensive approach to improving flood management at the state and local levels.

FloodSAFE California is a strategic multifaceted program initiated by DWR in 2006. FloodSAFE guides the development of regional flood management plans, which encourage regional cooperation in identifying and addressing flood hazards. Regional flood plans include flood hazard identification, risk analyses, review of existing measures, and identification of potential projects and funding strategies. The plans emphasize multiple objectives, system resiliency, and compatibility with state goals and integrated regional water management plans. DWR has the lead role to implement FloodSAFE and will work closely with state, federal, Tribal, and local partners to help improve integrated flood management systems statewide. DWR's role is to advise and assist local jurisdictions as they pursue compliance.

3.6.2.2.2 HAZARDOUS WASTE CONTROL ACT OF 1972

The Hazardous Waste Control Act created the Hazardous Waste Management Program and is implemented by regulations contained in Title 26 of the California Code of Regulations (CCR). These regulations list more than 800 materials that may be hazardous and establish criteria for their identification, packaging, and disposal. Under the Hazardous Waste Control Act and 26 CCR, hazardous waste generators must complete a manifest that accompanies the waste from the generator to the transporter to the ultimate disposal location. Copies of the manifest must be filed with DTSC.

3.6.2.2.3 CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION STANDARDS

Title 8 of the California Occupational Safety and Health Administration (Cal/OSHA) regulations specifies that workers who may be exposed to contaminated soils, vapors that could be inhaled, or groundwater containing hazardous levels of constituents are subject to monitoring and personal safety equipment requirements that specifically address airborne contaminants. The primary intent of the Title 8 requirements is to protect worker health.

3.6.2.2.4 EMERGENCY SERVICES ACT

Under the Emergency Services Act, the State of California developed a plan to coordinate emergency services provided by federal, state, and local agencies. Rapid response to incidents involving hazardous materials or hazardous waste is an important part of the plan, which is administered by the California Office of Emergency Services. This office coordinates the responses of other agencies, including EPA, the California Highway Patrol, the nine RWQCBs, the various air quality management districts, and County disaster response offices.

3.6.2.2.5 PESTICIDE REGULATIONS

EPA has delegated primary authority to the California Department of Pesticide Regulation (CDPR) to enforce federal and state laws pertaining to the proper and safe use of pesticides. County Agricultural Commissioners (CACs) and their staffs are largely responsible for the in-field enforcement of CDPR's pesticide use regulations in California's 58 counties. Personnel from CDPR's headquarters and CDPR field staff provide training, coordination, technical, and legal support to the counties.

Title 3 CCR, Division 6 describes the role of CDPR and provides guidance related to pesticide regulatory programs; pesticides (including pesticide registration and the identification and use of restricted materials); licensing, work requirements, and pesticide-related worker safety during pest control operations; and environmental protection for groundwater, air quality, aquatic and marine environments, surface water, and compost. The CACs, on behalf of CDPR, are responsible for enforcement of these human health and environmental protections in the field.

3.6.2.3 Local Regulations

3.6.2.3.1 AIRPORT LAND USE COMPATIBILITY PLANS

Airport land use compatibility plans generally are designed to encourage compatible land uses in the vicinity surrounding an airport by providing for the "orderly growth of each public airport and the area surrounding the airport" while safeguarding "the welfare of the inhabitants within the vicinity of the airport and the public in general."[183] Airport land use compatibility plans describe existing and planned uses in the vicinities of airports, and define noise exposure contours for land uses near airports. Airport land use compatibility plans also typically provide a figure showing the boundaries of Federal Aviation Administration structure height requirements to protect navigable airspace. Airport land use compatibility plans have been prepared for the three airports located in San Mateo County, as follows:

- *Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport*[184]
- *Final Airport Land Use Compatibility Plan for the Environs of Half Moon Bay Airport*[185]
- *Draft Final Comprehensive Airport Land Use Compatibility Plan for the Environs of San Carlos Airport*[186]

3.6.2.3.2 SAN MATEO COUNTY LOCAL HAZARD MITIGATION PLAN

Beginning in February 2021, a partnership of 36 local governments and special districts in San Mateo County began working together to update the San Mateo County Multijurisdictional Local Hazard Mitigation Plan (LHMP).[187] The LHMP enables the jurisdictions to use pre- and post-disaster financial assistance to reduce the risk of natural hazards to people who live in the county.

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[183] C/CAG. 2015. *Final Comprehensive Airport Land Use Compatibility Plan for the Environs of San Carlos Airport.* Available at: https://ccag.ca.gov/plansreportslibrary-2/airport-land-use/. Accessed April 20, 2023.

[184] C/CAG. 2012. *Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport.* Available at: https://ccag.ca.gov/wp-content/uploads/2014/10/Consolidated_CCAG_ALUCP_November-20121.pdf. Accessed April 20, 2023.

[185] C/CAG, 2014.

[186] C/CAG, 2015.

[187] County of San Mateo. 2021. 2021 *Multijurisdictional Local Hazard Mitigation Plan*. Available at: https://www.smcgov.org/media/53471/download?inline=. Accessed May 2023

The LHMP identifies long-term and short-term policies, programs, projects, and other activities to alleviate death, injury, and property damage that can result from a disaster. The types of hazards identified and described throughout the LHMP include earthquakes, dam failure, drought, wildfire, flooding, landslide, tsunami, and climate change. This plan complies with requirements for hazard mitigation planning to maintain eligibility for funding under FEMA grant programs. The LHMP also serves other purposes including enhancement of public awareness, establishes a decision tool for management, promotes compliance with state and federal program requirements, enhances local policies for hazard mitigation, supports viability after a hazard event, and provides inter-jurisdictional coordination.[188]

3.6.2.3.3 SAN MATEO COUNTY EMERGENCY OPERATIONS PLAN

The EOP establishes policies and procedures and assigns responsibilities to ensure the effective management of emergency operations within the San Mateo County Operational Area. [189] It provides information on the county emergency management structure of how and when the Emergency Operations Center staff is activated.

The overall objective of the EOP is to ensure the effective coordination of response forces and resources in preparing for and responding to situations associated with natural disasters, technological incidents and national security emergencies. To carry out its responsibilities, the emergency management organization will accomplish the following objectives during an emergency/disaster:

- Maintain overall coordination/support of emergency response and recovery operations, including on scene incident management as required.
- Coordinate and liaise with appropriate federal, state, and other local government agencies, as well as applicable segments of private sector entities and volunteer agencies. Establish priorities and resolve conflicting demands for support.
- Prepare and disseminate emergency public information to alert, warn, and inform the public.
- Disseminate damage information and other essential data.

The EOP's goals are as follows:

- Provide effective life safety measures and reduce property loss and damage to the environment.
- Provide for the rapid resumption of impacted businesses and community services.
- Provide accurate documentation and records required for cost recovery efforts.

3.6.2.3.4 SAN MATEO COUNTY LOCAL COASTAL PROGRAM

The LCP provides policies regarding development and project design standards in the coastal zone of San Mateo County.[190] This includes hazards such as high-risk fire areas and geologic and flood hazards, noted below:

[188] County of San Mateo, 2021.

[189] San Mateo County Sheriff's Office, 2015.

[190] County of San Mateo. 2013. Local Coastal Program. Available at: https://www.smcgov.org/planning/local-coastal-program. Accessed May 20, 2023

9.9 Regulation of Development in Floodplains

a. Channelization, dams, or other stream alterations shall incorporate the best mitigation measures feasible and be limited to: (1) necessary water supply projects, (2) flood control projects where no other methods for protecting existing development or providing public safety exists, or (3) developments to enhance fish and wildlife habitat.

b. Development located within flood hazard areas shall employ the standards, limitations and controls contained in Chapter 35.5 of the San Mateo County Ordinance Code, Sections 8131, 8132 and 8133 of Chapter 2 and Section 8309 of Chapter 4, Division VII (Building Regulations), and applicable Subdivision Regulations.

9.10 Geological Investigation of Building Sites

Require the County Geologist or an independent consulting certified engineering geologist to review all building and grading permits in designated hazardous areas for evaluation of potential geotechnical problems and to review and approve all required investigations for adequacy. As appropriate and where not already specifically required, require site-specific geotechnical investigations to determine mitigation measures for the remedy of such hazards as may exist for structures of human occupancy and/or employment other than those considered accessory to agriculture as defined in Policy 5.6.

"Hazards areas" and "hazards" are defined as those geotechnical hazards shown on the current Geotechnical Hazards Synthesis Maps of the General Plan and the LCP Hazards Maps. A copy of the report of all geologic investigations required by the California Division of Mines and Geology shall be forwarded to that agency

3.6.2.3.5 CONNECT THE COASTSIDE

Connect the Coastside is the San Mateo County Midcoast Comprehensive Transportation Management Plan.[191] Connect the Coastside aims to improve the safety and mobility for Midcoast residents, businesses, and visitors by recommending a suite of projects, policies, and programs to address current and future transportation conditions. The Midcoast area faces challenges in realizing community goals and vision for transportation. Climate change has accelerated sea level rise, coastal erosion, and the number and severity of emergencies like wildfires.

The following is an overview of different County departments and special projects related to emergency response and hazard mitigation planning:

- In the event of a disaster, the Department of Emergency Management coordinates countywide response and protection services. One of the missions of the Department of Emergency Management is to maintain and improve the countywide EOP. This plan establishes policies and procedures and assigns responsibilities to keep residents safe during an emergency situation.
- During an emergency or disaster, law enforcement is responsible for evacuation and the movement of the public away from a hazard area. Representatives from law enforcement and public safety agencies were part of the Connect the Coastside Technical Advisory Committee that reviewed and helped refine the plan proposals.
- In the event of an emergency, public safety agencies such as police and fire will be able to provide emergency information directly to people who have registered for the SMC Alert service.

[191] (San Mateo County. 2022. *Connect the Coastside*. Available at: https://www.smcgov.org/planning/connect-coastside. Accessed June 2023.

These alerts may include life safety, fire, weather, accidents involving utilities or roadways or disaster notifications. For example, the SMC Alert service would be used to notify Coastside employees and citizens of available evacuation routes during an emergency.

- In March of 2019, Supervisor Don Horsley allocated $75,000 of discretionary Measure K funds to launch the development of a countywide standardized emergency evacuation zone project (Zonehaven). The goals of the project are to reduce the amount of time it takes to notify the public, create a common operating evacuation platform for all jurisdictions, share information, and help people safely and efficiently evacuate in case of an emergency. Since the project began, the CAL FIRE San Mateo Division has worked with every fire and law enforcement agency in San Mateo County to identify over 300 evacuation zones. The project includes a public webpage that shows a map of each evacuation zone and a software application that helps first responders call for evacuations using the standard zones. This will greatly reduce the time from when an evacuation is called to when the public is notified. Additionally, the application integrates with Waze and Google Maps, so as soon as a zone is closed, people will be directed accordingly. Zonehaven was used to create an Evacuation Zone Map for the CZU Lightning Complex Fire in August 2020. The platform is available at https://community.zonehaven.com/.
- The County updated its LHMP and will update the Safety Element of the General Plan. The County will be working with emergency service providers such as CAL FIRE, the Department of Emergency Management, and the new Flood and Sea Level Rise Resiliency District. These efforts will further evaluate hazard risks and identify safety measures on the Midcoast.

3.6.2.3.6 SAN MATEO COUNTY GENERAL PLAN

The following policies relate to hazards from the San Mateo County General Plan[192]:

Chapter 7 (General Land Use Policies) of the General Plan has the following policies to minimize the risks from natural and human made hazards:

7.6 Natural and Man-Made Hazards. Designate land uses in order to minimize the danger of natural and man-made hazards to life and property.

Chapter 8 (Urban Land Use Policies) of the General Plan has policies to minimize the risks from natural and human made hazards:

8.32 Overcoming Constraints to Development.

a. Encourage efficient and effective infrastructure (e.g., water supply, wastewater, roads) necessary to serve the level of development allowable within urban areas.

b. Encourage improvements which minimize the dangers of natural and manmade hazards to human safety and property.

Chapter 15 (Natural Hazards) of the General Plan has the following policies to minimize risk from natural hazards. The following policies are relevant to the proposed project:

15.1 Minimizing Risks from Natural Hazards. Minimize the potential risks resulting from natural hazards, including but not limited to, loss of life, injury, damage to property, litigation, high service and maintenance costs, and other social and economic dislocations.

[192] San Mateo County. 2021a. County of San Mateo General Plan: Updated January 2013. Chapter revisions 2021. Available at: https://www.smcgov.org/planning/general-plan-policies. Accessed March 2023.

15.3 Incorporate Information on Natural Hazards into Land Use and Development Decisions. Integrate data on natural hazards into review of land use and development proposals in order to identify hazardous areas, potential constraints to development and/or appropriate mitigation measures.

15.12 Locating New Development in Areas Which Contain Natural Hazards.

a. As precisely as possible, determine the areas of the County where development should be avoided or where additional precautions should be undertaken during review of development proposals due to the presence of natural hazards.

b. Give preference to land uses that minimize the number of people exposed to hazards in these areas.

c. Determine appropriate densities and development.

d. Require detailed analysis of hazard risk and design of appropriate mitigation when development is proposed in these areas, including assessment of hazardous conditions expected to be exacerbated by climate change, such as increased risks of fire, flooding, and sea level rise.

15.13 Abatement of Natural Hazards.

a. Inventory and, where feasible, abate, repair, or rehabilitate natural hazard conditions which most directly threaten public health, safety, and property, giving priority to those hazards which directly threaten critical facilities, life and property.

b. Where feasible, provide for adaptive reuse rather than demolition of existing facilities.

15.14 Disclosure of Natural Hazards. Make efforts to inform the public, including potential buyers of property, that a parcel is located in an area of possible natural hazards. Methods to be used include but are not limited to provision of access to County data, preapplication conferences, environmental review, deed restrictions, requirements for site-specific investigations, educational programs, or other appropriate mechanisms.

15.27 Appropriate Land Uses and Densities in Fire Hazard Areas.

a. In rural areas, consider lower density land uses that minimize the exposure of significant numbers of people to fire hazards.

b. Consider higher density land uses for fire hazard areas in the rural area if development is clustered near major roads, has adequate access for fire protection vehicles and can demonstrate adequate water supplies and fire flow.

c. In urban areas, consider higher density land uses to be appropriate if development can be served by CDF/County Fire Department, a fire protection district or a city fire department, adequate access for fire protection vehicles is available and sufficient water supply and fire flow can be guaranteed.

15.28 Review Criteria for Locating Development in Fire Hazard Areas

a. Wherever possible, cluster new development near existing developed areas where there are adequate water supplies and good access for fire vehicles.

b. When development is proposed in hazardous fire areas, require that it be reviewed by the County Fire Warden to ensure that building materials, access, vegetative clearance from structures, fire flows and water supplies are adequate for fire protection purposes and in conformance to the fire policies of the General Plan.

15.30 Standards for Water Supply and Fire Flow for New Development

a. Require connection to a public water system or private water company or provision of an on-site water supply as a condition of approval for any new development proposal.

b. Determine the quantity of on-site water supply, fire flow requirements and spacing and installation of hydrants in accordance with the standards of the agency responsible for fire protection for the site proposed for development.

c. Consider the use of additional on-site fire protection devices including but not limited to the use of residential sprinkler systems and contracting the services of private alarm companies for development proposed in remote areas.

15.31 Standards for Road Access for Fire Protection Vehicles to Serve New Development

a. Consider the adequacy of access for fire protection vehicles during review of any new development proposal.

b. Determine the adequacy of access through evaluation of length of dead-end roads, turning radius for fire vehicles, turnout requirements, road widths and shoulders and other road improvement considerations for conformance with the standards of the agency responsible for fire protection for the site proposed for development.

c. To the maximum extent possible, design access for fire protection vehicles in a manner which will not result in unacceptable impacts on visual, recreational and other valuable resources.

15.32 Street Signing. Support efforts to identify all roads, streets and major public buildings in a manner so that they are clearly visible to fire protection and other emergency vehicles.

15.33 Road Patterns

a. Ensure road patterns that facilitate access for fire protection vehicles and provide secondary access and emergency evacuation routes when reviewing proposals for new subdivisions.

b. Encourage the Department of Public Works to study existing road patterns that have access problems to determine the feasibility and costs of access improvements.

c. Encourage fire protection agencies to identify emergency access and evacuation routes for existing developed areas and to provide this information to area residents.

15.34 Vegetative Clearance Around Structures.

a. Require clearance of flammable vegetation around structures as a condition of approval to new development in accordance with the requirements of the agency responsible for fire protection.

b. Conduct periodic inspections to ensure maintenance of required clearances.

15.35 Fire-Retardant Vegetation. Encourage the use of fire-retardant vegetation when reviewing new development proposals.

15.39 Support Structural Requirements of the County Building Codes. Support the standards for fire resistant construction contained in the County Uniform Construction Administration Code, including but not limited to requirements for fire resistant roofing, ventilation, windows, chimneys, fire walls and other construction materials.

15.40 Support Efforts to Inventory and Abate Structures that are Fire Hazard Risks.

a. Support efforts to inventory and abate structures that do not meet existing fire codes and/or are vulnerable to damage from disastrous fire events.

b. Encourage repair, rehabilitation, or adaptive reuse of structures requiring abatement, rather than demolition.

15.41 Incorporate Fire Hazard Concerns During Review of Proposals for New Development. Incorporate fire hazard concerns into the review of proposals for new development through measures, including but not limited to: (1) regulation of land use and limitation of density, (2) review of access, water supply and hydrant location, (3) conformance to defined hazardous areas design criteria, and (4) conformance with established building code requirements.

Chapter 16 (Man-Made Hazards) of the General Plan has the following policies to minimize risk from human made hazards. The following policies are relevant to the proposed project:

16.47 Strive to Protect Life, Property, and the Environment from Hazardous Material Exposure. Strive to protect public health and safety, environmental quality, and property from the adverse effects of hazardous materials through adequate and responsible management practices.

16.48 Strive to Ensure Responsible Hazardous Waste Management. Strive to ensure that hazardous waste generated within San Mateo County is stored, treated, transported and disposed of in a legal and environmentally safe manner so as to prevent human health hazard and/or ecological disruption.

16.49 Strive to Reduce Public Exposure to Hazardous Materials. Strive to reduce public exposure to hazardous materials through programs which: (1) promote safe transportation, (2) prevent accidental discharge, and (3) promote effective incident response, utilizing extensive inventory and monitoring techniques.

16.50 Reduce Public Exposure to Hazardous Waste. Strive to reduce public exposure to hazardous waste through programs which: (1) emphasize decreased generation of hazardous waste, (2) promote increased disposal capability for small generators of hazardous waste, including households and small businesses, (3) promote safe transportation of hazardous waste, (4) promote treatment and processing techniques as alternatives to landfill disposal of hazardous waste, and (5) prevent illegal disposal of hazardous waste.

16.53 Regulate Location of Hazardous Material Uses: Regulate the location of uses involving the manufacture, storage, transportation, use, treatment, and disposal of hazardous Hazards and Hazardous materials to ensure community compatibility. Provide adequate siting, design, and operating standards.

16.55 Encourage Adoption and Enforcement of Fire Code Hazardous Material Storage Permit Provisions. Encourage fire protection agencies serving the unincorporated area to adopt and enforce existing Uniform Fire Code provisions which authorize fire agency issuance of hazardous material storage permits so as to: (1) assure proper hazardous material storage, (2) prevent accidental discharge or spill, and (3) provide necessary inventory information beneficial to timely and efficient incident response and containment. Assure that relevant hazardous material inventory information is referred to the County and made available to the public.

16.68 Strive Toward Safe Building Construction. Strive toward safe building construction and full elimination of hazardous conditions.

16.69 Definition of Hazardous Structure. Define hazardous structure as a building or structure which is structurally unsafe, without adequate egress, a fire hazard or otherwise dangerous to human life by reason of improper construction, inadequate maintenance, dilapidation, obsolescence or abandonment, as specified in the San Mateo County Uniform Construction Code.

16.70 Regulate Building Construction. Regulate building construction practices to prevent hazardous structures and assure structural safety. Measures may include required conformance to an accepted set of construction standards, and authority to inspect suspected dangerous buildings, halt improper construction activities, and eliminate hazardous conditions.

3.6.2.3.7 SAN MATEO COUNTY ENVIRONMENTAL HEALTH SERVICES

EHS ensures a safe and healthy environment in San Mateo County through education, regulation, and monitoring. Services include but are not limited to hazardous waste management, restaurant inspections, housing inspections, medical waste disposal, water protection, water quality monitoring, and pollution prevention.

The following programs are under EHS[193]:

- The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) was established in 1993 and EHS was designated the Certified Unified Program Agency for San Mateo County in 1996. The Unified Program aims to protect public health and safety, restore and enhance environmental quality, and sustain economic vitality for the region. Compliance with the Unified Program is achieved through routine inspections and investigations into complaints or inquiries regarding disposal of hazardous materials.
- The Household Hazardous Waste (HHW) Program helps residents dispose of or recycle their residential hazardous waste properly at no cost. HHW is accepted at designated collection facilities and EHS events. Collected waste is either reused, recycled, processed for energy recovery, or stabilized for proper disposal to avoid HHW in landfills.

3.6.3 Thresholds of Significance

The determinations of significance of project impacts are based on applicable policies, regulations, goals, and guidelines defined by the California Environmental Quality Act (CEQA) and the County. Specifically, the project would be considered to have a significant effect on hazards and hazardous materials if the effects exceed the significance criteria described below:

1. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
2. Would the project 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?
3. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
4. Would the project 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?

[193] San Mateo County Health. 2023. Certified Unified Program Agency (CUPA). Available at: https://www.smchealth.org/hazardous-materials-cupa. Accessed June 2023.

5. Would a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project vicinity?
6. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
7. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?
8. Place housing within an existing 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
9. Place within an existing 100-year flood hazard area structures that would impede or redirect flood flows?
10. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? Or
11. Inundation by seiche, tsunami, or mudflow?

Each of these thresholds is discussed under Section 3.6.5, Impacts and Mitigation Measures.

The Initial Study checklist topic 2.9 Hazards and Hazardous Materials topics (c) and (e) are considered less than significant and are not addressed within this environmental impact report (EIR). See Appendix B for the Initial Study.

3.6.4 Impact Assessment and Methodology

The analysis also considers existing regulations that apply to building design and construction, including the California Building Code. Through compliance with the existing codes and ordinances, the project would be required to demonstrate compatibility with the hazardous materials handling, use and transport before issuing building permits.

3.6.5 Impacts and Mitigation Measures

Impact HAZ-1: Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (Less than Significant with Mitigation)

A significant impact may occur if a project would involve the use or disposal of hazardous materials as part of its routine operations or would have the potential to generate toxic or otherwise hazardous emissions that could adversely affect sensitive receptors.

Construction of the project would involve the transport, use, and disposal of potentially hazardous materials. These materials include lime, paints, adhesives, surface coatings, cleaning agents, fuels, and oils. As described in Chapter 2, Project Description, construction activities would be temporary and last approximately 18 months. These temporary construction activities involving the use, transport, storage, and disposal of hazardous materials would be conducted in compliance with all health and safety requirements, such as General Plan policies, OSHA regulations and California Health and Safety Code Article 1, and CCR Title 19, Public Safety, Division 2 (if required). Transporter information and disposal location(s) for soils have not yet been finalized. The names and applicable license information of such operators would be provided to EHS once confirmed.

Given the site history, numerous site investigations were completed to understand which hazardous materials (including pesticides, herbicides, other toxic substances, and radioactive materials) could be present on the project site in soils and/or groundwater. AEI completed studies in November 2015, February 2016, February 2018, April 2018, and August 2020. These studies are detailed in Section 3.6.1.3.2, Site Investigations, above.

Proposed project activities do not include off-haul of lead-impacted soils nor surplus soils from construction activities. While the project does not require the use of hazardous materials beyond those commonly used for construction activities and is not located in proximity to sensitive receptors or resources, the applicant would comply with applicable regulations and laws pertaining to the transport, storage, use, and disposal of potentially hazardous materials. Additionally, site testing did not encounter unsafe levels of lead in the soil; however, there is a chance that additional contaminated soil may be discovered during construction activities. The SMP recommends the following mitigation measures—including **MM-HAZ-1a** and **MM-HAZ-1e**—to ensure that the hazardous materials impact related to transport, use, and disposal would be less than significant with the following mitigation incorporated.

HAZ-1a Preconstruction Planning and Notification

Prior to the start of construction activity involving below-groundwork (e.g., slab removal or excavating), a copy of the SMP shall be provided by the applicant to all contractors for review.

HAZ-1b Implement Site-Specific Health and Safety Worker Requirements

Prior to the start of construction, a HASP shall be prepared by the General Contractor. The General Contractor and any subcontractors shall be responsible for the health and safety of their own workers, as required by Cal-OSHA, including but not limited to preparation of their own HASP and Injury and Illness Prevention Plan (IIPP). The HASP(s) shall contain provisions for limiting and monitoring chemical exposure to construction workers, chemical and non-chemical hazards, emergency procedures, and standard safety protocols.

The General Contractor shall submit the HASP to San Mateo County Environmental Health Services (EHS) at least 2 weeks prior to beginning construction field work. HASPs shall be updated as the project proceeds if unforeseen conditions are identified and necessitate modifications.

HAZ-1c Construction Best Management Practices

The following best management practices shall be implemented during construction.

1. Site Control: Site control procedures shall be implemented by the General Contractor to control the flow of personnel, vehicles, and materials in and out of the site while working with potentially contaminated materials. To control the spread of the contaminants of potential concern, the following controls shall be taken by the General Contractor:
    a. The site perimeter shall be fenced by the General Contractor.
    b. Access and egress shall be controlled at selected locations.
    c. Signs shall be posted at each entrance by the General Contractor, instructing visitors to sign in at the project support area.
2. Equipment Decontamination: Decontamination procedures shall be established and implemented by the General Contractor to reduce the potential for construction equipment and vehicles to transfer potentially impacted soil onto public roadways or other off-site areas. Gravel shall be placed at all site access points by the General Contractor and excess soil shall be removed from

construction equipment using dry methods (e.g., brushing or scraping) prior to moving equipment off-site.

3. Personal Protective Equipment: PPE shall be used to isolate workers from the contaminant of potential concern and physical hazards. The minimum level of protection for workers coming into direct contact with potentially contaminated materials is OSHA Level D PPE, listed below.

   The level of PPE shall be evaluated by the General Contractor on a continuing basis and modified, based upon conditions encountered at the site. The minimum PPE to be utilized during construction activities shall include the following:

   - Coveralls or similar construction work clothing;
   - Reflective safety vests;
   - Steel-toed boots;
   - Hard hat;
   - Work gloves, as necessary;
   - Safety glasses, as necessary; and
   - Hearing protection, as necessary.

HAZ-1d Dust Control Measures

All demolition and construction activities that have the potential to create dust shall comply with specified dust control measures. The following actions are required by the General Contractor to adequately address dust control:

- Construction areas shall be watered down at a sufficient frequency to eliminate visible dust. Additional watering may be required whenever the wind speed exceeds 15 miles per hour. Watering shall be performed in a manner such that runoff will not be produced at any time.
- At the end of each workday, all streets, sidewalks, paths, and intersections where work has occurred shall be swept or vacuumed to remove visible soil(s).
- All inactive soil piles expected to remain in-place for more than 7 days shall be covered with plastic sheeting or an equivalent tarp and properly secured to avoid wind damage.
- Signage shall be placed along Lincoln, Sierra, Carlos, and Stetson Streets to inform surrounding community members of the hotline phone number(s) to call and report visible dust problems.
- If proposed dust suppression efforts are unsuccessful, other measures shall be implemented to help control dust, such as wind breaks and/or dust curtains along street frontages, pending final resolution of necessary dust suppression efforts.
- Materials contained in all loading trucks or metal bins carrying excavated materials shall be maintained below the sides and back of the truck or metal bin and shall be properly covered to avoid dust generation and drying of soils during transport. Excavated materials may be moistened prior to transport.
- Drop heights shall be minimized while loading and unloading soil.
- Truck tires shall be brushed prior to leaving the site, and truck loading areas will be routinely swept and cleaned to avoid creating visible dust. Soil handling activities shall be halted when the wind speed exceeds 25 miles per hour and visible dust is being created that cannot be mitigated by soil moistening.

HAZ-1e Retain a Hazardous Materials Specialist

1. Prior to the start of construction activities, a Hazardous Materials Specialist shall be retained for consultation on the following:

   - Soil sampling analysis shall occur prior to any construction that would result in excavation within impacted soil areas near the community room and building 12, or residential buildings 15 and 16. Inspection may use a portable, x-ray fluorescence analyzer to field screen work area(s) during construction. Work area soils also may be monitored based upon visual observations.
   - Soil sampling analysis shall occur if previously unidentified features of concern are encountered. These include USTs, sumps, clarifiers, former water supply wells or similar features of potential environmental concern.

   If any of the above-listed material is found to contain lead, such materials shall be disposed of in accordance with applicable federal, state, and local regulations regarding worker safety and the safe removal and disposal of lead-impacted soil.

2. Excavation Dewatering

   During construction, if groundwater is encountered or accumulates in any excavation(s) due to rainwater, the Hazardous Materials Specialist shall be notified, and such water shall be handled in accordance with the following protocols:

   - For relatively small volumes of water, a temporary storage tank (frac tank) shall be utilized to hold such groundwater on a short-term basis while testing and disposal is arranged.
   - If conditions require installation of a dewatering system or larger volume of groundwater requires handling, proper RWQCB permits shall be obtained. Required permit conditions shall be followed for discharge into the nearby existing sanitary sewer or stormwater system.

3. Soil Monitoring and Screening

   During construction, the Hazardous Materials Specialist shall be notified by the General Contractor of the discovery of the below conditions and shall be on-site during the duration of construction activities to perform screening and possible sample collection:

   - Discovery and removal of previously unidentified features of concern, such as USTs, sumps, clarifiers, former water supply wells or similar features of potential environmental concern.
   - Areas of suspected contaminated soils as deemed appropriate by the Hazardous Materials Specialist or as reported by the General Contractor.

   The General Contractor is responsible for notification to the applicant of suspected impacted soils or possible conditions of environmental concern. If a UST or other features are discovered, work shall be suspended in its immediate vicinity, and the applicant and Hazardous Materials Specialist will be notified. EHS will be notified of the proposed response actions. Should a UST be encountered, it shall be addressed under permit with the County.

4. Contaminated Soils Excavation Practices

   During construction activities if soil is encountered that is suspected of being contaminated, earthwork in these suspect area(s) shall be stopped and worker access to the suspect area(s) shall be restricted. Areas shall be cordoned off, followed by notifying the Hazardous Materials Specialist. Soils suspected as being contaminated shall be evaluated through screening and/or analytical testing performed by a qualified professional tant so that appropriate handling and

disposal alternatives can be determined. Site development activities may result in a net export of soil. Such soil shall be properly characterized by a Hazardous Materials Specialist in accordance with applicable regulations prior to transportation from the site.

If on-site reuse of potentially contaminated soil is desired, soil samples shall be collected from such soil by the Hazardous Materials Specialist and analyzed by the Hazardous Materials Specialist for the contaminant of potential concern. If the contaminant is detected, whether above or below regulatory agency screening levels, further investigation of such soils may be performed by the Hazardous Materials Specialist. For soils considered for reuse, if the contaminant(s) is detected below the applicable ESL, reuse of the soil may be deemed appropriate, at the discretion of the applicant. If the contaminant is detected above the applicable ESL and soils are being considered for reuse on-site, the results and conditions shall be communicated to EHS for concurrence.

If soils are proposed to be hauled off-site, any impacted soils shall be profiled for proper disposal at landfill facilities under appropriate waste manifests. Prior to off-site disposal, additional soil samples may be collected and analyzed in accordance with the requirements of disposal facility(s). Soil suspected of being contaminated during excavation, shall be stockpiled or otherwise segregated from "clean" soil. Such soil shall be stockpiled on-site on top of and covered by an "impermeable" liner (e.g., 6-mil plastic sheeting) or other appropriate materials to reduce infiltration by rainwater and contamination of underlying soil while its disposition is being determined. Any such stockpiles shall be checked daily by the General Contractor to verify that they are adequately covered.

5. Excavation of Surplus Soil

   During construction, if excavation of surplus soil is proposed, surplus soils generated during grading activities shall be profiled by the Hazardous Materials Specialist for acceptance at appropriate facilities. Criteria for acceptance (e.g., concentrations of specific contaminants, odors, additional analytical testing, etc.) shall be determined by the acceptance facility(s) as part of the acceptance process.

6. Imported Fill Best Practices

   During construction, an evaluation of import fill materials shall be conducted by the Hazardous Materials Specialist and General Contractor to ensure such fill meets the geotechnical and environmental requirements for the proposed project. All selected sources of import fill shall have adequate documentation or certification to verify that the fill source is appropriate for the site. Documentation shall include detailed information on previous land use of the fill source, any Phase I ESAs performed and findings, and the results of any analytical testing performed.

   If no documentation is available or the documentation is inadequate or if no analytical testing has been performed, samples of the potential fill material shall be collected and analyzed by the Hazardous Materials Specialist prior to delivery of such soil to the site. The Hazardous Materials Specialist shall provide guidance to the General Contractor regarding acceptability of imported fill. No fill material shall be accepted if contaminant levels exceed current residential environmental screening goals and/or regional background concentrations.

7. Notifications

   During construction, notifications of the discovery of the contaminants in field screening, observations, or analytical results or other conditions of potential environmental concern shall be immediately made to the applicant, General Contractor, and Hazardous Materials Specialist. If analytical testing shows that the contaminant is above its applicable screening level, the

applicant and the General Contractor shall be notified. The discovery of any subsurface features shall be reported to the Hazardous Materials Specialist, followed by notifying the County Environmental Health Services. If such discovery or conditions require notification to another General Contractor or subcontractors, then such notification shall be made by the General Contractor.

8. Documentation

   Upon completion of excavation and earthwork performed in accordance with the SMP, the Hazardous Materials Specialist shall prepare a report that includes a site map showing areas of excavation and import fill, sample locations, and tables summarizing data. The report shall include appendices with copies of permits, including any dewatering permits, manifests, or bills of lading for removed soil and/or groundwater, and laboratory reports for soil and water profiling not previously submitted. The certified final project report will be prepared for EHS and MidPen Housing Corporation.

After implementation of **MM-HAZ-1a** through **MM-HAZ-1e,** Impact HAZ-1 would be less than significant.

Impact HAZ-2: Would the project 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? (Less than Significant with Mitigation)

There is potential for accidental release of hazardous materials that could be transported, used, and disposed of during project demolition and construction.

Elevated lead concentrations were found in soil at two locations in the Phase II investigation. The first location (Boring B-7) is located between the community building and residential building 12 in the inside northwest corner of the internal access road. The second location (Boring B-21) is located between residential buildings 15 and 16, in the southeast inside corner of the internal access road.

During the water well evaluation, six additional borings were drilled around the B-7 and B-21 locations. Results showed concentrations of lead that were below applicable RWQCB ESLs except for one of the six locations. Because of this outlier, a statistical analysis was performed to establish a representative site-wide background concentration for lead, as well as to evaluate its potential human health risk in shallow soils. The results of the statistical analysis show that the calculated 95% adjusted gamma upper confidence level for lead in shallow soils is 42.04 milligrams per kilogram, which is below its applicable RWQCB ESLs for both residential and construction worker scenarios, it is concluded that the lead concentrations in shallow soils across the Site do not pose a significant potential human health risk relative to the planned development. Given that the levels of lead in the soil are below all thresholds, the impact would be considered less than significant.

Project activities would include grading where the elevated lead levels were found. Soils in these areas would be mixed and further homogenized while further reducing lead levels and potential human health risks associated with shallow soils. No soil off-haul is proposed.

An SMP was developed to provide a framework for appropriately addressing potential environmental conditions, such as USTs or subsurface structures that may be encountered during future development activities. The SMP will provide information regarding site-specific conditions and previous investigation results, a summary of known and potential environmental conditions and Contaminants of potential concern, provisions for a site-specific HASP, as well as odor, storm water, and noise control plans for worker protection, guidelines for sampling and managing impacted or potential-impacted soils that may

be encountered (contingency plan), notification(s) to appropriate regulatory agencies, and documentation of environmental conditions encountered during site development.

Groundwater sampling was performed prior to well destruction. The depth of the groundwater was approximately 54 feet below the top of the well casing. Elevated concentrations of petroleum hydrocarbons like diesel and motor oil were encountered, in addition to VOCs. The concentrations of diesel and motor oil were attributed to the older submersible pump that had been left in the well for approximately 30 years. Submersible pumps are known to have seals, bearings, and oil-filled capacitors that contain petroleum-based greases, oil and lubricants, all of which can leak and fail over time.

One well was destroyed as part of earlier site remediation efforts. Groundwater encountered in the well had elevated levels of VOCs and diesel and motor oil, which were attributed to the older submersible pump that had been left in the well for approximately 30 years. Submersible pumps are known to have seals, bearings, and oil-filled capacitors that contain petroleum-based greases, oil, and lubricants, all of which can leak and fail over time.

None of the detected VOCs were found to exceed their applicable RWQCB ESLs except for naphthalene, which was found at a concentration (1.9 micrograms per liter) slightly above its RWQCB ESLs for direct exposure human health risk levels, including maximum contaminant level priority and human health risk based only levels. Because the well has been sealed and no on-site groundwater would be used for site construction and operation, the impact is considered less than significant.

The proposed project involves development of 16 affordable housing buildings and a community room. Infrastructure including an access road, utilities, and stormwater infrastructure. Hazardous materials used and stored on the project site would be limited to small amounts used in medical supplies, cleaning supplies and in fuels and fluids for vehicles and equipment. The project would not involve the use of underground storage tanks or other large-scale use or storage of hazardous materials that could result in their inadvertent release into the environment.

Mitigation measures **MM-HAZ-1a** through **MM-HAZ-1e** are recommended to be consistent with SMP recommendations.

Therefore, the impact related to the release of hazardous materials into the environment would be less than significant after implementation of **MM-HAZ-1a** through **MM-HAZ-1e.**

Impact HAZ-3: Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (Less than Significant)

See Initial Study Section 9, Hazards and Hazardous Materials, for the project-specific and cumulative analysis related to this question.

Impact HAZ-4: Would the project 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? (No Impact)

California Government Code Section 65962.5 requires various state agencies to compile lists of hazardous waste disposal facilities, unauthorized release from underground storage tanks, contaminated drinking water wells, and solid waste facilities from which there is known migration of hazardous waste, and to submit such information to the Secretary for Environmental Protection on at least an annual basis. In meeting the provisions in California Government Code Section 65962.5, commonly referred to as the

"Cortese List," database resources such as the DTSC EnviroStor and SWRCB Geotracker databases provide information regarding identified facilities.

As of May 22, 2023, the project site is not listed on the SWRCB Geotracker[194] database or the DTSC Envirostor[195] database. These database reviews indicate that the proposed project is not located on a known hazardous materials site, and there is no impact.

Impact HAZ-5: Would a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? (Less than Significant)

See Initial Study Section 2.9, Hazards and Hazardous Materials, for the project-specific and cumulative analysis related to this question.

Impact HAZ-6: Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (Less than Significant Impact)

More information is provided in EIR Section 3.12, Wildfire, including a discussion of emergency response plans. The San Mateo County EOP establishes policies and procedures and assigns responsibilities to ensure the effective management of emergency operations within the San Mateo County Operational Area. [196] The plan provides information on the county emergency management structure of how and when the Emergency Operations Center staff is activated.

Additionally, current programs SMC Alert[197] and Coastside FPD's Community Connect[198] are initiatives used to contact residents during an urgent or emergency situation as well as provide relevant information about residences to aid emergency responders during incident response. Local plans, such as the LHMP and Connect the Coastside, further describe coordinated actions and recommendations to enhance emergency response; including identification of alternative evacuation routes and establishment as needed for wildfire and other hazards.

The project site is located within 300 feet from Fire Station 44, ensuring sufficient emergency response if necessary. The Coastside FPD's response time goal is to respond within 6 minutes 59 seconds of receiving a call. In an email on May 11, 2023, the District Chief confirmed that response times are currently met throughout the district.[199]

There is an extensive network of roads, both well-maintained dirt and major paved roads surrounding the project site. Main roads in this network include Highway 1, Carlos Street, Sierra Street, Stetson Street, Etheldore Street, California Avenue, and Airport Street. These roads can all support weight loads of fire apparatus and allow for site access from all directions. There are main arteries from the nearest communities and fire stations that provide direct emergency response services. The project site would improve access to the site and would not impair implementation or physically interfere with current

[194] SWRCB, 2023.
[195] DTSC, 2023.
[196] San Mateo County Sheriff's Office, 2015.
[197] County of San Mateo. 2023. SMC Alert. Available at: https://www.smcgov.org/ceo/smc-alert. Accessed June 2023.
[198] Community Connect. 2023. Coastside Fire Protection District. Available at: https://www.communityconnect.io/info/ca-coastside. Accessed June 2023.
[199] Personal communication between Coastside Fire Department Chief and Erica Rippe, dated May 11, 2023.

adopted plans, including the San Mateo County EOP. The impact would be considered less than significant.

Impact HAZ-7: Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? (Less than Significant Impact)

See EIR Section 3.12, Wildfire, for the project-specific and cumulative analysis related to this question.

Impact HAZ-8: Place housing within an existing 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? (No Impact)

Most of the project site is located outside a FEMA flood hazard zone. A small portion of the site along the northern boundary lies within the flood hazard Zone X associated with Montara Creek; however, this area is outside of the proposed building footprints and any proposed development improvements. The water surface elevation in Montara Creek is approximately 100 feet below the portion of the site planned for development. No housing would be within an existing 100-year flood hazard area.

Impact HAZ-9: Place within an existing 100-year flood hazard area structures that would impede or redirect flood flows? (No Impact)

As stated in Impact HAZ-8, most of the project site is located outside a FEMA flood hazard zone. A small portion of the site along the northern boundary lies within the flood hazard Zone X associated with Montara Creek. However, the water surface elevation in Montara Creek is approximately 100 feet below the portion of the site planned for development. No project structures would be located within an existing 100-year flood hazard area.

Impact HAZ-10: Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? (Less than Significant)

The topography within the project site is generally flat and gently slopes westward toward the Pacific Ocean. Elevations within the project site range from approximately 95 to 205 feet above mean sea level. As stated above in Impacts HAZ-8 and HAZ-9, most of the project site is located outside a FEMA flood hazard zone. A small portion of the site along the northern boundary lies within the flood hazard Zone X associated with Montara Creek. However, the water surface elevation in Montara Creek is approximately 100 feet below the portion of the site planned for development. There are no large reservoirs in the project vicinity so the project would not be in an area subject to dam failure. The impact related to loss injury or death involving flooding by levee or dam, failure would be less than significant.

Impact HAZ-11: Inundation by seiche, tsunami, or mudflow? (Less Than Significant)

The project site is not within a tsunami hazard area, as shown on Figure 3.7-3 in EIR Section 3.7, Hydrology and Water Quality.[200] The project site is located on a bluff at an elevation of between 95 feet amsl and 205 feet amsl. The bluffs and elevation in the project site protect development from damage by tsunamis. There are no large reservoirs in the project vicinity so the project would not be in an area subject to inundation hazards from seiche. The geology of the site is not susceptible to landslides or mudflow. Impacts related to these hazards and the risk of loss of life due to project inundation would be

[200] California Geological Survey. 2021. California Tsunami Hazard Area Maps and Data. Available at: https://www.conservation.ca.gov/cgs/tsunami/maps. Accessed March 22, 2023.

less than significant. The impact related to loss injury or death involving flooding by seiche, tsunami, or mudflow would be less than significant.

3.6.6 Cumulative Impacts

Impact C-HAZ-1: Would the impacts of the proposed project, in combination with other past, present, and reasonably foreseeable future projects, contribute to a cumulative impact related to hazards and hazardous materials? (Less than Significant Impact)

Certain hazards are largely site-specific, such as handling or transporting hazardous materials, and the magnitude of this risk would be dependent on the site-specific conditions present at each specific site. Regardless of the potential risk, each project would be required to implement handling and transportation mitigation based on existing laws and regulations. The project-specific handling and transporting of hazardous materials are not significantly adding to existing impacts from the routine use and transport of hazardous materials and would not have a cumulative significant impact on the environment. The project does not have any significant impacts relating to adopted emergency response/evacuation plans, flood hazards, or inundation. There would be no cumulative impacts relating to these hazards and the impact is not cumulatively considerable.

3.7 HYDROLOGY AND WATER QUALITY

This section provides the hydrologic setting and potential impacts on water quality from the construction and operation of the project. The analysis in this section is based on the following:

- Cypress Point Hydromodification Management Memorandum. BKF Engineers. May 2, 2018[201]
- Hydromodification Management (HM) Applicability Worksheet for Carlos and Sierra Street, Moss Beach. San Mateo Countywide Water Pollution Prevention Program. Revisions June 21, 2022.[202]
- Draft Site Management Plan, AEI Consultants. March 2, 2016[203] (Appendix J)

3.7.1 Existing Conditions

3.7.1.1 Climate

San Mateo County has a Mediterranean climate characterized by cool wet winters, with an average of 29.6 inches of rain per year, and relatively warmer dry summers with coastal fog. The temperature typically varies from *44 degrees Fahrenheit (°F*) to *66°F* and is rarely below *38°F* or above *75°F*.[204, 205]

3.7.1.2 Surface Water

The project site is located in San Mateo County, on a peninsula between the Pacific Ocean and San Francisco Bay in the San Francisco Bay Hydrologic Region. Its dominant feature is the San Francisco Bay Estuary, which covers 1,100 square miles and conveys the waters of the Sacramento and San Joaquin Rivers to the Pacific Ocean.[206] Water on the eastern side of the Santa Cruz Mountains drains to the San Francisco Bay, while water on the western side drains to the Pacific Ocean. The Pacific Ocean is located approximately 750 feet west of the project site.

The project site is located in the drainage area for the James V. Fitzgerald Area of Special Biological Significance (Fitzgerald ASBS). This drainage area extends from 4th Street in Montara to the north to the Pillar Point breakwater in the south and includes a 5.5-mile band of shoreline (Figure 3.7-1). The James V. Fitzgerald Marine Reserve is located within the boundary of the Fitzgerald ASBS and is a marine protected area. The watershed draining into the Fitzgerald ASBS is a 4.5-square-mile area of unincorporated communities consisting of Montara, Moss Beach, rural areas of Montara and Moss Beach along and north of San Vicente Creek, Seal Cove, and Pillar Point Bluff. Montara Creek is within the Fitzgerald ASBS watershed boundary.

[201] BKF Engineers. 2018. Cypress Point Hydromodification Management (HM) – Revision 2. Memorandum to MidPen Housing Corp. BKF Engineers.
[202] BKF Engineers. 2022. Hydromodification Management (HM) Applicability Worksheet for Carlos and Sierra Street, Moss Beach. Prepared for MP Moss Beach Associates, LP. BKF Engineers. June 21.
[203] AEI Consultants. 2016. Site Management Plan. AEI Project No. 350428. Prepared for MidPen Housing Corporation. AEI Consultants.
[204] Weatherspark.com. 2023. Average Weather Year Round in Moss Beach. Available at: https://weatherspark.com/y/536/Average-Weather-in-Moss-Beach-California-United-States-Year-Round. Accessed March 20, 2023.
[205] Dwellics. 2023. Climate in Moss Beach, California. Available at: https://dwellics.com/california/climate-in-moss-beach. Accessed March 20, 2023.
[206] San Francisco Bay Regional Water Quality Control Board. 2019. *Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin.* Available at: https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/planningtmdls/basinplan/web/docs/BP_all_chapters.pdf. Accessed March 22, 2023.

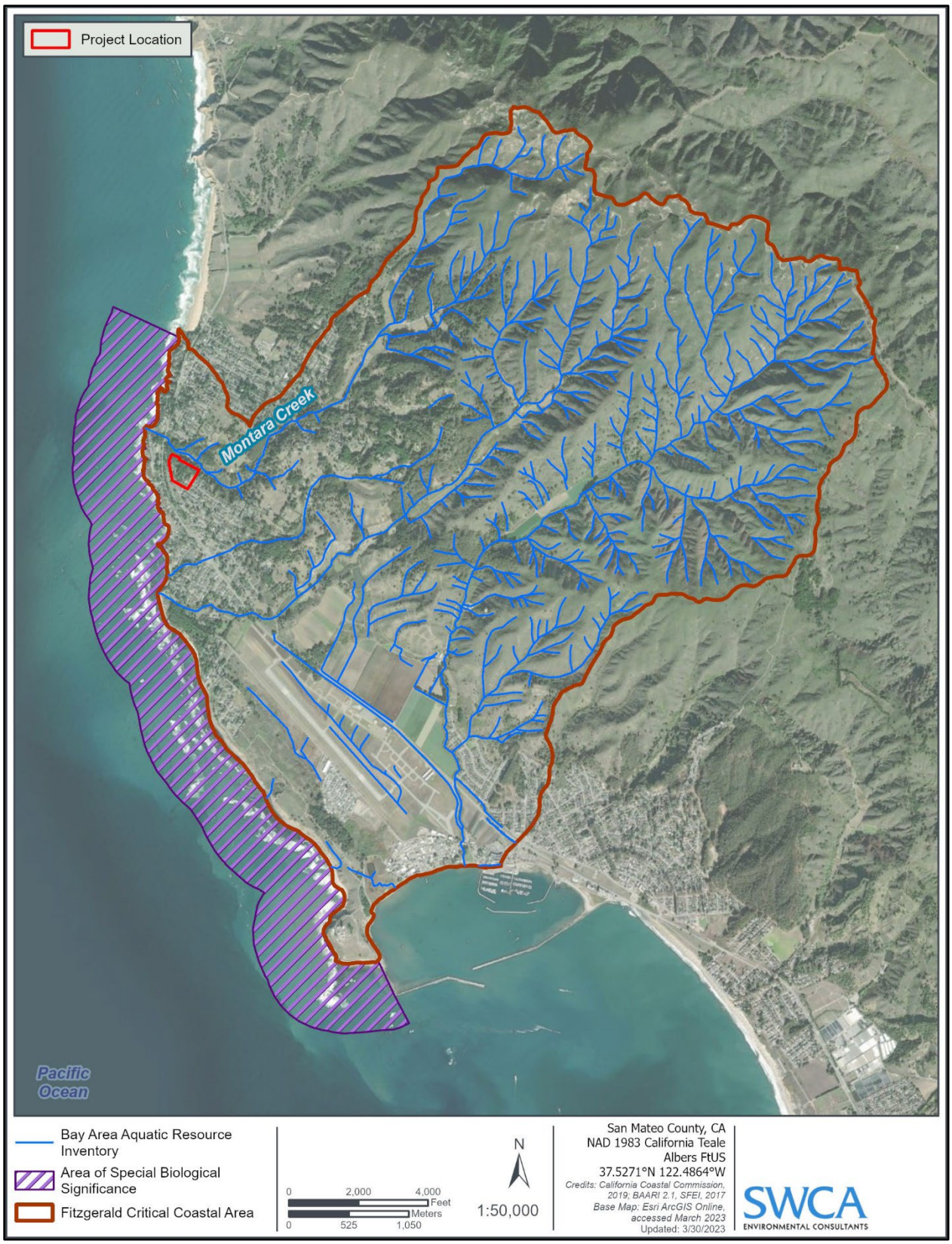


Figure 3.7-1. Fitzgerald Area of Special Biological Significance watershed.

3.7.1.3 Surface Water Quality

Existing sources of pollutants may include both point and nonpoint sources. Point sources, those discharging from discrete points, are subject to prohibitions by regulatory agencies, water quality requirements, periodic monitoring, annual reporting, and other requirements designed to protect the overall water quality. Nonpoint pollutant sources are sources that do not have a single, identifiable discharge point but are a combination of many sources. Rain carries pollutants and sediments from various parts of a watershed into surface water bodies such as storm drains, streams, rivers, reservoirs, and marshes during periods of wet weather.

Stormwater runoff from the project site drains from Montara Creek (see Figure 3.7-1) to the Fitzgerald ASBS approximately 0.85 mile north of the James V. Fitzgerald Marine Reserve. Montara Creek and San Vicente Creek are on the Clean Water Act (CWA) Section 303(d) list of impaired water bodies.[207] Stormwater runoff carries a variety of pollutants from vehicles, roadways, agriculture-related contaminants, and other urban pollutants. Montara Creek drains a mixed-use watershed and is periodically posted for high bacteria levels.

Urban runoff can contribute pollutants to Montara Creek, the Fitzgerald ASBS, and the Pacific Ocean. Pollutants of concern typically found in urban runoff include sediments, nutrients, pathogens, plant debris, animal wastes, petroleum hydrocarbons, heavy metals, toxic pollutants, litter, and yard wastes. Urban runoff includes sediment and other pollutants discharging from construction sites due to improper erosion control measures. Pesticide and herbicide application to landscaping and agriculture also contribute significantly to nutrient loading in surface waters. The *Water Quality Control Plan, San Francisco Bay Basin* (Basin Plan) has established beneficial uses for both surface water and groundwater in the basin.[208]

3.7.1.4 Site Drainage

The project site is located within hillside terrain along the northwest flank of the northwest-trending Santa Cruz Mountain Range within the Coast Ranges. Ground surface elevation within the project site ranges from approximately 95 feet along the northern edge of the site to about 205 feet along the eastern edge. The site slopes up gently to moderately to the east-northeast except for a north-facing slope along the northern boundary of the project site, which slopes moderately down to the north, and some localized flat areas near the center and eastern portions of the site. There are no water features on the project site. The steeply sloped wooded area approximately 250 feet to the north leads to a ravine containing Montara Creek, which flows west to the Pacific Ocean.

Stormwater runoff is assumed to percolate onsite and excess runoff flows northwest toward Carlos Street and 16th Street, ultimately discharging to Montara Creek. Besides the approximately 11-acre project site, an additional 1 acre of off-site runoff drains through the project site and contributes to the overall tributary drainage area.

3.7.1.5 Flooding and Tsunami

The majority of the project site is not in a Federal Emergency Management Agency (FEMA) flood hazard zone, as shown on Flood Insurance Rate Map 060311-0117. A small portion of the site along the northern boundary lies within the flood hazard Zone X associated with Montara Creek. Zone X identifies areas of

[207] State Water Resources Control Board. 2023. *Final Integrated Report (CWA Section 303(d) List/305(b) Report, Appendix D).* Available at: https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2018_integrated_report.html. Accessed March 22, 2023.
[208] San Francisco Bay Regional Water Quality Control Board, 2019.

0.2% annual flood hazard (once every 500 years) or areas of 1% annual flood hazard (once every 100 years) with average depths of less than 1 foot or with drainage areas less than 1 square mile (Figure 3.7-2).

The project site is not located in a tsunami hazard area (Figure 3.7-3).[209] The project site is located on a bluff at an elevation between 95 feet above mean sea level (amsl) and 205 feet amsl. The bluffs and elevation in the project site protect the development from damage by tsunamis.

3.7.1.6 Groundwater

As discussed further in Section 3.7.2.2, the California State Legislature approved a groundwater management law in 2015 known as the Sustainable Groundwater Management Act (SGMA), to be overseen and managed by the California Department of Water Resources (DWR). There are nine groundwater basins with boundaries—either partial or whole—within San Mateo County (Figure 3.7-4).[210]

The project site is located in the Half Moon Bay Terrace Groundwater Basin, which has a surface area of 14 square miles.[211] It is primarily within the Upper Moss Beach groundwater subbasin, although a small portion of the site encroaches into the Lower Montara Creek subbasin.[212] The Half Moon Bay Terrace Groundwater Basin is currently designated as a very low-priority basin.

For areas of higher elevation within the Half Moon Bay Terrace Groundwater Basin, direct precipitation is largely responsible for groundwater recharge, whereas for the lower elevation areas most recharge occurs locally from streams. Local recharge within the Upper Moss Beach groundwater subbasin is provided mainly by storms. According to studies, enhancing recharge from rainfall would benefit groundwater supplies in this subbasin. Lower Montara Creek is incised to bedrock, thereby limiting aquifer recharge from this reach of the stream.[213, 214] There are no municipal groundwater wells in the vicinity of the project site.[215]According to a report prepared by DWR, groundwater in the northern part of the Half Moon Bay Terrace Groundwater Basin is high in iron and manganese. Total dissolved solids range from 160 to 440 mg/L. [216]

As noted in Section 3.6, Hazards and Hazardous Materials, two domestic water supply wells were installed on the project site and the permits were granted to the California School Employee Association in 1986.[217] Both wells were abandoned at an undetermined date. A Water Well Sampling and Well Destruction Memorandum was drafted on April 9, 2018. The discussion can be found in Section 3.6, Hazards and Hazardous Materials.

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[209] California Geological Survey. 2021. California Tsunami Hazard Area Maps and Data. Available at: https://www.conservation.ca.gov/cgs/tsunami/maps. Accessed March 22, 2023.
[210] County of San Mateo Office of Sustainability. 2023. Groundwater. Available at: https://www.smcsustainability.org/water/groundwater/. Accessed April 22, 2023.
[211] DWR. 2014. Half Moon Bay Terrace Groundwater Basin. California's Groundwater Bulletin 118. Available at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/2_022_HalfMoonBayTerrace.pdf. Accessed March 22, 2023.
[212] Balance Hydrologics. 2010. *Midcoast Groundwater Study Phase III, San Mateo County, California*. Available at: http://sanmateorcd.org/links/209093%20Midcoast%20GW%20Phase%20III%206-9-10.pdf. Accessed March 21, 2023.
[213] DWR, 2014.
[214] Balance Hydrologics, 2010.
[215] Montara Water and Sanitary District. 2017. 2017 Water System Master Plan. Prepared by SRT Consultants. Available at: https://mwsd.montara.org/assets/uploads/documents/MWSD_2017%20Master%20Plan%20Update_Rev17_082417_Full.pdf. Accessed May 24, 2023.
[216] DWR, 2014.
[217] AEI Consultants. 2015. *Phase 1 Environmental Site Assessment*. AEI Consultants. (Appendix H)

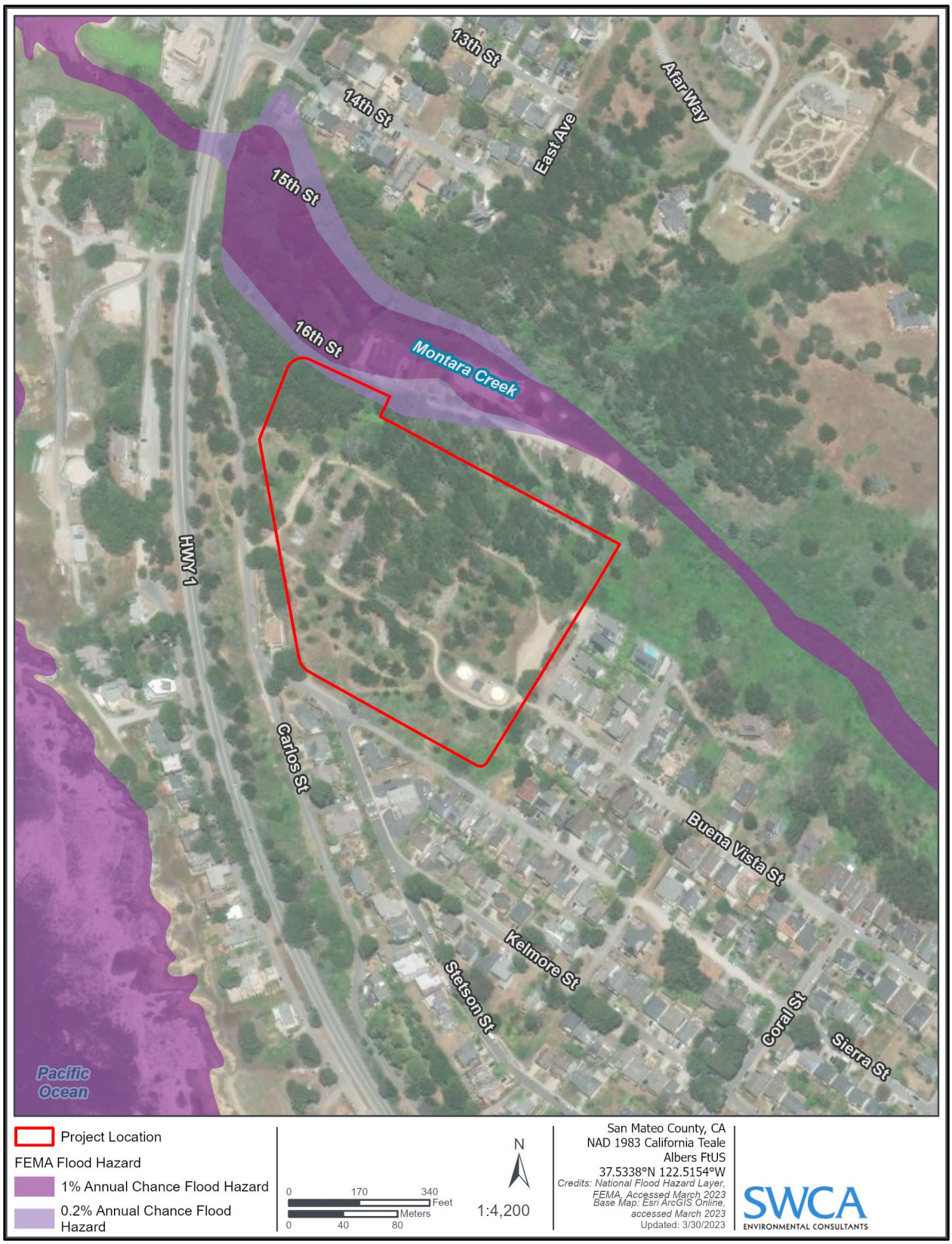


Figure 3.7-2. FEMA flood hazard zone.

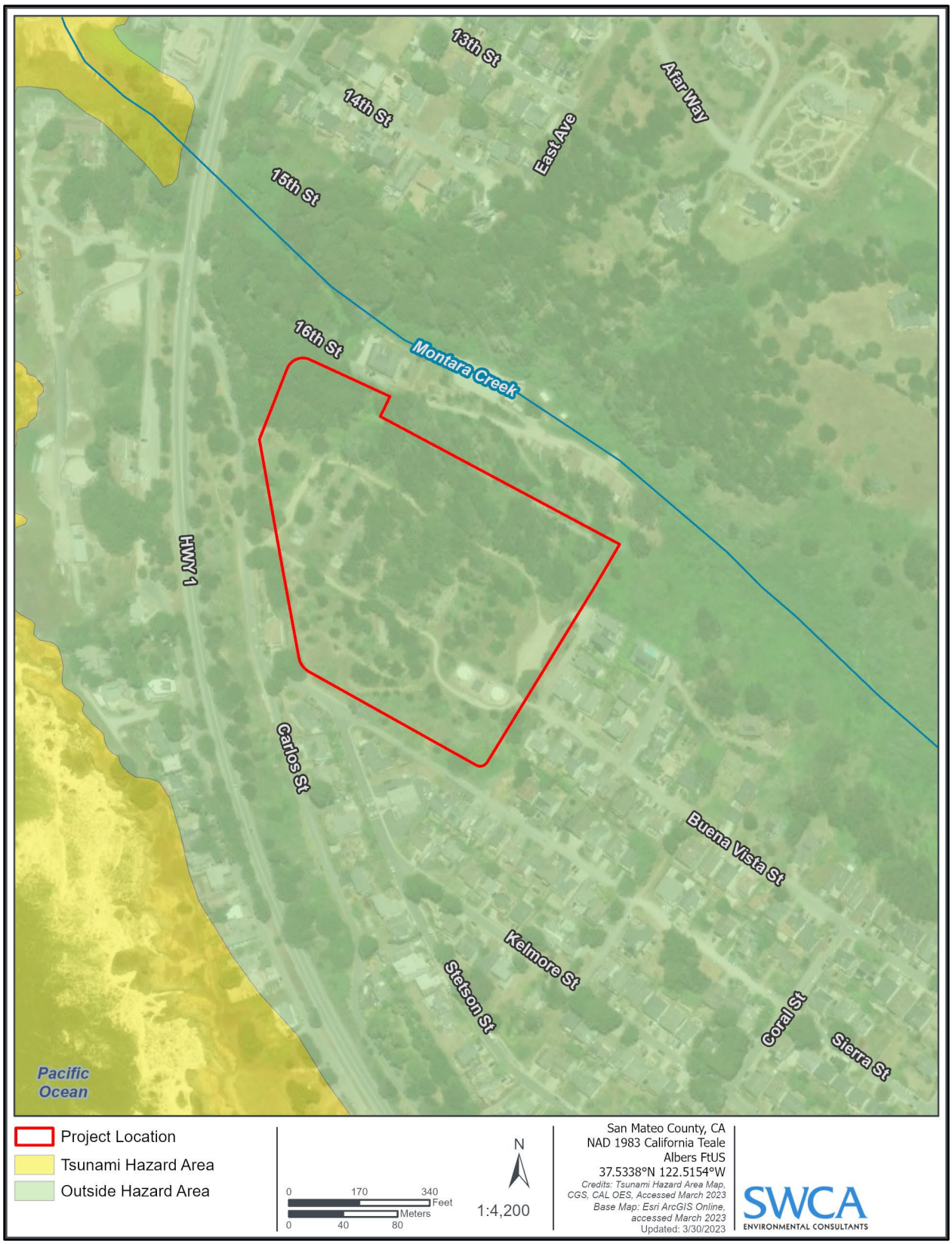


Figure 3.7-3. Tsunami hazard area.

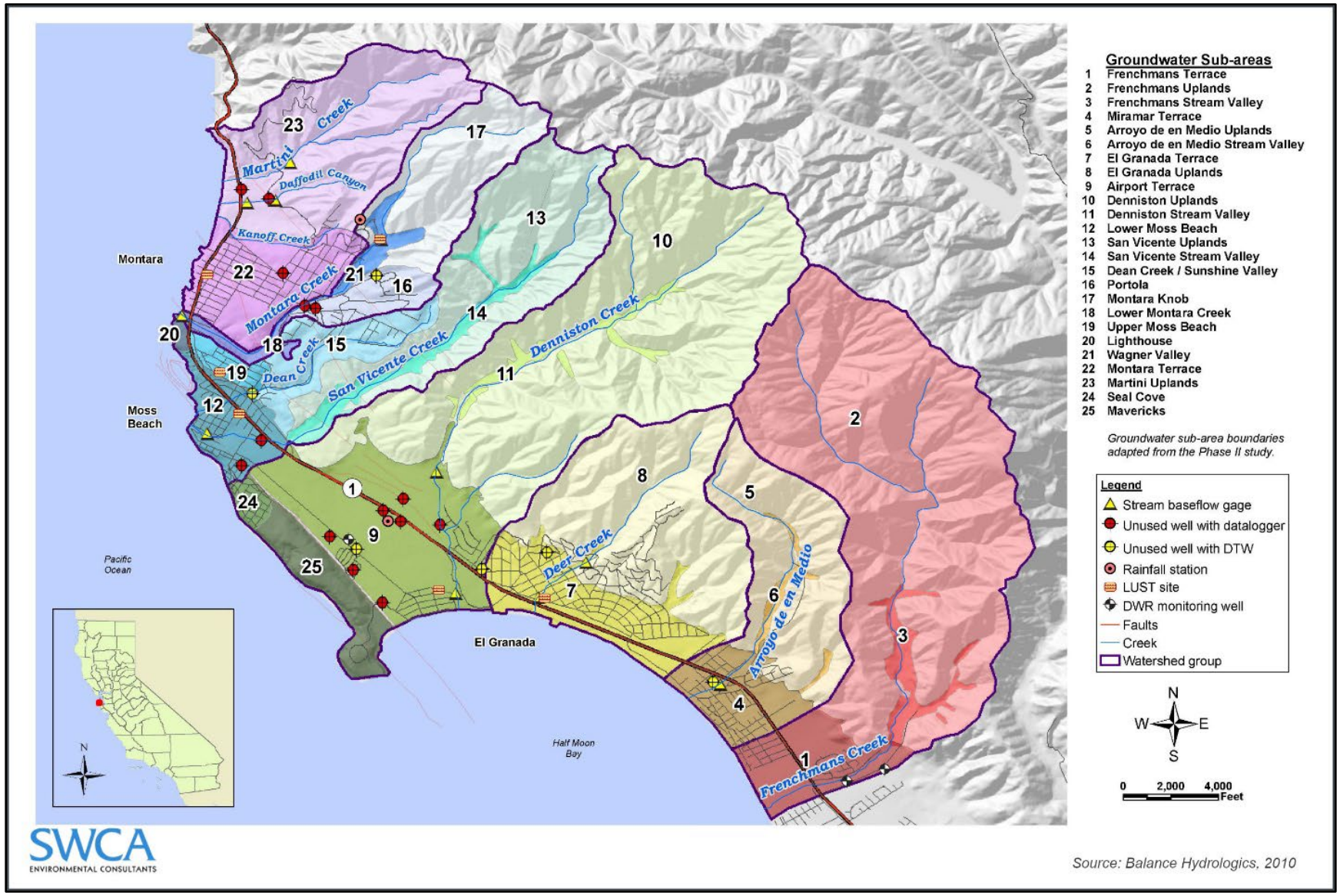


Figure 3.7-4. Groundwater basins in the project vicinity.

3.7.1.7 Dam Inundation

The project site is located outside of a dam inundation zone.[218]

3.7.2 Regulatory Setting

3.7.2.1 Federal

3.7.2.1.1 FEDERAL CLEAN WATER ACT, 33 USC 1251 ET SEQ. (1977)

The Clean Water Act (CWA) (33 United States Code [USC] 1251 et seq.), as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality. The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Numerous agencies have responsibilities for administration and enforcement of the CWA. At the federal level this includes the U.S. Environmental Protection Agency (USEPA), the U.S. Army Corps of Engineers (USACE), the Bureau of Reclamation, and the major federal land management agencies such as the U.S. Forest Service and the Bureau of Land Management. At the state level, Tribal lands, the California Environmental Protection Agency and its sub-agencies, including the State Water Resources Control Board (SWRCB), have been delegated primary responsibility for administering and enforcing the CWA.

Important sections of the act are as follows:

- **CWA Sections 303 and 304** provide for water quality standards, criteria, and guidelines. Under Section 303(d) of the CWA, the State of California is required to present the EPA with a list of impaired water bodies that do not meet water quality standards and objectives. California is required to establish a total maximum daily load (TMDL) for each pollutant/stressor. An essential component of a TMDL is the calculation of the maximum amount of a pollutant that a waterbody can receive while still meeting water quality standards. Based on the TMDL, the state allocates a loading capacity among the various point and nonpoint sources that discharge into the impaired waterbody. Permits for point sources are issued through the EPA's National Pollutant Discharge Elimination System (NPDES) program, as discussed below.
- **CWA Section 401 (Water Quality Certification)** requires an applicant for any federal permit that proposes an activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the CWA. The project site does not contain any aquatic resources which are anticipated to meet the criteria of waters of the state regulated under the Porter-Cologne Water Quality Control Act and/or Section 401 of the CWA.
- **CWA Section 402** establishes the NPDES program, a permitting system for the discharge of pollutants through a point source into waters of the U.S. Whereas the federal NPDES program mostly pertains to point source control, the current focus and regulation are shifting to nonpoint source pollution control under the authority of the RWQCBs. The NPDES program regulates the discharge of pollutants from municipal and industrial wastewater treatment plants and sewer collection systems, as well as stormwater discharges from industrial facilities, municipalities, and construction sites. In California, implementation and enforcement of the NPDES program are conducted through the State Water Resources Control Board SWRCB and the nine Regional

[218] County of San Mateo Planning and Building Department. 2005. San Mateo County Hazards: Dam Failure Inundation Areas. Available at: https://www.smcgov.org/planning/san-mateo-county-hazards-dam-failure-inundation-areas. Accessed May 24, 2023.

Water Quality Control Boards (RWQCBs). The RWQCBs set standard conditions for each permittee in their region, which includes effluent limitations and monitoring programs. The proposed project would be subject to NPDES permits as described under the State regulatory framework, below.

- **CWA Section 404** establishes a permit program for the discharge of dredged or fill material into waters of the U.S. This permit program is jointly administered by the USACE and the EPA.

3.7.2.1.2 NATIONAL FLOOD INSURANCE PROGRAM

FEMA is responsible for determining flood elevations and floodplain boundaries based on USACE studies. FEMA is also responsible for distributing the flood insurance rate maps used in the National Flood Insurance Program (Title 42 USC Chapter 50, Section 4102). These maps identify the locations of special flood hazard areas, including 100-year floodplains. FEMA allows non-residential development in the floodplain; however, FEMA has criteria to "constrict the development of land which is exposed to flood damage where appropriate" and "guide the development of proposed construction away from locations which are threatened by flood hazards." Federal regulations governing development in a floodplain are set forth in Title 44 Code of Federal Regulations Part 60, enabling FEMA to require municipalities that participate in the National Flood Insurance Program to adopt certain flood hazard reduction standards for construction and development in 100-year floodplains.

3.7.2.2 State

3.7.2.2.1 CALIFORNIA DEPARTMENT OF WATER RESOURCES

The DWR is the state agency that studies, constructs, and operates regional-scale flood protection systems, in partnership with federal and local agencies. DWR also provides technical, financial, and emergency response assistance to local agencies related to flooding.

Several bills were signed by Governor Schwarzenegger in 2007, adding to and amending state flood and land use management laws. The laws contain requirements and considerations that outline a comprehensive approach to improving flood management at the state and local levels.

FloodSAFE California is a strategic multifaceted program initiated by DWR in 2006. FloodSAFE guides the development of regional flood management plans, which encourage regional cooperation in identifying and addressing flood hazards. Regional flood plans include flood hazard identification, risk analyses, review of existing measures, and identification of potential projects and funding strategies. The plans emphasize multiple objectives, system resiliency, and compatibility with state goals and integrated regional water management plans. DWR has the lead role to implement FloodSAFE and will work closely with state, federal, Tribal, and local partners to help improve integrated flood management systems statewide. DWR's role is to advise and assist local jurisdictions as they pursue compliance.

3.7.2.2.2 PORTER-COLOGNE WATER QUALITY CONTROL ACT (CALIFORNIA WATER CODE, DIVISION 7)

The SWRCB administers water rights, water pollution control, and water quality functions for the state as part of the California Environmental Protection Agency. The RWQCBs conduct planning, permitting, and enforcement activities and share authority for the implementation of the Federal Clean Water Act and the State Porter-Cologne Act with the SWRCB. Under this State law, the SWRCB has authority over State waters and water quality. "Waters of the state" are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code Section 13050[e]). This definition differs from the CWA definition of waters of the U.S. by its inclusion of groundwater and

waters outside the ordinary high-water mark. Examples include, but are not limited to, rivers, streams, lakes, bays, marshes, mudflats, unvegetated and seasonally ponded areas, drainage swales, sloughs, wet meadows, natural ponds, vernal pools, diked baylands, seasonal wetlands, and riparian woodlands. RWQCBs have local and regional authority. The San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) has authority in the project site. RWQCBs prepare and periodically update Basin Plans, which establish:

- Beneficial uses of water designated for each protected water body
- Water quality standards for both surface water and groundwater
- Actions necessary to maintain these water quality standards

Projects that discharge waste to waters of the State must file a report of waste discharge with the appropriate RWQCB if the discharge could affect the quality of waters of the State (California Water Code, Article 4, Section 13260). The RWQCB will issue waste discharge requirements or a waiver of the waste discharge requirements for the project. The requirements will implement any relevant water quality control plans that have been adopted and must take into consideration the beneficial uses to be protected and the water quality objectives reasonably required for that purpose (Article 4, Section 13263).

Waters of the State are defined by the Porter-Cologne Water Quality Control Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The State Water Resources Control Board protects all waters in its regulatory scope, but it has special responsibility for isolated wetlands and headwaters. These water bodies have high resource value, are vulnerable to filling, and may not be regulated by other programs, such as Section 404 of the CWA. Waters of the State are regulated by the RWQCBs under the State Water Quality Certification Program, which regulates discharges of dredged and fill material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require a USACE permit, or fall under other federal jurisdiction, and have the potential to impact waters of the State are required to comply with the terms of the Water Quality Certification Program. If a proposed project does not require a federal license or permit but does involve activities that may result in impacts to beneficial uses or a discharge of harmful substances to waters of the State, the RWQCBs have the option to regulate such activities under state authority in the form of Waste Discharge Requirements or Certification of Waste Discharge Requirements.

3.7.2.2.3 WATER QUALITY CONTROL PLAN FOR THE SAN FRANCISCO BAY REGION

The MRP prohibits most non-stormwater discharges and specifies actions necessary to reduce the discharge of pollutants in stormwater to the maximum extent practicable. Non-structural BMPs required by the MRP include public education and outreach. BMPs related to municipal operations require inspections of businesses and construction sites to ensure proper implementation of stormwater BMPs, investigation and abatement of illicit discharges, and associated reporting to the SFBRWQCB. Structural BMPs include post-construction stormwater management at development sites consisting of site design measures, source control measures, LID design standards, and hydromodification management measures. The MRP also requires non-structural and/or structural BMPs to address certain water quality pollutants of concern (e.g., pesticides and trash).

The SFBRWQCB regulates surface water and groundwater quality in the region. The area under SFBRWQCB's jurisdiction consists of all the San Francisco Bay segments extending to the mouth of the Sacramento-San Joaquin Delta (Winter Island near Pittsburg) as well the Pacific Ocean along the Marin, San Francisco, and San Mateo coasts. The Basin Plan presents the beneficial uses that the SFBRWQCB

has specifically designated for local aquifers, streams, marshes, and rivers, as well as the water quality objectives and criteria that must be met to protect these uses.[219]

Runoff water quality is regulated by the NPDES program (established through the CWA, as described above). The objective of the NPDES program is to control and reduce pollutant discharge to bodies of water. The SWRCB recently adopted a statewide policy on compliance schedules in NPDES permits that would require a discharger seeking a compliance schedule to provide documentation for the following:[220]

- Diligent efforts made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream, and the results of those efforts
- Source control efforts that are currently underway or completed
- A proposed schedule for additional source control measures or waste treatment
- Data demonstrating current treatment facility performance
- The highest discharge quality that can reasonably be achieved until final compliance is attained
- A proposed schedule that is as short as practicable
- Additional information and analyses as determined by the SWRCB on a case-by-case basis.

Under the NPDES permit, construction projects must develop an Erosion and Sediment Control Plan (ESCP) and have it approved by the local land agency prior to the issuance of grading or building permits. The ESCP must include BMPs necessary to delineate areas of work, prevent erosion of unstable or denuded areas, plan for construction staging and storage logistics, construct stabilized access points, and include proper containment measures for construction materials and waste.

Projects disturbing more than 1 acre of land during construction are also required to file a Notice of Intent with the RWQCB to be covered under the State NPDES General Construction Permit for discharges of stormwater associated with construction activity. A SWPPP must be developed and implemented for each site covered by the general permit and must include BMPs that would reduce impacts to surface water quality.

The project site is in the hydromodification control area designated by the RWQCB in the Municipal Regional Stormwater NPDES Permit Order R2-2022-0018. The Municipal Regional Stormwater Permit (MRP)

establishes hydromodification management requirements within the C.3 provisions for water quality and quantity control contained in NPDES Municipal Stormwater Permit. The map of hydromodification control areas is provided in Appendix H of the C.3 Technical Guide.[221] According to the provisions, new developments in the control area that create more than 1 acre of impervious area are required to meet these standards. Although the permit states that areas discharging to engineered channels or structures can be exempted from hydromodification requirements, that exemption would not apply because there are natural channels both on-site and downstream of the project site. The C.3 requirements and

[219] San Francisco Bay Regional Water Quality Control Board, 2019.
[220] State Water Resources Control Board. 2008. Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits. Resolution No. 2008-0025. Available at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2008/rs2008_0025.pdf. Accessed March 22, 2023.
[221] San Mateo City/County Association of Governments. 2020. C.3 Stormwater Technical Guidance. Available at: https://flowstobay.org/wp-content/uploads/2020/04/SMCWPPP-C.3-Regulated-Project-Guide-Appendix_H.pdf. Accessed March 22, 2023.

hydromodification areas are subject to change based on current NPDES standards at the time building permits are submitted for consideration.

3.7.2.2.4 SUSTAINABLE GROUNDWATER MANAGEMENT ACT

The SGMA is a package of three bills (Assembly Bill 1739, Senate Bill 1168, and Senate Bill 1319) that provides local agencies with a framework for managing groundwater basins in a sustainable manner. The SGMA establishes standards for sustainable groundwater management, roles and responsibilities for local agencies that manage groundwater resources, and priorities and timelines to achieve sustainable groundwater management. Central to the SGMA is the identification of critically over-drafted basins, prioritization of groundwater basins, establishment of groundwater sustainability agencies, and preparation and implementation of groundwater sustainability plans (GSPs) for medium-priority, high-priority, and critically over-drafted basins. GSP objectives require that future groundwater use does not cause undesirable results, which include the following: declining water levels, reduction of groundwater storage, seawater intrusion, degraded water quality, land subsidence, and depletion of interconnected surface water. One requirement of a GSP is to establish a monitoring network to track water level changes and groundwater storage and to monitor pre-determined water level thresholds within each basin. Water level data for these basins will be available to the public through online portals. At the state level, DWR has the primary role in the implementation, administration, and oversight of the SGMA, with the SWRCB stepping in should a local agency be found to not be managing groundwater in a sustainable manner.

The Half Moon Bay Terrace Groundwater Basin is currently designated as a very low-priority basin and is not subject to the SGMA, nor is it required to form a Groundwater Sustainability Agency, or implement a GSP.[222]

3.7.2.2.5 CALIFORNIA OCEAN PLAN (1972)

The SWRCB adopted the California Ocean Plan (Ocean Plan) on July 6, 1972; the latest revisions were adopted in 2009. Unless an exception is granted, the Ocean Plan prohibits the discharge of waste, including stormwater runoff, to designated ASBSs. ASBSs are designated by the SWRCB as ocean areas requiring the protection of species or biological communities to the extent that alteration of natural water quality is undesirable.[223]

In 2012, the Ocean Plan authorized the SWRCB to grant an exception to the Ocean Plan provisions prohibiting waste discharge to ASBS when the SWRCB determines that the exception will not compromise protection of ocean waters for beneficial uses and where the public interest will be served. San Mateo County was included in the Water Board's General Exception (State Water Board Resolution No. 2012-0012, as amended by 2012-0031) to the California Ocean Plan with Special Protections adopted on March 20, 2012.[224] The prohibitions and special conditions contained in the Special Protections are intended to ensure that stormwater and nonpoint source discharges are controlled to protect the beneficial uses of the affected ASBS, including marine aquatic life and habitat, and to maintain natural water quality within the ASBS.[225]

[222] County of San Mateo Office of Sustainability, 2023.

[223] State Water Resources Control Board. 2009. *California Ocean Plan.* Available at: https://www.smcgov.org/media/73411/download?inline=. Accessed March 21, 2023.

[224] County of San Mateo. 2014. *James V. Fitzgerald Area of Special Biological Significance (ASBS) Draft Compliance Plan*. Prepared by EOA, Inc. Available at: https://www.waterboards.ca.gov/water_issues/programs/ocean/docs/asbs_general_exception/mateo_dcp_04302015.pdf. Accessed March 21, 2023.

[225] County of San Mateo. 2014. *James V. Fitzgerald Area of Special Biological Significance (ASBS) Draft Compliance Plan*.

3.7.2.3 Local

3.7.2.3.1 SAN MATEO COUNTYWIDE WATER POLLUTION PREVENTION PROGRAM

The San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) is a partnership of the City/County Association of Governments (C/CAG), each incorporated city and town in San Mateo County, and the County of San Mateo (County), which share a common NPDES permit.[226] The Municipal Regional Stormwater NPDES Permit (NPDES Permit No. CAS612008) was issued by the SFBRWQCB (Order R2-2022-0018)[227] in compliance with the Basin Plan and the NPDES program. As outlined in Provision C.3 of the MRP, participating agencies (including the County) must ensure that new development and redevelopment mitigate, to the maximum extent practicable, water quality impacts to stormwater runoff during the construction and operation periods of projects. The SMCWPPP published the C.3 Regulated Projects Guide and the Green Infrastructure Design Guide (GI Design Guide) to provide guidance on design, construction, and maintenance for projects.[228, 229]

Provision C.3.b of the MRP defines all new development and redevelopment projects that must comply with Provisions C.3.c. and C.3.d. New development projects that create and/or replace 5,000 or more square feet of impervious surface are C.3 Regulated Projects. Under Provision C.3.c, regulated projects must implement Low Impact Development (LID) treatment measures to control stormwater. LID measures consist of evapotranspiration, infiltration, rainwater harvesting and use, and/or biotreatment of the amount of stormwater runoff specified in MRP Provision C.3.d. Provision C.3.d provides sizing criteria for stormwater treatment systems.[230]

3.7.2.3.2 COUNTY OF SAN MATEO GREEN INFRASTRUCTURE GUIDE

The GI Design Guide compendium document was developed in parallel to the updated C.3 Regulated Projects Guide. Together these documents are referred to as the SMCWPPP GreenSuite and are intended to provide complete guidance and useful resources for C.3-regulated projects, as well as other non-regulated green infrastructure and LID projects. The GI Design Guide provides additional design guidance and inspiration for a number of green infrastructure facility types and project settings, including streets, buildings, and lots. The GI Design Guide also provides additional considerations for design construction, implementation, and operation and maintenance of green infrastructure facilities. The appendices of the GI Design Guide include templates for maintenance activities and additional resources for local agencies, designers, and builders.

3.7.2.3.3 COUNTY OF SAN MATEO LOCAL COASTAL PROGRAM

The Local Coastal Program (LCP) is the County's guiding document for implementation of the State Coastal Act administered by the California Coastal Commission. With information and policies pertaining

[226] County of San Mateo. 2023a. Stormwater Treatment Requirements. Available at: https://www.smcgov.org/planning/stormwater-treatment-requirements. Accessed March 21, 2023.
[227] San Francisco Bay Regional Water Quality Control Board. 2022. Municipal Regional Stormwater NPDES Permit. Order No. R2-2022-0018. NPDES Permit No. CAS612008. Available at: https://www.waterboards.ca.gov/rwqcb2/water_issues/programs/stormwater/MRP/mrp5-22/R2-2022-0018.pdf. Accessed March 22, 2022.
[228] San Mateo Countywide Stormwater Pollution Prevention Program. 2020. *C.3 Regulated Projects Guide.* Available at: https://www.flowstobay.org/wp-content/uploads/2020/03/SMCWPPP-C.3-Regulated-Project-Guide-High-Res_021220_0.pdf Accessed March 21, 2023.
[229] San Mateo Countywide Stormwater Pollution Prevention Program. 2020. *Green Infrastructure Design Guide.* Available at: https://www.flowstobay.org/wp-content/uploads/2020/03/GIDG-2nd-Edition-2020-03kh-RED.pdf Accessed March 21, 2023.
[230] San Francisco Bay Regional Water Quality Control Board, 2022.

to issues such as buildout and development, water supply capacity, wastewater treatment capacity, recreation, impervious surface zoning standards, nonpoint surface runoff controls, and sensitive species and habitat protection, the LCP governs land development in the unincorporated coastal area of San Mateo County. All development in the Coastal Zone must either comply with the policies and ordinances of the LCP in order to be issued a coastal development permit or be granted an exemption from the requirements. The County Planning and Building Department (Planning Department) released an updated LCP on June 18, 2013.

The updated LCP includes policy recommendations from the Midcoast LCP Update Project. The Midcoast project area encompasses the Fitzgerald ASBS watershed and includes policies and amendments such as a limitation on private well development in urban areas, avoidance of development in areas that are susceptible to erosion (e.g., bluff edges and faces), and establishment of minimum stormwater BMPs.

3.7.2.3.4 COUNTY OF SAN MATEO GENERAL PLAN

The *Vegetative, Water, Fish and Wildlife Resources Policies*[231] establish goals, policies, and implementation measures for the conservation and protection of important natural resources such as water quality.

- **Goal 1.1:** The County will conserve, enhance, protect, maintain, and manage vegetative, water, fish, and wildlife resources by promoting the conservation, enhancement, protection, maintenance, and managed use of the County's vegetative, water, fish, and wildlife resources.
    - **Policy 1.26: Protect Water Resources.** Ensure that development will: (1) minimize the alteration of natural water bodies, (2) maintain adequate stream flows and water quality for vegetative, fish, and wildlife habitats; (3) maintain and improve, if possible, the quality of groundwater basins and recharge areas; and (4) prevent to the greatest extent possible the depletion of groundwater resources.

The *Water Supply Policies*[232] establish goals, policies, and implementation measures for the conservation and protection of important natural resources such as water supply

- **Policy 10.8 Water Systems for Coastal Areas**
    - Support efforts to provide adequate water systems for the Mid-Coast, rural service centers, and other unincorporated urban areas.
- **Policy 10.18 Aquifer Studies and Management**
    - a. Support and cooperate in studies leading to a more thorough understanding of the groundwater aquifers, their location, quality, safe yield, and migration patterns. Formulate and carry out a management program that would ensure the long-term viability of aquifers for beneficial use.
    - b. Regulate, to the extent not in conflict with State law, the extraction of groundwater from aquifers in order to protect the safe yield and prevent overdrafting and saltwater intrusion.
    - c. Discourage activities and operations that would pollute groundwater supplies. Encourage the cleanup and restoration of polluted aquifers.

[231] County of San Mateo. 1986. General Plan. Available at: https://www.smcgov.org/planning/general-plan. Accessed May 15, 2023.
[232] County of San Mateo. 1986.

- **Policy 10.25 Efficient Water Use**
  - a. Encourage the efficient use of water supplies through effective conservation methods.
  - b. Require the use of water conservation devices in new structural development.
  - c. Encourage exterior water conservation.
  - d. Encourage water conservation for agricultural uses by using efficient irrigation practices.

The following are policies to minimize the risks from natural hazards from the San Mateo County General Plan Chapter 15, *Natural Hazards*:

- **Policy 15.1 Minimizing Risks from Natural Hazards**: Minimize the potential risks resulting from natural hazards, including but not limited to, loss of life, injury, damage to property, litigation, high service and maintenance costs, and other social and economic dislocations.
- **Policy 15.3 Incorporate Information on Natural Hazards into Land Use and Development Decisions**: Integrate data on natural hazards into review of land use and development proposals in order to identify hazardous areas, potential constraints to development and/or appropriate mitigation measures.
- **Policy 15.4 Definition of Natural Hazards**: Define natural hazards as conditions of potential danger or risk to life and/or property resulting from acts of nature, man-made alterations to the natural environment that create hazardous conditions, and/or hazardous conditions intrinsic to the natural environment. Natural hazards may include risks or vulnerabilities likely to be caused or exacerbated by climate change.
- **Policy 15.6 Definition of Fire Hazards**: Define fire hazards as wildland or structural fires that occur in areas that are remote, have difficult access for fire vehicles, and/or contain potentially flammable vegetative communities.
- **Policy 15.7 Definition of Flooding Hazards**: Define flooding hazards as general and temporary conditions of partial or complete inundation of normally dry land areas due to: (1) the overflow of inland or tidal waters; or (2) the unusual and rapid accumulation of runoff of surface waters resulting from storms, blockage of drainage channels or failures of dams, impoundments, and/or other public works facilities.
- **Policy 15.43 Determination of the Existence of a Flooding Hazard**:
  - a. When reviewing development proposals, use the Natural Hazards map to determine the general location of flooding hazard areas.
  - b. When the Natural Hazards map does not clearly illustrate the presence or extent of flooding hazards, use more detailed maps and information, including but not limited to, the Flood Insurance Rate Maps (FIRM) prepared by the Federal Emergency Management Agency (FEMA) for San Mateo County and the dam failure inundation maps prepared for the San Mateo County Office of Emergency Services.
- **Policy 15.45 Abatement of Flooding Hazards**: Support measures for the abatement of flooding hazards, including but not limited to: (1) removal or relocation of development from flood hazard areas; (2) construction of impoundments or channel diversions provided that adequate mitigation of environmental impacts can be demonstrated; and (3) debris clearance and silt removal programs conducted in a manner so as not to disrupt existing riparian communities.
- **Policy 15.46 Appropriate Land Uses and Densities in Flooding Hazard Areas**:
  - a. Consider rural land uses that do not expose significant numbers of people to flooding hazards, such as agriculture, timber production, public and private recreation, and general open space, to be the most appropriate for flooding hazard areas.

- b. Consider higher density land uses to be appropriate within flood hazard areas in developed urban areas and rural service centers when adequate mitigation of the flood hazard can be demonstrated.
- c. Discourage the location of new critical facilities in flood hazard areas.

- **Policy 15.47 Review Criteria for Locating Development in Areas of Special Flood Hazard**:
  - a. Wherever possible, retain natural floodplains and guide development to areas outside of areas of special flood hazard.
  - b. When development is proposed in areas of special flood hazards, require any structure to be safely elevated above the base flood elevation and not contribute to the flooding hazard to surrounding structures.
  - c. Promote subdivision design to avoid areas of special flood hazard when possible, and identify these areas on the approved subdivision map.
- **Policy 15.49 Incorporate Flooding Concerns During Review of Proposals for New Development**: In order to minimize damage to life and property, minimize disruption of commerce and governmental services and avoid the unnecessary expenditure of public funds, incorporate measures which regulate the location, design and intensity of new development in flood hazard areas."

3.7.2.3.5 JAMES V. FITZGERALD AREA OF SPECIAL BIOLOGICAL SIGNIFICANCE POLLUTION REDUCTION PROGRAM (2016)

In June 2011, the County began working on the Fitzgerald ASBS Pollution Reduction Program to comply with the Water Board's General Exception to the Ocean Plan with Special Protections. The program involves the implementation of targeted stormwater BMPs, water quality studies, BMP effectiveness monitoring within the ASBS watershed boundary, as well as education and outreach. The program's goals are to improve water quality and protect the beneficial uses of the Fitzgerald ASBS and assist with the County's compliance with the ASBS stormwater regulations.[233] Under the SWRCB's Ocean Plan with Special Protections, the Planning Department must regulate private stormwater discharges into the ASBS by implementing the following:

- Discharges may occur only during the wet weather season (October 1 through April 30) and must 1) be composed of only stormwater, 2) be free of pollutants, and 3) must not alter natural ocean water quality in the ASBS.
- All new point source discharges into the ASBS shall either be retained on-site or treated on-site before entering a County storm drain.
- Stormwater retention and treatment features must be identified on project plans and implemented during construction and future maintenance.
- ESCPs must be submitted for review and approval for projects within the ASBS watershed.
- Weekly construction site inspections must be required for all construction sites within the ASBS watershed.

[233] County of San Mateo. 2016. *James V. Fitzgerald Area of Special Biological Significance (ASBS) Updated Final Compliance Plan.* Prepared by EOA, Inc. Available at: https://www.smcsustainability.org/wp-content/uploads/filebase/energy-water/stormwater/SMC-ASBS-Compliance-Plan-UPDATED-9-20-16.pdf. Accessed March 22, 2023.

- On-site areas (new or replaced) used for car washing must drain to adequately sized vegetative areas or other on-site treatment facilities or occur on porous surfaces (e.g., gravel, grass) and use as little detergent as necessary. Discharge to the sanitary sewer is prohibited.

The County finalized the Fitzgerald SBS Pollution Reduction Program in 2016. The project's goal was to improve water quality and protect beneficial uses of the Fitzgerald ASBS and assist with the County's compliance with ASBS stormwater regulations.

3.7.2.4 City/County Association of Governments, San Mateo Countywide Sustainable Streets Master Plan

C/CAG finalized the San Mateo Countywide Sustainable Streets Master Plan using grant funds from the California Department of Transportation.[234] The plan aims to identify and prioritize street improvements for adding green infrastructure to provide water quality, flood reduction, and community benefits throughout San Mateo County in the context of climate change. The goals of the project include identifying how climate change would affect future rainfall, planning to sustainably capture and clean runoff in San Mateo County roadways, and using nature-based solutions, while providing safer and more resilient streets for all users including motorists, bicyclists, and pedestrians. The plan is anticipated to include high-resolution drainage mapping, project concepts to aid in pursuing implementation, and a tracking tool to view progress over time.

3.7.3 Thresholds of Significance

The determinations of significance of project impacts are based on applicable policies, regulations, goals, and guidelines defined by the California Environmental Quality Act (CEQA) and the County. Specifically, the project would be considered to have a significant effect on hydrology and water quality if the effects exceed the significance criteria described below:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?
3. 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 that would:
    a. result in substantial erosion or siltation on- or off-site;
    b. substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
    c. create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
    d. Impede or redirect flood flows?
4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

[234] C/CAG. 2021. Sustainable Streets Master Plan. Available at: https://www.flowstobay.org/data-resources/plans/sustainable-streets-master-plan/. Accessed May 24, 2023.

5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?
6. Significantly degrade surface or groundwater water quality?
7. Result in increased impervious surfaces and associated increased runoff?

Each of these thresholds is discussed under Section 3.7.4.1, Impacts and Mitigation Measures.

3.7.4 Impact Assessment and Methodology

3.7.4.1 Impacts and Mitigation Measures

Impact HYD-1: Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality? (Less Than Significant)

Construction

Water quality can be affected in the short term by construction activity (e.g., erosion and sedimentation due to land disturbances, uncontained material and equipment storage areas, improper handling of hazardous materials) and in the long term due to the release of urban pollutants (e.g., landscaping fertilizers, pesticides, and herbicides; leaking oils and grease from vehicles; trash). Water quality impacts associated with the proposed project can come from both stormwater runoff and discrete non-stormwater discharges to receiving waters. Without proper consideration and precautions, and without conducting construction and development activities according to the terms and conditions of applicable permits, such activities can degrade water quality in receiving water bodies, leading to violation of water quality standards and/or Basin Plan objectives.

Early stages of construction would allow for low risks to soil and contamination due to the relatively high permeable area, but as construction advances, more impermeable surfaces would be created, and soil and contaminant mobilization would increase. The addition of impervious surfaces would prevent surface water infiltration into the ground surface and increase the stormwater runoff volume and rate compared to existing conditions.

Project construction would remove approximately 1 acre of existing impervious surfaces on-site, totaling approximately 20,840 cubic yards of concrete and 295 trees. Construction would excavate approximately 9,507 cubic yards of soil and import approximately 9,881 cubic yards of fill to meet a total fill requirement of 19,388 cubic yards.

During construction, particularly during phases that include excavation, grading, and other earthwork, the potential exists for substantial increases in soil erosion and sediment transport in stormwater runoff that have the potential to affect the water quality of receiving waters. Sedimentation can lead to a degradation of water quality because sediment can carry nitrogen, phosphorus, petroleum, and other organic contaminants, pesticides, herbicides, and trace metals. Sediment can also accumulate at the entrance of downstream storm drain system inlets and reduce drainage capacity. In addition to stormwater runoff and potential resulting water quality and sediment impacts, there is the potential for hazardous materials, including petroleum products associated with diesel vehicle and equipment use, and contaminants from paving materials, concrete mixing, pouring and washout, and sanitary facilities, to enter Montara Creek. Following vegetation clearing, tree removal, and grading, excavation would occur for roadbed improvements, and foundations and concrete would be poured. These activities have the potential to

contribute pollutants to Montara Creek (particularly turbidity and high-pH wash water) that could affect water quality and may violate water quality standards if left uncontrolled.

However, prior to the issuance of grading permits or approval of development plans, the project would be required to implement a County-approved ESCP per the San Mateo Countywide Stormwater Pollution Prevention Program.[235, 236] The ESCP would contain erosion and sediment controls, soil stabilization, dewatering, source controls, and pollution prevention measures to mitigate erosion and sediment impacts during the construction period. The detailed ESCP would include, at a minimum, the following:

1. Provide a proposed schedule of grading activities, monitoring, and infrastructure milestones in chronological format. An anticipated construction schedule and/or construction duration (in weeks or months) shall be provided.
2. Delineate work areas including protecting surface waters, storm drain inlets, sensitive areas, and buffer zones. These areas should be consolidated and located outside steep or sensitive areas.
3. Protect surface water locations. Provide primary control measures (e.g., silt fence along the outer buffer zone of the creek; do-not-disturb riparian areas) and secondary control measures (e.g., fiber rolls) in disturbed areas sloping toward the creek/ocean.
4. Protect storm drain inlets using fiber rolls, permeable rock sacks, or other measures that keep sediment from entering the drain. Show inlet locations and protection measure details on the ESCP Plan. Include in the ESCP Plan that filter fabric or filter baskets shall be installed in the drains and cleaned out after each rain event, or as needed to function properly. Sandbags are prohibited as they tear and can result in sand entering the storm drains.
5. Maximize and protect areas to be undisturbed (including sensitive areas and buffer zones), using a vegetative buffer strip or 6-foot fence/barrier. Show the "limits of work" on the ESCP Plan and barriers along the "limit." Forbid work, storage, earth moving, vegetation clearing, and other disturbances outside of the "limit." Hay bales are prohibited as these can easily fall apart.
6. Provide a separate Tree Protection Plan to identify and protect trees and driplines extending over the project site, using fencing placed along drip lines. An arborist report is required for those trees where work will encroach into driplines (for on-site and off-site trees). See the County's Significant and/or Heritage Tree Ordinances for Tree Protection Plan guidelines.
7. Prevent runoff to off-site areas using perimeter controls (diversion berms, silt fencing, and/or fiber rolls). Silt fencing is preferred, but fiber rolls may work in some instances. Where the site is flat or the slope is gentle, installing these measures on the property line should be adequate. On slopes greater than 3:1, the measures must be installed along contour lines.
8. Indicate the location and method for stabilizing disturbed bare-earth areas. Use seeding and/or mulching and the following, as necessary:
    a. For slopes less than 3:1, provide silt fencing or fiber rolls along contour lines.
    b. For slopes greater than 3:1, anchored erosion blankets (rice, straw, or coconut) and fiber rolls or silt fencing at the crest are required. Jute netting is preferred when used with seeding.
9. Use diversion berms to divert water from unstable or denuded areas (e.g., top and base of a disturbed slope, grade breaks where slopes transition to a steeper slope).

[235] County of San Mateo. 2023b. Erosion and Sediment Control Plan Requirements. Available at: https://www.smcgov.org/planning/erosion-and-sediment-control-plan-requirements. Accessed May 24, 2023.
[236] C/CAG. 2023. Construction Best Practices. Available at: https://www.flowstobay.org/preventing-stormwater-pollution/with-new-redevelopment/construction-best-practices/. Accessed May 24, 2023.

10. Direct water from construction areas to designated temporary filtration/detention areas. Show any
11. temporary detention areas for stormwater and stabilization of those areas.
12. Show areas and proposed protection of temporary stockpiles using anchored-down plastic sheeting in dry weather. The use of plastic sheeting during the wet season, October 1 through April 30, is not allowed unless the stockpile is also protected with fiber rolls containing the base of the stockpile. Alternatively, in wet weather, or for longer storage, use seeding and mulching, soil blankets, or mats.

The applicant shall comply with the NPDES General Construction Activities Stormwater Permit requirements established by the CWA. The applicant can obtain coverage under the General Permit by filing a Notice of Intent with the SWRCB's Division of Water Quality. The filing shall describe erosion control and stormwater treatment measures to be implemented during and following construction and provide a schedule for monitoring performance. These BMPs shall serve to control point and nonpoint source pollutants in stormwater and constitute the project's SWPPP for construction activities. While the SWPPP will include several of the same components of the ESCP, the SWPPP shall also include BMPs for preventing the discharge of other nonpoint source pollutants besides sediment (paint, concrete, etc.) to downstream waters.

The SWPPP must specify the location, type, and maintenance requirements for BMPs necessary to prevent stormwater runoff from carrying construction-related pollutants into nearby receiving waters (in this case, Montara Creek). BMPs must be implemented to address the potential release of fuels, oil, and/or lubricants from construction vehicles and equipment (e.g., drip pans, secondary containment, washing stations); release of sediment from material stockpiles and other construction-related excavations (e.g., sediment barriers, soil binders); and other construction-related activities with the potential to adversely affect water quality. The number, type, location, and maintenance requirements of BMPs to be implemented as part of the SWPPP depend on site-specific risk factors such as soil erosivity factors, construction season/duration, and receiving water sensitivity. The SWPP will also incorporate the recommendations contained in the Site Management Plan, which outlines measures to minimize dust control, stormwater runoff, and tracking of soil off-site. These recommendations include equipment decontamination and personal protective equipment.

Operation

The project would increase impervious surfaces on-site by approximately 143,254 square feet. Operation of the project would also involve activities that would generate new sources of pollutants on-site, such as pesticides, fertilizers, oils, grease, lubricants, and sediment in urban runoff. New impervious surfaces, including roads and parking lots, collect automobile-derived pollutants such as oils, greases, heavy metals, and rubber. During storm events, these pollutants would be transported into the proposed stormwater management system by surface runoff. An increase in point source and nonpoint source pollution could result from increases in development intensity that may directly impact water quality specific to site drainage patterns. Accordingly, disturbed soils, sedimentation, and contaminants that are mobilized by water flow may ultimately be conveyed northwest toward Carlos Street and 16th Street, ultimately discharging to Montara Creek.

The project would also implement the site-specific recommendations included in the geotechnical investigation[237] and 2015 Site Management Plan, as part of MM-HAZ-1.[238] The project would comply

[237] Rockridge Geotechnical. 2022. Geotechnical Investigation – Cypress Point Family Community, 16th and Carlos Streets, Moss Beach, California.
[238] AEI Consultants, 2016.

with the construction site controls, site design measures, source control regulations, and stormwater treatment measures outlined in the ESCP, SWPPP, MRP, and the recommendations within the geotechnical investigation. With inclusion of the above cited regulatory requirements, implementation of the project would not violate any water quality standards or waste discharge requirements, and impacts would be less than significant.

Impact HYD-2: Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? (Less than Significant)

Construction

Construction of all aspects of the proposed project would require a minimal amount of water for dust control and slurry mixing. Water would be obtained from the Montara Water and Sanitary District (MWSD), which obtains its entire supply from groundwater sources from the San Mateo Coastal Basin aquifers and surface water diverted from Montara Creek.[239] Water for dust control would be transported to the project site by truck. Construction of the project would not substantially decrease groundwater supplies or interfere with groundwater recharge; impacts would be less than significant.

Operation

The project site and the proposed 71 residential units would obtain water from the MWSD, as described in Section 3.11, Utilities and Service Systems. Project operation would result in groundwater use due to the source of MWSD water supplies.

As stated previously, the project would increase impervious surfaces on-site by approximately 143,254 square feet. Impervious surfaces prevent the infiltration of runoff into the underlying soil and can interfere with groundwater recharge. However, as noted in the geotechnical investigation, the project site has low permeability of the near-surface soils; portions of the site are underlain by bedrock and there is no groundwater present in the upper approximately 30 feet of soil. [240] Lower Montara Creek is incised to bedrock, thereby limiting aquifer recharge from this reach of the stream.[241] Therefore, the groundwater recharge on-site is low.

With implementation of the project, an approximately 7-acre portion of the site would remain pervious and continue to serve as groundwater recharge during storm events. The remaining impervious areas would be served by bioretention basins. Stormwater within the basins would be retained, and a major portion of the water would be discharged into a storm drain for eventual discharge to Montara Creek. Some stormwater within the bioretention basins would percolate to groundwater. Local recharge within the Upper Moss Beach groundwater subbasin comes primarily from storm events.

As the project site is not identified as an important area for groundwater recharge, and because some of the runoff from the site would be retained in bioretention ponds that would facilitate recharge, a reduction in the amount of pervious area on-site would not substantially interfere with groundwater recharge. The impact on groundwater recharge would be less than significant.

[239] Montara Water and Sanitary District. 2017. 2017 Water System Master Plan. Prepared by SRT Consultants. Available at: https://mwsd.montara.org/assets/uploads/documents/MWSD_2017%20Master%20Plan%20Update_Rev17_082417_Full.pdf. Accessed May 24, 2023.
[240] Rockridge Geotechnical. 2022. Geotechnical Investigation – Cypress Point Family Community, 16th and Carlos Streets, Moss Beach, California.
[241] Balance Hydrologics, 2010.

Impacts on the hydrologic conditions of groundwater resources and the groundwater level of the Half Moon Bay Terrace Groundwater Basin would be less than significant. Impacts associated with the availability of an adequate groundwater supply are addressed in Section 3.11, Utilities and Service Systems.

Impact HYD-3: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

- ***result in substantial erosion or siltation on- or off-site;***
- ***substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;***
- ***create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;***
- ***or impede or redirect flood flows? (Less than Significant)***

As required by the MRP and the authority given to the SMCWPPP, projects creating 1 or more acres of impervious area in non-exempt regions of San Mateo County are required to reduce increased runoff associated with the project so that the amount of stormwater runoff off-site does not increase. As discussed under Impact HYD-1, the project would also be required to implement an ESCP and SWPPP, per the MRP and the San Mateo Countywide Stormwater Pollution Prevention Program.

The project used the Bay Area Hydrology Model to analyze peak flow comparisons for the 2, 5, 10, and 25-year storm events; this model is designed to fully comply with the County requirements.[242] In addition to MRP requirements, all projects resulting in an increase in impervious surface must also comply with the County's Drainage Policy.[243] Compliance includes a written analysis of the delineation of drainage basins, a description of the proposed drainage system, discussion of the rationale used to design the system, discussion of methods and/or calculations, description of how excess drainage would be detained, and a description of how discharge would be controlled.

The project includes a comprehensive stormwater management system with four distinct drainage management areas (DMAs) based on stormwater flow patterns. Stormwater runoff on the project site would be collected by overland flow and directed away from buildings to three stormwater bioretention basins in the western portion of the project site. The required and provided bioretention square footage for each DMA is shown in Table 3.7-1. The bioretention basins would be designed to comply with the project's dual requirements of stormwater treatment and HM requirements.

Table 3.7-1. Drainage Management Areas

Drainage Management Areas	Total Area (square feet)	Impervious Area (square feet)	Pervious Area (square feet)	Bioretention Area Required (square feet)	Bioretention Area Provided (square feet)
DMA 1	111,973	64,093	45,529	2,150	2,351

[242] BKF Engineers, 2018.

[243] County of San Mateo Planning and Building Department. 2023. Surface Water Drainage Review. Available at: https://www.smcgov.org/planning/surface-water-drainage-review. Accessed May 24, 2023.

Drainage Management Areas	Total Area (square feet)	Impervious Area (square feet)	Pervious Area (square feet)	Bioretention Area Required (square feet)	Bioretention Area Provided (square feet)
DMA 2	109,233	73,263	33,988	1,950	1,982
DMA 3	8,188	4,902	3,086	161	200
DMA 4	19,652	996	18,656	0	0
Total	249,046	143,254	101,259	4,261	4,533

Per the recommendations of the geotechnical investigation, the bioretention areas would include underdrains and/or drain inlets and no exfiltration into the subgrade soil due to the low permeability of the near-surface soil.[244] Drain inlets would also be located at low points throughout the hardscape and landscape areas to collect and convey large storm event overflow runoff. Storm drain lines ranging in diameter from approximately 12 inches to 21 inches would move runoff to two on-site catch basins along the western boundary. The project would install a new connection to the existing storm drain main on Carlos Street, which ultimately outfalls to Montara Creek.

Compliance with the Municipal Regional Stormwater Permit and Planning Department requirements would reduce drainage and stormwater impacts to a less-than-significant level.

Impact HYD-4: Would the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? (Less than Significant)

Most of the project site is located outside a FEMA flood hazard zone. A small portion of the site along the northern boundary lies within the flood hazard Zone X associated with Montara Creek. However, the water surface elevation in Montara Creek is approximately 100 feet below the portion of the site planned for development.

The project site is not located within a tsunami hazard area (see Figure 3.7-3).[245] The project site is located on a bluff at an elevation of between 95 feet amsl and 205 feet amsl. The bluffs and elevation in the project site protect development from damage by tsunamis. There are no large reservoirs in the project vicinity so the project would not be in an area subject to inundation hazards from seiche. The geology of the site is not susceptible to landslides or mudflow. Impacts related to these hazards and the risk of pollutant release due to project inundation would be less than significant.

Impact HYD-5: Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? (Less than Significant)

The proposed project would abide by all requirements of the San Mateo Countywide Water Pollution Prevention Program and the MRP issued by the SFBRWQCB. The project would not conflict with the Water Quality Control Plan for the San Francisco Bay Basin because it would comply with all applicable requirements of the MRP. The project site is not located in a groundwater basin and would not use groundwater; therefore, it would not conflict with or obstruct the implementation of a sustainable groundwater management plan. Impacts would be less than significant.

[244] Rockridge Geotechnical, 2022.

[245] California Geological Survey. 2021. California Tsunami Hazard Area Maps and Data. Available at: https://www.conservation.ca.gov/cgs/tsunami/maps. Accessed March 22, 2023.

Impact HYD-6: Significantly degrade surface or groundwater water quality?

Refer to the analysis under Impacts HYD-1 and HYD-2.

Impact HYD-7: Result in increased impervious surfaces and associated increased runoff?

Refer to the analysis under Impact HYD-3.

3.7.5 Cumulative Impacts

Impact C-HYD-1: Would the impacts of the proposed project, in combination with other past, present, and reasonably foreseeable future projects, contribute to a cumulative impact related to hydrology and water quality? (Less than Significant)

Cumulative development would result in a change from undeveloped to urban pollutant discharge to surface water runoff and groundwater percolation. Construction activities could also result in the pollution of natural watercourses or underground aquifers. The types of pollutant discharges that could occur as a result of construction include accidental spillage of fuel and lubricants, discharge of excess concrete, and an increase in sediment runoff. Storm runoff concentrations of oil, grease, heavy metals, and debris increase as the amount of urban development increases in the watershed. However, when properly implemented, water quality requirements of the SFBRWQCB and the County would mitigate any adverse impacts resulting from new development on the project site.

Therefore, the project, in conjunction with pending cumulative development, would not significantly increase the concentration of urban pollutants in surface runoff or groundwater. Polluted runoff that may be generated during construction activities of cumulative development and projects considered in this analysis would be regulated by the SWRCB under General Construction, NPDES permits, and would be minimized using standard construction BMPs. Cumulative impacts would therefore be less than significant for hydrology and water quality. With adherence to these regulatory standards, the cumulative contribution from the project would be less than significant. No mitigation is required.

3.8 LAND USE AND PLANNING

This section describes existing land uses in the project vicinity, identifies regulatory requirements, and assesses potential project-related impacts on land use. The section includes an analysis of the project's compatibility with land use and/or habitat plans.

3.8.1 Existing Conditions

The project site is in the unincorporated community of Moss Beach in coastal San Mateo County. The 11.02-acre project site is one parcel (Assessor's Parcel Number 037-022-070) and contains remnant foundations of former military barracks and a school as well as Monterey pine and Monterey cypress forest, non-native grassland, and shrubs. The project site includes two Montara Water and Sanitary District (MWSD) water tanks and associated facilities which are not part of the proposed project. The project is located east of Highway 1 and the Pacific Ocean, southeast of the Point Montara Lighthouse Hostel, and on the northwest edge of the unincorporated community of Moss Beach. The project site is surrounded to the south and east by single-family residential areas. The Coastside Fire Protection District Station 44 is also located to the south. To the north is Montara Creek with scattered single-family residences north of the creek. To the west is one single-family residence and Highway 1. West of Highway 1 are single-family residences, the MWSD office and treatment facilities, Montara Lighthouse and Hostel, and the Pacific Ocean.

As discussed in Chapter 2, Project Description, the project site has a land use designation of Medium-High Residential under the County of San Mateo (County) General Plan and is zoned Planned Unit Development District (PUD) 140/Coastal Development District under the County Zoning laws. The California Coastal Commission certified the Local Coastal Program (LCP) land use designation amendment from Medium-High Density Residential to Medium Density Residential on March 12, 2021.[246]

Surrounding General Plan land use designations include Medium Density Residential to the southwest and southeast, and Open Space and Medium Density Residential to the northeast. The Highway 1 corridor to the west is under California Department of Transportation (Caltrans) authority and does not have a General Plan land use designation and the land to the west of Highway 1 is designated Institutional (Figure 3.8-1). The area surrounding the project site is zoned Resource Management to the northeast, and One Family Residential/Residential Density District 17/Design Review District/Coastal Development District on all other adjacent sides. Residential Density District 17 is the Combining District for the coastal Montara–Moss Beach–El Granada (Midcoast) planning area. The land to the west of Highway 1 is zoned One Family Residential, Coastal Management, and Coastside Commercial Recreation (Figure 3.8-2).

[246] On April 21, 2021, a lawsuit was filed challenging the Coastal Commission staff report under California Environmental Quality Act (CEQA), the LCP amendment under the Coastal Act, and the hearing process under the Code of Civil Procedure section 1094.5(b). The lawsuit was dismissed entirely on April 21, 2023. Evidence supporting the challenge was not provided, and the court found that commission complied with CEQA and the Coastal Act and did not deprive the petitioner of a fair hearing. *(Superior Court of California, 2023. County of San Francisco. Order Denying Verified Petition for Writ of Mandate Case No. CPF-21-517430. April 21, 2023.)*

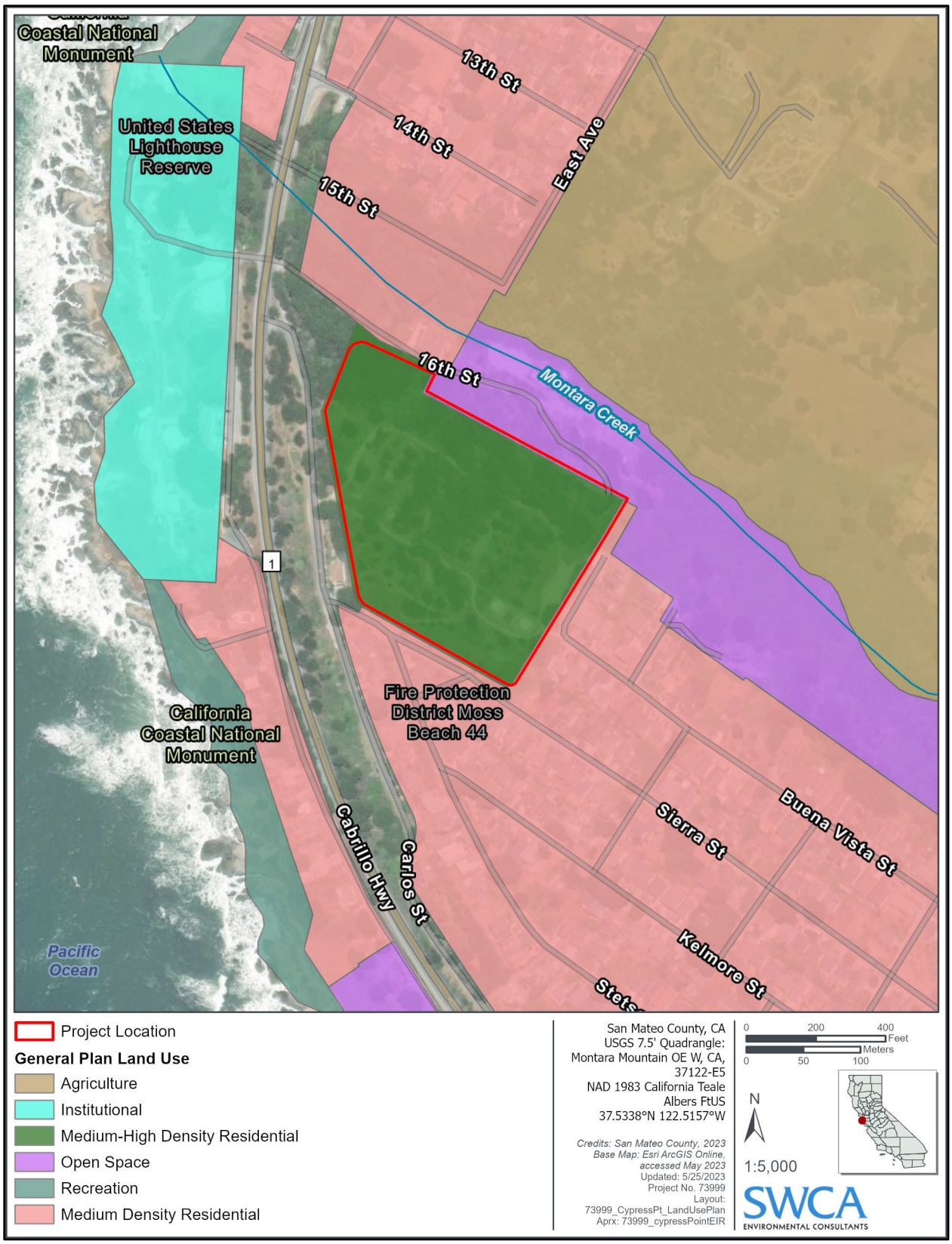


Figure 3.8-1. County of San Mateo General Plan land use map.

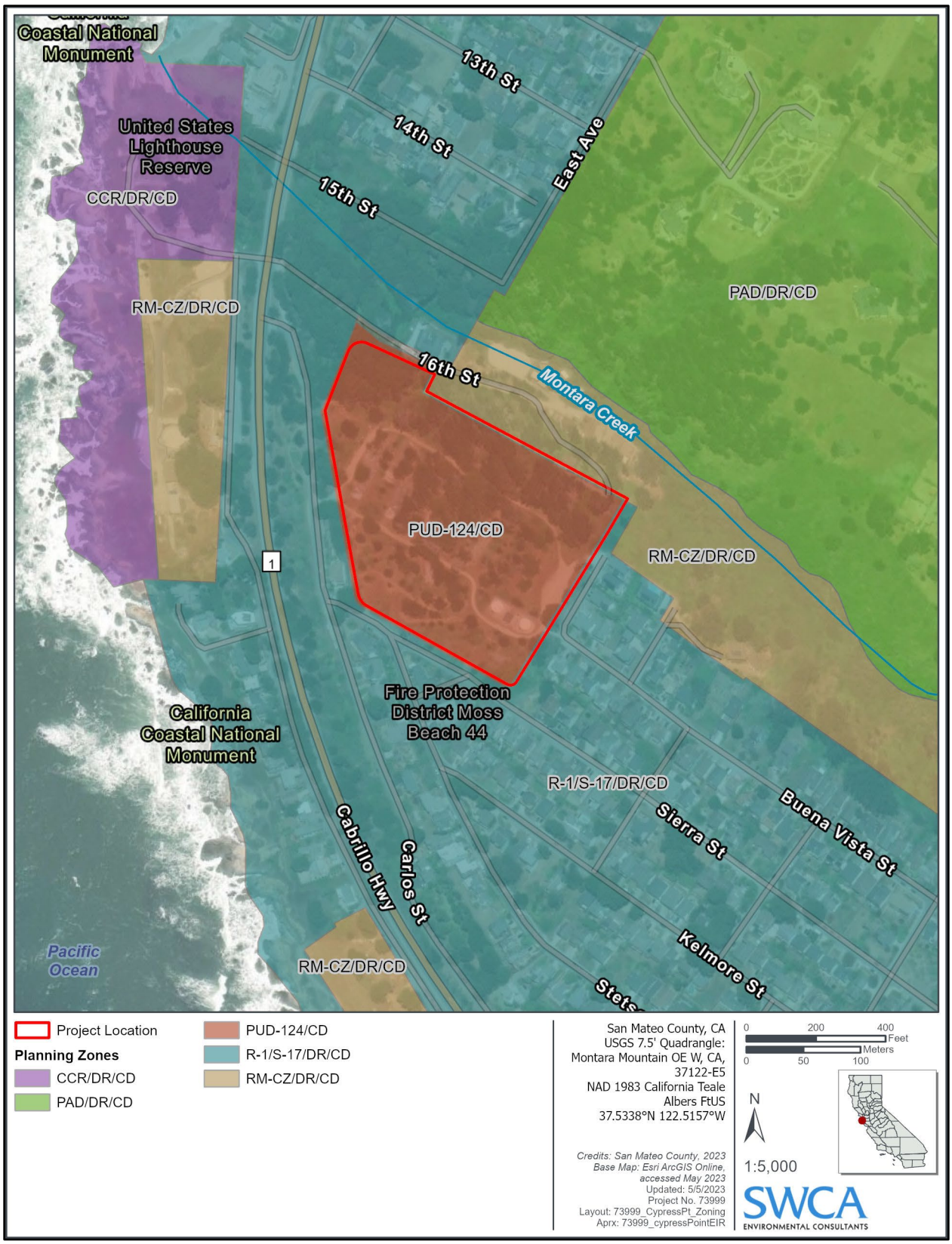


Figure 3.8-2. County of San Mateo zoning map.

3.8.2 Regulatory Setting

3.8.2.1 Federal

There are no applicable federal land use or planning regulations for the proposed project.

3.8.2.2 State

3.8.2.2.1 REGIONAL HOUSING NEEDS ALLOCATION

The California Department of Housing and Community Development is responsible for forecasting and determining housing needs throughout the state on a regular cycle. The Regional Housing Needs Determination and Allocation process occurs every 8 years, and is a process designed to identify the total number of housing units that every local government in the state must plan to accommodate in their next Housing Element cycle. First the state determines how much housing at a variety of affordability levels is needed for each region in the state. The number of housing units are divided into four categories: extremely low/very-low income, low income, moderate income, and above-moderate income. Then regional governments develop a methodology to allocate those housing needs to local governments. The 6th cycle of the Regional Housing Needs Allocation (RHNA) was adopted by the state in 2020 and applies to the planning period 2023 through 2031.[247]

The Association of Bay Area Governments (ABAG) is the Council of Governments for the nine-county San Francisco Bay Area. ABAG is responsible for allocating the regional share of the RHNA among all cities, towns, and counties in the Bay Area region. During 2019 and 2020, ABAG developed a RHNA methodology with input from a committee of elected officials, city and county staff, and stakeholders (Housing Methodology Committee).[248]

3.8.2.3 Local

3.8.2.3.1 COUNTY OF SAN MATEO GENERAL PLAN (1986)

The County General Plan designates Montara–Moss Beach–El Granada as an existing Urban Community (Definitions 8.5 and 8.9). Under definition 8.12, it adopts the land use designations and amendments of the County LCP for this community.[249]

As part of project approvals, a General Plan Amendment from Medium-High Density Residential to Medium Density Residential is currently being processed and would ensure the project is consistent with the LCP zoning and land use designations.

[247] California Department of Housing and Community Development. 2023. *Regional Housing Need Allocation (RHNA).* Available at: https://www.hcd.ca.gov/planning-and-community-development/regional-housing-needs-allocation. Accessed May 5, 2023.
[248] Association of Bay Area Governments (ABAG). 2021. *Draft Regional Housing Needs Allocation (RHNA) Plan: San Francisco Bay Area, 2023-2031.* Available at: https://abag.ca.gov/sites/default/files/documents/2021-05/ABAG_2023-2031_Draft_RHNA_Plan.pdf. Accessed January 9, 2023.
[249] County of San Mateo. 1986. *San Mateo County General Plan Policies.* Available at: https://www.smcgov.org/planning/general-plan. Accessed May 5, 2023.

3.8.2.3.2 COUNTY OF SAN MATEO GENERAL PLAN HOUSING ELEMENT (2015)

As part of their General Plan, the County is required to update their Housing Element to incorporate their share of the RHNA. The Housing Element must include an inventory of sufficient sites zoned for each income category of development. The existing 2014–2022 Housing Element (2015) addresses housing needs for the period 2014 through 2022. The County released the Public Review Draft 2023–2031 Housing Element for review in November 2022 that will address housing needs for 2023–2031.[250] The Draft Housing Element is based on the 6th cycle RHNA, which applies to the planning period 2023 through 2031. The project site is designated as an affordable housing opportunity site under both the 2014–2022 and the 2023–2031 San Mateo County Housing Elements, and the project would be available to households making up to 80% of the area median income.[251] This would include households in the Very Low (less than 50% of the median) and Low (50% to 80% of the median) income categories.[252]

3.8.2.3.3 COUNTY OF SAN MATEO MIDCOAST LOCAL COASTAL PROGRAM (2013)

In 1980, the County Board of Supervisors and California Coastal Commission approved the LCP for the Midcoast. All development in the Coastal Zone requires either a Coastal Development Permit (CDP) or exemption from CDP requirements. The current edition of the LCP includes amendments through August 8, 2012.[253] In the LCP, the site is designated as infill and as a priority development site for affordable housing.[254]

The project site is located in the Midcoast LCP Area of San Mateo County and is regulated under the County LCP.[255] The LCP is made up of 12 components: Locating and Planning New Development, Public Works, Housing, Energy, Agriculture, Aquaculture, Sensitive Habitats, Visual Resources, Hazards, Shoreline Access, Recreation/Visitor serving Facilities, and Commercial Fishing/Recreational Boating. Policies that are applicable to the proposed project include the following:

<u>Locating and Planning New Development</u>

- **LCP Policy 1.1** requires a CDP for all development in the Coastal Zone, subject to certain exemptions.
- **LCP Policy 1.5(b)** permits in urban areas land uses in the LCP Land Use Plan Map and conditional uses up to the densities specified in Tables 1.2 and 1.3 of the LCP.
- **LCP 1.17** states the intention to conserve, improve, and revitalize existing residential, commercial, and industrial areas.

[250] County of San Mateo. 2023. *San Mateo County Housing Element Update 2023-2031.* Available at: https://www.smcgov.org/planning/san-mateo-county-housing-element-update-2023-2031. Accessed January 9, 2023.
[251] County of San Mateo. 2023. *San Mateo County Housing Element Update 2023-2031.* Available at: https://www.smcgov.org/planning/san-mateo-county-housing-element-update-2023-2031. Accessed January 9, 2023.
[252] Association of Bay Area Governments (ABAG), 2021. *Final Regional Housing Needs Allocation (RHNA) Plan: San Francisco Bay Area, 2023-2031.* Available at: https://abag.ca.gov/sites/default/files/documents/2021-12/Final_RHNA_Allocation_Report_2023-2031-approved_0.pdf. Accessed July 18, 2023.
[253] County of San Mateo. 2013. *Local Coastal Program Policies.* Available at: https://www.smcgov.org/planning/local-coastal-program#. Accessed January 4, 2023.
[254] San Mateo County. 2013. *Local Coastal Program Policies.* Available at: https://www.smcgov.org/planning/local-coastal-program. Accessed March 30, 2023.
[255] County of San Mateo, 2013.

- **LCP Policy 1.18** directs new development to existing urban areas in order to maximize efficiencies and discourage urban sprawl and allows for some future growth to develop at relatively high densities for affordable housing.
- **LCP Policy 1.19** states that no permit for development in the urban area shall be approved unless it can be demonstrated that it will be served with adequate water supplies and wastewater treatment facilities. Section (c) specifies that new public water connections in the MSWD water service area will be allowed only if consistent with the MSWD Public Works Plan. Section (h) states that lack of adequate water supplies and wastewater facilities shall be grounds for denial of development applications.
- **LCP Policy 1.23(a)** limits the maximum number of new dwelling units per year to 40 units until:
  - A comprehensive transportation management is incorporated into the LCP
  - Adequate stormwater facilities have been constructed and there is sufficient evidence that the Intertie Pipeline System capacity is adequate to avoid sewage overflows and water quality violations
  - The growth rate is changed by an LCP amendment
- **LCP Policy 1.23(d)** exempts building permits for affordable housing from the 40-unit maximum if 1) the units are affordable as defined by Section 6102.48.6 of the certified zoning regulations and subject to income and cost/rent restrictions for the life of the development; and 2) the growth rate average over a 3-year period, that includes the year the building permit is issued and the following 2 years, does not exceed 40 units/year.
- **LCP Policy 1.25** requires protection of archaeological and paleontological resources, including mitigation plans for resources constructed in sensitive areas.
- **LCP Policy 1.35** requires that all new development and activities protect coastal water quality by:
  - a. Implementing appropriate site design and source control best management practices to prevent soil erosion and pollution runoff
  - d. Using multi-benefit, natural features in stormwater treatment systems, such as landscape-based bioretention areas, where feasible
  - e. Minimizing the introduction of pollutants into coastal waters
  - f. Minimizing the amount of impervious surfaces and maximizing on-site infiltration of runoff
  - j. For projects creating more than 1 acre of impervious surface, implementing hydromodification requirements as further detailed in Appendix 1.A of the LCP
  - k. Implementing the minimum stormwater pollution prevention requirements contained in Appendix 1.A of the LCP
- **LCP Policy 1.36** requires that all new development in the Half Moon Bay Airport Influence Area comply with all Federal Aviation Administration standards and criteria regarding safety, flashing lights, reflective material, land uses that may attract large concentrations of birds, heating, ventilation, and air conditioning (HVAC) exhaust fans, and land uses which may generate electrical or electronic interference with aircraft communications and/or instrumentation.

<u>Public Works</u>

- **LCP Policy 2.8** reserves public works capacity for identified priority land uses as shown on Table 2.7 and Table 2.17 of the LCP.

- **LCP Policy 2.16** reserves sewage treatment capacity identified priority land uses.
- **LCP Policy 2.24a** ensures water supplies are reserved for identified priority land uses.
- **LCP Policy 2.48** requires that roadway improvements be consistent with all applicable policies of the LCP.

Housing

- **LCP Policy 3.1** encourages adequate housing for low- and moderate-income residents and workers.
- **LCP Policy 3.2** strives to ensure decent housing for low- and moderate-income persons regardless of age, sex, race, marital status, or other arbitrary factors.
- **LCP Policy 3.3** strives to provide such housing in balanced residential environments.
- **LCP Policy 3.4** strives to improve the available range of housing choices.
- **LCP Policy 3.12** designates affordable housing sites as priority land uses for which water and sewer capacity will be reserved.
- **LCP Policy 3.13** requires that a new affordable development maintains a sense of community character.
- **LCP Policy 3.14** specifies that affordable housing on the Midcoast be located in the urban boundary.
- **LCP Policy 3.15.a(1)** designates the "11-acre site in North Moss Beach" as a potential affordable housing site and sets criteria for development.
- **LCP Policy 3.15b** designates the project site as Medium High Density to incorporate a density bonus within the land use designation.
- **LCP Policy 3.16a** limits the number of building permits for affordable housing units to 60 during any 12-month period.
- **LCP Policy 3.16b** allows the County Board of Supervisors to increase the number of permits if they find that the phasing "threatens the implementation of affordable housing by prohibiting developers from building when circumstances are uniquely favorable for a limited period of time."
- **LCP Policy 3.20** provides for Grant Density Bonuses for affordable housing developments that meet specific requirements.
- **LCP Policy 3.21** establishes an inclusionary requirement for affordable housing in all new developments.
- **LCP Policy 8.12a** applies a Design Review Zoning District to urban areas of the Coastal Zone.
- **LCP Policy 8.12b** ensures new developments are located and designed so as not to block ocean views from public viewing points. Development in the Design Review District must be reviewed by the Design Review Committee.
- **LCP Policy 8.13a** includes special design guidelines for Montara–Moss Beach–El Granada–Miramar, which include 1) designing structures to fit the topography of the site, 2) use of natural materials and colors, 3) use of pitched roofs with non-reflective materials, 4) designing structures in scale with surroundings, 5) minimize blocking of views to or along the shoreline.

3.8.2.3.4 COUNTY OF SAN MATEO ZONING REGULATIONS

The County Zoning Regulations includes regulations to regulate growth in San Mateo County.[256]

Chapter 3. Parking

For apartments, the following number of parking spaces are required:

- 1 space for each studio apartment
- 1.2 spaces for each one-bedroom apartment
- 1.5 parking spaces for each two-bedroom apartment
- 2 spaces for each three- or more-bedroom apartment
- 1 visitor parking space for every 10 units
- 1 bicycle parking space for every 4 units
- 2 dedicated electric vehicle (EV) charging spaces

Affordable housing developments are required to have the same number of parking spaces required for single-family dwellings or apartments.

Under Section 6121, Parking Areas Development and Maintenance, parking areas are required to have the following:

- Parking areas for more than 10 vehicles shall be effectively screened on each side facing residential areas.
- Parking areas for more than 10 vehicles shall be paved with asphalt or Portland cement binder pavement.
- Parking areas shall be installed so cars do not overhang required sidewalks, planters, and landscaped areas.
- Landscaped areas at least 4 feet wide shall be provided adjacent to all street rights-of-way. Live landscaping shall be provided and maintained.

Chapter 9. Planned Unit Development (PUD) Districts

- Chapter 9 describes regulations for enacting a PUD district. Before enacting a PUD district, the Planning Commission must find the precise plan is in harmony with its surroundings; not in conflict with the County Master Plan; is desirable for future growth of the area; will not be detrimental to the character of the area; will not cause undue interference with existing or prospective traffic movements on adjacent highways; will provide adequate light, air, privacy, and convenience of access to the property; and will not be subject to undue risk of fire, inundation, and other dangers.

[256] County of San Mateo. 2022. *Zoning Regulations*. Available at: https://www.smcgov.org/media/101461/download?inline=. Accessed May 5, 2023.

Chapter 18.6. Airport Overlay (A-O) District

Noise insulation in the A-O district is required to achieve the following: interior community noise equivalent levels (CNEL) with windows closed, attributable to exterior sources, shall not exceed an annual CNEL of 55 A-weighted decibels (dBA).

Chapter 20. Combining Districts

Section 6300.2. Regulations for S-17 Combining District (Midcoast). This sets building and setback requirements for the Midcoast. However, these regulations apply to "any single-family residential district with which the S-17 District is combined." Therefore, they are not relevant to the project.

Section 6300.2.11. Winter Grading. Development related grading, e.g., site preparation, shall not occur between October 15 and April 15 in any given year unless the applicant demonstrates to the satisfaction of the Community Development Director and Building Official that the development site will be effectively contained to prevent erosion and sedimentation, and that such site containment has been established and is ongoing. Site containment shall include, but not be limited to, covering stored equipment and materials, stabilizing site entrances and exposed slopes, containing or reducing runoff, and protecting drain inlets.

Section 6300.9.11.70. Midcoast Impervious Surface Area. Under this section, the amount of impervious surface area is limited to 10% of the parcel size. Impervious structures include, but are not limited to, non-porous driveways, decks, patios, walkways, and swimming pools. An exception to the limit may be granted by the Community Development Director upon finding that off-site project drainage, i.e., runoff, will not exceed that amount equivalent to 10% (parcel size). The applicant shall submit a professionally prepared site plan showing topography, drainage, and calculations which demonstrates this finding can be made.

Section 6300.9.11.80. Building Height. For parcels east of Highway 1 and greater than 10,000 square feet or larger in size, the maximum building height is 32 feet.

Section 6300.9.11.100. Daylight Plane or Façade Articulation. This section provides details for Daylight Plane or Facade Articulation options for design requirements, which must be approved by the Design Review Committee.

Section 6300.9.11.110. Midcoast Winter Grading. Development-related grading shall not occur between October 15 and April 15, unless the applicant demonstrates to the satisfaction of the Community Development Director and Building Official that the development site will be effectively contained to prevent erosion and sedimentation, and that such site containment has been established and is ongoing.

Chapter 28.1. "DR" Design Review District

Section 6565.20. This section includes Standards for Design for one-family and two-family (duplex) residential development in the Midcoast area. The purpose of the Midcoast design standards is to encourage new single-family homes and additions that have their own individual character, while ensuring that they are complementary with neighboring houses, the neighborhood character of each Midcoast community, and the surrounding natural setting.

3.8.2.3.5 COUNTY OF SAN MATEO DESIGN REVIEW

The Coastside Design Review Committee is appointed by the County Board of Supervisors to ensure that new development is compatible with the visual character of the San Mateo Coastside, specifically the

communities of Montara, Moss Beach, El Granada, and Princeton-by-the-Sea.[257] Specific standards have been adopted for each community and are used by the committee to review each development project. These policies are contained in the Zoning Regulations, Chapter 28.1.[258] The committee bases design review on the guidelines in the Community Design Manual.[259]

Design review is required for all new projects located in the Design Review Overlay District that require a building permit, or grading or land clearing projects that requires a grading permit. The Design Review Committee holds public hearings to solicit comments and produces written findings of their decisions.[260]

The Community Design Manual includes guidelines to ensure the project is visually compatible with its environment and surrounding neighborhood. Design guidelines include:

- Minimize grading and vegetation removal
- Control site preparation to reduce erosion soil exposure and impacts on the natural drainage system
- Blend structures with the natural vegetative cover of the site
- Use only native vegetation in landscaping
- Set back development from streams, drainage areas, or bodies of water
- Preserve public views and views from scenic corridors
- Cluster development to preserve open space
- Integrate paved areas into the site and use small separate parking areas
- Use underground utilities where feasible
- Use exterior colors and materials that blend with natural setting and surrounding neighborhood
- Use simple shapes for buildings and roofs to unify building design
- Design structures related in size and scale to the surrounding neighborhood

3.8.2.3.6 RESOLUTION NO. 007603 (JULY 21, 2020)

On July 21, 2020, the County Board of Supervisors adopted a resolution which changed the zoning of the project site from PUD-124/CD to PUD-140/CD.[261] Under the new zoning designation, the parcel was:

- Changed from Medium High Density to Medium Density,
- Reduced from 148 dwelling units to 71 dwelling units (6.5 dwelling units per acre)

[257] County of San Mateo. 2023. Coastside Design Review Committee Webpage. Available at: https://www.smcgov.org/planning/coastside-design-review-committee. Accessed March 5, 2023.
[258] County of San Mateo, 2022.
[259] County of San Mateo. 1976. *Community Design Manual.* Available at: https://www.smcgov.org/planning/coastside-design-review-committee. Accessed May 5, 2023.
[260] County of San Mateo, 2022.
[261] County of San Mateo Board of Supervisors. 2020. Ordinance No. 007603. (1) Amending Chapter 2 of Division VI of the County Ordinance Code to revise the zoning maps to change the zoning of the subject parcel to Planned Unit Development No. 140 (PUD-140); (2) Amending Chapter 2 of the division VI of the County Zoning Ordinance Code to revise the zoning maps to add Design Review Overlay to the subject parcel, and (3) Amending Chapter 2 of Division VI of the County Ordinance Code Appendix A, to enact the following planned unit development No. 140 Zoning District Regulations. Available at: https://sanmateocounty.legistar.com/LegislationDetail.aspx?ID=4596406&GUID=23FD57DC-5964-41E0-BFBA-E29AA5709560&FullText=1. Accessed January 4, 2023.

- Revised to require that all units (with the exception of the manager's unit) be affordable, and
- Added Design Review Overlay to the parcel.

3.8.2.3.7 HALF MOON BAY AIRPORT ENVIRONS LAND USE COMPATIBILITY PLAN (2014)

The Airport Land Use Compatibility Plan (ALUCP) for the Half Moon Bay Airport is intended to "protect and promote safety and welfare of residents, business, and airport users near the airport." It protects the public from airport noise and ensures people are not concentrated in areas susceptible to aircraft accidents.

Under Policy 4.1.8.3 of the ALUCP, the City/County Association of Governments shall encourage local governments to submit development proposals in the Airport Influence Area to the Airport Land Use Commission for review if they include more than 50 dwelling units. Under Table 4B, safety criteria for the Airport Influence Area includes requirements for maintaining 10% open land, airport disclosure notification, and airspace review for objects more than 100 feet tall; and prohibits hazards to flight.[262]

3.8.2.3.8 SIGNIFICANT TREE ORDINANCE OF COUNTY OF SAN MATEO (2016) AND REGULATIONS FOR THE PROTECTIONS OF HERITAGE TREES (2016)

These ordinances require submittal of an Existing Tree Plan, including 1) an Arborist's report of all Significant or Heritage Trees to be removed, and 2) a tree protection plan for all trees to be preserved.[263, 264] Permits must be acquired for all regulated trees to be removed. In this instance, the proposed tree removal for this project will be considered as part of the Coastal Development Permit application. Significant trees to be removed must be replaced at a one to one ratio, as determined by the Community Development Director.

3.8.3 Thresholds of Significance

The determinations of significance of project impacts are based on applicable policies, regulations, goals, and guidelines defined by CEQA Guidelines Appendix G, as modified by the County. Specifically, the project would be considered to have a significant effect on land use and planning if the effects exceed the significance criteria described below:

1. Physically divide an established community.
2. 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.
3. Serve to encourage off-site development of presently undeveloped areas or increase development intensity of already developed areas (examples include the introduction of new or expanded public utilities, new industry, commercial facilities, or recreation activities).

[262] City/County Association of Governments of San Mateo County. 2014. *Final Airport Land Use Compatibility Plan for the Environs of Half Moon Bay Airport.* Available at: https://ccag.ca.gov/wp-content/uploads/2014/10/HAF-ALUCP-Final.pdf. Accessed January 12, 2023.
[263] County of San Mateo. 2016. Significant Tree Ordinance of County of San Mateo. Available at: https://www.smcgov.org/planning/tree-regulations. Accessed May 5, 2023.
[264] County of San Mateo. 2016. Regulation of Removal and Trimming of Heritage Trees on Public and Private Property. Available at: https://www.smcgov.org/planning/tree-regulations. Accessed May 5, 2023.

Each of these thresholds is discussed under Section 3.8.5, Impacts and Mitigation Measures, below.

3.8.4 Impact Assessment and Methodology

The County's General Plan, LCP, Zoning Regulations, and Half Moon Bay ALUCP were reviewed for consistency with the proposed project. Geographic information system (GIS) data and a site visit were used to confirm the land uses in the project site. Project effects related to land use and planning were compared against policies and zoning codes for consistency.

3.8.5 Impacts and Mitigation Measures

Impact LUP-1: Would the project physically divide an established community? (No Impact)

The project is located on the northwestern edge of the community of Moss Beach and would add 71 multi-family dwelling units in an area that is adjacent to existing single-family dwellings. It is zoned for 71 units of residential development and is surrounded by similar residential uses on the southeast and southwest in the form of residential development in Moss Beach, and on the north by residential development in Montara. Therefore, it would not physically divide an established community and no impact would occur.

Impact LUP-2: Would the project 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? (Less than Significant)

The project is designed to comply with all land use and zoning plans, policies, and regulations. It would construct an affordable housing project for persons residing or working on the coast, which would meet the intentions of General Plan Housing Element and LCP Policies 2.24, 3.1, 3.2, 3.3, 3.4, 3.13, 3.14, 3.15, 3.21. As part of project approval, a General Plan Amendment to amend the site designation from Medium-High Density Residential, which permits 8.8-17.4 units per acre, to Medium Density Residential which permits 6.1-8.7 units per acre is proposed. The proposed project's 71 units would be consistent with the proposed General Plan amendment to Medium Density Residential. The project would assist the County in meeting its regional fair share of housing allocation for the 6th cycle of the RHNA plan. In particular:

- The project applicant has applied for a Coastal Development Permit which complies with LCP Policy 1.1. The Coastal Commission completed a Policy Consistency Analysis in August 2020.
- The project is located in a designated urban area under the LCP Land Use Map and is located on a site designated for multi-family residential development. It is also on a site designated for affordable housing in both the existing (2015) and draft (2023) County General Plan Housing Elements. Therefore, the project would meet the requirements of LCP Policies 1.5(b), 1.17, and 1.18 and Zoning Code Chapter 9.
- The project meets all requirements of the PUD-140/DR Zoning District. The project includes a total of 71 units and would comply with all requirements of the Coastside Design Review Committee.
- The maximum height of project buildings is 28 feet and the minimum setback from Carlos Street is 20 feet. The project is designed to cluster buildings and provide minimal interference with visual character and a maximum of open space, meeting the requirements of Zoning Code

Sections 6300.9.11.80 and 6300.9.11.100, and LCP Policies 8.12a and 8.13a. The project would be subject to the Design Review Committee requirements in compliance with Zoning Code Chapter 28.1. The project would provide two parking spaces for each unit, would be paved, would be screened from residential areas, and would meet all requirements of Zoning Code Chapter 3.

- The project would be clustered on-site in order to minimize tree removal and allow for open space uses, including trails. Open space areas would be planted with low-water-intensive, and native species appropriate to the soils and climate. Therefore, the project would comply with Community Design Manual guidelines.
- The project would protect coastal water quality and include natural stormwater management and treatment systems, as required by the County's stormwater management guidelines for C.3 regulated projects. The project would also be required to implement a stormwater pollution protection plan during construction. See Section 3.7, Hydrology and Water Quality, for more information. The project is designed to comply with LCP Policy 1.35 and Zoning Codes 6300.2.11, 630.9.11.70, and 6300.9.11.110.[265]
- The project is located in the Airport Influence Area (Zone 7) for the Half Moon Bay Airport[266] and would be reviewed for consistency by the Airport Land Use Commission. The project would not exceed any height requirements for the Airport Influence Area. The project would comply with Chapter 18.6 of the Zoning Code and the Half Moon Bay ALUCP.
- The project site is within the service area of the MWSD. The affordable housing units planned for the project site qualify as a priority use as described in the 2013 County LCP. Therefore, the project complies with LCP Policies 1.19, 2.8, 2.16, 2.24a, and 3.12.
- The project has completed a cultural resources investigation and would not impact archaeological or paleontological resources. Therefore, it would comply with LCP Policy 1.25.
- The applicant has requested that the County concur with their conclusion that the proposed project meets the requirements provided in Policy 1.23, Section (d), and should thus be exempted from the requirements contained in Policy 1.23. The project would provide affordable housing and it is likely that the growth rate over a 3-year period would not exceed 40 units per year. Therefore, the project would comply with LCP Policy 3.16a. In addition, the proposed project includes hydromodification features to ensure that post-project stormwater runoff does not exceed pre-project levels. With the County's approval of the applicant's request, the project would be consistent with these policies.
- The project would provide affordable housing opportunities for low-income persons. It has been designed to provide an overall density similar to the surrounding neighborhood, and much less than allowable under the prior zoning. Although it would be eligible for a density bonus under Policy 3.20, the applicant is not requesting a density bonus in order to design a project that fits with the character of the existing community.
- The project site has scattered Monterey Pine and Monterey Cypress trees, with a forest of these trees along the northern boundary of the project site. The removal of regulated trees has been minimized as much as possible, clustering the proposed development on the site to retain the forested open space on the northern portion of the project site. All existing trees to be retained on the project site would be fenced during construction and provided with temporary irrigation.

[265] The project is currently undergoing an analysis for wildfire access and evacuation routes. This section will be updated once that evaluation is complete.
[266] City/County Association of Governments of San Mateo County, 2014.

Therefore, the project would comply with the ordinances for protection of Heritage Trees and Significant Trees.

The Coastal Commission completed a Policy Consistency Analysis in August 2020 which is incorporated by reference into this document. The Policy Consistency Analysis concluded that the project is consistent with relevant San Mateo County LCP policies, with two exceptions.

- Policy 1.23 limits the maximum number of new dwelling units to 40 per year. Policy 1.23(d) states building permits for units in excess of 40 may still be issued if the units are affordable and if the growth rate average over a 3-year period will not exceed 40 units per year. MidPen has requested that the County concur with their conclusion that the growth rate average over a 3-year period for the project would not exceed 40 units per year. If the request is approved, the project would be consistent with this measure.
- Policy 3.15(d)(1)(a) states development on the project site must help meet the LCP housing objectives according to the following criteria: 21% of the total units constructed must be reserved for low-income households, and an additional 14% must be reserved for moderate-income households. MidPen has requested that this policy be modified to more closely reflect the objectives of the proposed project. If the policy is modified to reflect the project objectives, the project would be consistent with this measure.[267]

As discussed above, the project is designed to comply with all land use and zoning plans, policies, and regulations. Impacts related to traffic and emergency access are discussed in Sections 3.10, Transportation, and 3.12, Wildfire. As a result, less than significant impacts to any land use plan, policy, or regulation would occur.

Impact LUP-3: Would the project serve to encourage off-site development of presently undeveloped areas or increase development intensity of already developed areas (examples include the introduction of new or expanded public utilities, new industry, commercial facilities or recreation activities)? (Less than Significant)

The project would include construction of affordable housing on a site identified for affordable housing in the County LCP and General Plan. The project does not include new industry, commercial facilities, or recreation activities. The project is designed to provide housing for people already working on the coast, therefore, it would not encourage off-site development or increase development intensity of already developed areas. Therefore, the project would result in less-than-significant impacts for this topic.

3.8.6 Cumulative Impacts

Impact C-LUP-1: Would the impacts of the proposed project, in combination with other past, present, and reasonably foreseeable future projects, contribute to a cumulative impact related to land use and planning? (Less than Significant)

The geographic context for analysis of cumulative impacts related to land use and planning generally includes the San Mateo County coast including the communities of Moss Beach, Montara, El Granada, and Princeton-by-the-Sea.

[267] California Coastal Commission. 2021. *Cypress Point Project MidPen Housing. Policy Consistency Analysis*. July 2021. Available at: https://www.smcgov.org/media/104101/download?inline=. Accessed July 18, 2023.

There are no applicable General Plan or LCP policies or programs that conflict with the proposed project's creation of affordable housing, either in an individual or a cumulative capacity. In fact, the proposed project implements state, regional, and local goals to increase the supply of affordable housing. The project site is specifically identified for affordable housing in the County's LCP and the PUD-140 zoning district regulations.[268, 269]

The project would not encourage off-site development of presently undeveloped areas or increase development intensity of already developed areas. The proposed project has a density of 6.5 dwelling units per acre in compliance with the County's LCP Land Use Map. This allowable density was reduced from the original allowable density of 13.6 dwelling units per acre. Therefore, the proposed project density is similar to surrounding neighborhoods. The project is subject to design review guidelines and authority. There are no existing or reasonably foreseeable projects adjacent to the project site that would combine with the proposed project to divide an established community. Therefore, the proposed project's contribution would not be cumulatively considerable. Given this, the proposed project, in conjunction with other planned and approved projects, would result in a less than significant cumulative impact with respect to land use and planning.

[268] County of San Mateo Board of Supervisors, 2020.
[269] County of San Mateo, 2022.

3.9 NOISE

This section describes the environmental and regulatory setting for noise and vibration. It also describes existing conditions and potential impacts related to noise that would result from the implementation of the proposed project, and mitigation for potentially significant impacts, where feasible. Descriptions and analysis in this section are based on the following noise report:

- Illingworth & Rodkin, Inc. 2018. *Cypress Point Affordable Housing Project Noise and Vibration Assessment*. Completed June 12, 2018.[270] (Included as Appendix O)

The noise and vibration assessment was completed in 2018. Considering project updates and changes, an updated 2023 noise memorandum was warranted and analyzed changes to the project that would affect the noise environment, including tree removal activities. Other changes to the project, including modifications to the traffic study, were not considered to be substantial enough to warrant additional analysis.[271] In 2023, Illingworth & Rodkin completed the following noise assessment memorandum for the proposed tree removal activities:

- Illingworth & Rodkin, Inc. 2023. Cypress Point Affordable Housing Project Noise Assessment Update of Proposed Tree Removal Activities. Completed May 19, 2023. [272] (Included as Appendix P)

3.9.1 Environmental Setting

3.9.1.1 Noise Fundamentals and Terminology

Noise is commonly defined as sound that is undesirable because it interferes with speech communication and hearing, causes sleep disturbance, or is otherwise annoying. The following acoustical terms are used throughout this analysis:

- Ambient sound level is defined as the composite of noise from all sources near and far (i.e., the normal or existing level of environmental noise at a given location).
- Decibel (dB) is the physical unit commonly used to measure sound levels. Technically, a dB is a unit of measurement that describes the amplitude of sound equal to 20 times the base 10 logarithm of the ratio of the reference pressure to the sound of pressure, which is 20 micropascals (μPa).
- Sound measurement is further refined by using a decibel "A-weighted" sound level (A-weighted decibel [dBA]) scale that more closely measures how a person perceives different frequencies of sound; the A-weighting reflects the sensitivity of the ear to low or moderate sound levels.
- Equivalent noise level (L_{eq}) is the energy average A-weighted noise level during the measurement period.
- The root-mean-squared maximum noise level (L_{max}) characterizes the maximum noise level as defined by the loudest single noise event over the measurement period.

[270] Illingworth & Rodkin, Inc. 2018. *Cypress Point Affordable Housing Project Noise and Vibration Assessment*. Completed June 12, 2018.
[271] Illingworth & Rodkin, Inc. 2023. *Cypress Point Affordable Housing Project Noise Assessment Update of Proposed Tree Removal Activities*. Completed May 19, 2023.
[272] Illingworth & Rodkin, Inc., 2023.

- Day-night sound level (L_{dn}) is the A-weighted equivalent sound level for a 24-hour period with an additional 10-dB weighting imposed on the equivalent sound levels occurring during nighttime hours (10:00 p.m.–7:00 a.m.).
- Community noise equivalent level (CNEL) is a measure of the 24-hour average noise level that penalizes noise that occurs during the evening and nighttime hours, when noise is considered more disturbing. To account for this increase in disturbance, 5 dBA is added to the hourly L_{eq} during the evening hours (7:00 p.m.–10:00 p.m.) and 10 dBA is added during the nighttime hours (10:00 p.m.–7:00 a.m.).
- Percentile-exceeded sound level (L_{xx}) describes the sound level exceeded for a given percentage of a specific period. For example, L_{10} is a relatively loud noise exceeded only 10% of the measured time, whereas L_{90} is a relatively quiet sound exceeded 90% of the measured time.
- Noise-sensitive land use is defined as a location most likely to be adversely affected by excessive noise levels, or as a place where quiet is an essential element of their intended purpose.

3.9.1.2 Sound Levels of Representative Sounds and Noises

The U.S. Environmental Protection Agency (EPA) has developed an index to assess noise impacts from a variety of sources. Noise levels in a quiet rural area at night are typically between 32 and 35 dBA. Quiet urban nighttime noise levels range from 40 to 50 dBA. Noise levels during the day in a noisy urban area are frequently as high as 70 to 80 dBA. Noise levels above 110 dBA become intolerable; levels higher than 80 dBA over continuous periods can result in hearing loss. Levels above 70 dBA tend to be associated with task interference. Levels between 50 and 55 dBA are associated with raised voices in a normal conversation.[273] In general, an average person perceives an increase of 3 dBA or less as barely perceptible. An increase of 10 dBA is perceived as a doubling of the sound. Table 3.9-1 provides criteria that have been used to estimate an individual's perception of increases in sound. Table 3.9-2 presents sound levels for some common noise sources and the human response to those decibel levels.

Table 3.9-1. Average Human Ability to Perceive Changes in Sound Levels

Increase in Sound Level (dBA)	Human Perception of Sound
2–3	Barely perceptible
5	Readily noticeable
10	Doubling of the sound and perceived as twice as loud
20	Dramatic change

Source: Bolt, Beranek and Newman, Inc.[274]

[273] U.S. Environmental Protection Agency (EPA). 1973. Legal Compilation on Noise, Vol. 1, p. 2-104.

[274] Bolt, Beranek and Newman, Inc. 1973. *Fundamentals and Abatement of Highway Traffic Noise*. Report Number PB-222-703. Prepared for U.S. Department of Transportation, Federal Highway Administration. Cambridge, Massachusetts: Bolt, Beranek and Newman, Inc.

Table 3.9-2. Sound Levels of Representative Sounds and Noises

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1,000 feet		
	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 miles per hour		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	— 70 —	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	— 60 —	
		Large business office
Quiet urban daytime	— 50 —	Dishwasher next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: Caltrans.[275]

Attitude surveys are used for measuring the annoyance felt in a community that results from 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, television, house vibrations, and interference with sleep and rest. The CNEL as a measure of noise has been found to provide a valid correlation between 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 that is highly annoyed, the threshold for ground vehicle noise is about 50 dBA CNEL. At a CNEL of about 60 dBA, approximately 12% of the population is highly annoyed. When the CNEL increases to 70 dBA, the percentage of the population that is highly annoyed increases to about 25% to 30% of the population. There is, therefore, an increase of about 2% in perceived annoyance for each 1-dBA increase between a CNEL of 60 and 70 dBA. Between a CNEL of 70 and

[275] California Department of Transportation (Caltrans). 2013. Technical Noise Supplement (TeNS). Available at: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tens-sep2013-a11y.pdf. Accessed June 2018.

80 dBA, each decibel increase results in an increase of about 3% in the percentage of the population that is highly annoyed.

People appear to respond more adversely to aircraft noise. When the CNEL is 60 dBA, approximately 30% to 35% of the population is believed to be highly annoyed. Each decibel increase to 70 dBA CNEL adds about 3 percentage points to the number of people who are highly annoyed. Above 70 dBA CNEL, each decibel increase results in about a 4% increase in the percentage of the population that is highly annoyed.

3.9.1.3 Fundamentals of Groundborne Vibration

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero (i.e., there is no net motion). 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 millimeters/second or inches/second is used to evaluate construction-generated vibration for building damage and human complaints. Table 3.9-3 displays the reactions of people and the effects on buildings that continuous vibration levels produce.

The annoyance levels shown in Table 3.9-3 should be interpreted with care since vibration may be found to be annoying at much 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 vibrations, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated complaints for vibrations levels where there is very little risk of actual structural damage.

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 (i.e., periodic, not continuous), 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 induce structural 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. Studies have shown that the threshold of perception for average persons is in the range of 0.008 to 0.012 inch/second PPV. Human perception of vibration varies with the individual and is a function of the 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.

Damage caused by vibration can be classified as cosmetic or structural. Cosmetic damage includes minor cracking of building elements (exterior pavement, room surfaces, etc.). Structural damage involves threats to the integrity of buildings. Damage resulting from construction-related vibration typically results only in cosmetic damage. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher, and there is no consensus as to what amount of vibration may pose a threat for structural damage to the building. Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is in a high state of disrepair and the construction activity occurs immediately adjacent to the structure.

Table 3.9-3. Reaction of People and Damage to Buildings from Continuous or Frequent Intermittent Vibration Levels

Velocity Level PPV (inch/second)	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	Virtually no risk of damage to normal buildings
0.3	Strongly perceptible to severe	Threshold at which there is a risk of damage to older residential dwellings such as plastered walls or ceilings
0.5	Severe; vibrations considered unpleasant	Threshold at which there is a risk of damage to newer residential structures

Source: Caltrans.[276]

3.9.1.4 Existing Noise Environment

The project site is located northeast of the Carlos Street and Sierra Street intersection in Moss Beach, California. Figure 3.9-1 shows the project site plan superimposed on an aerial image of the project site vicinity. As shown on Figure 3.9-1, residential land uses (sensitive receptors) bound the project site to the south, east, and north. There are also commercial buildings associated with the Montara Sanitary District to the west opposite California State Highway 1 (Highway 1).

A noise monitoring survey was conducted at the project site between Wednesday, August 30, 2017, and Friday, September 1, 2017. The noise and vibration assessment was completed in 2018.[277] The 2023 noise memorandum analyzed changes to the project that would affect the noise environment (such as tree removal). Modifications to the traffic study were not considered to be substantial enough to warrant additional analysis.[278] The noise monitoring survey included two long-term noise measurements (LT-1 and LT-2) and three short-term noise measurements (ST-1 through ST-3), as shown in Figure 3.9-1. The long-term measurements were made to quantify the daily trends in noise levels near the westernmost and easternmost site boundaries. The 10-minute short-term measurements were made to quantify specific noise sources affecting the project vicinity and characterize the range of noise levels throughout the project site. The noise environment at the project site and the nearby land uses results primarily from vehicular traffic along Highway 1.

[276] Caltrans. 2013. Transportation and Construction Vibration Guidance Manual. Available at: https://www.contracosta.ca.gov/DocumentCenter/View/34120/Caltrans-2013-construction-vibration-PDF. Accessed June 2023.
[277] Illingworth & Rodkin, Inc., 2018.
[278] Illingworth & Rodkin, Inc., 2023.

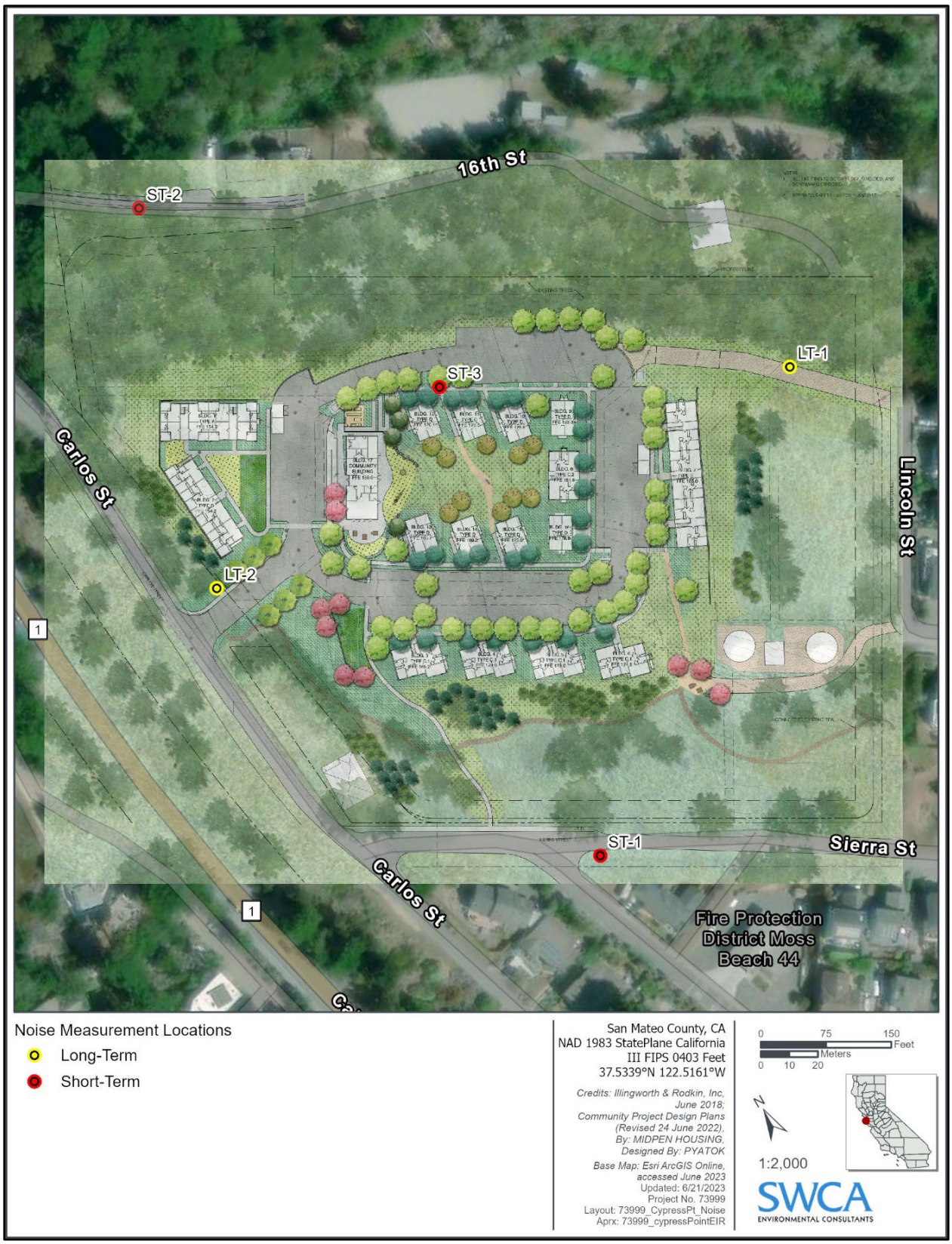


Figure 3.9-1. Noise measurement locations.

Long-term noise measurement LT-1 was made in the northeast corner of the project site, approximately 125 feet west of the Lincoln Street centerline. This noise measurement was made to quantify existing noise levels near the adjacent sensitive receptors. Hourly average noise levels at this location typically ranged from 39 to 55 dBA L_{eq} during the day and from 34 to 47 dBA L_{eq} at night. The average community noise equivalent level on Thursday, August 31, 2017, was 51 dBA CNEL. The daily trend in noise levels at LT-1 is shown in the noise and vibration assessment (see Appendix O).

Long-term noise measurement LT-2 was made along the western boundary of the project site, approximately 60 feet east of the Carlos Street centerline and 200 feet east from the centerline of Highway 1. This noise measurement quantified existing noise levels primarily from vehicular traffic along Highway 1. Hourly average noise levels at this location typically ranged from 48 to 57 dBA L_{eq} during the day and from 41 to 52 dBA L_{eq} at night. The average community noise equivalent level on Thursday, August 31, 2017, was 55 dBA CNEL. The daily trend in noise levels at LT-2 is shown in the noise and vibration assessment (see Appendix O).

Short-term noise measurement ST-1 was made on the southeast corner of the Stetson Street and Sierra Street intersection, approximately 20 feet east of the Stetson Street centerline and approximately 30 feet south of the Sierra Street centerline. The 10-minute average noise level measured at this location between 12:20 p.m. and 12:30 p.m. on Wednesday, August 30, 2017, was 44 dBA L_{eq}. Short-term noise measurement ST-2 was made along 16th Street, approximately 15 feet south of the 16th Street centerline and approximately 260 feet east of the Carlos Street centerline. The 10-minute average noise level measured at this location between 12:40 p.m. and 12:50 p.m. on Wednesday, August 30, 2017, was 53 dBA L_{eq}. Short-term noise measurement ST-3 was made near the center of the project site, approximately 400 feet east of the Carlos Street centerline and approximately 510 feet north of the Sierra Street centerline. The 10-minute average noise level measured at this location between 9:40 a.m. and 9:50 a.m. on Friday, September 1, 2017, was 43 dBA L_{eq}. Table 3.9-4 summarizes the results of the short-term noise measurements.

Table 3.9-4. Summary of Short-Term Noise Measurement Data (dBA)

Noise Measurement Location	L_{max}	L_1	L_{10}	L_{50}	L_{90}	L_{eq}
ST-1: Southeast corner of Stetson Street/Sierra Street intersection. (8/30/2017, 12:20 p.m. to 12:30 p.m.)	51	49	47	43	40	44
ST-2: Along 16th Street. (8/30/2017, 12:40 p.m. to 12:50 p.m.)	60	58	55	52	47	53
ST-3: Center of project site. (9/1/2017, 9:40 a.m. to 9:50 a.m.)	55	51	46	41	38	43

Source: Noise and Vibration Assessment.[279]

3.9.2 Regulatory Setting

The State of California and San Mateo County have established regulatory criteria that are applicable to this assessment. The State CEQA Guidelines, Appendix G, are used to assess the potential significance of impacts pursuant to local San Mateo County General Plan policies, Municipal Code standards, or the applicable standards of other agencies. A summary of the applicable regulatory criteria is provided below.

California Environmental Quality Act (CEQA) does not define what noise level increase would be considered substantial. Typically, an increase in the CNEL noise level resulting from the project at noise-

[279] Illingworth & Rodkin, Inc., 2018.

sensitive land uses of 3 dBA or greater would be considered a significant impact when projected noise levels would exceed those considered acceptable for the affected land use. An increase of 5 dBA CNEL or greater would be considered a significant impact when projected noise levels would remain within those considered acceptable for the affected land use.

3.9.2.1 2016 California Building Code, Title 24, Part 2

The current version of the California Building Code requires interior noise levels attributable to exterior environmental noise sources be limited to a level not exceeding 45 dBA L_{dn}/CNEL in any habitable room.

3.9.2.2 San Mateo County Mid-Coast Local Coastal Program

The San Mateo County Mid-Coast Local Coastal Program offers qualitative noise goals and objectives, including to: 1) require that engines use muffler systems, 2) minimize noise impacts on surrounding land uses, especially residential, and 3) require that all development minimize the impacts of noise on adjacent properties and the community at large.

3.9.2.3 2014 Final Airport Land Use Compatibility Plan for the Environs of Half Moon Bay Airport

The Half Moon Bay Airport Land Use Compatibility Plan (ALUCP)[280] adopted by the San Mateo County Airport Land Use Commission contains standards for projects within the vicinity of Half Moon Bay Airport, which are relevant to this project.

4.2.1.1 Aircraft Noise Contours. Existing (2012) and 20-year future (2032) CNEL aircraft noise exposure contours were prepared for Half Moon Bay Airport and are depicted in Chapter Two of the ALUCP.[281] The 20-year noise exposure contour is slightly larger due to a projected increase in operations as indicated in the 2013 Airport Layout Plan Narrative Report. Therefore, the 2032 noise exposure contours shall be used for evaluation of airport/land use noise compatibility for the Half Moon Bay Airport.

The 60 dB CNEL noise exposure contour is the threshold for residential noise compatibility for Half Moon Bay Airport.

4.2.1.3 Residential Uses. Residential uses are considered conditionally compatible in areas exposed to noise levels between 60 and 64 dB CNEL 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 detached single-family dwellings must be sound-insulated to achieve an indoor noise level of CNEL 45 dB or less from exterior sources. Residential uses are not considered compatible above 65 CNEL.

3.9.2.4 SAN MATEO COUNTY GENERAL PLAN, CHAPTER 16

San Mateo County offers qualitative noise goals and objectives, including to: 1) strive toward a livable noise environment, 2) reduce noise impacts through noise and land use compatibility and noise mitigation, 3) promote protection of noise-sensitive land uses and noise reduction in quiet areas and noise impact areas, 4) give priority to reducing noise at the source rather than at the receiver, and 5) promote

[280] City/County Association of Governments of San Mateo County (C/CAG). 2014. *Final Airport Land Use Compatibility Plan for the Environs of Half Moon Bay Airport.* Available at: https://ccag.ca.gov/wp-content/uploads/2014/10/HAF-ALUCP-Final.pdf. Accessed April 20, 2023.
[281] C/CAG, 2014.

noise reduction through the use of techniques such as site planning, noise barriers, and architectural design and construction.

The San Mateo County Code of Ordinances[282] identifies "normal acceptable" exterior noise levels at residential land uses as 60 dB CNEL or less and interior noise levels in residences as 45 dB CNEL or less.

3.9.2.5 San Mateo County Code of Ordinances

4.88.330 – Exterior noise standards.

It is unlawful for any person at any location within the incorporated area of the County to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person which causes the exterior noise level when measured at any single or multiple family residence, school, hospital, church, or public library situated in either the incorporated or unincorporated area to exceed the noise level standards set forth in Table 3.9-5, below.

Table 3.9-5. Receiving Land Use: Single or Multiple Family Residence, School, Hospital, Church, or Public Library Properties

Category	Cumulative Number of Minutes in Any 1-Hour Time Period	Daytime, dBA 7 a.m. to 10 p.m.	Nighttime, dBA 10 p.m. to 7 a.m.
1	30	55	50
2	15	60	55
3	5	65	60
4	1	70	65
5	0	75	70

a) In the event the measured background noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted in 5 dBA increments to encompass the background noise level.

b) Each of the noise standards specified above shall be reduced by 5 dBA for simple tone noises, consisting primarily of speech or music, or for recurring or intermittent impulsive noises.

c) If the intruding noise source is continuous and cannot reasonably be stopped for a period of time whereby the background noise level can be measured, the noise level measured while the source is in operation shall be compared directly to the noise level standards above.

4.88.340 – Interior noise standards.

No person shall, at any location within the unincorporated area of the County, operate, or cause to be operated within a dwelling unit, any source of sound, or create, or allow the creation of, any noise which causes the noise level when measured inside a receiving dwelling unit with windows in their normal seasonal configuration to exceed the following noise level standards set forth in Table 3.9-6.

Table 3.9-6. Interior Noise Level Standards – Dwelling Unit

Category	Cumulative Number of Minutes in Any 1-Hour Time Period	Daytime, dBA 7 a.m. to 10 p.m.	Nighttime, dBA 10 p.m. to 7 a.m.
1	5	45	40
2	1	50	45
3	0	55	50

[282] San Mateo County. 2023. Code of Ordinances Chapter 4.88 Noise Control. Available at: http://smc-ca.elaws.us/code/coor_title4_ch4.88

a) In the event the measured background noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted in 5 dBA increments to encompass the background noise level.

b) Each of the noise standards specified above shall be reduced by 5 dBA for simple tone noises, consisting primarily of speech or music, or for recurring or intermittent impulsive noises.

c) If the intruding noise source is continuous and cannot reasonably be stopped for a period of time whereby the background noise level can be measured, the noise level measured while the source is in operation shall be compared directly to the noise level standards above.

4.88.360 – Exemptions.

The following activities shall be exempted from the provisions of this chapter:

a) Any mechanical device, apparatus, or equipment used, related to or connected with emergency machinery, vehicle, or work.

b) Noise sources associated with demolition, construction, repair, remodeling, or grading of any real property, provided said activities do not take place between the hours of 6:00 p.m. and 7:00 a.m. on weekdays, 5:00 p.m. and 9:00 a.m. on Saturdays, or at any time on Sundays, Thanksgiving, and Christmas.

4.88.380 – Exemption.

Whenever, for the good of the public, a government agency, public utility, or private utility determines a project must be done before 7:00 a.m. or after 6:00 p.m., or on weekends, and so states in its contract, change order(s), or bid documents, said work shall be exempted from this chapter.

3.9.3 Thresholds of Significance

The determinations of significance of project impacts are based on applicable policies, regulations, goals, and guidelines defined by CEQA and the County. Specifically, the project would be considered to have a significant effect on noise if the effects exceed the significance criteria described below:

1. 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.
2. Generation of excessive groundborne vibration or groundborne noise levels.
3. 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 2 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.

Each of these thresholds is discussed under Section 3.9.5, Impacts and Mitigation Measures, below.

3.9.4 Impact Assessment and Methodology

The following impact analysis is based, in part, on the noise and vibration assessment[283] and the noise assessment update of proposed tree removal activities memorandum[284] provided as Appendices O and P, respectively. The following analysis evaluates the potential change in the existing noise levels at the project site and surrounding area due to an increase in noise and groundborne vibration during both construction and operation of the project. The evaluation of potential impacts is based on the following General Plan policies.

[283] Illingworth & Rodkin, Inc., 2018.
[284] Illingworth & Rodkin, Inc., 2023.

The County of San Mateo's General Plan sets forth noise policies and programs to mitigate potential impacts through both preventative and responsive measures. The applicable General Plan policies were presented in detail in the Regulatory Background section and are summarized below for the proposed project:

- The County's normally acceptable exterior noise level standard is 60 dBA CNEL or less for the proposed residential land use.
- The County's standard for interior noise at the proposed residential land use is 45 dBA CNEL.

While noise level thresholds for temporary construction are not provided in the County's General Plan or Code of Ordinances, there is a threshold of 45 dBA for speech interference indoors. Assuming a 15-dBA exterior-to-interior reduction for standard residential construction, this would correlate to an exterior threshold of 60 dBA L_{eq} at residential land uses. Additionally, temporary construction would likely be considered annoying to surrounding land uses if the ambient noise environment increased by at least 5 dBA L_{eq} over an extended period of time. The temporary construction noise impact would be considered significant if project construction activities exceeded 60 dBA L_{eq} at nearby residences and exceeded the ambient noise environment by 5 dBA L_{eq} or more for a period longer than 1 year.

A significant noise impact would occur if traffic generated by the project would substantially increase noise levels at sensitive receptors in the project vicinity. A substantial increase would occur if: a) the noise level increase with the project is 5 dBA CNEL or greater, where existing noise levels are less than 60 dBA CNEL, or b) the noise level increase with the project is 3 dBA CNEL or greater, where existing noise levels are 60 dBA CNEL or greater. The nearest noise-sensitive receptor is approximately 80 feet to the southeast of the project site, where ambient noise levels are expected to remain below 60 dBA CNEL; therefore, a significant impact would occur if project-generated traffic would permanently increase noise levels by 5 dBA CNEL. For reference, traffic volumes would have to double for noise levels to increase by 3 dBA CNEL.

3.9.5 Impacts and Mitigation Measures

Impact N-1: Would the project generate 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? (Less than Significant with Mitigation)

Construction

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. Project construction is anticipated to occur over an approximate period of 18 months. At the time of the 2018 noise analysis, construction was assumed to last 14 months. It was determined that the ambient noise environment over the longer 18-month construction duration would be unchanged, and new analysis would not be necessary. Results of the Fehr and Peers Transportation Impact Assessment (TIA) Peer Review[285] indicate that traffic counts in the project area remain similar to counts measured by Kittelson as part of the Cypress Point TIA.[286]

[285] Fehr and Peers. 2023. *Cypress Point TIA Peer Review*. Included as Appendix R.
[286] Kittelson and Associates. 2023. *Cypress Point TIA*. Included as Appendix Q.

Section 4.88.360 of the San Mateo County Code of Ordinances establishes allowable hours of construction between 7:00 a.m. and 6:00 p.m. on weekdays and 9:00 a.m. and 5:00 p.m. on Saturdays. No construction is allowed to occur at any time on Sundays, Thanksgiving, and Christmas. The project proponent will be required to comply with the code limits, and construction activities will only be allowed to occur during allowable hours. Project construction activities would comply with applicable noise standards.

The noise-sensitive receptors to the south of the project site along Carlos Street would have existing daytime ambient noise levels similar to the noise levels recorded at LT-2. Based on these data, the average hourly noise level during daytime construction hours would range from 48 to 57 dBA L_{eq}. The noise-sensitive receptors to the east of the project site would have existing daytime ambient noise levels similar to the noise levels recorded at LT-1. Based on these data, the average hourly noise level during daytime construction hours would range from 39 to 55 dBA L_{eq}.

Construction activities for individual projects are typically carried out in stages. During each stage of construction, there would be a different mix of equipment operating, and noise levels would vary by stage and vary within stages, based on the amount of equipment in operation and the location at which the equipment is operating. Typical construction noise levels at a distance of 50 feet are shown in Tables 3.9-7 and 3.9-8. Table 3.9-7 shows the average noise level ranges, by construction phase, and Table 3.9-8 shows the maximum noise level ranges for different construction equipment. Most demolition and construction noise is within the range of 80 to 90 dBA at a distance of 50 feet from the source.

Construction activities generate considerable amounts of noise, especially during earth-moving activities when heavy equipment is used. The construction of the proposed project would include demolition, site preparation, grading and excavating, paving, and building erection and finishing. The hauling of excavated materials and construction materials would generate truck trips on local roadways as well.

Table 3.9-7. Typical Ranges of Construction Noise Levels (by construction phase) at 50 Feet, L_{eq} (dBA)

	Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial Parking Garage, Religious, Amusement, Recreation, Store, Service Station		Public Works Roads, Highways, Sewers, 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

Source: Noise and Vibration Assessment[287]

I = All pertinent equipment present at site.

II = Minimum required equipment present at site.

All measurements are in dBA.

[287] Illingworth & Rodkin, Inc., 2018.

Table 3.9-8. Typical Ranges of Construction Noise Levels (by equipment type) at 50 Feet, L_{max} (dBA)

Equipment Category	L_{max} Level (dBA)[*,†]	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[‡]	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 kilovolt amperes 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
In situ 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

Equipment Category	L_{max} Level (dBA)*,†	Impact/Continuous
Vibratory compactor	80	Continuous
Vibratory pile driver	95	Continuous
All other equipment with engines larger than 5 horsepower	85	Continuous

Source: National Cooperative Highway Research Program.[288]

* Measured at 50 feet from the construction equipment, with a "slow" (1 second) time constant.

† Noise limits apply to total noise emitted from equipment and associated components operating at full power while engaged in its intended operation.

‡ Portable air compressor rated at 75 cubic feet per minute or greater and that operates at greater than 50 pounds per square inch.

Noise-sensitive land uses located near the project site include residences to the south, east, and north. Hourly average noise levels due to construction activities during busy construction periods outdoors would range from about 74 to 88 dBA L_{eq} at a distance of 50 feet. Construction-generated noise levels decrease at a rate of about 6 dBA per doubling of the distance between the source and receptor. The noise-sensitive land uses (residences) are approximately 80 to 270 feet from the project site's central primary construction area. At these distances, hourly average noise levels during busy construction periods would range from 70 to 84 dBA L_{eq} at the closest residence to the south, from 63 to 77 dBA L_{eq} at the closest residence to the north, and from 59 to 73 dBA L_{eq} at the closest residence to the east. Construction noise levels would be expected to exceed 60 dBA L_{eq} and to exceed the ambient noise environment by at least 5 dBA L_{eq} at noise-sensitive residential uses in the project vicinity for a period exceeding 1 year. Additionally, a noise memorandum analyzed the noise from the proposed tree removal activities. Tree removal activities would last approximately 6 days during the proposed 18-month construction period and would produce noise levels of approximately 84 dBA L_{eq} at 50 feet from the center of the operation, which is within the same range of the anticipated construction noise levels discussed.

To ensure compliance with the noise BMPs, the mitigation measure below would be implemented to reduce construction noise levels emanating from the site, limit construction hours, and minimize disruption and annoyance.

MM-N-1 Implement Construction Noise Best Management Practices

Construction activities shall be conducted in accordance with the provisions of Section 4.88.360 of the San Mateo County Code of Ordinances, which limits construction work to the hours between 7:00 a.m. and 6:00 p.m. on weekdays and 9:00 a.m. and 5:00 p.m. on Saturdays. No construction shall occur at any time on Sundays, Thanksgiving, and Christmas.

The noise impacts of construction equipment may be minimized through modification of the equipment, the placement of equipment on the site, and by imposing constraints on equipment operations. Construction equipment should be well-maintained and used judiciously to be as quiet as possible. The project proponent shall include the following BMPs in all contracts related to project construction activities near sensitive land uses:

- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Unnecessary idling of internal combustion engines should be strictly prohibited.

[288] National Cooperative Highway Research Program (NCHRP). 1999. *Mitigation of Nighttime Construction Noise, Vibrations and Other Nuisances*. Available at: https://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_syn_218.pdf. Accessed June 2023.

- Locate stationary noise-generating equipment, such as air compressors or portable power generators, as far as possible from sensitive receptors as feasible. If they must be located near receptors, adequate muffling (with enclosures where feasible and appropriate) shall be used to reduce noise levels at the adjacent sensitive receptors. Any enclosure openings or venting shall face away from sensitive receptors.
- Use "quiet" air compressors and other stationary noise sources where technology exists.
- Establish construction staging areas at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.
- Locate material stockpiles, as well as maintenance/equipment staging and parking areas, as far as feasible from residential receptors.
- Control noise from construction workers' radios to a point where they are not audible at existing residences bordering the project site.
- Notify all adjacent business, residences, and other noise-sensitive land uses of the construction schedule, in writing, and provide a written schedule of "noisy" construction activities to the adjacent land uses and nearby residences.
- Designate a "disturbance coordinator" who would be responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., bad muffler) and will require that reasonable measures be implemented to correct the problem. 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 schedule.

Implementation of **MM-N-1** would reduce construction noise levels from the site, limit construction hours, and minimize disruption and annoyance. With the implementation of these measures and recognizing that noise generated by construction activities would occur over a temporary period, the temporary increase in ambient noise levels would be less than significant.

Operation

Peak-hour traffic volumes along roadways in the project vicinity, as identified in the project's traffic study, were reviewed to calculate the permanent noise increase attributable to project-generated traffic. As stated in the 2018 Noise Impact Report, a comparison of the volumes expected under the Existing Plus Project scenario and the Existing scenario indicated that the hourly average traffic noise level (L_{eq}) would increase by less than 1 dBA as a result of the project.[289] The change in the CNEL would be the same as the change in the peak-hour L_{eq}. The permanent noise level increase due to the project-generated traffic would be less than 1 dBA CNEL at noise-sensitive receptors in the project vicinity. Therefore, the proposed project would not cause a substantial permanent noise level increase at the nearby noise-sensitive receptors. This impact is considered less than significant.

Impact N-2: Would the project generate excessive groundborne vibration or groundborne noise levels? (Less than Significant)

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 demolition, site

[289] Illingworth & Rodkin, Inc., 2018.

preparation, grading, excavating, paving, and new building framing and finishing. This analysis assumes the proposed project would not require pile driving, which can cause excessive vibration.

For structural damage, the California Department of Transportation recommends a vibration limit of 0.5 inch/second PPV for buildings structurally sound and designed to modern engineering standards, 0.3 inch/second 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 inch/second PPV for ancient buildings or buildings that are documented to be structurally weakened. Construction activities would have the potential to produce vibration levels of 0.08 inch/second PPV or more at historical structures located within 60 feet of the project site. However, there are no known ancient buildings or buildings that are documented to be structurally weakened within 60 feet of where construction will take place on the project site. Because it is not known if the buildings surrounding the project site are structurally sound and built to modern standards, this analysis conservatively assumes that groundborne vibration levels exceeding 0.3 inch/second PPV would have the potential to result in a significant vibration impact on surrounding residences. For human annoyance, a vibration limit of 0.1 inch/second PPV (see Table 3.9-3), produced by continuous/frequent intermittent sources of construction vibration would be strongly perceptible and would cause human annoyance.

Table 3.9-9 presents typical vibration levels that could be expected from construction equipment at a distance of 25 feet. Project construction activities (such as drilling and 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 of the activity. At a distance of 25 feet, jackhammers typically generate vibration levels of 0.035 inch/second PPV, and drilling typically generates vibration levels of 0.09 inch/second PPV. Vibration levels would vary depending on soil conditions, construction methods, and equipment used.

The nearest sensitive receptor to the project site is the residence located along Carlos Street approximately 80 feet southeast of the primary construction area at the project site. Construction activities occurring in the outer landscaped areas of the project site would not likely use heavy equipment capable of producing high vibration levels (e.g., vibratory roller). At a distance of 80 feet from the primary construction area, vibration levels attributable to project construction would be up to 0.06 inch/second PPV, which is below the 0.3 inch/second PPV structural threshold and below the 0.1 inch/second PPV human annoyance threshold. Other buildings and sensitive receptors in the project vicinity located further from the project site would also experience construction vibration levels below these thresholds, as vibration attenuates with distance from the source. At these locations, and in other surrounding areas where vibration would not be expected to cause structural damage, vibration levels may still be perceptible.

Table 3.9-9. Summary of Short-Term Noise Measurement Data (dBA)

Equipment		PPV at 25 feet (inch/second)	Approximate L_v at 25 feet (VdB)
Pile driver (impact)	upper range	1.158	112
	typical	0.644	104
Pile driver (sonic)	upper range	0.734	105
	typical	0.170	93
Clam shovel drop		0.202	94
Hydromill (slurry wall)	in soil	0.008	66
	in rock	0.017	75
Vibratory roller		0.210	94

Equipment	PPV at 25 feet (inch/second)	Approximate L_v at 25 feet (VdB)
Hoe ram	0.089	87
Large bulldozer	0.089	87
Caisson drilling	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

Source: USDOT[290]

Notes: L_v = Vibration Levels; VdB = vibration decibels

To further reduce the less-than-significant impact, the following **MM-N-2** is recommended.

MM-N-2 Implement Construction Vibration Best Management Practices

Prior to start of ground-disturbing activities, the contractor shall use administrative controls to minimize construction impacts, such as notifying neighbors of scheduled construction activities. During construction activities, the contractor shall schedule construction activities with the highest potential to produce perceptible vibration during the hours with the least potential to affect nearby businesses, so perceptible vibration can be kept to a minimum.

Implementation of **MM-N-2** would further reduce impacts from groundborne vibration or groundborne noise levels. With these mitigation measures and given the intermittent and short duration of the project phases that have the highest potential of producing vibration (use of jackhammers and other high-power tools) these levels of vibration would be considered less than significant. Operationally the project would not generate any groundborne vibration or groundborne noise levels.

Impact N-3: Would the project, if 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? (Less than Significant)

The Initial Study Section 2.9, Hazards and Hazardous Materials provide additional discussion regarding the Half Moon Bay Airport, located approximately 0.9 mile southeast of the project site.[291] The airport is subject to the ALUCP, as adopted by the City/County Association of Governments (C/CAG) in 2014.[292] The ALUCP is designed to encourage compatible land uses in the vicinity surrounding an airport. The project site falls within Zone 7 of the airport influence area, the outermost area indicated in the ALUCP. The aircraft accident risk level in Zone 7 is considered to be low.[293] The project site lies outside the 2032 60 dBA CNEL noise contour. Although noise levels resulting from aircraft would be intermittently audible, they would be less than 60 dBA CNEL at the project site and compatible with the proposed land use. Impacts would be less than significant.

[290] United States Department of Transportation (USDOT). 2006. *Transit Noise and Vibration Impact Assessment*. Available at: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf. Accessed June 2023.
[291] County of San Mateo. 2023. Half Moon Bay Airport. Available at: https://www.smcgov.org/publicworks/half-moon-bay-airport. Accessed January 20, 2023.
[292] City/County Association of Governments (C/CAG). 2014. *Airport Land Use Compatibility Plan for the Environs of Half Moon Bay Airport*. https://ccag.ca.gov/wp-content/uploads/2014/10/HAF-ALUCP-Final.pdf. Accessed January 20, 2023.
[293] C/CAG, 2014.

3.9.6 Cumulative Impacts

Impact C-N-1: Would the impacts of the proposed project, in combination with other past, present, and reasonably foreseeable future projects, contribute to a cumulative impact related to noise? (Less than Significant)

Cumulative noise or vibration impacts can occur when more than one project is under construction simultaneously or when a project is expected to generate operational noise or vibration at the same time. The potential for cumulative noise impacts to occur is specific to the distance between the related projects and their stationary sources.

Related projects in the vicinity of the proposed project considered in this analysis include construction activities that could occur simultaneously with the construction of the project. Construction-related noise levels from the related projects would be short-term and intermittent. Further, it is assumed that the projects within San Mateo County would be required to comply with the General Plan policies. Noise resulting from cumulative construction activities would be reduced to the extent reasonably and technically feasible through mitigation measures proposed for each project and compliance with locally enforced noise ordinances. Therefore, with the related projects also complying with County requirements regarding construction noise impacts, the proposed project construction-related noise would be less than cumulatively considerable and would be less than significant. Groundborne vibration impacts due to construction activities are generally limited to buildings located close to the construction site. Due to the rapid attenuation of the groundborne vibration and groundborne vibration levels below the 0.3 inch/second PPV structural threshold and below the 0.1 inch/second PPV human annoyance threshold, no cumulative impact concerning groundborne vibration would occur. Cumulative impacts, therefore, would be less than significant and no mitigation is necessary.

3.10 TRANSPORTATION

This section describes the potential transportation-related impacts associated with development of the proposed multi-family residential uses. See Chapter 2, Project Description (including Table 2.5-1, Building Characteristics, and Table 2.5-2, Project Parking), for a detailed description of the proposed project and site plan.

To provide a context for the impact analysis, this section begins with the environmental setting which is a description of the existing physical and operational conditions for the transportation system. Following the setting is the regulatory framework influencing the transportation system and providing the basis for impact significance thresholds used in the impact analysis. This section concludes with the thresholds of significance, impact analysis methodology, findings, and, where applicable, recommended mitigation measures.

The project applicant retained Kittelson & Associates to prepare a Traffic Impact Analysis and Mitigation Plan (TIA) to evaluate potential transportation impacts related to the proposed project and identify mitigation measures. Kittelson & Associates' Cypress Point TIA was drafted in August 2019 in conformance with the requirements of San Mateo County's Local Coastal Program (LCP)[294] such as LCP Policy 2.52 and the City/County Association of Governments (C/CAG) Congestion Management Program (CMP)[295] and Transportation Demand Management (TDM) Policies.[296] Kittelson & Associates' Cypress Point TIA has been subsequently updated as the project evolved through public engagement and County review processes as described below:

- The 2019 Cypress Point TIA was updated on July 2022 as part of the project applicant's coastal development permit (CDP) process under the County's LCP and the County's environmental review process under the California Environmental Quality Act (CEQA) Guidelines.
  The 2019 Cypress Point TIA was updated to include information on vehicle miles traveled (VMT) addressing Senate Bill (SB) 743 and changes in the CEQA Guidelines to shift from level of service (LOS) to VMT to determine transportation impacts.
- In December 2022, San Mateo County retained Fehr & Peers to independently review Kittelson & Associates' 2022 Cypress Point TIA and to prepare a VMT Analysis. Fehr & Peers completed the TIA Peer Review and VMT Analysis in May 2023. The peer review effort resulted in an update to the 2022 Cypress Point TIA. The 2022 Cypress Point TIA was updated in May 2023 with completion of the peer review process (2023 Cypress Point TIA) and can be found in Appendix Q of this EIR. The Fehr & Peer's 2023 TIA Peer Review and VMT Analysis can be found in Appendix R of this EIR.

Kittelson & Associates' 2023 Cypress Point TIA conforms to the requirements and standards set forth in the County's LCP and the State CEQA Guidelines and includes detailed information on both CEQA (plan/program policy consistency, safety, emergency access, and mitigation) and non-CEQA (level of service) topics. It incorporates information developed through the peer review process and references Fehr & Peer's 2023 TIA Peer Review and VMT Analysis on topics such as traffic count updates, trip generation, and VMT. The Fehr & Peers' 2023 TIA Peer Review and VMT Analysis includes a summary of the peer review process and the quantitative VMT analysis requested by the County.

[294] County of San Mateo Planning and Building Department. 2023a. Local Coastal Program. Available at: Local Coastal Program | County of San Mateo, CA (smcgov.org). Accessed May 15, 2023.
[295] C/CAG. 2021a. Congestion Management Program Index. Available at: https://ccag.ca.gov/programs/transportation-programs/congestion-management/. Accessed May 24, 2023.
[296] C/CAG. 2023a. TDM Program. Available at: https://ccagtdm.org/about/. Accessed May 23, 2023.

The transportation analysis and mitigation measure recommendations in Kittelson & Associates' 2023 Cypress Point TIA and Fehr & Peers' 2023 TIA Peer Review and VMT Analysis guide the CEQA analysis as well as the County's final determination of transportation-related conditions of approval that would be required to support conformance with policies outside of the CEQA. This section is largely based on the information found in these background reports (see EIR Appendices Q and R).

3.10.1 Environmental Setting

This section describes the immediate project setting with a focus on the existing transportation system and operating conditions in the study area. Figure 3.10-1 illustrates the existing regional and local roadway system, the public transit network and stops, the bicycle and recreational trail networks, and nearby land uses. It also shows the transportation study area and study intersections.

The approximately 11-acre project site is located in Moss Beach within the Midcoast area of unincorporated San Mateo County. The vacant site is located within the coastal zone on the inland (or east) side of Highway 1 (State Route [SR]-1) adjacent to an existing residential area of Moss Beach on the urban side of the urban rural boundary established by the LCP.[297] The site is bounded by vacant land and residences along 16th Street to the north; residences to the east along Lincoln and Buena Vista streets; residences to the south along Sierra, Stetson, and Carlos streets; vacant land along Carlos Street to the west (toward SR-1); and an adjacent residence at the northeast corner of Carlos and Sierra streets. The project site is north of Moss Beach's commercial area along the east side of SR-1 near California Avenue (e.g., Coastside Market grocery store).

The project site is within the Cabrillo Unified School District service area. The closest public elementary schools are Farallone View, El Granada, and Hatch in Montara, El Granada, and Half Moon Bay, respectively. The closest private elementary schools are the Upgrade Children's Center, the Wilkinson School, and the Sea Crest School in Princeton, El Granada, and Half Moon Bay, respectively. The closest intermediate and high schools are in Half Moon Bay -- Manuel F. Cunha Intermediate School and Half Moon Bay High School. The project site is within 1.4 miles of Farallone View Elementary School, 0.5 mile of Moss Beach Park, and 0.8 mile of the Seton Coastside Medical Center.

[297] County of San Mateo Planning and Building Department. 2023a. Local Coastal Program, Map 1.4 - Midcoast Land Use Plan, pg. 1.34. Available at: download (smcgov.org). Accessed June 2023.



Figure 3.10-1. Regional and local transportation network.

3.10.1.1 Existing Circulation System

3.10.1.1.1 EXISTING ROADWAY NETWORK

The primary mode of travel on the San Mateo County coast is the private vehicle with regional access provided from SR-1 and State Route 92 (SR-92). SR-92 is a major east-west state highway that serves regional traffic between SR-1, U.S. Interstate-280, and the San Mateo Bridge. SR-1 and SR-92 are the only roads that provide connections to other parts of the County. Most of the coastal communities connect to SR-1 but do not connect with each other.

Descriptions of each roadway facility are presented below.

- **SR-1** is a major north-south state highway that facilitates regional travel along California's Pacific coastline and provides the only access to Moss Beach. It connects Moss Beach to destinations in the north, such as San Francisco, and to the south, such as Half Moon Bay. This portion of SR-1 is also known as the Cabrillo Highway. SR-1, from the San Francisco County Line to the Santa Cruz County Line, is part of the County's Congestion Management Plan roadway network. In the vicinity of the project site, SR-1 is a two-lane highway with one lane each for both the northbound and southbound directions with left-turn lanes at the intersections of 16th, Carlos, and Etheldore/Vallemar streets, and California Avenue/Wienke Way. SR-1 has a posted speed limit of 45 miles per hour (mph) in Moss Beach.
- **Carlos Street** is an approximately 20- to 28-foot-wide, two-lane, two-way local street with no center striping that runs north-south through Moss Beach parallel to SR-1. Primary access to the project site is provided via a proposed driveway off Carlos Street north of Sierra Street. North of the project site, Carlos Street can be directly accessed from SR-1. From the south, access to Carlos Street is from SR-1 via Etheldore Street or California Avenue. Near the project site, Carlos Street has no pavement markings or on-street parking. Further south in Moss Beach's commercial area near California Avenue, Carlos Street includes on-street parking on its east side. The posted speed limit is 25 mph.
- **Sierra Street** is a two-lane, two-way local street that extends east from Carlos Street to Vermont Street and provides residential access across Moss Beach. The posted speed limit is 15 mph.
- **Stetson Street** is a two-lane, two-way local street that extends south from Sierra Street near the project site to Sunshine Valley Road and provides access across Moss Beach. The posted speed limit is 15 mph.
- **Etheldore Street** is a two-lane, two-way local street that connects Moss Beach to SR-1. It extends in a southeasterly direction from the intersection with SR-1 through Moss Beach and intersects with SR-1 further south. The posted speed limit is 15 mph. Vallemar Street is on the west side of SR-1 and is a continuation of Etheldore Street.
- **California Avenue** is an east-west, two-lane, two-way local street that crosses SR-1 south of the project site, providing SR-1 access to much of the residential area of Moss Beach. The posted speed limit is 15 mph. Wienke Way spurs off California Avenue on the west side of SR-1.

3.10.1.1.2 EXISTING PEDESTRIAN AND BICYCLE NETWORK

A comprehensive network of pedestrian facilities and bikeways that are safe, convenient, and accessible for both commuter and recreational travel is an essential part of the County's transportation infrastructure. The existing pedestrian and bicycle network conditions are as follows:

- SR-1 in Moss Beach has 8-foot-wide shoulders for bicyclists, but there are no defined walkways on either side of the roadway and just one marked crosswalk of SR-1 at Virginia Avenue.

- Carlos Street between SR-1 and Etheldore Street has no sidewalks or bicycle infrastructure (e.g., shared roadway bicycle pavement markings). Further south in Moss Beach's commercial area near California Avenue, Carlos Street includes a sidewalk on the east side and shared roadway bicycle pavement markings.
- Sierra Street features a sidewalk on its north side between Carlos and Stetson streets but not on its south side or on any other roadway segments. Sierra Street has no bicycle infrastructure.
- Stetson Street between Sierra Street and California Avenue includes a sidewalk on its north side and no sidewalk on its south side. Stetson Street has no bicycle infrastructure.
- Etheldore Street east of SR-1 between Carlos Street and California Avenue includes an intermittent sidewalk on its south side and no sidewalks on its north side. Etheldore Street has no sidewalks or bicycle infrastructure beyond California Avenue.
- California Avenue east of SR-1 between Carlos and Buena Vista streets includes a paved sidewalk on its north side and no sidewalks on its south side. California Avenue has no bicycle infrastructure.

In summary the existing pedestrian network in the vicinity of the project site is discontinuous. In some locations, intermittent sidewalks require maintenance, while in other locations sidewalks are absent altogether. Where sidewalks are absent, pedestrians walk along paved or unpaved shoulders or in the roadway (e.g., Carlos Street). Additionally, there are no marked crosswalks at any of the study intersections on the local roadway network or on SR-1 where it intersects with Carlos Street, Etheldore Street, and California Avenue. Crossing distances at SR-1 for pedestrians and cyclists vary from about 60 feet between intersections to about 80 feet at these intersections. Further, the existing bicycle network does not include any Class I (Bike Paths) or Class II (Bike Lanes) facilities on adjacent roadways outside of the shared roadway markings noting the Class III (Bike Routes) bicycle facility on Carlos Street (see Sections 3.10.2.2.2, State, and 3.10.2.4.1, San Mateo County General Plan, for state and county bicycle facility definitions).

3.10.1.1.3 EXISTING PUBLIC TRANSIT NETWORK

The San Mateo County Transit District is the administrative body for most public transit and transportation programs in San Mateo County, including SamTrans bus service which provides fixed route bus service throughout San Mateo County, including the Midcoast area. The project site is served by SamTrans Routes 117 and 18. Both routes have stops in Moss Beach primarily along SR-1 but also along Etheldore Street. Descriptions of the routes and schedules with the closest stops to the project site are provided below. Service detail[298] All routes and stops are shown on Figure 3.10-1, above.

SamTrans Route 117

Route 117 operates daily between Linda Mar Park & Ride in Pacifica and Miramontes Point Road/Moonridge Apartment along SR-1 south of Half Moon Bay, with limited service to the town of Pescadero. Service is provided from 4:57 a.m. to 9:32 p.m. on weekdays and 5:05 a.m. to 9:34 p.m. on weekends with 60-minute headways on weekdays and weekends. The closest northbound bus stops are located at the southeast corner of SR-1/14th Street (0.23 mile north of the project site in the Montara), at the southeast corner of California Avenue/Etheldore Street (0.47 mile south of the project site in Moss Beach), and at southeast corner of Etheldore Street/Sunshine Valley Road (0.62 mile south of the project site within Moss Beach). The closest southbound bus stops are located at SR-1/16th Street (0.11 mile

[298] San Mateo County Transit District. 2023a. SamTrans Schedules and Maps. Available at: https://www.samtrans.com/schedulesmaps. Accessed May 23, 2023.

from the project site), California Avenue/Etheldore Street (0.47 mile from the project site), and at Etheldore Street/Sunshine Valley Road (0.62 mile south of the project site).

SamTrans Route 18

Route 18 is a school-oriented route that serves Half Moon Bay High School and Cunha Intermediate School. It operates on weekdays only along Sunshine Valley Road and SR-1 between Miramontes Point Road and Moonridge Apartments along SR-1 south of Half Moon Bay and SR-92 to Main Street/7th Street in Montara. It also provides school day service between Cunha Intermediate School and Main Street/7th Street in the mornings and afternoons. In the Moss Beach area, the route travels primarily along Sunshine Valley Road with bus stops provided (in both the northbound and southbound direction) at Etheldore Street/Sunshine Valley Road (0.62 mile south of the project site).

SamTrans Bus Stop Conditions

The northbound bus stop located at SR-1/14th Street on the east side of SR-1 (0.23 mile north of project site) is a signed pole with a widened concrete shoulder and an adjacent paved sidewalk. It is not served by a sidewalk, crossing, or any infrastructure to provide walking access to and from the project site to the bus stop, i.e., along the east side of Carlos Street and the east side of SR-1.

The southbound bus stop located at SR-1/16th Street on the west side of SR-1 (0.11 mile west of project site) is a signed pole at the foot of a steep slope with a few feet of shoulder. It is not served by a sidewalk, crossing, or any infrastructure to provide walking access to and from the project site to the bus stop. Site constraints such as topography limit the scope of potential bus stop improvements.

The northbound and southbound bus stops located at the southeast and northwest corners of California Avenue/Etheldore Street are signed poles (0.47 mile south of project site) and are not connected to a sidewalk. The northbound bus stop is located at the foot of a slope with a few feet of graveled shoulder. The southbound bus stop is located on a flat graveled shoulder. The most direct walking paths between the project site and these stops are along Carlos Street and Etheldore Street to California Avenue and along Sierra Street, Stetson Street, and California Avenue to Etheldore Street. However, there is no walking path of travel with continuous sidewalks, crossings, or other supporting infrastructure.
The walking path of travel with the most complete sidewalk infrastructure is along Sierra Street, Stetson Street, Kelmore Street, and California Avenue to Etheldore Street.

3.10.2 Regulatory Setting

A variety of federal, state, regional, and local plans, legislation, and policy directives provide guidelines for the safe operation of streets and transportation facilities in the unincorporated community of Moss Beach. While the County has primary responsibility for the maintenance and operation of local transportation facilities within its jurisdiction, including in Moss Beach, County staff work on a continual basis with responsible federal, state, and regional agencies, such as the California Department of Transportation (Caltrans), as well as others, to maintain, improve, and balance the competing transportation needs of the community and the region.

3.10.2.1 Federal

There are no federal regulations related to transportation that are applicable to the proposed project.

3.10.2.2 State

3.10.2.2.1 CALIFORNIA SENATE BILL 743

In 2013 Senate Bill (SB) 743 was signed into law with the intent to "more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions" and required the Office of Planning and Research (OPR) to identify new metrics for identifying and mitigating transportation impacts within the CEQA. As a result, in December 2018, the California Natural Resources Agency certified and adopted updates to the State CEQA Guidelines. The revisions included new requirements related to the implementation of SB 743 and identified vehicle miles traveled (VMT) per capita, VMT per employee, and net VMT as new metrics for transportation analysis under CEQA (as detailed in Section 15064.3[b]). Beginning July 1, 2020, the newly adopted VMT criteria for determining significance of transportation impacts were implemented statewide.

SB 743 modifications, which are now in effect, change the focus of transportation impact analysis in CEQA from measuring impacts to drivers, to measuring the impact of driving. The change replaces level of service (LOS) with VMT and provides a review of land use and transportation projects that would help reduce future VMT growth. In September 2020, the County drafted Interim Change to Vehicle Miles Traveled as Metric to Determine Transportation Impacts under CEQA Analysis; these have yet to be approved (see Section 3.10.3.2.2, Methodology).

3.10.2.2.2 CALIFORNIA DEPARTMENT OF TRANSPORTATION

Caltrans manages the operation of state highways, including SR-1, which passes through Moss Beach and from which the project site is visible and can be accessed via the Carlos Street, Etheldore Street, and California Avenue intersections. Caltrans maintains annual traffic data on state highways and interchanges within San Mateo County. Caltrans no longer uses LOS (consistent with SB 743) and now relies on VMT and safety to evaluate transportation impacts. Caltrans published the Vehicle Miles Traveled-Focused Transportation Impact Study Guide (Caltrans TIS Guide) in May 2020, which replaced the prior guide reliant on LOS. The Caltrans TIS Guide notes that lead agencies have the discretion to choose VMT thresholds and methods, and generally conforms to OPR guidance.[299]

Caltrans also issued Traffic Safety Bulletin 20-02-R1 in December 2020 providing guidance for intergovernmental review for potential safety impacts of land use projects and plans affecting the State Highway System (SHS). The bulletin describes the procedure for Caltrans staff to review potential safety impacts and develop mitigation measures as appropriate. Additionally, "Complete Streets" is a Caltrans policy directive intended to provide safe mobility for all users, including bicyclists and pedestrians, and is a consideration during Caltrans' interdepartmental review of projects that could affect the SHS. According to Director's Policy 37, signed on December 7, 2021, it is Caltrans' organizational priority to encourage and maximize walking, bicycling, transit, and passenger rail as a strategy to not only meet state climate, health, equity, and environmental goals but also to foster socially and economically vibrant, thriving, and resilient communities.[300]

The Caltrans Highway Design Manual provides the design information and procedural steps necessary to develop and evaluate engineering plans among other potential roadway design interventions or

[299] Caltrans. 2020. Vehicle Miles Traveled-Focused Transportation Impact Study Guide. Available at: https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-05-20-approved-vmt-focused-tisg-a11y.pdf. Accessed May 23, 2023.
[300] Caltrans. 2021. Director's Policy 37 – Complete Streets. Available at: https://dot.ca.gov/-/media/dot-media/programs/sustainability/documents/dp-37-complete-streets-a11y.pdf. Accessed May 23, 2023.

improvements associated with traffic congestion and the provision of safe mobility for pedestrians and bicyclists. The Caltrans Highway Design Manual classifies bikeways into four categories:[301]

- **Class I Bikeway (Bike Path)**: a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II Bikeway (Bike Lane)**: a striped and signed lane for one-way bike travel on a street or highway.
- **Class III Bikeway (Bike Route)**: signage only for shared use with motor vehicles within the same travel lane on a street or highway.
- **Class IV Bikeway (Separated Bikeway)**: also known as a cycle track, a Class IV Bikeway is for the exclusive use of bicycles and includes a physical 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.

The proposed project would add traffic to SR-1 at Carlos Street, which is a location with a known line-of-sight safety traffic safety concern. As a result, potential mitigation measures may include changes in the Caltrans right-of-way. Therefore, the Caltrans Highway Design Manual and Complete Streets policy are considered in the analysis of the proposed project.

3.10.2.3 Regional

3.10.2.3.1 PLAN BAY AREA: STRATEGY FOR A SUSTAINABLE REGION

The Metropolitan Transportation Commission (MTC), the San Francisco Bay Area's regional transportation planning agency, adopted Plan Bay Area 2050 in October 2021, which identifies how the Bay Area will meet its GHG emission reduction targets.[302] Plan Bay Area is also considered the Association of Bay Area Governments (ABAG)/MTC Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). In accordance with SB 743, Plan Bay Area included elements designed to encourage the type of land use development to meet three primary objectives. First, roadway LOS could not be considered an environmental impact under the CEQA. Second, it introduced changes to VMT per capita as a determinant of environmental impact. Third, the use of VMT as an environmental impact in CEQA is considered a mechanism for achieving state and regional greenhouse gas (GHG) emission reduction goals.

3.10.2.4 County

3.10.2.4.1 SAN MATEO COUNTY GENERAL PLAN

The San Mateo County General Plan (County General Plan) was adopted in 1986 and serves as a guide for both land development and conservation within the unincorporated areas of the county.[303] Policies

[301] Caltrans. 2022. Highway Design Manual, 7th Edition. Chapter 60. Available at: https://dot.ca.gov/programs/design/manual-highway-design-manual-hdm. Accessed May 23, 2023.
[302] Association of Bay Area Governments/MTC. 2021. Plan Bay Area 2050. Available at https://www.planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_October_2021.pdf. Accessed May 23, 2023.
[303] County of San Mateo. 1986. General Plan. Available at: https://www.smcgov.org/planning/general-plan. Accessed May 15, 2023.

within the County General Plan relevant to transportation and circulation and applicable to the proposed project include, but are not limited to, the following:

- **Urban Road Improvements** (*County General Plan, Chapter 12, Item 12.16)*: In urban areas, where improvements are needed due to safety concerns or congestion, support the construction of interchange and intersection improvements, additional traffic lanes, turning lanes, redesign of parking, channelization, traffic control signals, or other improvements.
- **Financing Local Road Improvements** (*County General Plan, Chapter 12, Item 12.20)*: Utilize all available techniques for funding local road improvements in unincorporated areas, including assessment districts, developer contributions, and County road funds. Ensure road improvements are consistent with adopted land use plans and area plans.
- **Local Circulation Policies** (*County General Plan, Chapter 12, Item 12.21)*: In unincorporated communities, plan for providing:
  - Maximum freedom of movement and adequate access to various land uses;
  - Improved streets, sidewalks, and bikeways in developed areas;
  - Minimal through traffic in residential areas;
  - Routes for truck traffic which avoid residential areas and are structurally designed to accommodate trucks;
  - Access for emergency vehicles; and
  - Bicycle and pedestrian travel.
- **Local Road Standards** (*County General Plan, Chapter 12, Item 12.31)*: Allow for modification of road standards for sub-areas of the County, which respond to local needs and conditions as identified in area plans.
- **Pedestrian Paths** (*County General Plan, Chapter 12, Item 12.48)*: Encourage the provision of safe and adequate pedestrian paths in new development connecting to activity centers, schools, transit stops, and shopping centers.

The County General Plan encourages the use of walking, bicycling, and use of transit through its Transportation Policies and, more specifically, its Complete Streets goals and objectives.[304] The goal of the Complete Streets program is to:

> "Create and maintain Complete Streets that serve all categories of transportation users and goods, providing safe, efficient, comfortable, and convenient travel along all streets through an integrated, balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the General Plan." (*County General Plan, Chapter 12, Item 12.7*)

Among the goals and objectives of the Complete Streets program applicable to the proposed project is the guidance to "incorporate Complete Streets infrastructure into existing streets to improve the safety and convenience of users, accommodate all transportation users, and increase connectivity across jurisdictional boundaries and for existing and anticipated areas of development" (*County General Plan, Chapter 12, Item 12.31).*

[304] County of San Mateo, 1986.

The County's pedestrian and bicycle network is defined by the following functional classes of pedestrian and bicycle facilities consistent with the 2021 C/CAG San Mateo County Comprehensive Bicycle and Pedestrian Plan and the Unincorporated San Mateo County Active Transportation Plan (*County General Plan, Chapter 12, Item 12.60)*:

- **Pedestrian Path**: A path that is physically separated by distance or barrier from a roadway. Pedestrian paths are different than sidewalks and are typically constructed in conjunction with Class I Bicycle Paths.
- **Sidewalk**: A pedestrian-dedicated paved walkway located adjacent to roadways.
- **Class I – Bicycle Path**: Class I facilities are multi-use facilities that provide a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II – Bicycle Lane**: Class II facilities provide a striped and signed lane for one-way bicycle travel within the paved area of a roadway. The minimum width for bike lanes ranges between 4 and 6 feet depending on the edge of roadway conditions (curbs) and speed. Bike lanes are demarcated by a 6-inch white stripe, signage, and pavement legends and depending on right-of-way width include a buffer zone between the bike lane and adjacent travel lane.
- **Class III – Bicycle Route**: Class III facilities provide signs for shared use with motor vehicles within the same travel lane on a street or highway. Bike routes may be enhanced with warning or guide signs and shared lane marking pavement stencils. While Class III routes do not provide a measure of separation from traffic, they have an important function in providing continuity to the bikeway network. Depending on location (e.g., on streets in residential neighborhoods), Class III routes are also identified as bicycle boulevards which prioritize bicycle through-travel, while calming motor vehicle traffic and maintaining relatively low motor vehicle volumes. Treatments vary depending on context, but often include elements of traffic calming, including traffic diverters, speed attenuators such as speed humps or chicanes, pavement markings, and signs.
- **Class IV – Cycle Track or Separated Bikeway**: Class IV facilities provide a right-of-way designated exclusively for bicycle travel adjacent to a roadway that is protected from vehicular traffic. Types of separation include, but are not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

3.10.2.4.2 CITY/COUNTY ASSOCIATION OF GOVERNMENTS OF SAN MATEO COUNTY, COUNTYWIDE TRANSPORTATION PLAN

The City/County Association of Governments of San Mateo County (C/CAG) is a Joint Powers Authority whose membership includes the County of San Mateo and 20 cities. In 2017, the C/CAG Board of Directors adopted the San Mateo Countywide Transportation Plan 2040 (2017 CTP)[305] to provide San Mateo County with a long-range, comprehensive transportation plan for identifying and resolving transportation issues. The 2017 CTP was also adopted by all of the cities within the County, SamTrans, and the San Mateo County Transportation Authority (SMCTA).

The 2017 CTP is a planning document that envisions, directs, and prioritizes the transportation needs of San Mateo County by analyzing various transportation-related elements, such as roadways, transit services, land use, transportation systems management, and pricing. Transportation planning objectives and policies include integration of transportation and land use plans for sustainable commuting with surrounding counties in the Bay Area. Specific goals of the 2017 CTP pertaining to the proposed project

[305] C/CAG. 2017. San Mateo Countywide Transportation Plan 2040. Available at: https://ccag.ca.gov/programs/countywide-transportation-plan/. Accessed May 24, 2023.

include integrating transportation and land use plans and decisions in support of a more livable and sustainable San Mateo County and enhancing safety and efficiency on the countywide roadway network to foster comfortable, convenient, and multimodal mobility.

3.10.2.4.3 CITY/COUNTY ASSOCIATION OF GOVERNMENTS OF SAN MATEO COUNTY, CONGESTION MANAGEMENT PROGRAM

Per the requirements of Propositions 111 and 108, every urban county within California designates a Congestion Management Agency (CMA) to prepare and implement a Congestion Management Program (CMP) that includes all jurisdictions within the urban county. The CMA is also responsible for updating the CMP at least every two years. C/CAG is designated as the CMA for San Mateo County and works on multiple issues that affect quality of life in general. Passage of Assembly Bill 2419 allowed existing CMAs to opt to discontinue activities; however, C/CAG voted to continue to participate in and adopt a CMP. The first CMP for the County was adopted by C/CAG in 1991. It has continued to be updated and amended on a biennial basis.[306]

The purpose of the CMP is to identify strategies to respond to future transportation needs, develop procedures to alleviate and control congestion, and promote countywide solutions. C/CAG has developed LOS standards for 53 roadway segments (along State Routes [SR-] 1, 35, 82, 84, 92, 109, and 114; U.S. Highway 101; Interstates [I-] 280 and 380; and along major roadways on Geneva Avenue, Mission Street, and Bayshore Boulevard) and 16 intersections (mostly along SR-82/El Camino Real and SR-84) throughout the County.

The CMP is required to be consistent with the Metropolitan Transportation Commission (MTC) planning process that includes regional goals, policies, and projects for the Regional Transportation Improvement Program (RTIP). The 2021 CMP Update established a new "Companion Monitoring Network" consisting of 10 roadway segments and 17 intersections not in the CMP where C/CAG desired to see additional congestion monitoring. The San Mateo CMP roadway system is consistent with Plan Bay Area 2050 (i.e., the RTP/SCS) adopted in October 2021.[307]

In 2000, C/CAG adopted a policy that provided guidelines for analyzing the impacts of land use decisions made by local jurisdictions. The C/CAG Land Use Impact Analysis Program Policy, also known as the Transportation Demand Management (TDM) Policy, is implemented during the environmental review process and, as of January 1, 2022, applies to developments that generate 100 average daily trips.[308, 309] Previously, the threshold for local jurisdictions to notify C/CAG of new development projects was 100 net peak hour trips, or those proposed as part of a General Plan Amendment. The policy requires that proposed projects develop a TDM plan that includes strategies that have the capacity to reduce the demand for single-occupancy vehicle trips; thus, the guidelines also provide a menu of TDM measures and corresponding trip reduction credits. For small residential projects (less than 500 average daily trips), such as the proposed project, the target trip reduction percentage is 25%. The County implements the C/CAG TDM Policy as part of the development review and permitting process, including for County projects in the Coastal Zone. The C/CAG TDM Policy does not preclude local jurisdictions from applying their established traffic impact analysis regulations or ordinances during the course of local development review nor does it preclude local jurisdictions from applying lawfully required analysis required by CEQA.

[306] C/CAG, 2021a.
[307] ABAG/MTC, 2021.
[308] C/CAG, 2023a.
[309] C/CAG. 2021a. Congestion Management Program Appendices. Available at: https://ccag.ca.gov/wp-content/uploads/2022/03/CMP-Appendix-2021_Final.pdf. Accessed May 23, 2023.

3.10.2.4.4 SAN MATEO COUNTY TRANSPORTATION AUTHORITY SHORT-RANGE HIGHWAY PLAN: 2021–2030

The SMCTA Short-Range Highway Plan (SRHP)[310] establishes a strategy for directing Measure A and Measure W sales tax revenues toward street and highway improvements in San Mateo County aimed at reducing commute corridor congestion; enhancing bicycle, pedestrian and public transit modes of travel; enhancing safety; meeting local mobility needs; and making regional connections including regional transit connection. The SMCTA updates the SRHP on a 10-year cycle, with the last version prepared for the 2011 through 2020 time period. The 2021 update to the SRHP includes a policy framework for making investment decisions. The SRHP incorporates the Measure A goals along with the new Measure W core principles and is the policy foundation for making street and highway program investment decisions. The purpose of the SRHP is to identify and program funds for projects that will remove bottlenecks along the most congested commute corridors and that will improve supplemental roadway projects throughout the County. The SRHP uses the adopted Strategic Plan 2020-2024 evaluation criteria, which was used to score projects during the 2021 Highway Program Call for Projects. To be eligible to compete in the Highway Program Call for Projects, a project must be included in the Countywide Improvement Plan. The SRHP also allows the SMCTA to sponsor projects of countywide significance. Measure W funds are currently programmed to initiate the planning phase for recommended improvements along SR-1, i.e., Moss Beach State Route 1 Congestion and Safety Improvements Project (Section 3.10.2.5.1, Local Coastal Program).[311, 312]

3.10.2.4.5 REIMAGINE SAMTRANS

In February 2022, SamTrans completed Reimagine SamTrans[313]—a comprehensive, multi-phase systemwide operational analysis and redesign of the SamTrans bus system initiated in June 2019. The SamTrans Board adopted the new SamTrans network on March 3, 2022, with implementation beginning in August 2022. The goals of the project were to prioritize equity through prioritization of buses to high-need communities from underused and duplicate routes, to improve efficiency by creating faster, reliable service through more direct and consolidated routes, and to expand connections by providing expanded all-day service, and more service to transit hubs and job centers. Changes to existing bus service were laid out in a series of actions as follows:

- Improving frequency
- Offering services later and on weekends
- Modifying routes by providing more direct routes and reducing duplication of service
- Improving access with new routes and connections
- Providing a new on-demand service
- Discontinuing service on select routes

Changes relevant to the proposed project include increased service frequency on Route 117 (from service every 60 minutes on weekdays and every 120 minutes on weekends to service every 60 minutes, 7 days a

[310] San Mateo County Transportation Authority. 2021. Short-Range Highway Plan: 2021-2030. Available at: https://www.smcta.com/media/3716/download?inline. Accessed May 23, 2023.
[311] County of San Mateo Planning and Building Department. 2023c. Moss Beach State Route 1 Congestion and Safety Improvements Project. Available at: https://www.smcgov.org/planning/moss-beach-sr-1. Accessed May 23, 2023.
[312] San Mateo County Transit District. 2023b. Transportation Authority Board of Directors Meeting Agenda Item #11(b), December 2, 2021. Available at: https://www.smcta.com/media/20082/download. Accessed May 23, 2023.
[313] San Mateo County Transit District. 2022. Reimagine SamTrans - Final Report. Available at: https://www.samtrans.com/about-samtrans/reimagine-samtrans. Accessed May 23, 2023.

week) and Route 18 (from service every 45 minutes during morning peak hours and every 60 minutes during afternoon peak hours to service every 30 minutes during morning and afternoon peak hours). In addition, Route 117 revisions would include the removal of low ridership segments off SR-1, e.g., to Sunshine Valley Road (in the project site vicinity), 6th Street, Canada Cove, and Pescadero.

Additionally, on-demand service (SamTrans Ride Plus) has been introduced in the Half Moon Bay Area in a zone serving El Granada and Half Moon Bay from Miramontes Point Road on the south, Capistrano Road on the north, and the Pacific Ocean to the west.[314] The zone extends inland to cover development on the east side of SR-1 and operates from 8:00 a.m. to 5:00 p.m., 7 days a week. The goal is to better connect people to grocery stores, community services, and Route 294 with service to other parts of the county in a rural area of San Mateo County with limited road access that has historically been hard to serve with regularly scheduled bus service.

3.10.2.4.6 SAMTRANS BUS STOP IMPROVEMENT PLAN

SamTrans is in the beginning stages of the development of the SamTrans Bus Stop Improvement Plan.[315] The Bus Stop Improvement Plan includes an evaluation of the existing conditions at the more than 1,800 bus stops throughout the SamTrans service district. SamTrans staff are currently engaged in a data collection effort and public and stakeholder engagement process to inform their efforts to improve the accessibility and comfort of their bus stops.

3.10.2.4.7 CITY/COUNTY ASSOCIATION OF GOVERNMENTS OF SAN MATEO COUNTY, SAN MATEO COUNTY COMPREHENSIVE BICYCLE AND PEDESTRIAN PLAN

The San Mateo County Comprehensive Bicycle and Pedestrian Plan (CBPP)[316] was adopted by the C/CAG on June 10, 2021. The 2021 CBPP update builds off the 2011 CBPP and 2000 San Mateo County Comprehensive Bicycle Route Plan. The 2021 CBPP is intended to coordinate and guide the provision of all bicycle- and pedestrian-related plans, programs, and projects within the county. The C/CAG, in partnership with the SMCTA and in coordination with the County and the 20 cities within the county, has developed the CBPP to identify bike routes of countywide significance, to serve as a guide to the incorporated cities regarding bikeway policies and design standards, and to identify focused areas for pedestrian improvements and related design guidance. The CBPP also provides guidance on countywide priorities for future funding. As a Countywide Bicycle and Pedestrian Plan, it focuses on providing bikeway connections between the incorporated cities, adjacent counties, and major regional destinations within the County. The CBPP includes the following planned Class I, Class II, and Class III bikeways in the vicinity of the project site:[317]

- Class I Multi-Use Path (the Parallel Trail) along SR-1 and near Carlos Street between 11th Street in Montara and Miramontes Point Road south of Half Moon Bay
- Class II Bicycle Boulevard along Carlos Street between Vermont Street and SR-1

[314] San Mateo County Transit District. 2023c. SamTrans Public Transit On-Demand Index. Available at: https://www.samtrans.com/microtransit-samtrans-ride-plus. Accessed August 2023.
[315] San Mateo County Transit District. 2023d. SamTrans – Bus Stop Improvement Plan. Available at: https://www.samtrans.com/Projects/bus-stop-improvement-plan. Accessed May 23, 2023.
[316] CCAG. 2021b. San Mateo County Comprehensive Bicycle and Pedestrian Plan 2021. Available at: https://ccag.ca.gov/programs/transportation-programs/active-transportation/. Accessed May 23, 2023.
[317] CCAG. 2023. C/CAG Countywide Bicycle and Pedestrian Plan Interactive Map. Available at: C/CAG Interactive Bicycle and Pedestrian Plan Maphttps://ccag.ca.gov/programs/transportation-programs/active-transportation/. Accessed May 23, 2023.

- Class II Bicycle Lane along SR-1 between 1st Street in Montara and Mirada Road in El Granada, which is the primary bike route extending from the north end of the Midcoast area south through Half Moon Bay.

Additionally, the San Mateo County Safe Routes to School is administered by C/CAG and the San Mateo County Office of Education. This program intends to increase the number of students able to walk and bike to school. Funds are available to school districts for education, enforcement and promotion/encouragement activities; evaluation and project coordination; and for small capital projects.

3.10.2.4.8 UNINCORPORATED SAN MATEO COUNTY ACTIVE TRANSPORTATION PLAN

On February 9, 2021, the San Mateo County Board of Supervisors approved the first Active Transportation Plan for unincorporated San Mateo County: the Unincorporated San Mateo County Active Transportation Plan (SMC ATP).[318] The SMC ATP is a comprehensive framework to guide the development of active transportation projects and programs for walking, bicycling and other forms of human-powered movement for people of all ages and abilities throughout unincorporated County communities.

The purpose of the SMC ATP is to build on the potential for walking and bicycling by defining a community-driven vision for the future of active transportation in unincorporated San Mateo County and developing a framework for the of implementation of projects, programs, and policies to turn the vision into a reality. It identifies a vision of a connected multimodal network for bicyclists and pedestrians, with improved safety and complete streets; all oriented around the following five goals that promote access, safety, equity, mode share, and flexibility.

- Goal 1: Comprehensive Countywide System of Facilities for Bicyclists and Pedestrians
- Goal 2: More People Riding and Walking for Transportation and Recreation
- Goal 3: Improved Safety for Bicyclists and Pedestrians
- Goal 4: Complete Streets and Routine Accommodation of Bicyclists and Pedestrians
- Goal 5: Strong Local Support for Non-Motorized Transportation

The SMC ATP presents a backbone network of bicycle facilities to connect the region, including a bicycle and pedestrian trail that would be developed on the east side of SR-1, i.e., the SR-1 Multimodal Parallel Trail. The SR-1 Multimodal Parallel Trail is a planned Class I Bicycle and Pedestrian Path on the east side of SR-1 between Montara to Half Moon Bay that currently consists of Class I and Class II bikeways. In the project vicinity the SR-1 Multimodal Parallel Trail would be located between SR-1 and Carlos Street. Additionally, the California Coastal Trail, which is planned to be located adjacent to the Pacific Coast, is part of a larger statewide effort to provide a network of public trails along the entire California coastline. The California Coastal Trail consists of Class I, Class II, and Class III bikeways, and unpaved gravel trails. Recommendations in Connect the Coastside: The San Mateo County Midcoast Comprehensive Transportation Management Plan and the SMC ATP seek to create a robust network of Coastside bicycle facilities. The following projects are recommended in Moss Beach:

- Class III Bikeway on California Ave from Tierra Alta Street to North Lake Street
- Class III Bikeway on full length of Etheldore Street

[318] County of San Mateo Office of Sustainability. 2021. Unincorporated San Mateo County Active Transportation Plan. Available at: https://www.smcsustainability.org/livable-communities/active-transportation/unincorporated-smc-active-transportation-plan. Accessed May 23, 2023.

- Class III Bikeway on Vallemar Street, Juliana Avenue and Wienke Way
- Class III Bikeway on Carlos Street between 16th Street and Vermont Avenue
- Class I Bikeway on SR-1 between 16th and Etheldore streets

3.10.2.5 Local

3.10.2.5.1 LOCAL COASTAL PROGRAM

The California Coastal Commission (CCC) implements the California Coastal Act and oversees development within the Coastal Zone in partnership with local governments. The County's Local Coastal Program (LCP) was approved by the County and certified by the CCC in late 1980. In order to certify the LCP, the CCC must determine that the land use plan conforms with the requirements of Chapter 3 of the Coastal Act, and that the zoning and implementation provisions are consistent with, and adequate to carry out, the land use plan policies. After LCP approval/certification in late 1980, the CCC's permitting authority over most new development was transferred to the County, granting the County the authority to issue coastal development permits for development that is found to be consistent with the LCP. Additionally, the CCC reviews and approves amendments to previously certified LCPs. The County's LCP was last updated on August 8, 2012, and is a subset of the County General Plan; the two documents are internally consistent.[319, 320] Among the policies of the LCP applicable to the proposed project are:

- **LCP Policy 2.42 (Roadway Capacity Limits)** limits the expansion of roadways (i.e., additional lanes) to a capacity which does not exceed that needed to accommodate commuter peak period traffic when buildout of the Land Use Plan occurs, and which does not exceed existing and probable future capacity of water and sewage treatment and transmission capacity or otherwise conflict with other policies of the LCP.
- **LCP Policy 2.43 (Desired Level of Service)** states that "in assessing the need for road expansion, consider Service Level D acceptable during commuter peak periods and Service Level E acceptable during recreation peak periods."
- **LCP Policy 2.44 (Route 1 and Route 92 Phase I Capacity Limits)** states under subsection (b) that improvements to SR-1 are to be limited to the following:
  - slow vehicle lanes on uphill grades
  - the following operational and safety improvements within the existing alignment or lands immediately adjacent:
    - elimination of sharp curves
    - lane widening
    - lane reconfiguration
    - acceleration/deceleration lanes
    - wider shoulders to allow passage for bicycles, emergency vehicles
    - signals at major intersections
  - additional traffic lanes in the Midcoast area as depicted on Map 1.3, provided the additional lanes comply with all other applicable policies of the LCP, including, but not limited to, sensitive habitat and wetland protection policies
  - construction of a tunnel for motorized vehicles only behind Devil's Slide through San Pedro Mountain.

[319] County of San Mateo, 2013.
[320] County of San Mateo, 1986.

- **LCP Policy 2.50 (Improvements for Bicycle and Pedestrian Trails)** requires that Caltrans protect and make available right-of-way to allow for bicycle and pedestrian trail development, commensurate with the C/CAG Bicycle and Pedestrian Plan and California Coastal Trail Plan; promote development of the Multimodal Parallel Trail; and promote safe pedestrian crossings of SR-1.
- **LCP Policy 2.52 (Traffic Mitigation for all Development in the Urban Midcoast)** requires applicants for new development that generates any net increase in vehicle trips on SR-1 and/or SR-92 to develop and implement a traffic impact analysis and mitigation plan and to submit the traffic impact analysis and mitigation plan and associated analyses and implementation measures prior to the approval of any Coastal Development Permit application that triggers this requirement. Furthermore, it includes subsection (a) which suggests TDM measures set forth by C/CAG to offset new traffic generated by a project to the extent feasible. The 2023 Cypress Point TIA and the C/CAG TDM Checklist for a Residential (Multi-Family) Land Use: Small Project meet this requirement (see EIR Appendix Q [2023 Cypress Point TIA] and Appendix 9 of the 2023 TIA [C/CAG TDM Checklist]).
- **LCP Policy 2.53 (Transportation Management Plan)** required the County to develop a comprehensive transportation management plan to address the cumulative traffic impacts of residential development, including single-family, two-family, multi-family, and second dwelling units, on roads and highways in the entire Midcoast, including the City of Half Moon Bay. Plan elements include a cumulative traffic analysis based on LCP buildout and an evaluation of the feasibility of developing an in-lieu fee traffic mitigation program and the expansion of public transit, including buses and shuttles. See below for a discussion of the Connect the Coastside: The San Mateo County Midcoast Comprehensive Transportation Management Plan (Connect the Coastside).[321]
- **LCP Policy 2.56 (Increased Service for Coastside Residents)** encourages continued County coordination with SamTrans to expand service. See Section 3.10.2.4.6 for a discussion of ReImagine SamTrans and recently implemented improvements along the coastside.

LCP Policy 2.52 complements C/CAG's TDM Policy (see Section 3.10.2.4.3) and LCP Policy 2.53 requiring development of a transportation management plan (Connect the Coastside). As noted, the County's LCP requires that developments in the coastal zone evaluate impacts to LOS for coastal access and emergency vehicles and develop a traffic impact analysis and mitigation plan. The LCP generally states that prior to approval of a CDP the traffic impact analysis and mitigation plan must include: 1) traffic mitigation measures (to the extent feasible), 2) enough information for the County to assess if the proposed mitigation measures offset new vehicle trips generated by the project to the extent feasible, and 3) the project's cumulative impacts combined with other reasonably foreseeable future projects. Traffic mitigation measures (LCP Policy 2.52a) could include shuttle services for employees of the development, subsidizing transit, providing bicycle storage, and others. C/CAG coordinates countywide congestion management and recommends TDM measures, and the potential number of trips offset as part of its biannual Congestion Management Program.[322]

In addition to roadway-related LCP policies, the County's LCP identifies the California Coastal Trail, a continuous interconnected public trail system along the coastline, as a means of encouraging active transportation. The California Coastal Trail is anticipated to cross SR-1 at 16th Street, and further plans are identified in Connect the Coastside for creating safer and more continuous walking and bicycling facilities.

[321] County of San Mateo Planning and Building Department. 2022. Connect the Coastside Final Plan. Available at: https://www.smcgov.org/planning/connect-coastside. Accessed May 23, 2023.
[322] C/CAG, 2023b. TDM Measures. Available at: https://ccagtdm.org/measures/. Accessed May 23, 2023.

Highway 1 Safety and Mobility Study (Phases 1 and 2)

In coordination with Caltrans, the Local Government Commission, and other San Mateo County departments, the San Mateo County Planning and Building Department led a community-based planning study focused on short and long-term transportation improvements along the Midcoast portion of SR-1. The plan includes a series of transportation improvements along the SR-1 corridor including pedestrian crossings, raised medians, and left-turn lanes to improve vehicular, pedestrian and bicycle mobility. Phase 1 of the study, which focuses on Miramar, El Granada and Princeton, was adopted by the San Mateo County Board of Supervisors in 2009. Phase 2, which focuses on Moss Beach and Montara, was adopted by the San Mateo County Board of Supervisors in in 2012.[323]

Connect the Coastside: The San Mateo County Midcoast Comprehensive Transportation Management Plan

The County's LCP includes a policy requiring preparation of a Transportation Management Plan for the entire Midcoast that addresses the transportation impacts of future development (LCP Policy 2.53). Connect the Coastside: The San Mateo County Midcoast Comprehensive Transportation Management Plan (Connect the Coastside) meets the requirements of LCP Policy 2.53 and was adopted by the San Mateo County Board of Supervisors on July 26, 2022. Connect the Coastside represents the culmination of a planning process initiated in 2014.[324] It is a community-based transportation plan prepared to address the mobility needs of Midcoast residents and visitors, to protect coastal resources and public access, and improve the livability for Midcoast residents. Connect the Coastside identifies programs and improvements for the SR-1 and SR-92 corridors to improve mobility and accommodate the Midcoast's future transportation needs. Future implementation of Connect the Coastside may lead to amendments to various County regulations, including proposed amendments to the County's LCP. The community input and technical data gathered in the Highway 1 Safety and Mobility Study (Phases 1 and 2), among other planning processes, informed the development of Connect the Coastside.[325]

Connect the Coastside's study area includes land area south of the Tom Lantos Tunnels (Devil's Slide) to the southern terminus of Half Moon Bay, including areas west and east of SR-1 (to Interstate 280), as well as land areas proximate to SR-92, from SR-1 to I-280 and involved the 1) assessment of existing development and transportation conditions in the study area; 2) projections for cumulative development and associated transportation system impacts; 3) identification of potential infrastructure, policies, programs, and plans to mitigate impacts based on the analysis and building upon previous planning efforts, like the Highway 1 Safety and Mobility Study (Phases 1 and 2), the Highway 1 Congestion and Safety Improvement Project, the Coastside Access Study, and SamTrans Coastside Transit Study; and 4) development and refinement of recommendations through extensive and iterative public engagement.

A key purpose of Connect the Coastside is to define priority projects that will then be eligible to apply for funding. It identifies a diverse range of road, highway and trail improvements within the following categories:

- Bicycle and walking trails
- Roadways and intersections

[323] County of San Mateo Planning and Building Department. 2023b. Transportation Plans. Available at: https://www.smcgov.org/planning/transportation-plans. Accessed May 23, 2023.
[324] County of San Mateo Planning and Building Department. 2022. Connect the Coastside Final Plan, pp. 33-34. Available at: https://www.smcgov.org/planning/connect-coastside. Accessed May 23, 2023.
[325] County of San Mateo Planning and Building Department. 2022. Connect the Coastside Final Plan, Chapter 3 (Planning Context), pp. 27-37, and Appendix C-Planning and Policy Context. Available at: https://www.smcgov.org/planning/connect-coastside. Accessed July 2023.

- Pedestrian routes
- Transit facilities and services
- Parking

See Table 3.10-1 for a list of recommended projects relevant to the proposed project including those at 16th, Carlos Street, and California Avenue and along SR-1 that will be more fully developed as part of the Moss Beach State Route 1 Congestion and Safety Improvements Project (see below). Connect the Coastside also recommends projects, e.g., the Multimodal Parallel Trail, which would improve the multimodal circulation system in the vicinity of the project site and within Moss Beach and along the Midcoast. Recommended projects will need to be incorporated into local, regional, and state transportation plans such as the San Mateo County Transportation Authority Strategic Plan, the San Mateo County Congestion Management Plan, the County of San Mateo's Five-Year Capital Improvement Plan (CIP), Plan Bay Area 2050, and the State Transportation Improvement Program to secure funding.

Table 3.10-1. Connect the Coastside Project Recommendations

Project Name	Project No.	Description
SR-1 Side Street Stop Signs	R2	Install stop signs and pavement markings at all side streets of SR-1 where missing.
16th Street/SR-1 Intersection Control	R5	Intersection control, with preliminary recommendation of single-lane roundabout.
California Avenue/SR-1 Intersection Control	R6	Intersection control, with preliminary recommendation of single-lane roundabout.
Carlos Street Realignment to 16th Street	R9	Realign north terminus of Carlos Street at SR-1 to connect to 16th Street.
Carlos Street Traffic Calming	R10	Striping, signage, and completion of missing sidewalk, with conversion to one-way southbound with parking reoriented facing south on Carlos Street to accommodate the Parallel Trail and calm traffic in central Moss Beach.
New and Improved Crossings of SR-1 and SR-92	Pe1	Improve existing and add new pedestrian crossings on SR-1 and SR-92 including marked crossings with flashing beacons, overcrossing of SR-1/south of Carlos Street, and improve SR-1/Coronado.
SR-1 Multimodal Parallel Trail	Pe2	Connected walking and bicycling facilities along the east side of SR-1 through connected Class I Path, sidewalks, and Class III Bike Route, with marked crossings of intersecting streets with the path.
SR-1 Sidewalks in Moss Beach and Montara	Pe4	Add sidewalks in central Montara and Moss Beach in front of businesses located on SR-1 and marked crossings of side-street intersections with SR-1.
Central Moss Beach Bicycle and Pedestrian Improvements	Pe5	Add sidewalk on west/north sides on Etheldore Street (north of California Avenue) where missing and on California Avenue (south of Etheldore Street) to connect to existing sidewalks. Add Class III Bike Route on California Avenue from Etheldore Street to SR-1.
Montara Safe Routes to School	Pe6	Various improvements to make it easier to walk and bike to Farallone View Elementary School, including sidewalks, Class III Bike Routes, improved crossings, and stop signs.
SR-1 Bikeway	B1	Bikeway designation on SR-1 of Class II Bike Lanes.
Transit Stop Improvements	T1	Ensure all bus stops have an ADA accessible pad, with additional amenities at higher use stations including benches, shelters, and lighting.
Increased Midcoast Bus Service	T3	Work with the SamTrans, Commute.org, and other partners to provide additional bus service on existing lines serving the Midcoast, new commute express service between Half Moon Bay and the Colma BART station, and to align transit schedules to support student travel needs.

Source: Connect the Coastside 2022, Table 29 and p. 107; Fehr & Peers 2023 (see EIR Appendix R).

Moss Beach State Route 1 Congestion and Safety Improvements Project

The County and the SMCTA, in cooperation with Caltrans, initiated the Moss Beach State Route 1 Congestion and Safety Improvements Project (Moss Beach/SR-1 Project) in 2022.[326] The Project Initiation phase for the Moss Beach/SR-1 Project began in September 2022 and is funded by Measure W funds from the SMCTA and San Mateo County matching funds.[327] Per Caltrans, the appropriate project initiation document to be prepared is a Project Study Report-Project Development Support (PSR-PDS). The PSR-PDS is expected to be complete in November 2023. Assuming additional funding is secured, the Caltrans standard timeline for project buildout (project initiation, preliminary engineering, environmental review/project approval, final design, and construction) shows that the Moss Beach/SR-1 Project could be operational in 2030.

The Moss Beach/SR-1 Project is an outgrowth of the land use and transportation planning processes in the Midcoast area that resulted in the vision and multimodal transportation framework of Connect the Coastside. The project's purpose is to encourage residents and visitors to walk, bike, and use transit within Moss Beach and along the Midcoast. It is important to note that there is only one marked crossing of SR-1 in a 6-mile stretch of the unincorporated Midcoast area including Moss Beach and the intersections closest to the project site.

The Moss Beach/SR-1 Project recommendations for improvements on SR-1 in unincorporated Moss Beach from 16th Street to Cypress Avenue and surrounding area will be focused on improving traffic flow, intersection safety, and vehicular operations along and across SR-1, and increasing SR-1 crossing opportunities for pedestrians and cyclists as part of a series of multimodal improvements on, or parallel to, SR-1. Because the Moss Beach/SR-1 Project would be informed by previous planning and transportation studies, including Connect the Coastside and the SMCTA's August 2015 Preliminary Planning Study for Highway 1 Congestion and Safety Improvement Project, it is expected that roundabouts and traffic signals with pedestrian crossings and other associated infrastructure at the SR-1 intersections with 16th Street and Carlos Street would be evaluated as project alternatives, along with a potential consolidation of the 16th Street and Carlos Street intersection. Thus, potential improvements may include new controlled intersections (either single-/multi-lane roundabouts or traffic signals) at 16th Street, California Avenue, and Cypress Avenue; intersection consolidation (e.g., 16th Street and Carlos Street); dedicated turn lanes; high-visibility crosswalks; a new sidewalk on the west side of SR-1 from California Avenue to Cypress Avenue; bus stop improvements for SamTrans Route 117; Class 2 bike lanes; and a Class 1 multi-use path on the east side of SR-1 (along SR-1 and Carlos Street).

3.10.3 Impacts Analysis and Mitigation Measures

3.10.3.1 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, as adapted by the County for the San Mateo County Initial Study Environmental Evaluation Checklist, a project would be considered to have a significant effect on transportation if the effects exceed the significance criteria described below.

1. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, and parking.

[326] County of San Mateo Planning and Building Department. 2023c. Moss Beach State Route 1 Congestion and Safety Improvements Project. Available at: https://www.smcgov.org/planning/moss-beach-sr-1. Accessed May 23, 2023.
[327] San Mateo County Transit District. 2023b. Transportation Authority Board of Directors Meeting Agenda Item #11(b), December 2, 2021. Available at: https://www.smcta.com/meetings/2021/12/ta-board-directors. Accessed May 23, 2023.

2. Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b), Criteria for Analyzing Transportation Impacts.
3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
4. Result in inadequate emergency access.

Each of these thresholds is discussed under Section 3.10.3.3, below. Significance criteria 1 is related to potential conflicts or inconsistencies with applicable programs, plans, ordinances, or policies identified by the County as addressing the circulation system, i.e., limit coastal access by impeding the buildout of the local sidewalk, bicycle, and recreational trail networks or other improvements described in Connect the Coastside, the County's LCP, or the Moss Beach/SR-1 Project. Significance criteria 2 is related to the implementation of VMT as the primary performance metric for determining transportation impacts under the CEQA. Significance criteria 3 is related to the potential for new and/or exacerbated hazard conditions for people walking, driving, bicycling, or taking transit based on land use trip generation characteristics (i.e., vehicle type) and changes to roadway network (e.g., new or modified segments and/or intersections). Significance criteria 4 is related to site design and provision of adequate site access and paths of travel for emergency service providers, e.g., fire (see **Section 3.12, Wildfire** for a discussion of evacuation routes). In addition, an analysis of construction and a parking assessment are provided for informational purposes.

3.10.3.2 Impact Assessment and Methodology

3.10.3.2.1 PROPOSED DEVELOPMENT CHARACTERISTICS

As discussed in EIR **Chapter 2, Project Description**, the project site is located in the coastal zone on the urban side of the urban rural boundary established by the County's LCP[328] and is defined as an infill site per the County's LCP Policies document,[329] zoned for Medium Density Residential (a downzone completed through the 2022 LCP Amendment and upheld on appeal), and designated as a priority development site for affordable housing in the County's LCP and the County's current Housing Element[330] (and the public review draft for the 2023–2031 cycle).[331] The project sponsor proposes the development of 71 residential units, an associated 3,460-square-foot community building, a 142-space parking lot with driveway access from Carlos Street (including six accessible spaces and 57 electric vehicle charging infrastructure-ready spaces), an interconnected system of paths and outdoor open spaces/recreation areas, an improved sidewalk on Sierra Street, and eight short-term and 36 long-term (i.e., indoor and secure) bicycle parking spaces. The residential development would include a mix of one-, two-, and three-bedroom units. All, except the building manager's unit, would be affordable to households earning less than 80% of the Area Median Income. The project sponsor has also committed to an agreement with the County Department of Housing to set aside 52 of the 70 proposed units as Local Preference Units (about 74% of the units), where eligible households are those that include at least one member who lives or works in the City of Pacifica, the City of Half Moon Bay, and/or the unincorporated County region between the City of Pacifica and the City of Half Moon Bay (Greater Moss Beach Region). In addition, the project sponsor has committed to the implementation of the following required and

[328] County of San Mateo Planning and Building Department. 2023. Local Coastal Program, Map 1.4 - Midcoast Land Use Plan. Available at: download (smcgov.org). Accessed June 2023.
[329] County of San Mateo County Planning and Building Department, 2013. Local Coastal Program Policies. June 18. Available at: County of San Mateo | Local Coastal Program Policies 2013. Accessed June 2023.
[330] County of San Mateo County Planning and Building Department, 2015. Housing Element, 2014-2022, December 29. Available at: San Mateo County Housing Element (smcgov.org). Accessed July 2023.
[331] County of San Mateo County Planning and Building Department, 2022. San Mateo County Housing Element Update 2023-2031 Index. Available at: San Mateo County Housing Element Update 2023-2031 | County of San Mateo, CA (smcgov.org). Accessed July 2023.

additional TDM measures identified in the C/CAG TDM Checklist for a Residential (Multi-Family) Land Use: Small Project (see Appendix 9 [C/CAG TDM Checklist] in EIR Appendix Q [2023 Cypress Point TIA]):

- M2 – Orientation, Education, Promotional Programs and/or Materials (*Required*)
- M3 – TDM Coordinator/Contact Person (*Required*)
- M6 – Transit or Ridesharing Passes/Subsidies (*Required*)
- M8 – Secure Bicycle Storage (*Required*)
- M9 – Design Streets to Encourage Bike/Ped Access (*Required*)
- M11 – Family-Supportive Amenities (*Additional*)
- M22 – Active Transportation Subsidies (*Additional*)
- M23 – Gap Closure (*Additional*)
- M24 – Bike Repair Station (*Additional*)

In addition, the project sponsor has committed to promote walking and bicycling with better connections to the local pedestrian and bicycle network via sidewalk improvements/new construction on the rights-of-way (north side of Sierra Street and east side of Carlos Street) adjacent to the project site. Further improvements that the project sponsor has committed to implementing are site design improvements that would enhance driver, pedestrian, and bicyclist safety through provision of signage and more visible pavement markings and street crossings at the new project driveway at Carlos Street and on-site loop road/parking area and wider on-site paths to promote separation from on-site vehicle circulation/parking (see EIR **Chapter 2, Project Description**).

3.10.3.2.2 METHODOLOGY

The C/CAG's 2021 CMP[332] requires local jurisdictions to notify C/CAG at the beginning of the CEQA process of all development applications or land use policy changes that are expected to generate a net 100 average daily trips on the CMP roadway network. Preparation of a traffic impact analysis for land use projects that generate more than 500 trips per day or 100 peak hour trips at an intersection is required by the County.[333]

Vehicle Miles Traveled (VMT)

According to CEQA Guidelines Section 15064.3(a), "VMT is generally the most appropriate measure of transportation impacts." It defines VMT as "the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in subdivision (b) (2), below (regarding roadway capacity), a project's effect on automobile delay shall not constitute a significant environmental impact."

CEQA Guidelines Section 15064.3(b) lists the following criteria for analyzing transportation impacts:

1. Land Use Projects. VMT exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within 0.5 mile of either an existing major transit stop or a

[332] C/CAG. 2021a. Congestion Management Program Appendices. Available at: https://ccag.ca.gov/wp-content/uploads/2022/03/CMP-Appendix-2021_Final.pdf. Accessed May 23, 2023.
[333] County of San Mateo Department of Public Works. 2013. Traffic Impact Study Requirements prepared by County of San Mateo Department of Public Works, Roadway Services, September 1. Available at: https://www.smcgov.org/media/46076/download?inline=. Accessed August 2023.

stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease VMT in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.

2. Transportation Projects. Transportation projects that reduce, or have no impact on, VMT should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, such as in a regional transportation plan EIR, a lead agency may tier from that analysis as provided in Section 15152.
3. Qualitative Analysis. If existing models or methods are not available to estimate the VMT for the particular project being considered, a lead agency may analyze the project qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.
4. Methodology. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's VMT, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's VMT and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate VMT and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

As explained on the County of San Mateo Public Works website:[334]

> Effective July 1, 2020, the County of San Mateo has transitioned to using Vehicle Miles Traveled (VMT) instead of Level of Service (LOS) as the metric for determining transportation-related impacts under CEQA.

The County is in the process of developing new thresholds of significance to identify transportation-related impacts under the CEQA as required by SB 743 for the unincorporated areas within the county. In September 2020, County staff submitted interim VMT analysis criteria to the County Board of Supervisors.[335] The interim VMT analysis criteria are based on County modifications to OPR's SB 743 recommendations. The County's interim changes from LOS to VMT also include a list of project types that are exempt from detailed quantitative VMT analysis if County screening criteria are met. One such screening criterion is for projects that provide 100% affordable housing. Per the County's interim guidance, 100% affordable housing projects typically generate lower VMT than market-rate housing if on an infill site in an urban/suburban area of the county. The proposed project is a 100% affordable housing project that qualifies as an urban infill site under the LCP and would therefore be exempt under the County's interim VMT Guidance. However, the project sponsor requested that a quantitative VMT analysis be conducted to be conservative and estimate the effectiveness of project characteristics such as the Local Preference Agreement, the C/CAG TDM Checklist measures, and other potential TDM measures because of the limited public transit options along the Midcoast and known safety hazards for drivers, pedestrians, and bicyclists traveling along and across SR-1 in the Moss Beach area.

[334] County of San Mateo Department of Public Works. 2020. San Mateo County Traffic Impact Analysis Requirements. Available at: https://www.smcgov.org/publicworks/traffic-impact-analysis-requirements. Accessed May 23, 2023.
[335] County of San Mateo Department of Public Works. 2020. Interdepartmental Memo, Change to Vehicle Miles Traveled as Metric to Determine Transportation Impacts under CEQA Analysis. Available at: https://www.smcgov.org/media/46081/download?inline=. Accessed May 23, 2023.

The County has discretion to set its significance threshold based on the baseline VMT or a reduction of the baseline VMT. For residential projects, OPR recommends using significance thresholds that compare a project's home-based trip VMT per resident to the baseline home-based trip VMT per resident. For office projects, OPR recommends using significance thresholds that compare a project's home-based VMT per worker to the home-based baseline VMT per worker. Baseline VMT by resident and worker are generated using the C/CAG VMT Estimation Tool which uses data from the C/CAG-VTA San Mateo County Travel Demand Model and existing travel patterns. The County's VMT significance thresholds are as follows:

- Residential – 15% below the baseline VMT (countywide average for baseline year 2015) for home-based VMT per resident
- Office – 15% below the baseline VMT (countywide average for baseline year 2015) for home-based work VMT per worker
- Transportation projects must have a net increase of 0 total VMT

Level of Service

Revisions to CEQA transportation analysis requirements do not preclude the application of local general plan policies, municipal and zoning codes, conditions of approval, or any other planning requirements through a typical planning approval process. These requirements aim to ensure adequate operation of the transportation system in terms of transportation congestion measures related to vehicular delay and roadway capacity. Furthermore, SB 743 does not preclude local agencies from using LOS to determine local impacts. Accordingly, the County continues to require evaluation of LOS to guide local circulation system planning and site access management and inform recommended conditions of approval for development projects.

The County's Department of Public Works typically requires analysis of the traffic and circulation impacts of proposed residential and non-residential developments that would add more than 500 daily trips or 100 peak hour trips. If a project would add more than 500 daily trips or 100 peak hour trips, the County defines a minimum acceptable design intersection level of service as LOS C, with no individual movement operating at less than LOS D. The requirements state that on occasion, LOS D may be allowed for peak periods.[336] If a project would add fewer than 500 daily trips or 100 peak hour trips, an analysis is generally not required. Because the proposed project would generate fewer than 500 daily trips and fewer than 100 peak hour trips, it is not subject to the County's Transportation Impact Study (TIS) requirements (County TIS).[337]

The project site is located within the coastal zone and is subject to the transportation policies identified in the County's LCP (see Section 3.10.2.5.1, Local Coastal Program) including LCP Policy 2.52, which requires the preparation of a traffic impact analysis and mitigation plan. In assessing the need for roadway expansion the LCP indicates a desired LOS D standard for streets and intersections within the LCP area during commuter peak periods (weekday a.m. and p.m.) and a LOS E standard during recreation peak periods (Saturday midday) (LCP Policy 2.43). The potential impacts of the proposed project are being evaluated in accordance with the standards set forth by San Mateo County through its LCP and C/CAG's Land Use (TDM) Policy which require approval of the required C/CAG TDM Checklist for a Residential (Multi-Family) Land Use: Small Project with required and additional TDM measures and a required trip reduction goal of 25% (see Section 3.10.3.2.1, above).

[336] County of San Mateo Department of Public Works, 2013.
[337] County of San Mateo Department of Public Works. 2013.. Accessed May 24, 2023.

The intersection LOS analysis is considered outside of the CEQA process and is not used as a metric to determine the significance of a transportation impact under the CEQA. See the 2023 Cypress Point TIA in EIR Appendix Q for the detailed intersection LOS analysis for existing, existing plus project, cumulative, and cumulative plus project weekday a.m. and p.m. peak hour intersection operations and Saturday midday intersection operations. Any non-CEQA impacts or considerations resulting from the intersection LOS analysis would inform the entitlements review process and the conditions imposed on the project.

3.10.3.3 Impacts and Mitigation Measures

Impact TR-1: Implementation of the proposed project could conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. (Less than Significant)

See Section 3.10.2.5.1, Local Coastal Program, for a description of applicable transportation-related LCP policies referenced below in the assessment of the consistency of the project's development characteristics and mitigation measures with the County's LCP (see discussions above under Section 3.10.3.2.1 and below under Impact TR-3 and Impact TR-4).

Local Coastal Program

The proposed project does not include incompatible land uses that would interfere or conflict with an existing program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, or pedestrian systems or facilities. As discussed in **EIR Chapter 2, Project Description** and **Section 3.8, Land Use and Planning**, the project site is designated an affordable housing opportunity site in the County's LCP. As further noted, the approximately 11-acre project site is listed in the current 2014-2022 Housing Element and the public review draft of the Housing Element for the 2023–2031 cycle) as a housing opportunity site. In response to the land use and transportation constraints for new development within the coastal zone as it relates to demand on public infrastructure networks, i.e., transportation, water, and sewer, LCP amendments were adopted by the Board of Supervisors and the California Coastal Commission and codified in the Zoning Ordinance in 2022. The amendments changed the zoning to limit the allowed intensity of residential development permitted on the site (from 148 units to 71 units). Thus, the proposed project characteristics, i.e., residential uses, are consistent with the LCP as amended, and with the projected level of growth and development identified in Connect the Coastside.

As discussed in Section 3.10.3.3, under Impact TR-3 and Impact TR-4, the site plan shows adequate site access and on-site circulation and has been reviewed by both the County Department of Public Works and the Coastside Fire District. These agencies have concluded that the proposed driveway(s) and on-site loop road comply with their respective policies and requirements. Additionally, the project sponsor would improve the on-site pedestrian pathway connecting to the existing sidewalk on Sierra Street, improve the north sidewalk along Sierra Street, and construct a new sidewalk on east side of Carlos Street south from the proposed driveway entrance from Carlos Street to the Sierra Street/Carlos Street intersection; all of which would be implemented as part of the proposed project (see **Chapter 2, Project Description**). The proposed project would also provide adequate vehicle and bicycle parking spaces that meet the parking requirements specified by the County. Furthermore, the project sponsor would implement transportation demand management measures in the C/CAG TDM Checklist for a Residential (Multi-Family) Land Use: Small Project (see Appendix 9 in EIR Appendix Q) that are consistent with the County's LCP and Connect the Coastside as well as additional transportation demand management measures as mitigation measures to address project-related impacts (see Mitigation Measure (MM)-TR-2, MM-TR-4b, and MM-TR-4c).

The development of the proposed project at a density of approximately 6.4 residential units per acre would not conflict with transportation-related policies or regulations in the County's LCP, Connect the

Coastside, or C/CAG's 2021 TDM Policy. Pursuant to LCP Policy 2.52 a traffic impact analysis and mitigation plan was prepared to evaluate local circulation and safety issues and to develop mitigation measures to address impacts.

Traffic Operations

As discussed in Section 3.10.3.2, Impact Assessment and Methodology, the CEQA Guidelines provide that a project's effect on automobile delay shall not constitute a significant environmental effect. Revisions to CEQA transportation analysis requirements however do not preclude the application of local general plan policies, municipal and zoning codes, conditions of approval, or any other planning requirements through a lead agency's planning approval process. These requirements aim to ensure adequate operation of the transportation system in terms of transportation congestion measures related to vehicular delay and roadway capacity. Therefore, an analysis is provided to assess the effect of the proposed project on traffic operations for informational purposes and to evaluate its consistency with the County's LCP and relevant policies.

As discussed below, based on the trip generation and trip distribution information, project-related vehicle trips added to the local circulation system would incrementally increase traffic on the circulation system including SR-1 (both northbound and southbound). The results of the intersection LOS analysis show that the added project trips would degrade the LOS at the study intersections (all unsignalized) in the vicinity of the project site identified by the County for the traffic operations analysis under the County's LCP (see Figure 3.10-1):

1. State Route 1 and 14th Street
2. State Route 1 and 16th Street
3. State Route 1 and Carlos Street
4. Carlos Street and Sierra Street
5. Sierra Street and Stetson Street
6. State Route 1 and Etheldore Street/Vallemar Street
7. State Route 1 and California Avenue/Wienke Way
8. Carlos Street and California Avenue
9. California Avenue and Etheldore Street
10. California Avenue and Stetson Street

As shown below, the project-related traffic contributions at the study intersections are anticipated to result in less than desirable LOS at the SR-1 intersections such as Carlos Street, Etheldore Street, and California Avenue, i.e., vehicle delay and queuing on the stop-controlled approaches as drivers attempt to access SR-1 from the local streets. Safety-related hazards associated with project-related vehicle additions to the circulation system, and the exposure of pedestrian or bicyclists to roadway-related hazards are discussed under Impact TR-4.

Existing Traffic Conditions

The 2023 Cypress Point TIA (see EIR Appendix Q) evaluated traffic conditions at the study intersections using intersection LOS in order to determine if project-related traffic contributions would result in the need for roadway improvements/expansions pursuant to LCP Policy 2.43. LOS is a qualitative description of traffic flow based on such factors as speed, travel time, delay, and freedom to maneuver. Six levels are

defined, from LOS A, with the best operating conditions (i.e., free-flow conditions with little or no delay), to LOS F, with the worst operating conditions (i.e., jammed conditions with excessive delays).

Table 3.10-2 presents the results of the intersection LOS analysis under existing conditions without the proposed project. LOS at the unsignalized intersections were based on the 2010 Highway Capacity Manual (HCM) methodology using Synchro software. For stop-controlled intersections, LOS depends on the average delay experienced by vehicles on the stop-controlled approaches. Thus, for two-way stop-controlled intersections, operations are defined by the average control delay experienced by vehicles entering the intersection from the stop-controlled approaches on minor streets or from left-turn approaches on major streets, in this case, from intersecting side streets on to SR-1. In general, the traffic volumes along SR-1 (which are currently uncontrolled) govern traffic operations, i.e., more traffic along the major street of SR-1 makes finding a gap to enter the highway more difficult for drivers on a side street with stop control. Therefore, drivers attempting to access SR-1 from intersecting side streets with SR-1 such as Carlos Street, Etheldore Street, and California Avenue experience delays.

The intersection LOS evaluations under existing conditions are based on peak-hour turning-movement counts collected for the weekday a.m. (7:00 to 9:00), weekday p.m. (4:00 to 6:00), and Saturday midday (11:00 a.m. to 1:00 p.m.) peak periods. The intersection counts were collected on Thursday, April 20, 2017, and Saturday April 22, 2017 and include motor vehicles, bicycles, and pedestrians.[338] Because the project site is located within the coastal zone and subject to the County's LCP and its land use and transportation policies, e.g., Policy 2.43-Desired LOS (discussed in Section 3.10.2.5, Local), the following LOS thresholds are used to assess the need for roadway expansions or improvements:

- LOS D overall and for critical movements during weekday peak hours
- LOS E overall and for critical movements during weekend peak hours

As noted below, under existing or cumulative conditions without the proposed project, certain intersections already operate below the desired LOS; thus, the magnitude of project-related contributions at such locations is provided as additional delay in seconds at the critical movements which in this instance are the approaches to SR-1 from the intersecting stop-controlled side streets.

LCP Policy 2.43 states that these thresholds (desired LOS) should be considered when assessing the need for road expansion as a result of conditions below the desired LOS. Further, within the existing alignment or lands immediately adjacent, LCP Policy 2.44 allows for limited roadway improvements including those developed through Connect the Coastside to address operational and safety concerns, e.g., the Moss Beach/SR-1 Project which includes intersection operation and crossing improvements at SR-1/16th Street, SR-1/Carlos Street, and SR-1/California Avenue with safe accommodations for pedestrian and bicycle travel along and across SR-1.

[338] For traffic volumes along SR-1, Kittelson checked historical traffic counts to see if an upward adjustment would appropriately represent peak summer conditions. The available data showed the average two-way annual daily traffic volume on SR-1 in the project vicinity to be 16,500 vehicles per day and the peak month daily vehicle volume to be 17,600 vehicles per day. Kittelson used the ratio between the two (1.07) to inflate the observed April 2017 volumes. All analysis traffic volumes for through movements along SR-1 were increased by 7%. Appendix 2 of the 2023 TIA shows the correspondence with Caltrans on the appropriateness of this method. See EIR Appendix Q.

Table 3.10-2. Intersection Level of Service – Existing Conditions without Project

No.	Location	Control	Existing Weekday a.m.		Existing Weekday p.m.		Existing Saturday Midday	
			Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
1	State Route 1 and 14th Street	TWSC	24.4	C	32.6	D	38.1	E
2	State Route 1 and 16th Street	TWSC	31.0	D	**37.6**	**E**	38.4	E
3	State Route 1 and Carlos Street	TWSC	13.8	B	13.3	B	14.8	B
4	Carlos Street and Sierra Street	TWSC	8.4	A	8.7	A	8.6	A
5	Stetson Street and Sierra Street	TWSC	8.6	A	9.0	A	8.7	A
6	State Route 1 and Etheldore Street / Vallemar Street	TWSC	22.3	C	**37.0**	**E**	31.0	D
7	State Route 1 and California Avenue / Wienke Way	TWSC	**43.5**	**E**	**78.2**	**F**	**87.1**	**F**
8	Carlos Street and California Avenue	TWSC	9.8	A	9.4	A	9.9	A
9	Etheldore Street and California Avenue	TWSC	9.5	A	9.7	A	9.7	A
10	Stetson Street and California Avenue	AWSC	7.2	A	7.3	A	7.2	A

Source: Highway Capacity Manual 2010; Kittelson & Associates 2023 (see EIR Appendix Q).

Notes: (s) = seconds, AWSC: All-Way Stop Control, TWSC: Two-Way Stop Control. LOS and delay reported for TWSC intersections is for the worst approach or movement. Bold lettering indicates an intersection that does not meet the LCP's desired LOS (LOS D overall and for critical movements during weekday peak hours, LOS E overall and for critical movements during weekend peak hours).

Under existing conditions, the intersection LOS analysis shows the following:

- **SR-1 and 16th Street intersection (No. 2)** traffic operations are below the desired LOS D for the weekday p.m. peak hour at LOS E.
- **SR-1 and Etheldore Street/Vallemar Street intersection (No. 6)** traffic operations are below the desired LOS D for the weekday p.m. peak hour at LOS E.
- **SR-1 and California Avenue/Wienke Way intersection (No. 7)** traffic operations are below the desired LOS D for the weekday a.m. and p.m. peak hour at LOS E and LOS F, respectively. Traffic operations are also below the desired LOS E for the Saturday midday peak hour at LOS F.

Table 3.10-3 presents the results of the intersection LOS analysis under cumulative conditions without the proposed project. Cumulative conditions are based on information derived from the C/CAG-VTA San Mateo County Travel Demand Model including funded and approved transportation projects as well as past, present, and reasonably foreseeable development projects with active planning applications within the incorporated and unincorporated portions of the County along the Midcoast and in nearby communities, such as Montara and City of Half Moon Bay.

Table 3.10-3. Intersection Level of Service – Cumulative Conditions (2040) without Project

No.	Location	Control	Cumulative Weekday a.m.		Cumulative Weekday p.m.		Cumulative Saturday Midday	
			Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
1	State Route 1 and 14th Street	TWSC	58.2	F	>80	F	59.8	F
2	State Route 1 and 16th Street	TWSC	74.7	F	>80	F	59.7	F
3	State Route 1 and Carlos Street	TWSC	16.2	C	18.8	C	19.5	C

No.	Location	Control	Cumulative Weekday a.m.		Cumulative Weekday p.m.		Cumulative Saturday Midday	
			Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
4	Carlos Street and Sierra Street	TWSC	8.5	A	8.8	A	8.6	A
5	Stetson Street and Sierra Street	TWSC	8.7	A	9.1	A	8.8	A
6	State Route 1 and Etheldore Street / Vallemar Street	TWSC	52.3	F	>80	F	34.1	D
7	State Route 1 and California Avenue / Wienke Way	TWSC	>80	F	>80	F	>80	F
8	Carlos Street and California Avenue	TWSC	10.0	B	9.7	A	10.2	B
9	Etheldore Street and California Avenue	TWSC	9.7	A	9.9	A	10.0	B
10	Stetson Street and California Avenue	AWSC	7.3	A	7.4	A	7.2	A

Source: Highway Capacity Manual 2010; Kittelson & Associates 2023 (see EIR Appendix Q).

Notes: (s) = seconds, AWSC: All-Way Stop Control, TWSC: Two-Way Stop Control. LOS and delay reported for TWSC intersections is for the worst approach or movement. **Bold lettering** indicates an intersection that does not meet the LCP's desired LOS (LOS D overall and for critical movements during weekday peak hours, LOS E overall and for critical movements during weekend peak hours).

Under cumulative conditions, the intersection LOS analysis shows the following:

- **SR-1 and 14th Street intersection (No. 1)** traffic operations are projected to be below the desired LOS D for the weekday a.m. and p.m. peak hour at LOS F. Traffic operations would also be below the desired LOS E for the Saturday midday peak hour at LOS F.
- **SR-1 and 16th Street intersection (No. 2)** traffic operations are projected to be below the desired LOS D for the weekday a.m. and p.m. peak hour at LOS F. Traffic operations would also be below the desired LOS E for the Saturday midday peak hour at LOS F.
- **SR-1 and Etheldore Street/Vallemar Street intersection (No. 6)** traffic operations are projected to be below the desired LOS D for the weekday a.m. and p.m. peak hour at LOS F.
- **SR-1 and California Avenue/Wienke Way intersection (No. 7)** traffic operations are projected to be below the desired LOS D for the weekday a.m. and p.m. peak hour at LOS F. Traffic operations would be below the desired LOS E for the Saturday midday peak hour at LOS F.

Trip Generation

The estimation of daily and peak-hour vehicle trips generated by the proposed project is based on information compiled in the 9th Edition of the Institute of Transportation Engineers (ITE) *Trip Generation* manual.[339] Table 3.10-4 presents the proposed project trip generation estimates. As shown, the proposed project is estimated to generate 473 daily trips, 37 weekday a.m. peak hour trips, 45 weekday p.m. peak hour trips, and 37 weekend Saturday midday peak hour trips.

[339] ITE. 2012. *Trip Generation: an ITE informational report*, 9th ed. Institute of Transportation Engineers, Washington, D.C.

Table 3.10-4. Project Trip Generation

Land Use	Size	Daily Trips	Weekday a.m. Peak Hour			Weekday p.m. Peak Hour			Saturday Midday Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out
Apartment*	71 units	473	37	8	29	45	29	16	37	19	18

Source: ITE 2012; Kittelson & Associates 2023 (see EIR Appendix Q).

* ITE Code 220 used for trip generation. The ITE Trip Generation manual lists an average rate of 6.65 weekday trips per dwelling unit for land use ITE 220 (Apartment), 6.59 for ITE 221 (low-rise apartment), 4.20 for ITE 222 (High-Rise Apartment), and no reported daily rate for ITE 223 (Mid-Rise Apartment).

Trip Distribution and Assignment

The trip distribution pattern for the proposed project was estimated based on existing travel patterns and travel volume data on the surrounding roadway system, from knowledge of local travel times, and the locations of complementary land uses. The project trips were assigned to the roadway network based on the directions of approach and departure, the roadway network connections, and the location of the project driveway. The recorded north/south distribution of traffic along SR-1 was used to inform the direction that project traffic would be going to or coming from in order to access the project site. Access to SR-1 from the project site was assumed to be via Carlos Street and SR-1 intersections at Carlos Street (north of the site) and Etheldore Street or California Avenue (south of the project site).

Intersection Levels of Service and Traffic Operations

Tables 3.10-5 and 3.10-6 present traffic operations data for existing and cumulative conditions with the proposed project. With the addition of project-related vehicle trips to the local circulation system, the following study intersections under existing plus project conditions and cumulative plus project conditions may fail to operate at the LCP's current desired LOS, and thereby give rise to the need for the County to assess potential roadway expansions/improvements:

Existing Plus Proposed Project Conditions

- **State Route 1 and California Avenue/Wienke Way (No. 7)**: As shown in Table 3.10-2, this intersection already operates below the desired LOS under Existing Conditions in the weekday a.m. (LOS E), weekday p.m. (LOS F), and Saturday midday (LOS F) peak hours. As shown in Table 3.10-5, under Existing plus Project Conditions, this intersection is projected to continue to operate below the desired LOS in the weekday a.m., weekday p.m., and Saturday midday peak hours. In the weekday p.m. and Saturday midday peak hours, the addition of approximately 22 project-related weekday p.m. peak hour vehicle trips and approximately 18 project-related Saturday midday peak hour vehicle trips is projected to add about 5.9 and 5.2 seconds of average delay, respectively, for the critical movement, i.e., the side-street, stop-controlled movement to access SR-1, and contribute to its operation below the desired LOS.

Table 3.10-5. Intersection Level of Service – Existing Plus Project Conditions

No.	Location	Control	Weekday a.m.		Weekday p.m.		Saturday Midday	
			Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
1	State Route 1 and 14th Street	TWSC	25.1	D	33.7	D	39.4	E
2	State Route 1 and 16th Street	TWSC	31.7	D	**39.1**	**E**	39.3	E
3	State Route 1 and Carlos Street	TWSC	19.9	C	27.5	D	32.0	D

No.	Location	Control	Weekday a.m.		Weekday p.m.		Saturday Midday	
			Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
4	Carlos Street and Sierra Street	TWSC	8.4	A	8.7	A	8.6	A
5	Stetson Street and Sierra Street	TWSC	8.6	A	9.0	A	8.7	A
6	State Route 1 and Etheldore Street / Vallemar Street	TWSC	22.7	C	**38.2**	**E**	31.7	D
7	State Route 1 and California Avenue / Wienke Way	TWSC	**45.6**	**E**	**84.1**	**F**	**92.3**	**F**
8	Carlos Street and California Avenue	TWSC	9.8	A	9.4	A	9.9	A
9	Etheldore Street and California Avenue	TWSC	9.5	A	9.7	A	9.7	A
10	Stetson Street and California Avenue	AWSC	7.2	A	7.3	A	7.2	A

Source: Highway Capacity Manual 2010; Kittelson & Associates 2023 (EIR Appendix Q).

Notes: (s) = seconds, AWSC: All-Way Stop Control, TWSC: Two-Way Stop Control. LOS and delay reported for TWSC intersections is for the worst approach or movement. **Bold lettering** indicates an intersection that does not meet the LCP's desired LOS (LOS D overall and for critical movements during weekday peak hours, LOS E overall and for critical movements during weekend peak hours). **Gray highlighted cells** indicate locations where the addition of project trips would either degrade operations to below the desired LOS or add time to the average delay to the critical movement at a location already operating below the desired LOS.

Cumulative Plus Proposed Project Conditions

- **State Route 1 and 16th Street (No. 2)**: As shown in Table 3.10-3, this intersection is already projected to operate below the desired LOS under Cumulative Conditions in the weekday a.m. (LOS F), weekday p.m. (LOS F), and Saturday midday (LOS F) peak hours. As shown in Table 3.10-6, under Cumulative plus Project Conditions this intersection is projected to continue to operate below the desired LOS in the weekday a.m., weekday p.m., and Saturday midday peak hours. In the weekday p.m. hour, the addition of approximately 23 project-related vehicle trips is projected to add between 5.1 and 8.9 seconds of average delay for the critical movements, i.e., the stop-controlled westbound and eastbound side-street movements to access SR-1 from 16th Street and contribute to its operation below the desired LOS.
- **State Route 1 and Carlos Street (No. 3)**: As shown in Table 3.10-3, this intersection is projected to operate within the desired LOS under Cumulative Conditions in the weekday a.m. (LOS C), weekday p.m. (LOS C), and Saturday midday (LOS C) peak hours. As shown in Table 3.10-6, under Cumulative plus Project Conditions this intersection is projected to operate below the desired LOS in the weekday a.m. (LOS E) and weekday p.m. peak hours (LOS F). In the weekday a.m. and p.m. peak hours, the addition of approximately 37 project-related weekday a.m. peak hour vehicle trips and approximately 45 project-related weekday p.m. peak hour vehicle trips is projected to add delays (from approximately 20.5 seconds to 45.5 seconds, respectively) for the critical movement, i.e., the side-street, stop-controlled movements to access SR-1 from Carlos Street, and cause it to operate below the desired LOS.
- **State Route 1 and Etheldore Street/Vallemar Street (No. 6)**: As shown in Table 3.10-3, this intersection is already projected to operate below the desired LOS under Cumulative Conditions in the weekday a.m. (LOS F) and weekday p.m. (LOS F) peak hours and operates within the desired LOS in the Saturday midday (LOS D) peak hour. As shown in Table 3.10-6, under Cumulative plus Project Conditions this intersection is projected to continue to operate below the desired LOS in the weekday a.m. and weekday p.m. peak hours and would operate within the desired LOS during the Saturday midday peak hour. In the weekday p.m. peak hour, the addition of approximately 22 project-related vehicle trips is projected to add approximately 5.7 seconds of average delay for the critical movement, i.e., the side-street, stop-controlled movement to access SR-1, and contribute to its operation below the desired LOS.

- **State Route 1 and California Avenue/Wienke Way (No. 7)**: As shown in Table 3.10-3, this intersection is already projected to operate below the desired LOS under Cumulative Conditions in the weekday a.m. (LOS E), weekday p.m. (LOS F), and Saturday midday peak hours (LOS F). As shown in Table 3.10-6, under Cumulative plus Project Conditions this intersection is projected to continue to operate below the desired LOS in the weekday a.m., weekday p.m., and Saturday midday peak hours. In the weekday a.m., weekday p.m., and Saturday midday peak hours, the addition of approximately 18 project-related weekday a.m. peak hour vehicle trips, approximately 22 project-related weekday p.m. peak hour vehicle trips, and approximately 18 project-related Saturday midday peak hour vehicle trips is projected to add up to between 4.7 and 57.5 seconds of average delay for the critical movement, i.e., the side-street, stop-controlled movement to access SR-1, and contribute to its operation below the desired LOS.

Table 3.10-6. Intersection Level of Service – Cumulative Plus Project Conditions

No.	Location	Control	Cumulative Weekday a.m.		Cumulative Weekday p.m.		Cumulative Saturday Midday	
			Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
1	State Route 1 and 14th Street	TWSC	**60.6**	**F**	**92.5**	**F**	**60.6**	**F**
2	State Route 1 and 16th Street	TWSC	**77.5**	**F**	**114.2**	**F**	**61.4**	**F**
3	State Route 1 and Carlos Street	TWSC	**36.7**	**E**	**64.2**	**F**	49.1	E
4	Carlos Street and Sierra Street	TWSC	8.5	A	8.8	A	8.6	A
5	Stetson Street and Sierra Street	TWSC	8.7	A	9.1	A	8.8	A
6	State Route 1 and Etheldore Street / Vallemar Street	TWSC	**>80**	**F**	**112.0**	**F**	35.1	E
7	State Route 1 and California Avenue / Wienke Way	TWSC	**>80**	**F**	**>80**	**F**	**>80**	**F**
8	Carlos Street and California Avenue	TWSC	10.0	B	9.7	A	10.2	B
9	Etheldore Street and California Avenue	TWSC	9.7	A	9.9	A	10.0	B
10	Stetson Street and California Avenue	AWSC	7.3	A	7.4	A	7.2	A

Source: Highway Capacity Manual 2010; Kittelson & Associates 2023 (see EIR Appendix Q).

Notes: (s) = seconds, AWSC: All-Way Stop Control, TWSC: Two-Way Stop Control. LOS and delay reported for TWSC intersections is for the worst approach or movement. **Bold lettering** indicates an intersection that does not meet the LCP's desired LOS (LOS D overall and for critical movements during weekday peak hours, LOS E overall and for critical movements during weekend peak hours). **Gray highlighted cells** indicate locations where the addition of project trips would either degrade operations to below the desired LOS or add time to the average delay to the critical movement at a location already operating below the desired LOS.

As noted, the project site is located within the coastal zone and subject to the County's LCP. Accordingly, the desired LOS cited in LCP Policy 2.43, i.e., LOS D overall and for critical movements during weekday peak hours and LOS E overall and for critical movements during weekend peak hours, were used to identify potential impacts that trigger the need for the County to assess potential roadway improvements. Based on the above, project-related traffic contributions are projected to result in the need to assess roadway modifications that could improve operations at the following intersections under existing and cumulative plus project conditions:

- SR-1 and 16th Street (No. 2)
- SR-1 and Carlos Street (No. 3)
- SR-1 and Etheldore Street/Vallemar Street (No. 6)
- SR-1 and California Avenue/Wienke Way (No. 7)

Effect of Project-Specific Mitigation Measures

Implementation of MM-TR-3 (Temporary Closure of Carlos Street at State Route-1) is projected to redistribute traffic from the SR-1/Carlos Street intersection to the SR-1/Etheldore Street and SR-1/California Avenue intersections. The redistribution of project-related traffic could result in additional delays for drivers attempting to access SR-1 from these side streets, or secondary effects, at these intersections where the critical movement delay fell below the desired LOS threshold under Existing plus Project conditions (weekday p.m. peak hour) and Cumulative plus Project conditions (Saturday midday peak hour). With regard to the SR-1/Etheldore Street Intersection as shown in Table 3.10-2, under Existing Conditions, this intersection currently operates within the desired LOS in the weekday a.m. (LOS C) and Saturday midday (LOS D) peak hours and operates below the desired LOS in the weekday p.m. (LOS E) peak hour. Under Existing plus Project conditions with redistributed traffic, this intersection is projected to operate below the desired LOS in the weekday p.m. peak hour (LOS E) similar to the proposed project without redistributed traffic. However, with redistributed traffic, in the weekday p.m. peak hour, the redistributed project-related vehicle trips could add additional time to the average delay for the critical movement and contribute to traffic operations below the desired LOS. As shown in Table 3.10-3, under Cumulative Conditions this intersection is projected to operate below the desired LOS during weekday a.m. (LOS F) and p.m. (LOS F) peak hours and is projected to operate with an acceptable LOS standard in the Saturday midday (LOS D) peak hour. Under Cumulative plus Project Conditions with redistributed traffic, intersection operations are projected to degrade in the Saturday midday peak hour and operate below the desired LOS at LOS F, unlike the proposed project without redistributed traffic which is not projected to cause this intersection to operate below the desired LOS under Cumulative plus Project Conditions. In the Saturday midday peak hour, the addition of project-related vehicle trips is projected to add delays for the critical movement, i.e., the side-street, stop-controlled movement to access SR-1 from Etheldore Street, and result in operations below the desired LOS.

As discussed below, the C/CAG TDM Checklist measures included with the proposed project (see Appendix 9 in EIR Appendix Q) and implementation of MM-TR-2 (Implement C/CAG TDM Checklist Measure M4) under Impact TR-2 (VMT), and MM-TR-4b (Augment C/CAG TDM Checklist Measure M3) and MM-TR-4c (Additional Transportation Demand Management Measures) under Impact TR-4 (Hazards) would be expected to reduce project trips to the extent feasible. The C/CAG TDM Checklist measures and additional mitigation would reduce the vehicle trip generation and reduce the effect to the extent feasible; however, the level of vehicle trip generation reduction cannot be measured. Thus, implementation of MM-TR-4c would be expected to reduce project-related vehicle trips to the extent feasible but is not expected to offset all project-related vehicle additions at the SR-1 intersections with 16th, Carlos, and Etheldore streets and California Avenue. As such, the less than desired LOS at these intersections may remain.

Conclusions

In summary, the changes in the desired LOS identified in LCP Policy 2.43 resulting from implementation of the proposed project are not significant impacts under CEQA. The C/CAG TDM Checklist measures that would be implemented as part of the proposed project and the mitigation measures identified for the proposed project's CEQA-related impacts on VMT and as a result of exposure of future residents to roadway-related hazards, e.g., additional TDM measures, would shift a share of future residents from driving to alternative modes or reduce the demand for travel, thus addressing, in part and to the extent feasible, the incremental increase in project-related trips to the roadway network and the resultant travel delays for driver's attempting to access SR-1 from side-stop controlled intersection such as 16th Street, Carlos Street, Etheldore Street, and California Avenue. Implementation of the required C/CAG TDM Checklist Measures and the project-specific mitigation measures would be consistent with LCP Policy 2.50 (Improvements for Bicycle and Pedestrian Trails) and LCP Policy 2.56 (Increased Service for

Coastside Residents) because these measures would support County efforts to shift single-occupancy vehicle trips to other travel modes such as public transit and promote active transportation choices. Furthermore, the Moss Beach/SR-1 Project (Section 3.10.2.5.1, Local Coastal Program) would address the desired LOS at the SR-1 intersections with 16th and Carlos Streets and California Avenue/Wienke Way through an evaluation and refinement of the various alternatives that have been promulgated through the Connect the Coastside process, e.g., traffic signalization and single-/multi-lane roundabouts, to address the known safety and congestion concerns along this segment of SR-1. As discussed under Impact TR-3 and in Section 3.10.2.5.1, Local Coastal Program, the temporary closure of Carlos Street at SR-1 (MM-TR-3) would be an interim measure that would be removed when the SR-1 roadway and intersection improvements under the Moss Beach/SR-1 Project are approved and ultimately constructed. However, implementation of the Moss Beach/SR-1 Project and the intersection improvements that would successfully address these congestion and safety concerns are under the jurisdiction of Caltrans. Thus, implementation authority does not rest exclusively with the County and the funding and timing cannot be guaranteed. As further noted under Impact TR-3, the County can establish conditions of approval which would require the project sponsor to contribute funds proportional to the project's impact to offset the costs of implementing improvements at affected locations with traffic impacts. The Kittelson TIA (see EIR Appendix Q) prepared in conformance with LCP Policy 2.52 identified mitigation measures to address project effects to the extent feasible; all such measures as described below under Impact TR-2, TR-3 and TR-4 would be consistent with the County's LCP transportation-related policies.

In addition, and for informational purposes only, as discussed in Section 3.10.3.2.2, State, the County TIS provides LOS thresholds that differ from those in LCP Policy 2.43. The County TIS considers the minimum acceptable LOS to be LOS C overall, with, "no individual movement operating at less than 'D'," though it notes that "On occasion, level of service 'D' may be allowed for peak periods in dense urban conditions per County's discretion."[340, 341] Although the County indicated that the LCP's desired LOS thresholds are the appropriate and applicable standards for determining the need for roadway improvements/expansion; for purposes of comparison, the findings from application of the stricter threshold are provided as follows:

- Existing plus Project conditions: no change in results
- Cumulative plus Project conditions: two additional effects identified – SR-1 and Carlos Street (No. 3) and SR-1/Etheldore Street/Vallemar Street (No. 6) in Saturday midday peak hour conditions

These secondary effects at SR-1/Etheldore Street and its operation within the desired LOS would benefit from the same set of TDM measures as the other identified intersections with degraded LOS, i.e., vehicle trips replaced by other modes.

Transportation Plans

Connect the Coastside

Connect the Coastside includes a suite of project recommendations to address current and future transportation needs such as hazardous roadway conditions, roadway congestion, and pedestrian/bicycle safety concerns throughout the Midcoast, including along SR-1 and at the SR-1/16th Street, SR-1/Carlos Street, and SR-1/California Avenue intersections. Coordination between Caltrans, the County, and other local stakeholders such as SamTrans, will continue in order to complete the improvements recommended in Connect the Coastside. Among the priority projects identified in Connect the Coastside is the Moss

[340] County of San Mateo Department of Public Works, 2013.
[341] County of San Mateo Department of Public Works, 2020.

Beach/SR-1 Project.[342] The County initiated this effort in 2022 and is committed to improving the intersections and pedestrian crossings on SR-1 in Moss Beach at the SR-1/16th Street, SR-1/Carlos Street, and SR-1/California Avenue intersections. The County will continue to coordinate with Caltrans and other local stakeholders on the desired improvements. The selected form of intersection controls and the timing of their installation, when determined through the Moss Beach/SR-1 Project, would constitute improvements consistent with the LCP Policy 2.42 because it would not propose or necessitate the expansion of roadways. The alternatives to be evaluated and refined through the Moss Beach/SR-1 Project would be consistent with Connect the Coastside and inform the project-specific mitigation measures discussed under Impact TR-3 and Impact TR-4. The proposed project is not anticipated to conflict with any existing or planned active transportation facilities or recommended improvements identified in Connect the Coastside and the resultant Moss Beach/SR-1 Project.

Other Transportation Plans

The proposed project would not conflict with the County's Complete Streets policies, the C/CAG 2021 TDM Policy, nor other traffic-related policies or regulations. The County's LCP and the General Plan's local circulation policy allows for improved streets, sidewalks, and bikeways in developed areas in unincorporated communities. The traffic generated by future residents would increase vehicles on Carlos Street and project-related traffic contributions to the SR-1/Carlos Street intersection, located approximately 500 feet north of the project site driveway off Carlos Street, would exacerbate an already existing hazardous intersection in terms of safety for vehicles, pedestrians, and bicyclists (see Section 3.10.3.3, under Impact TR-4). As discussed under Impact TR-4, the proposed project would not change roadway geometries in the immediate project vicinity that would prevent the development of the proposed bicycle facilities or safe bike travel. In addition, implementation of the bicycle network components of MM-TR-4c, i.e., sharrow pavement markings on Sierra Street, Carlos Street and California Avenue, would be consistent with the recommended pedestrian and bicycle network improvements in Moss Beach identified in the 2021 CBPP and the SMC ATP, e.g., the Multimodal Parallel Trail between SR-1 and Carlos Street. Therefore, the proposed project would not conflict with existing or proposed bicycle facilities identified in the SMC ATP and/or CBPP or inhibit bicycle access along Carlos and Sierra streets.

The project site is served by two SamTrans bus routes (Route 117 and Route 18) which primarily travel along SR-1 (see Figure 3.10-1). The closest northbound Route 117 bus stop is located north of the project site on the east side of SR-1 at SR-1/14th Street (0.23 mile from the project site). The closest southbound Route 117 bus stop is located west of the project site across Carlos Steet on the west side of SR-1 and south of 16th Street (0.11 mile from the project site). Other bus stops that serve both Route 117 and Route 18 are located to the south at Etheldore Street/California Avenue (0.62 mile from the project site) and Etheldore Street/Sunshine Valley Road (0.62 mile from the project site). Since the majority of SR-1 traffic movements experience little or no delay, project-related traffic contributions to SR-1 are not anticipated to decrease the performance of public transit. With regard to the improving existing bus stops that serve Route 117, the County and project sponsor are working with SamTrans to evaluate, and, if feasible, pursue improvements to the existing bus stops at Etheldore and California Avenue (see MM-TR-4c). The existing bus stop closest to the project site on west side of SR-1 south of 16th Street across from Carlos Street for southbound SamTrans Route 117 bus stop would not be improved due to space and access constraints.

Additionally, the proposed project would include transportation demand management features with the potential to reduce vehicle trips by up to 26% (see Appendix 9 in EIR Appendix Q). Thus, project features would have the potential to limit project-related operational deficiencies introduced at the

[342] County of San Mateo Planning and Building Department, 2023c.

SR-1/Carlos Street intersection and SR-1/California Avenue intersections under existing conditions plus the proposed project and cumulative conditions plus proposed project. The proposed project would therefore be consistent with the County's LCP, as amended; the Housing Element, and the Shared Vision 2025 goal of promoting affordable, livable communities for all County residents.

Furthermore, project-specific mitigation measures (discussed below) would be consistent with the Moss Beach/SR-1 Project (discussed below) and the potential intersection modifications at SR-1/Carlos Street and SR-1/California Avenue/Wienke Way under evaluation, i.e., traffic signalization or roundabouts.

Conclusion

The proposed project would not conflict with or result in an adverse effect on the circulation system, including transit, roadway, bicycle and pedestrian facilities, and parking. The proposed project, as designed, and the identified mitigation measures are consistent with County's LCP policies, Connect the Coastside, and the resultant Moss Beach/SR-1 Project as well as applicable policies such as Complete Streets and the C/CAG 2021 TDM Policy to the extent feasible. The project-specific mitigation measures identified to address the CEQA-related impacts (MM-TR-2, MM-TR-3, MM-TR-4b, and MM-TR-4c, below) would also address, in part and to the extent feasible, the less than desirable LOS at the following intersections under existing plus project and cumulative plus project conditions:

- SR-1 and 16th Street (No. 2)
- SR-1 and Carlos Street (No. 3)
- SR-1 and Etheldore Street/Vallemar Street (No. 6)
- SR-1 and California Avenue/Wienke Way (No. 7)

Therefore, the proposed project would be consistent with existing programs, plans, ordinances, or policies addressing the circulation system, and the impact would be less than significant.

TR-1 Mitigation Measure Recommendation

None.

Impact TR-2: The proposed project would exceed the County VMT thresholds and therefore would not be consistent with State CEQA Guidelines Section 15064.3(b). (Significant and Unavoidable with Mitigation)

As noted in Section 3.10.3.2.2, Methodology, the proposed project is a 100% affordable housing project and qualifies as an urban infill site under the County's LCP. The project would therefore be eligible for project screening (e.g., presumed to have a less than significant impact) based on the County's Interim VMT guidance. However, the project sponsor requested that a quantitative VMT analysis be conducted to be conservative and estimate the effectiveness of project characteristics such as the Local Preference Agreement, the C/CAG TDM Checklist measures, and other potential TDM measures because of the limited public transit options along the Midcoast and known safety hazards for drivers, pedestrians, and bicyclists traveling along and across SR-1 in the Moss Beach area. The quantitative analysis below follows the methodology described above under Section 3.10.3.2.2.

If a residential project is not determined exempt through the screening process identified in the County's Interim VMT guidance document, the County requires residential projects to quantitatively assess VMT impacts using a threshold of significance of 15% below the countywide average baseline VMT home-based trip VMT per resident (13.60 listed in County Interim VMT guidance document). Therefore, under a quantitative scenario, the proposed project would have a significant impact if it would result in more

than 11.56 daily home-based VMT per capita by resident. The Bay Area daily average for home-based VMT per resident was 14.6; thus, 15% below the Bay Area's baseline VMT of 14.6 home-based trip VMT per resident would set the threshold at 12.41. Additionally, the C/CAG VMT Estimation Tool was used to aggregate coastal Transportation Analysis Zones (TAZ) that cover the Midcoast from south of Devil's Slide through the City of Half Moon Bay, including the project site, and develop a Coastal TAZ daily average for home-based VMT per resident. Based on the C/CAG VMT Estimation Tool, the Coastal TAZ baseline VMT for the subregional geography, i.e., the urban Coastal TAZs along SR-1 between Devil's Slide and the City of Half Moon Bay along SR-1 excluding TAZs north of Devil's Slide in the City of Pacifica and TAZs east of the project site in rural areas of the county, is 23.8 daily home-based trip VMT per resident; thus, 15% below the Coastal TAZ baseline VMT of 23.8 home-based VMT per resident would set the threshold at 20.7.[343] (Figure 3.10-2).

The C/CAG VMT Estimation Tool estimates a baseline residential VMT of 23.6 daily home-based trip VMT per resident for the TAZ in which the project site is located which is below the Coastal TAZ baseline VMT of 23.8 (see Figure 3.10-2). The proposed project would add 71 new residential units including a building manager unit to an area of the County where VMT per resident (23.6) exceeds the Bay Area, County, and Coastal TAZ daily averages for home-based VMT per resident (14.6, 13.6, and 19.0, respectively). Based on existing travel patterns and the jobs-housing balance, new residents at the project site would be expected to generate VMT at a similar rate which would exceed the County's significance threshold of 11.56 daily home-based VMT per capita by resident, which is 15% below the daily County average VMT. It would also exceed the thresholds of 12.41 daily home-based VMT per capita by resident and 16.15 daily home-based VMT per capita by resident, which are 15% below the daily regional and Coastal TAZ VMT, respectively.

[343] C/CAG, SB 734 – LOS to VMT, San Mateo Countywide VMT Estimation Tool. Available e at: https://ccag.ca.gov/sb-743-los-to-vmt/. Accessed June 14, 2023.

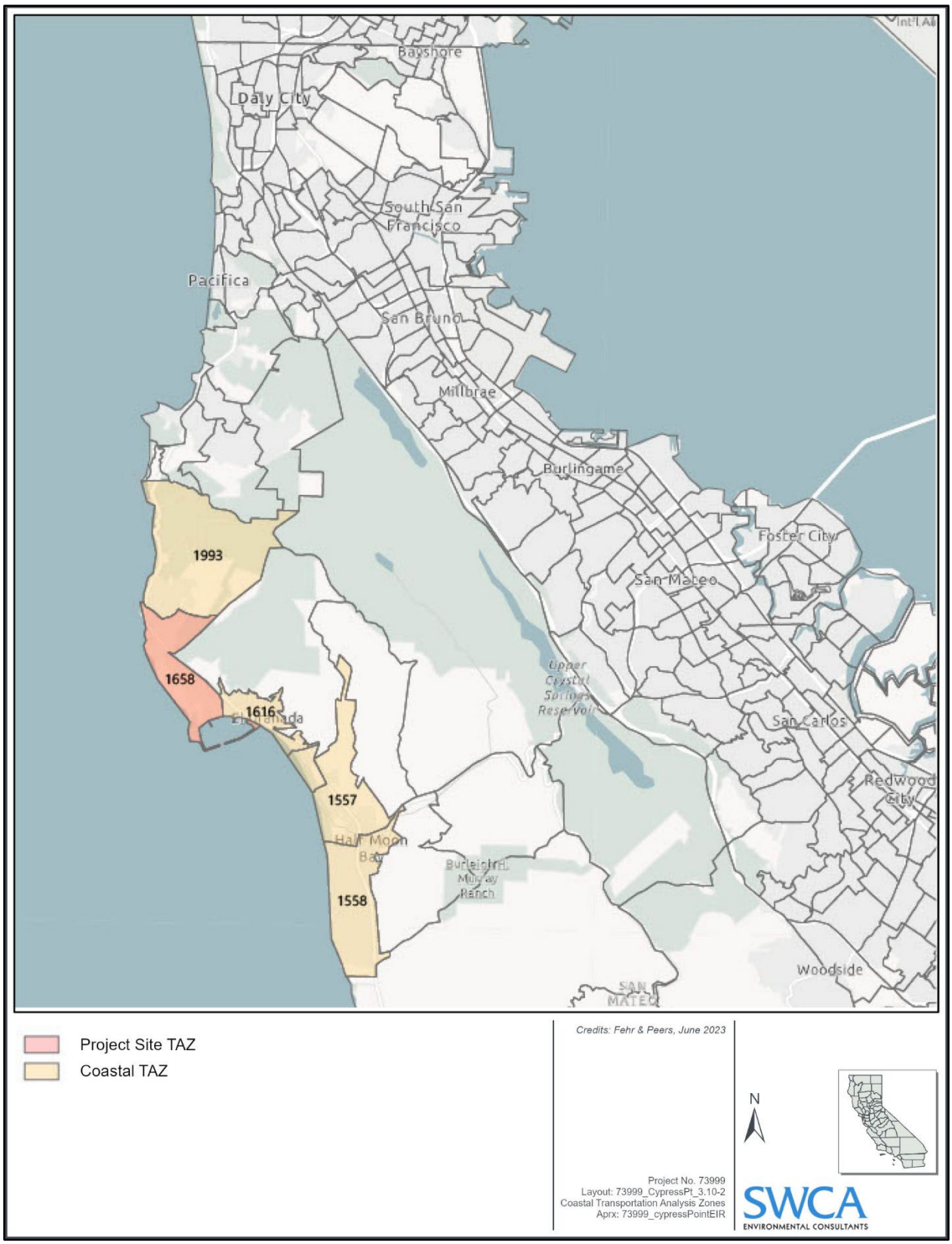


Figure 3.10-2. Coastal Transportation Analysis Zones.

As noted in Section 3.10.3.2.1, Proposed Development Characteristics, the project sponsor would implement TDM measures to provide options to future residents to allow use of non-auto modes; strategies to encourage carpooling, biking, walking, and transit use; and site design features to promote shifts from automobiles to transit and non-auto modes such as walking and bicycling. The TDM program includes measures that are related to non-drive alone mode education, transit or ridesharing subsidies, bicycle amenities, and infrastructure improvements to support active transportation. The proposed TDMs would achieve a total trip reduction of 26% and would meet C/CAG requirements to include measures that achieve a minimum trip reduction target of 25% based on project type, size, and location. Furthermore, the project sponsor has committed to set aside 52 of the 70 affordable housing units as Local Preference Units where eligible households are those that include at least one member who lives or works in the City of Pacifica, the City of Half Moon Bay, and/or the unincorporated County region between the City of Pacifica and the City of Half Moon Bay (Greater Moss Beach Region). See **Chapter 2, Project Description,** for a discussion of the "Local Preference Agreement" and the affordability by income breakdown. The Local Preference Agreement may result in shorter commute trips per resident, and thus reduce VMT.

A quantitative VMT analysis was conducted to be conservative and to determine if the affordable housing characteristics of the proposed project, the Local Preference Agreement, and the various TDM measures would reduce VMT to a less-than-significant level. The VMT analysis was informed by the most recent version of the CAPCOA Handbook.[344] The Caltrans TDM+ Tool was used to estimate potential VMT reductions for the TDM measures.[345] As shown in Table 3.10-7, 100% affordable housing may have a 28.6% reduction in VMT compared with market-rate housing.[346]

Table 3.10-7. Range of Potential VMT Reductions

Measure	VMT Reduction		
	Subsector	**Change in VMT**	**Description**
Scale: Project/Site [NOTE A]			
Affordable and Below Market Rate Housing	Land Use	-28.6%	All units are affordable except the building manager unit. The maximum percent reduction is applied.
Increased Density	Land Use	N.A.	At 6.4 units per acre the proposed project is less dense than the average U.S. residential density. LCP Amendment approved for the proposed project reduced the development intensity. No reduction is applied.
Transit Subsidy or Discounted Transit Program	Trip Reduction Programs	-0.73%	C/CAG TDM Checklist M6 – Transit or Ridesharing Passes/Subsidies, offers tenants passes or subsidies for monthly public transit or ridesharing costs incurred, equivalent to 30% of value or $50, whichever is lower. The current monthly cost for a SamTrans Express Pass is $130.[NOTE B] The project sponsor will comply with this required TDM Measure.

[344] California Air Pollution Control Officers Association. 2021. Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity, pp. 80–83. Available at https://www.caleemod.com/handbook/full_handbook.html. Accessed May 23, 2023.

[345] Caltrans, SB 743 Implementation Resources. Available at: https://dot.ca.gov/programs/sustainability/sb-743/sb743-resources. Accessed June 14, 2023. TDM+ is a quick response, excel-based tool developed by Fehr & Peers to assist in calculating VMT reductions from the strategies presented in the 2021 CAPCOA Report Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity. Its interface is designed to allow the user to update the inputs for each measure based on the specific attributes of a project or plan, as well as to pre-populate certain default values based on the project location. This version of TDM+ is currently in beta-testing.

[346] California Air Pollution Control Officers Association, 2021.

Measure	VMT Reduction		
	Subsector	**Change in VMT**	**Description**
End-of-Trip Bicycle Facilities	Trip Reduction Programs	-0.55%	The C/CAG TDM Checklist includes M8 – Secure Bicycle Storage. The project sponsor will comply with CalGREEN minimum bicycle parking requirements.
Scale: Plan/Community NOTE A			
Gap Closure and Sidewalk Improvements NOTE C	Neighborhood Design	-2.73%	The TDM Checklist includes M23 – Gap Closure. As part of this measure, the project sponsor will add sidewalks and high- visibility crosswalks as part of MM-TR-4c for Impact TR-4. Using an approximately 1,000-foot radius of the project site as a study area, the existing sidewalk length is about 0.1 mile and with the TDM Checklist and mitigation measure the sidewalk length will be about 0.2 mile.
Non-CAPCOA Measures			
Local Preference Units	N/A	-(0 to 10.6)%	If 100% of residents in the local preference units live on the coast, apply a 0% reduction. If 100% of residents in the local preference units work on the coast, apply a 10.6% reduction.
Total Reduction		**29.5% to 37.0%** NOTES D and E	

Source: Fehr & Peers, TIA Peer Review and VMT Analysis, 2023 (see EIR Appendix R).

Note: N/A = Not Applicable

NOTE A The CAPCOA Handbook recommends that GHG reductions of transportation measures from different scales of application should not be combined. For this reason, the reduction in VMT is calculated for the Project/Site scale that includes a higher share of VMT reductions compared to the Plan/Community scale.

NOTE B Fare information available at https://www.samtrans.com/fares/fare-types.

NOTE C The Gap Closure and Sidewalk Improvements measure is expected to reduce the community's VMT. Although these improvements would likely reduce project-level VMT, when calculating project-level VMT reductions, the CAPCOA Handbook does not recommend applying Plan/Community benefits with Project/Site benefits as these benefits are at two different scales. See MM-TR-4b (Hazards), below.

NOTE D Total VMT reduction is calculated using this equation: $Reduction = 1 - [(1 - A) * (1 - B) * (1 - C)]$ where A, B, and C represent the percent reduction in VMT for a specific TDM Measure. The Project results in a VMT reduction of 29.5%.

NOTE E The CAPCOA Handbook does not identify "Local Preference Units" as a quantified measure. If it were, it would be expected to be at the Project/Site scale and within the Land Use subsector. Applying this measure with a maximum reduction of 10.6% would result in a VMT reduction of 37.0%.

As shown in Table 3.10-7, VMT reductions would range between 29.5% and 37.0% based on the applicability of the Local Preference Agreement (range of reductions as noted in table above). Since the Local Preference Agreement allows for people who already live or work in the designated area, the potential VMT reduction could be 0% if everyone who moves to this project site already lives and works in the designated area, and thus commute distances would not change since people would still be commuting the same distances. If everyone who moves to the project site also works locally and previously lived outside of the designated area, then the maximum potential VMT reduction of 10.6% would apply. A mix of people who live or work in the designated area would fall in between the range of potential VMT reductions. This range of estimated VMT reductions would lessen the proposed project's daily home-based VMT per capita by resident of 23.6 to between 14.87 and 16.64, which is not below the VMT threshold for the Bay Area regional average (12.41) or the County average (11.56). However, at the subregional level focused on the urban Coastal TAZs between Devil's Slide and the City of Half Moon Bay, the proposed project with the VMT reductions shown in Table 3.10-7 would not exceed the Coastal TAZ baseline VMT with a 15% reduction (20.7).

Since the proposed project would have a significant VMT-related impact based on exceedance of the VMT threshold for the County average (11.56), mitigation is needed to reduce to a less-than-significant level.

TR-2 Mitigation Measure Recommendation

In addition to the proposed project characteristics (i.e., affordable housing and Local Preference agreement; C/CAG TDM measures incorporated as part of the project) and the additional pedestrian and bicycle network and transit stop improvements identified under MM-TR-4c), the project sponsor may consider implementing C/CAG TDM Checklist Measure M4 for participation in Commute.org or Transportation Management Association Equivalent.[347] Currently, three Peninsula Traffic Congestion Relief Alliance (Commute.org) shuttles provide weekday service through San Mateo County. Although no shuttles operate service near the project site, Connect the Coastside encourages the development of innovative transit service solutions to better service the Midcoast residents, workers, and visitors. To support bicycle commuting as an option Commute.org has a Bicycle to Work Rewards Program that rewards San Mateo County residents, workers, and students up to $100 for logging bicycle commutes that begin or end in the County. Additionally, commuters who live and work in San Mateo County are eligible for the Guaranteed Ride Home program, in which Commute.org will cover the cost of a ride home, up to $60 per trip with a maximum of four trips per calendar year, in case of illness or bicycle theft/breakage.

MM-TR-2 Implement C/CAG TDM Checklist Measure M4

> The project sponsor shall incorporate C/CAG TDM Checklist Measure M4- Actively Participate in Commute.org or TMA Equivalent: Certified participation in Commute.org/or TMA from the "Additional Recommended" list in the "Residential (Multi-Family) Land Use: Small Project" checklist. Consistent with C/CAG TDM Checklist Measure M3, the project sponsor shall ensure there is designated staff to communicate the availability of these resources and rewards to residents to encourage bicycling for commuting purposes and promote participation in Commute.org or Transportation Management Association Equivalent. C/CAG TDM Checklist Measure M4 shall be implemented as part of the new tenant move in procedures consistent with required C/CAG TDM Checklist Measure M2, and on a monthly basis with rent payment notice. In addition, to ensure that any changes to transportation benefits are communicated to tenants in a timely manner, the project sponsor (or designated TDM coordinator through Commute.org) shall use a private tenant noticing system or equivalent as needed.

Although implementation of MM-TR-2 would potentially reduce VMT, any changes are likely marginal and are unlikely to result in the additional VMT reductions needed to be at 15% below the County Average (11.56). Thus, given the location of the project site, the limited high-quality mass transit service in the study area, and the efficacy of both MM-TR4C and the required and additional C/CAG TDM Checklist measures included as part of the proposed project, there are no other feasible mitigation measures to reduce the project VMT from 23.6 to 11.56 (a 51% reduction). Therefore, the proposed project's VMT impact would remain significant and unavoidable with mitigation.

Impact TR-3: Project-related traffic contributions to vehicle movements at the Carlos Street and SR-1 intersection would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). (Less Than Significant with Mitigation)

The conceptual site plan was reviewed to assess potential hazards due to project design or operations and incompatible land uses. For purposes of this hazards analysis, the design or operational features considered are site access, on-site circulation, and the proposed project's traffic contributions to

[347] C/CAG, 2023b.

dangerous intersections, i.e., those with restricted sight distances for existing operating speeds per the Caltrans Highway Design Manual.

The site plan shows adequate access from Carlos Street and adequate on-site circulation for the proposed residential development. The project entrance would be a new 28-foot-wide, two-lane driveway aligned with Carlos Street to provide a clear line of sight for vehicles approaching from both directions on Carlos Street. The proposed roadways within the project site (the project driveway off Carlos Street, the 25-foot-wide loop road, and the 20-foot-wide graveled road off Lincoln Street) are not part of a normal public route, and would only be used by visitors, building management staff, parcel delivery employees, and County staff for emergency response access and for maintenance access to the water tanks (Montara Sanitary and Water) on the east side of the project site. The proposed driveway off Carlos Street would not create line-of-sight or other design-related vehicular hazards such as sharp curves; therefore, on-site operational issues and operational issues on adjacent local roads (Carlos and Sierra streets) are not expected to occur as a result of the proposed project. Although Carlos Street does not have sharp roadway curves or street parking that would limit or obstruct the vision of exiting drivers from the project driveway off Carlos Street, the adjacent property to south between proposed driveway and the northeast corner of the intersection of Sierra and Carlos Streets includes an existing boundary wall and mature trees (if retained) that have the potential to restrict exiting drivers from seeing vehicles approaching from the left (south) along Carlos Street. As a result, it appears that drivers would need to move closer to the intersection to see oncoming vehicles. Although traffic volumes on Carlos Street do not suggest that this is a hazard, to optimize sight distance and thereby ensure that exiting drivers can see other vehicles traveling on Carlos Street, the project sponsor has committed to the addition of pavement markings and signage to alert drivers on Carlos Street of the intersection and this will be incorporated in an updated site plan for the project's entitlement review process (see EIR **Chapter 2, Project Description**).

In addition to site access and on-site circulation, the proposed project's traffic contributions to intersections along SR-1 were evaluated. Each of the intersections along SR-1 were first evaluated to determine if any of these have restricted sight distances that do not meet the Caltrans Highway Design Manual standards. Based on that evaluation, the intersection of SR-1 and Carlos Street, which would be the primary project site access point off SR-1, was found to provide 305 feet of sight distance to the south, which is 246 feet less than what is required for an intersection with a 50-mph facility such as SR-1, per Table 405.1A in the Caltrans Highway Design Manual.[348] The inadequate corner sight distance at the SR-1/Carlos Street intersection makes it difficult for motorists on Carlos Street exiting onto SR-1 to see vehicles on SR-1 and judge adequate gap acceptance for safe entry onto SR-1. The steep topography and existing vegetation also make it difficult for motorists on SR-1 to see vehicles on Carlos Street attempting to exit onto SR-1. Additionally, a two-way left-turn lane is present along SR-1 between Carlos and 16th streets. Considering the need for deceleration before making a left turn from SR-1 to either Carlos Street or 16th Street, motorists making northbound left turns to 16th Street (to access the Montara Water and Sanitary District facilities and the Point Montara Lighthouse and hostel) and those making southbound left turns to Carlos Street represent overlapping and conflicting uses of the lane.

Because the SR-1/Carlos Street intersection is the closest point of access for project-related traffic to and from SR-1, the addition of southbound left-turning project traffic from SR-1 to Carlos Street would further contribute to potential conflicts between the two movements since both movements share a very short left-turn lane. The addition of project-related traffic to the westbound approach, which has inadequate corner sight distance, would also further contribute to potential conflicts at the SR-1/Carlos Street intersection. This would represent a significant impact and mitigation measures are recommended.

[348] Caltrans, 2022.

TR-3 Mitigation Measure Recommendations

Because a relatively high number of rear-end collisions have occurred near the 16th Street intersection with SR-1 with collisions likely caused by roadway design and speeding, the County, as part of the Moss Beach/SR-1 Project (a Connect the Coastside priority project), initiated the first step in the Caltrans process for roadway improvements that would address the known traffic safety and congestion concerns at this location (see Section 3.10.2.5, Local). As a result, the proposed mitigation measures anticipate those actions as well as future County actions associated with Connect the Coastside and highlighted in its adopting resolution by the County Board of Supervisors.

MM-TR-3: Temporary Carlos Street Closure at State Route-1

> In order to reduce the project-related traffic contributions to an existing traffic safety hazard at State Route-1 and Carlos Street, the project sponsor, in coordination with the County Department of Public Works and the Coastside Fire Protection District, will close the northern 500 feet of Carlos Street between State Route-1 and the proposed Carlos Street driveway to all vehicular traffic except emergency vehicles until the Moss Beach/SR-1 Project is constructed and in operation (expected 2030).
>
> The closure shall be implemented with the placement of infrastructure such as knock-over bollards at the north end of Carlos Street and at its intersection with the proposed driveway (i.e., at each end of the 500-foot-long road segment) along with pavement markings and sign poles indicating "Emergency Vehicle Access Only". At the Carlos Street driveway, the closure will be noticed with the placement of a sign pole and pavement markings at the Carlos Street driveway exit indicating "Left-Turn Only". All road closure infrastructure at the Carlos Street/SR-1 intersection and Carlos Street and proposed project driveway will be temporary and will require a Caltrans encroachment permit and County approval to ensure that emergency vehicle access will not be inhibited.
>
> Furthermore, all temporary improvements shall be consistent with the Moss Beach/SR-1 Project. Implementation authority for the Moss Beach/SR-1 Project rests jointly with the County and Caltrans; therefore, the recommended closure is a temporary solution until the County implements the Moss Beach/SR-1 Project. Ultimate improvements are expected to be consistent with Caltrans Highway Design Manual standards and provide adequate sight distance.

Implementation MM-TR-3 would address the existing traffic hazard for drivers accessing SR-1 from Carlos Street and for drivers exiting SR-1 to Carlos Street by restricting use of the north segment of Carlos Street by existing and project-related traffic. The existing and project-related traffic would be directed south on Carlos Street or Sierra and Stetson streets to access SR-1 at either Etheldore Street or California Avenue which are not identified as intersections with existing line-of-sight or traffic safety concerns. Implementation of MM-TR-3 would redistribute traffic to Etheldore Street or California Avenue and affect intersection operating conditions at SR-1 (see discussion under Impact TR-1).

Although implementation of MM-TR-3 would temporarily eliminate the need for addressing the existing traffic safety hazard at the SR-1/Carlos Street intersection associated with limited sight distance, curving roadway, steep topography, closely spaced intersections with short left-turn lanes, high traffic speeds, and dense vegetation, the ultimate improvements for Carlos Street, 16th Street, and SR-1 would be realized as part of the Moss Beach/SR-1 Project (see Section 3.10.2.5.1, Local Coastal Program). Furthermore, the temporary closure of Carlos Street would not conflict with future intersection design solutions to be developed through the Moss Beach/SR-1 Project, which is anticipated to include project alternatives with traffic signalization or single-/multi-lane roundabout design solutions. As discussed above under Section 3.10.2.5.1, Local Coastal Program, the County, working with Caltrans and other stakeholders, have contributed to or prepared the 2012 Highway 1 Safety and Mobility Improvement Study (Phase 2),

the 2015 Highway 1 Congestion and Safety Improvement Project Preliminary Planning Study, and Connect the Coastside (2022). The traffic safety and congestion improvement recommendations for Carlos Street, 16th Street, and SR-1 that stem from those planning efforts inform the Moss Beach/SR-1 Project and the project alternatives to be studied for feasibility. Thus, the proposed improvements are anticipated to include traffic signalization or roundabouts that would address the hazard impact on a permanent basis. In addition, the County may require the project sponsor to contribute a proportional payment for improvements based on project type, e.g., number of residential units and gross-square footage of non-residential uses as part of conditions of approval.

As noted, implementation authority for the Moss Beach/SR-1 Project would rest jointly with the County and Caltrans and is therefore out of the County's exclusive control, however, the County is committed to implementing these improvements. In the unlikely event that the County is unable to implement the Moss Beach/SR-1 Project, the temporary road closure of Carlos Street would remain to ensure that the significant impact would be reduced to a less-than-significant level. Therefore, implementation of MM-TR-3 would reduce the significant impact to a less-than-significant level. In addition, the project sponsor has committed to implementing driveway improvements at the Carlos Street intersection to improve a line-of-sight concern related to existing landscape features (see EIR **Chapter 2, Project Description**).

Impact TR-4: Project-related pedestrians and bicyclists would be exposed to roadway-related hazards at the State Route 1 and Carlos Street intersection due to a geometric design feature (e.g., sharp curves or dangerous intersections). (Significant and Unavoidable with Mitigation)

The immediate transportation circulation system is dominated by SR-1. The various Midcoast transportation planning studies along SR-1, including Connect the Coastside, identified existing transportation-related hazards on SR-1 being lack of sidewalks; lack of crossing opportunities; high speed traffic; vegetation and roadway design that limits visibility or safe lines-of-sight; and limited lighting. Traveling south from Pacifica, the first signalized intersection is at Capistrano Road, beyond the communities of Montara and Moss Beach, and the next is not until Coronado Street, almost a mile to the south.

As described in Section 3.10.1.1.2, Existing Pedestrian and Bicycle Network, there are no marked crosswalks on SR-1 where it intersects with Carlos Street or Etheldore Street, the closest intersections to the project site, or at California Avenue. There is a marked, uncontrolled crosswalk on SR-1 at Virginia Avenue, one block south of California Avenue. Bicyclists and pedestrians residing in this area of Moss Beach likely use Carlos Street, Etheldore Street, or California Avenue to travel north along SR-1 via foot or bike to Montara to access neighborhood commercial goods and services along Main Street, the Farallone View Elementary public school, and the northbound SamTrans Route 117 stop (the closest to the project site) among other destinations. Bicyclists and pedestrians would also cross SR-1 at these locations to access the southbound SamTrans Route 117 stop and other destinations in Moss Beach on west side of SR-1 such as the Point Montara Lighthouse. The northbound and southbound shoulders along this segment of SR-1 do not include sidewalks or bicycle facilities. Thus, pedestrians and bicyclists currently travel along SR-1 or cross SR-1 at unsignalized intersections in Moss Beach such as Carlos and Etheldore streets, or at the midblock; all of which are identified hazards due to lack of facilities, line-of-sight deficiencies, and traffic speeds. More likely, people choose not to walk or bike and instead just drive to destinations that should be considered within walking or biking distance or, if planned correctly, walking plus transit distance.

Implementation of the proposed project would add approximately 213 people to the local population, some of whom would walk, bike, and/or use transit. The project sponsor would also implement a series of C/CAG TDM Checklist measures as part of the proposed project to encourage walking, bicycling, and use of public transit. Assuming successful adoption, an increased share of future residents would walk, bike,

or use transit to access goods and services, schools, and other destinations. Thus, the proposed project has the potential to lead to an increase in pedestrians and bicyclists accessing the nearest Route 117 bus stop on west side of SR-1 south of 16th Street opposite Carlos Street where there is no marked crosswalk across SR-1 to safely access. Furthermore, as discussed under Impact TR-3, SR-1 traffic speeds are high and there is inadequate corner sight distance where Carlos Street meets SR-1 for pedestrians and bicyclists to see vehicles and for motorists on SR-1 to see crossing pedestrians and bicyclists. However, information provided to project residents by the developer could minimize this potential by providing directions to other bus stops within 0.5 miles of the site that do not require the crossing of intersections with such safety concerns. Because it cannot be guaranteed that project residents will use the safer routes/bus stops, implementation of the proposed project could expose future residents who choose to walk, bike, or use transit to an existing safety hazard. This is considered a significant impact and mitigation measures are recommended.

TR-4 Mitigation Measure Recommendation

MM-TR-4a Implement MM-TR-3 (Temporary Carlos Street Closure at State Route-1)

Implementation of MM-TR-3: Temporary Carlos Street Closure at State Route-1 would resolve the traffic safety hazard by restricting existing and project-related traffic through a road closure to be approved by the County Department of Public Works; but since it would remain open for pedestrians and bicyclists, the safety hazard for pedestrians and bicyclists would not be entirely resolved. Therefore, the impact would remain significant and unavoidable. As described in Section 3.10.2.5.1, Local Coastal Program, the range of intersection design solutions under consideration with the Moss Beach/SR-1 Project, a priority project identified in Connect the Coastside, would resolve both the traffic safety and pedestrian/bicyclist safety hazards. Because implementation of this mitigation measure is not within the full control of the project sponsor or the County, the impact would remain significant and unavoidable in the event that the Moss Beach/SR-1 project is not completed.

MM-TR-4b Augment C/CAG TDM Checklist Measure M3

> In addition to the proposed project characteristics (i.e., affordable housing and Local Preference agreement; C/CAG TDM Checklist measures incorporated as part of the project; and the additional pedestrian and bicycle network and transit stop improvements identified under MM-TR-4c, below), the project sponsor shall augment standard educational materials associated with the C/CAG TDM Checklist M3 to support safe and sustainable active transportation.
>
> Consistent with C/CAG TDM Checklist Measure M3, the project sponsor shall ensure there is designated staff to develop educational materials that includes pedestrian, bicycle, and vehicle safety-related information for review and approval by County. Educational materials shall include, but not be limited to, a bus stop location map highlighting stops that do not require travel along or across SR-1, pedestrian and bicycle route network map highlighting potential hazards (e.g., no marked crosswalk, discontinuous sidewalk, narrow roadway), and other site-specific safety-related information.

Although implementation of MM-TR-4b could potentially dissuade a share of the pedestrians and bicyclists from crossing SR-1 or traveling north along SR-1 to access the more proximate SamTrans Route 117 SB and NB bus stops or for local travel, there is no way to measure the reduction; therefore, the proposed project's hazard impact would remain significant and unavoidable with mitigation.

MM-TR-4c Additional Transportation Demand Management Measures

In addition to the C/CAG Transportation Demand Management measures included as part of the proposed project to reduce project-related vehicle trips and promote carpooling and non-auto modes of travel to improve mode share, the project sponsor in coordination with the County shall implement, or facilitate the implementation of, the additional pedestrian-, bicycle-, and transit-related TDM measures detailed below. The additional TDM measures focus on the filling of gaps in the existing pedestrian and bicycle network in the vicinity of the project site and within Moss Beach to facilitate commute, household, and recreation trips by foot, bicycle, or transit; and commits the project sponsor to a fair share contribution to transit stop improvements at selected SamTrans stops. All proposed improvements would be designed to meet accessibility requirements and the needs of all users consistent with County and Caltrans' Complete Streets policies.

Off-Site Pedestrian Network and Access to Transit Improvements

- Stetson Street/Kelmore Street
    - Add a curb ramp with truncated domes on the northeast corner if feasible with fire station configuration and drainage.
    - Add a high-visibility crosswalk for pedestrians to cross Kelmore Street and connect to the existing sidewalk on the east side of Stetson Street.
- Stetson Street/California Avenue
    - Add a curb ramp and high-visibility crosswalk with advanced stop bar to cross Stetson Street (from northeast corner to northwest corner toward Etheldore Street).
- California Avenue/Etheldore Street
    - Add a curb ramp and high-visibility crosswalk with advanced stop bar for pedestrians to cross California Avenue and access the northbound bus stop at the southeast corner of intersection.
    - Add a curb ramp and high-visibility crosswalk with advanced stop bar for pedestrians to cross Etheldore Street and access the southbound bus stop at the northwest corner of intersection.
- California Avenue, south of Etheldore Street
    - Add approximately 80 feet of new sidewalk on north side of California Avenue to connect to the existing sidewalk and downtown Moss Beach.

Off-Site Bicycle Network Improvements

- Sierra Street
    - Provide sharrows on Sierra Street between project site and California Avenue to connect to the planned Class III Bikeway on California Avenue identified in the Unincorporated San Mateo County Active Transportation Plan.
- California Avenue
    - Provide sharrows on California Avenue between Sierra and Carlos streets to assist with implementation of the planned Class III Bikeway along California Avenue between Tierra Alta Street and North Lake Street, as identified in the Unincorporated San Mateo County Active Transportation Plan.

Off-Site Transit Stop Improvements

- Evaluate the need for the project sponsor to contribute toward accessible bus stops at the southeast and northwest corners of California Avenue/Etheldore Street including provision of bus benches at each stop if feasible based on topography and other site constraints.

Implementation of the C/CAG TDM Checklist measures that are part of the proposed project, MM-TR-2 (Implement C/CAG TDM Checklist Measure M4), and these additional TDM measures would shift some of the project-related vehicle trips to alternative modes of travel such as walking, bicycling or transit or reduce the overall need for travel (e.g., by providing improved delivery services on-site to reduce the need for additional shopping trips). The proposed sidewalk network improvements connecting to the Sam Trans Route 117 bus stops within Moss Beach at California Avenue/Etheldore Street (approximately 0.5 mile from project site), the improvements to the bus stops, and dissemination of relevant traffic safety concerns to residents may dissuade a share of the potential transit users from crossing SR-1 or traveling north along SR-1 to access the much closer SamTrans bus stops. Although the effectiveness of a TDM plan cannot be guaranteed, in aggregate, the various TDM measures may simultaneously increase and reduce the demand for people crossing SR-1 or traveling north along SR-1. Thus, implementation of MM-TR-4c would not reduce the impact to a less-than-significant level.

In summary, implementation of the Moss Beach/SR-1 Project would address the existing and long-standing traffic safety and pedestrian and bicycle hazard concerns at the intersections of SR-1, Carlos Street, and 16th Street. However, implementation authority for the Moss Beach/SR-1 Project rests jointly with the County and Caltrans and is therefore out of the County's exclusive control. If the County is unable to fund the completion of the intersection improvement, as proposed by the Moss Beach/SR-1 Project, this impact would remain significant and unavoidable.

Impact TR-5: Project-related pedestrians would be exposed to roadway hazards due to a discontinuous sidewalk network. (Less than Significant with Mitigation)

Implementation of the proposed project would add approximately 213 people to the local population, some of whom would walk to access neighborhood commercial goods and services within Moss Beach. As discussed under Impact TR-4, successful implementation of the C/CAG TDM Checklist measures that are part of the proposed project, and the additional TDM measures listed in MM-TR-4b would shift some of the project-related vehicle trips to alternative modes of travel such as walking, bicycling or transit. Although the effectiveness of a TDM plan cannot be guaranteed, assuming successful implementation and adoption of the various TDM measures the demand for people using the sidewalk network would increase.

As described in Section 3.10.1.1.2, Existing Pedestrian and Bicycle Network, there is no sidewalk connection to the community of Montara and the existing sidewalk network connecting the project site to the rest of Moss Beach is discontinuous. Where sidewalks are absent or require maintenance, pedestrians walk along paved or unpaved shoulders or in the roadway. In addition, there are no marked crosswalks at any of the intersections on the local roadway network or on SR-1 where it intersects with Carlos Street, Etheldore Street, and California Avenue.

The site plan shows a complete on-site sidewalk network but there is only one connection to the greater sidewalk network, via the north sidewalk on Sierra Street. There are no marked crosswalks at Sierra Street to Stetson Street to access the discontinuous sidewalk networks along Stetson and/or Kelmore streets to California Avenue. This is one potential pedestrian route to connect to the SamTrans bus stops at Etheldore Street/California Avenue, the Moss Beach neighborhood commercial area centered around the SR-1/California Avenue intersection, and other destinations within Moss Beach. However, the most direct pedestrian route from the project site to the center of Moss Beach is via Carlos Street, but it does not

include sidewalks. Carlos Street does include a wide shoulder on its west side which is routinely used based on site observations and visual surveys.

Thus, pedestrian access from the site to the local sidewalk network on Sierra Street places project residents at a location without marked connections to the sidewalks on Stetson and Kelmore streets. Furthermore, the most direct pedestrian route to central Moss Beach is along Carlos Street which includes no sidewalks. These gaps in the sidewalk network would require project residents to walk in the street increasing the likelihood of pedestrian/vehicle interactions. Therefore, without safe connections from the project site to the sidewalks on Stetson Street across Sierra Street or pedestrian infrastructure improvements along Carlos Street, project residents would be exposed to roadway hazards, resulting in the potential for decreased pedestrian safety. This potential increase in pedestrian/vehicle interactions would be a hazard and would represent a significant impact. Mitigation measures are recommended to reduce the impact.

TR-5 Mitigation Measure Recommendation

MM-TR-5 Implement MM-TR-4b and MM-TR-4c

Implementation of the C/CAG TDM Checklist measures that are part of the proposed project, e.g., TDM Measure M23 (Gap Closure), and the additional TDM measures listed in MM-TR-4b, and MM-TR-4c would result in the following:

- Filling in of gaps in the sidewalk network south of the project site including marked crosswalks, i.e., discrete locations within approximately 0.5 mile of the project site;
- Development of safety-related materials as part of C/CAG TDM Checklist Measure M3;
- Improvements at the northbound and southbound SamTrans bus stops at Etheldore/California Avenue; and
- New shared roadway markings (sharrows) on Carlos Street, Sierra Street, and California Avenue (Class III Bike Routes) to promote bicycle safety.

Implementation of the C/CAG TDM Checklist measures and the pedestrian-related measures of MM-TR-4b and MM-TR-4c would limit the potential for pedestrian/vehicle interactions and reduce the significant impact to a less-than-significant level. In addition, the project sponsor has committed to implementing on-site circulation improvements to promote pedestrian and bicycle connections from the site to the local sidewalk and bicycle network (see EIR **Chapter 2, Project Description**).

Impact TR-6: Buildout of the project would not result in inadequate emergency access. (Less than Significant).

The fire/emergency medical services provider closest to the project site, Coastside Fire Protection District Station 44, is located on Stetson Street between Sierra and Kenmore streets less than a block south of the project site. Currently, access to the project site is provided from Carlos Street via a 10-foot-wide easement/graveled road (Buena Vista Street), which runs through the center of the site roughly parallel to Sierra Street and connects to the existing 35-foot-tall water tanks on the eastern edge of the project site near Lincoln and Buena Vista streets (an existing secondary access).

The proposed 28-foot-wide two-lane driveway off Carlos Street would be the primary access to the proposed residential development and associated parking areas (see Figure 2.5-1 in EIR Chapter 2). The Carlos Street driveway and 25-foot-wide on-site loop road would comply with County and California Fire Code requirements for emergency vehicle access. On the northeast portion of the site the proposed loop road would connect to a 20-foot-wide graveled road that would provide secondary access to the

project site from Lincoln Street. The final design of all circulation improvements is expected to adhere to all applicable County and other statutes and requirements, including, without limitation, those set forth in the California Fire Code and California Vehicle Code. Given this, there would be sufficient access for emergency vehicles. The proposed project would not inhibit emergency access and the impact would be less than significant. The final plans will be approved by the Fire Department prior to the issuance of permits for the proposed project. See Section 3.12, Wildfire, for a discussion of evacuation plans and potential routes and capacity in the case of a wildfire emergency.

TR-6 Mitigation Measure Recommendation

None.

3.10.3.3.1 CONSTRUCTION ASSESSMENT

For informational purposes a construction assessment is provided (also see EIR **Chapter 2, Project Description**, Table 2.6-1). In the short term, construction-related traffic to and from the project site associated with the transport of off-site construction equipment, site preparation such as hauling of spoils, delivery of building materials, and activities of construction workers would occur. It is anticipated that on each work day during the 18-month construction schedule there would be an average of 10 to 78 one-way construction worker vehicle trips, an average of 2 to 8 one-way vendor truck trips, and an average of 2 to 300 one-way off-haul truck trips with variations based on construction phase demolition, site preparation, grading, building construction, paving, and finalization (interior finish and site landscaping). The short-term construction traffic related to delivery of equipment, import/export of spoils, delivery of building materials as well as the daily transportation of construction workers to the site is not expected to cause a significant increase in traffic volumes. Further, construction-related traffic would not increase traffic congestion resulting in operational deficiencies because these short-term activities would be temporary.

3.10.3.3.2 PARKING ASSESSMENT

For informational purposes a parking assessment is provided. It evaluates the adequacy of parking for the proposed project against San Mateo County zoning regulations on parking and parking demand, as estimated based on industry standards. Based on County zoning regulations, a 71-unit apartment complex must provide 127 parking spaces as shown in Table 3.10-8. As described above under Section 3.10.3.2.1, Proposed Development Characteristics, the proposed project would provide 142 parking spaces. Therefore, the proposed project would provide 15 more parking spaces than required.

Table 3.10-8. Parking Requirements for Proposed Project

Apartment Type	Number of Units	Parking Rate (Per Unit)	Parking Required
One bedroom	16	1.2	20
Two bedroom	37	1.5	56
Three bedroom	18	2	36
Guest Parking*		0.2	15
Total			**127**

Source: Kittelson & Associates 2023 (see EIR Appendix Q).

* Guest parking at one space per five units

An estimate of parking demand was performed using the *Parking Generation* manual published by ITE.[349] This manual is a standard transportation industry document that estimates the demand for parking based on studies conducted at similar sites. The land use in the ITE manual that is the most similar to the proposed project is the Low/Mid-Rise Apartment (LU 221) since the Apartment (LU 220) is not available.

Based on the demand rates from previous studies compiled in the ITE Manual, the average demand for a 71-unit apartment complex would be about 88 parking spaces while the maximum observed demand would be about 138 parking spaces, as shown in Table 3.10-9. This demand includes demand from any guests as well as residents. With a parking supply of 142 spaces, the proposed project is expected to have about 4 more parking spaces than the anticipated maximum demand.

Table 3.10-9. Average Estimated Parking Demand for Proposed Project

Parking Demand*	Number of Units	Demand Rate†	Parking Spaces Needed
Average	71	1.23	88
Maximum Observed		1.94	138

Source: Kittelson & Associates 2023 (see EIR Appendix Q).

* Demand based on ITE Parking *Generation* manual, 4th ed. (LU 221)

† Demand rate in vehicles per apartment

Under both criteria, the amount of parking shown on the site plan would be adequate to meet the demand.

Additionally, electric vehicle (EV) parking requirements are determined by the California Green Building Code, which was updated in 2022. The code requires 10% of parking spaces be EV-capable spaces (i.e., 15 parking spaces for the proposed project), 25% be equipped with low-power charging receptacles (i.e., 36 parking spaces for the proposed project), and 5% be equipped with Level 2 Electric Vehicle Supply Equipment (EVSE) which would translate into 8 parking spaces for the proposed project. As described above under Section 3.10.3.2.1, Proposed Development Characteristics, the proposed project would provide 57 parking spaces equipped with electric vehicle charging infrastructure (21 standard EVSE spaces and 36 low-power spaces), which would meet the California Green Building Code requirements and the County's electric vehicle parking requirements in the current Building Regulations.

3.10.3.3.3 CUMULATIVE IMPACTS

Past, present, and reasonably foreseeable future land development and roadway projects included in the cumulative analysis are based on discussions with the San Mateo County Planning and Building Department (see EIR **Chapter 3, Environmental Impacts Analysis**, Table 3-1 and Figure 3.0-1). Among the listed cumulative projects are the approved, but not yet constructed, projects south of the project site in the Princeton/Pillar Point Harbor area of unincorporated San Mateo County: a recreation vehicle (RV) park located at the corner of SR-1 and Capistrano Road and the Big Wave Wellness Center assisted housing and office park development. All cumulative land development projects would add vehicle trips to the roadway network and new users to the local pedestrian and bicycle networks and the public transit system.

[349] ITE. 2010. *Parking Generation: an ITE informational report*, 4th ed. Institute of Transportation Engineers, Washington, D.C.

Impact C-TR-1: The proposed project, in combination with other past, present, and reasonably foreseeable future projects, would not result in a cumulatively considerable transportation impact related to a conflict with a program, plan, ordinance, or policy addressing the circulation system. (Less than Significant)

The cumulative development projects identified in Table 3-1 would be required to follow the County's LCP policies and any applicable transportation-related program, plans, ordinances, and policies addressing the circulation system, e.g., LCP Policy 2.52, C/CAG TDM Ordinance, Complete Streets. As noted in the County's LCP and Connect the Coastside (see Section 3.10.2.5.1, Local Coastal Program), prior to approval of a CDP, each land use development project along the local coastal zone must address the potential effects of new demand on public infrastructure including on the safety and operation of the vehicular circulation system which includes safety and traffic congestion considerations as part of Complete Streets planning principles. The Caltrans's SR-1 Route 1 Multi-Asset Roadway Rehabilitation Project is associated with the larger interagency stakeholder process discussed under Section 3.10.2.5.1, Local Coastal Program. This project stems from the Highway 1 Safety and Mobility Study (Phase 1 and Phase 2) and is a recommended project in Connect the Coastside. This multi-asset rehabilitation project is consistent with Phase 1 improvements, Connect the Coastside, and Complete Streets.

Like the proposed project, each of the cumulative land development projects identified in Table 3-1 would be required to undergo site plan reviews and plan checks to ensure road standards and Complete Street policies are met, that C/CAG TDM Checklist measures are identified, and that additional TDM measures and conditions of approval are identified, as applicable. TDM measures are intended to promote shifts from driving to walking, biking and using transit and a reduction in the demand for travel, consistent with the County's LCP, Connect the Coastside, the C/CAG TDM Policy, and Complete Streets. As noted, for each cumulative land development project these requirements would be applied in the development review process for a CDP through the County's LCP and as part of CEQA compliance. As discussed in Section 3.10.3.3 under Impact TR-1, the proposed project would not be inconsistent or in substantial conflict with applicable programs, ordinances, or policies addressing the circulation system. Therefore, the proposed project, in combination with other past, present, and reasonably foreseeable future projects, and assuming implementation of TDM measures, would not result in a cumulatively considerable transportation impact related to conflicts with a program, plan, ordinance, or policy addressing the circulation system.

As discussed in Section 3.10.3.3 under Impact TR-1, the County's LCP (Policy 2.52) requires the development of a traffic impact analysis and mitigation plan for the proposed project. Each of the cumulative land development projects identified in Table 3-1 would also be required to prepare their own traffic impact analyses for purposes of determining project-related contributions to less than desired LOS consistent with Connect the Coastside. As discussed under Impact TR-1, the 2040 cumulative conditions in the 2023 Cypress Point TIA are based on the C/CAG-VTA San Mateo County Travel Demand Model which includes future development throughout the region (including the cumulative projects listed in Table 3-1). The 2040 cumulative forecasts are consistent with regional growth totals projected by the Plan Bay Area 2050.[350] Therefore, the traffic forecasts reflect both growth in Moss Beach and increases in traffic volumes on SR-1 due to regional growth. Base year (Year 2013) and future year (Year 2040) forecasts were extracted from the model and linearly interpolated to develop growth between the traffic count year (2017) and the current model horizon year (2040). The intersection LOS analysis under Impact TR-1 shows that the addition of project-related vehicle trips to the critical movements at the SR-1/16th Street (No. 2), Carlos Street (No. 3), Etheldore Street (No. 6), and California Avenue (No. 7) intersections

[350] ABAG/MTC, 2021.

under 2040 cumulative conditions are projected to result in project-related contributions to average delays of 4 seconds during the weekday morning, weekday afternoon, and Saturday midday peak periods. These projected contributions would exacerbate conditions at intersections operating with a less than desired LOS as defined in LCP Policy 2.43 (i.e., LOS E and LOS F).

The mitigation measures identified for the project-specific CEQA impacts associated with VMT and Hazards (MM-TR-2 [C/CAG TDM Checklist Measure M4], MM-TR-4b [Augment C/CAG TDM Checklist Measure M3], and MM-TR-4c [Additional TDM Measures]) would reduce vehicle trips at the study intersections to the extent feasible but would not resolve the reduction in delays that contribute to the less than desired LOS. As noted under Impact TR-1, the safety and operational concerns at the SR-1/16th Street (No. 2), Carlos Street (No. 3), Etheldore Street (No. 6), and California Avenue (No. 7) intersections would be addressed as part of the Moss Beach/SR-1 Project, a priority project initiated soon after adoption of Connect the Coastside.

Thus, the proposed project, in combination with other past, present, and reasonably foreseeable future projects, would not result in a cumulatively considerable transportation impact related to conflicts with an applicable program, plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system.

Impact C-TR-2: The proposed project, in combination with other past, present, and reasonably foreseeable future projects, would result in a cumulatively considerable transportation impact related to VMT and consistency with State CEQA Guidelines Section 15064.3(b). (Significant and Unavoidable with Mitigation)

The cumulative development projects identified in Table 3-1 would be required to follow the County's Interim VMT guidance using the VMT screening criteria, e.g., project type and location, to determine if exempt from detailed VMT analysis. If not exempt, a detailed quantitative analysis is required to determine if the project can meet the County's threshold of 15% below the countywide VMT average. Like the proposed project, cumulative development projects would be required to incorporate C/CAG TDM Checklist measures and any project-related mitigation measures to shift vehicle trips to other modes or to reduce the overall demand for travel. Unlike land development projects, roadway projects are evaluated to determine if they would induce VMT, e.g., roadway expansion. The Caltrans'SR-1 Route 1 Multi-Asset Roadway Rehabilitation Project is not a roadway expansion project; thus, it would not contribute to cumulative transportation impacts related to VMT.

As discussed under Impact TR-2, although the proposed project would be screened from detailed VMT analysis based on classification as an affordable housing project on an urban infill site, a quantitative analysis prepared to be conservative showed that it would result in a significant and unavoidable project-level impact because it would exceed the calculated daily average VMT threshold for a residential project even with implementation of mitigation. No mitigation measures beyond those required through the C/CAG TDM Checklist and identified as MM-TR-2, MM-TR-4b, and MM-TR-4c would reduce this impact to a less-than-significant level. By exceeding the daily VMT threshold after implementation of available mitigation, the proposed project would not be consistent with CEQA Guidelines Section 15064.3(b) and would incrementally contribute to a cumulative transportation related impact associated with meeting VMT reduction goals (15% below countywide VMT averages) and the targeted GHG emission reductions. Cumulative development projects in this area of the unincorporated County would, like the proposed project, also incrementally contribute to a cumulative transportation impact related to VMT because the effectiveness of the transportation demand control measures in the coastal context cannot be guaranteed.

Thus, the proposed project, in combination with other past, present, and reasonably foreseeable future projects, and assuming implementation of measures, would result in a cumulatively considerable transportation impact related to VMT and would result in a cumulatively considerable contribution to a significant cumulative transportation impact related to VMT.

Impact C-TR-3: The proposed project, in combination with other past, present, and reasonably foreseeable future projects, would result in a cumulatively considerable transportation impact related to hazards. (Significant and Unavoidable with Mitigation)

As discussed under the project-specific hazards analyses under Impact TR-3, Impact TR-4, and Impact TR-5, the proposed project would add new vehicles, pedestrians and bicyclists to the SR-1/Carlos Street (No. 3) and SR-1/16th Street (No. 2) intersections and to a discontinuous sidewalk and bicycle network within a 0.5-mile radius of project site thus increasing the potential for hazardous interactions between motorists, pedestrians, and bicyclists. The segment of SR-1 with these two intersections is a curving roadway with high traffic speeds, steep topography, dense vegetation, closely spaced intersections and left-turn lanes, and limited lines-of-sight. It has been evaluated as part of the comprehensive Connect the Coastside transportation planning process resulting in the Moss Beach/SR-1 Project, a priority project initiated and funded by County (see Section 3.10.2.5.1, Local Coastal Program).

Implementation of MM-TR-3 (Temporary Carlos Street Closure at SR-1) would resolve the impact at the SR-1/Carlos Street intersection due to limited sight distance for project-related motorists accessing SR-1 from Carlos Street by prohibiting all existing and project-generated traffic from using SR-1/Carlos Street. Implementation of a suite of TDM measures, i.e., the required C/CAG TDM Checklist measures, MM-TR-2, MM-TR4b, and MM-TR-4c to the extent feasible, would reduce overall demand for travel and shift a percentage of drivers to other modes of transportation; however, the impact would remain significant and unavoidable because the effectiveness of the identified TDM program is not guaranteed. Also, any offsets in vehicle trip contributions at hazardous locations as a result of the TDM program may result in additional project-related pedestrians and bicyclists on the local sidewalk and local roads also increasing the potential for conflicts. Further, implementation of MM-TR-3 (Temporary Carlos Street Closure at SR-1), MM-TR-2, MM-TR-4b, and MM-TR-4c would minimize to the extent feasible but not fully resolve the impact at the SR-1/Carlos Street intersection for pedestrians and cyclists accessing SR-1 from Carlos Street.

Each of the cumulative land development projects identified in Table 3-1 would add vehicle trips to the roadway network and new users to the local pedestrian and bicycle networks and the public transit system. The proposed Etheldore Apartments Project is the only cumulative project that would add vehicle trips and new users such as pedestrians and bicyclists to Carlos Street and other local roads in Moss Beach as well as the stop-controlled side streets (or critical movements) at the intersections of SR-1/California Avenue/Wienke Way (No. 7), SR-1/Etheldore Street/Vallemar Street (No. 6), SR-1/Carlos Street (No. 3), and SR-1/16th Street (No. 2). Like the proposed project, implementation of the proposed Etheldore Apartments Project and other more distant cumulative land development projects (Montara, Princeton, Half Moon Bay) would be subject to a similar set of regulatory requirements, including required C/CAG TDM Checklist measures; project-specific mitigation measures; and conditions of approval. All such measures are intended to promote shifts from driving to walking, biking, and using transit and a reduction in the demand for travel, consistent with the County's LCP, Connect the Coastside, the C/CAG TDM Policy, and Complete Streets. For each cumulative land development project, these requirements would be applied through the coastal development review process under the County's LCP and as part of CEQA compliance.

Cumulatively considerable contributions of the proposed project and the proposed Etheldore Apartments Project to cumulative transportation-related hazard impacts at the SR-1/Carlos Street and SR-1/16th Street

intersections for pedestrian and cyclists would occur even with implementation, to the extent feasible, of project-specific mitigation measures, i.e., MM-TR-2, MM-TR-3, MM-TR-4b, and MM-TR-4c. However, when considered in the context of the improved intersection design/geometrics/controls (e.g., roundabout or signalized intersections with high-visibility crosswalk) for the SR-1/Carlos Street and SR-1/16th Street intersections proposed in the Moss Beach/SR-1 Project, the proposed project and the proposed Etheldore Apartments Project would not contribute considerably to a cumulative transportation impact related to hazards because the congestion and safety concerns would be resolved. As discussed, the Moss Beach/SR-1 Project is anticipated for construction in 2029 and operation in 2030; and, if implemented, would resolve project-related congestion and safety concerns (new and/or exacerbated) at the SR-1/Carlos Street and SR-1/16th Street intersections among other locations along SR-1 in Moss Beach. However, because proposed improvements to SR-1/Carlos Street and SR-1/16th Street require changes to the Caltrans rights-of-way implementation is not in control of the County and is not guaranteed. Thus, the proposed project, in combination with other past, present, and reasonably foreseeable future projects, would result in a cumulatively considerable contribution to a significant cumulative transportation impact related to hazards even with implementation of project-specific mitigation measures to the extent feasible, i.e., MM-TR-2, MM-TR-3, MM-TR-4b, and MM-TR-4c.

Impact C-TR-4: The proposed project, in combination with other past, present, and reasonably foreseeable future projects, would not result in a cumulatively considerable transportation impact related to emergency access. (Less Than Significant)

As discussed under Impact TR-6 (Emergency Access), the proposed project would not inhibit emergency access and the impact would be less than significant. Among the cumulative land use development projects that could combine to inhibit emergency access in the study area (Moss Beach) is the proposed Etheldore Apartments Project, an 8-unit residential development at 2385 Carlos Street. Cumulative land use development projects including the Etheldore Apartments Project would be required to go through their own CEQA review process. Each project would also go through a County review process that includes Public Works and the Coastside Fire Protection District and requires that the design of proposed circulation improvements, if any, adhere to all applicable County and other statutes and requirements, including, without limitation, those set forth in the California Fire Code and California Vehicle Code for emergency access. Therefore, the proposed project, in combination with other past, present, and reasonably foreseeable future projects, would not result in a cumulative transportation impact related to emergency access.

3.11 UTILITIES AND SERVICE SYSTEMS

This section describes the potential impacts to utilities and service systems with development of the proposed multi-family residential use. Potential effects are evaluated relative to the infrastructure and supply of water and wastewater. Information for this section was obtained from the Montara Water and Sanitary District (MWSD), Sewer Authority Mid-Coastside (SAM), and Recology of the Coast (Recology) services.

3.11.1 Existing Conditions

3.11.1.1 Water

The MWSD provides water, sanitary sewer, and solid waste disposal services to the coastal communities of Montara, Moss Beach, and adjacent areas located north of Half Moon Bay and south of Pacifica, in San Mateo County, California. It does not issue building permits or oversee growth and development. Except for water service that may be provided to property that has already been developed and is served by on-site wells, new connections to the MWSD system may only be made for property approved for development by the County of San Mateo, subject to the County's building, planning, and zoning regulations, and the County's Local Coastal Program (LCP).[351]

MWSD owns and operates water storage, treatment, and distribution facilities that currently provide domestic water to approximately 1,660 domestic water connections, most of which (approximately 90%) are single-family and multi-family residential connections. This equates to approximately 6,000 residents. The remaining connections serve commercial and industrial customers.[352] Approximately 151 private fire protection meters are also connected to the MWSD's system; these meters only draw water in the event of a fire.[353]

3.11.1.1.1 WATER SOURCES

Water in the MWSD is supplied by groundwater sources from San Mateo Coastal Basin aquifers and surface water from Montara Creek. Currently, MWSD operates 12 active groundwater wells with a combined rated capacity of 602 gallons per minute (gpm).[354] The Alta Vista, North Airport Well, South Airport Well, and Airport Well No. 3 produce more than half the groundwater. However, the reliable capacity of the system is defined as the capacity of the system with the largest source out of service. Assuming the largest source (i.e., the Alta Vista groundwater well) is out of service, the reliable capacity of the system would be 527 gpm or 758,880 gallons per day (gpd).[355] Production records between 2004 and 2016 show variable yields from the MWSD wells due to operational constraints and maintenance issues. The wells typically operate no more than 12 hours in a given day, depending on water quality, well location, and system demands. According to monthly production records in 2016, the average production rate of the 12 wells was 365 gpm while in operation, or about 61% of their rated capacity.[356]

[351] MWSD. 2023. "Frequently Asked Questions." Available at: https://mwsd.montara.org/about/faq. Accessed June 21, 2023.
[352] MWSD, 2023.
[353] MWSD. 2018. *SAM Flow Report for January 2018*. Available at: https://mwsd.montara.org/assets/docs/board/collateral/121/Consent_4.pdf. Accessed June 21, 2023.
[354] MWSD. 2017. *2017 Water System Master Plan*. Available at: https://mwsd.montara.org/assets/uploads/documents/MWSD_2017%20Master%20Plan%20Update_Rev17_082417_Full.pdf. Accessed June 21, 2023.
[355] MWSD, 2017.
[356] MWSD, 2017.

Montara Creek is the MWSD's surface water source. Pre-1913 water rights allow MWSD to divert up to 200 gpm from Montara Creek, subject to regulatory and resource agency approvals; however, the availability of such a flow rate is uncertain.[357] In addition, the California Department of Fish and Wildfire occasionally limits diversion rates at certain seasons to protect endangered species.

Each water source has a rated capacity established at the time it was brought online; however, all sources typically operate below their respective rated capacities. Rated capacities are used to determine the reliable capacity and the maximum serviceable demand of the water system. In total, MWSD sources currently have a combined rated capacity of 677 gpm, with 602 gpm provided by 12 active groundwater wells, and 75 gpm provided by Montara Creek surface water.[358]

3.11.1.1.2 WATER INFRASTRUCTURE SYSTEM

The MWSD water system includes untreated water and treated water storage facilities.[359] MWSD supplies potable water to customers through a distribution system of pipes approximately 150,000 feet long and ranging in diameter from 2 to 16 inches, one water booster station with two pumps, and 28 pressure-regulating valve stations.[360] There are several pressure-regulating valve stations near the project site, including the stations at Buena Vista and Lincoln Streets, Sierra and Lincoln Streets, and 14th and Farralone Streets. Water is received from seven treated water storage tanks, 12 groundwater wells, and the surface and groundwater treatment facilities at the Alta Vista site, the Pillar Ridge site, and wellheads.[361]

Untreated surface water is diverted from Montara Creek through a 6-inch diameter pipeline and is stored in a 77,000-gallon concrete raw water storage tank that allows for the settling of initial sediment and suspended solids. After approximately 15 hours of detention time, the surface water is conveyed to the Alta Vista Water Treatment Plant. Presently, the Alta Vista Water Treatment Plant has a rated operating capacity of 75 gpm. Treated water is stored in the 462,000-gallon Alta Vista Treatment Tank No. 1 or 500,000-gallon Alta Vista Treatment Tank No. 2 and then conveyed to the potable water distribution system. In total, MWSD has seven treated water storage tanks with a combined capacity of about 1.4 million gallons for operational, emergency, and firefighting uses.

The potable water distribution system must sustain a minimum working pressure of 40 pounds per square inch during peak hourly demand conditions and 20 pounds per square inch during fire flow conditions. The 2017 Water System Master Plan Update (2017 Master Plan) analyzed the water distribution system's ability to deliver water under maximum daily demand flow conditions and the addition of new connections, supply sources, system improvements, and/or storage facilities.[362] The existing distribution system demonstrated adequate performance and capacity to accommodate maximum daily demand flow. However, the system-wide fire flow analysis identified multiple improvements to alleviate deficiencies, including replacement of "critically stressed" pipelines. The proposed improvements are categorized as Priority Level 1 and Priority Level 2, based on the MWSD capital improvement plan prioritization criteria. Priority Level 1 projects address the system deficiencies related to adding new customers to the system, as most of the identified system deficiencies are due to increased demand resulting from adding new connections to the system. Priority Level 1 improvements for new customers include: 1) Water Main Upgrades Program, 2) Existing Well Upgrade Program, 3) New and Upgraded Pressure Reducing Valve Stations Program, 4) Emergency Generator Upgrades Program, 5) Schoolhouse Booster Pump Station

[357] MWSD, 2017.
[358] MWSD, 2017.
[359] MWSD, 2017.
[360] MWSD, 2017.
[361] MWSD, 2023.
[362] MWSD, 2017.

Upgrade, 6) Portola Tank Telemetry Upgrade, 7) Develop Additional Supply Reliability, and 8) Big Wave North Project Alternative Main Extension Project.[363] Priority Level 2 projects serve existing MWSD customers and include the required improvements to address system renewal and replacement needs and ensure sufficient response under daily operational scenarios, fire flow, and emergency conditions.

The project site currently contains a 10-foot-wide MWSD easement with water lines, including an 8-inch water line extending from both Sierra Street and Buena Vista Street through the project site to the fenced MWSD facilities. A 10-inch water line extends from Carlos Street to MWSD facilities. The two existing water tanks owned by the MWSD are not part of the proposed development.

3.11.1.1.3 WATER SUPPLY PLANNING

Based on MWSD customer billing records, the average annual consumption of potable water is approximately 99.1 million gallons, and the average daily consumption is approximately 271,501 gpd. On average, MWSD water sources produced an annual average of 296,018 gpd over the past 13 years, with minimum of 260,983 gpd in 2014 and maximum 359,023 gpd in 2004, respectively. MWSD's source production is dependent upon customer consumption, as the sources only produce water in response to customer demands.[364]

As of December 11, 2013, the MWSD had 128,000 gpd available to be used for new service connections and was permitted to serve new connections. Available water supply may be used to serve existing development that is within the LCP urban area that is currently served by private wells, or to provide new service connections to development that has been authorized pursuant to the County's LCP, including the LCP's growth limitation for the MWSD service area, which is currently 1% per year. The overall water supply capacity needed for the MWSD to serve 1,000 new residential connections is 483,458 gpd (annual average) and 773,533 gpd (maximum daily demand).[365] The water system can support the demands of the projected population with a slight deficit appearing after 1,000 new connections are added to the system.

MWSD prepared and adopted a 2017 Master Plan to support the long-term resource planning of water supply and water system facilities for the current and future demands of the MWSD and to create a foundation for MWSD's Capital Improvements Program. Future demands on the MWSD water system were estimated for various numbers of additional connections. Future demand estimates are based on the following assumptions:

- People that currently reside or own property in the service area but are not yet connected to MWSD will connect to the water system, and
- The MWSD will serve new homes being built in the service area in accordance with the *2013 County of San Mateo Local Coastal Program (LCP) Update*.[366]

MWSD has established storage goals for current demands and for expected future growth. The total storage goal is a target value that the MWSD has set for the operation of its system and is not a mandated requirement. To date, MWSD complies with regulations related to water storage requirements and has sufficient storage to serve both existing customers and up to 1,000 new water service connections.[367]

[363] MWSD, 2017.
[364] MWSD, 2017.
[365] County of San Mateo. 2013. *Local Coastal Program*. Table 2.9 Updated Water Consumption Estimate (2006). Available at: https://www.smcgov.org/planning/local-coastal-program. Accessed June 22, 2023.
[366] MWSD, 2017.
[367] MWSD, 2017.

3.11.1.2 Wastewater

SAM provides municipal wastewater treatment for its member agencies (i.e., Granada Sanitary District, the City of Half Moon Bay, and the MWSD). These member agencies serve approximately 27,000 coastal residents in San Mateo County. Each member agency owns, operates, and maintains a sanitary sewer system; MWSD owns and maintains the sanitary sewer system for Montara and Moss Beach. The wastewater systems of these member agencies connect to the pump stations, force mains, and interceptor pipelines owned by SAM. The SAM system includes a regional wastewater treatment plant (WWTP), an 8-mile transmission intertie pipeline system line, approximately 1.8 miles of gravity sewer pipe, and 5.7 miles of force main pipeline, as well as three pumping stations.[368]

The regional WWTP is an activated sludge secondary treatment facility that was constructed on a site within the City of Half Moon Bay. The WWTP and its discharge pipe extend approximately 1,900 feet from the shore into the Pacific Ocean.[369] In 2018, the average daily flow was 1.64 million gallons per day (MGD). The WWTP capacity was expanded in 1999 to flows presented in Table 3.11-1.

Table 3.11-1. SAM WWTP Influent Flows

Parameter	Flow (MGD)
Average Daily Dry Weather	4
Peak Day Wet Weather	9
Peak Hourly Wet Weather	15

Source: California San Francisco Regional Water Quality Control Board[370]

As one of the member agencies of SAM, the MWSD serves approximately 1,940 wastewater connections. The MWSD maintains sanitary sewer facilities, including approximately 25 miles of sewer line, 13 major sewer pump stations, and 41 pump stations with 54 installed pumps.[371] Due to the hilly terrain, some pump stations have more than one pump to provide backup. All Montara wastewater is pumped by SAM's northern pump station, often referred to as the Montara Pump Station, to the WWTP. The average daily flow for MWSD was 0.373 MGD in January 2018.[372]

Since May 2, 2007, SAM has reported 20 sanitary sewer overflows (SSOs) from its collection system, with 85% caused by a pipe structural problem or failure.[373] Only one SSO that occurred in January 2008 was caused by rain exceeding the collection system design capacity. Since May 2017, SAM has not had a Category 1 SSO, which is the discharge of untreated wastewater from a sanitary sewer system failure or flow condition that reaches surface water. Nevertheless, increasing the capacity of the

[368] SAM. 2022. Sewer Authority Mid-Coastside. Available at: https://samcleanswater.org/. Accessed June 20, 2023.
[369] SAM, 2021. *Request For Proposals Wastewater Treatment Plant Capacity And Treatment Process Review Study.* https://samcleanswater.org/vertical/sites/%7B1307B359-C05A-436D-AC1C-9EB8D6FFB4A3%7D/uploads/RFP_for_SAM_WWTP_Review_Study_Final_Feb_9.pdf. Accessed June 20, 2023.
[370] California San Francisco Regional Water Quality Control Board, 2017. *Staff Summary Report – Reissuance of NPDES Permit.* Available online at: https://samcleanswater.org/vertical/sites/%7B1307B359-C05A-436D-AC1C-9EB8D6FFB4A3%7D/uploads/NPDES_Permit_Tentative_2017.pdf. Accessed June 21, 2023.
[371] MWSD, 2023.
[372] MWSD, 2018.
[373] California RWQCB, 2018a. "Prosecution Staff Response To Comments." Available online at: https://www.waterboards.ca.gov/sanfranciscobay/board_info/agendas/2018/August/SAMC/Prosection_staff_RTC_SAM_Stipulated_Order.pdf. Accessed June 21, 2023.

underground storage tank system may help SAM manage any possible increases in wastewater flows associated with future inflow and infiltration from its member agency collection systems.[374]

The 2017 Master Plan identified several needed improvements to alleviate deficiencies within the Upper Moss Beach area. These improvements include replacement of the 2-inch pressure-regulating valve station and the adjacent 2-inch piping along Buena Vista Street, upsizing 750 feet of pipeline located along California Avenue and Pearl Street to a 6-inch diameter pipeline, and system-wide replacement of 8,395 feet of 1.5-inch, 2-inch, 2.5-inch, 3-inch, and 4-inch diameter pipelines with 6-inch diameter pipeline.[375] None of these improvements are resulting from or occurring on the project site.

3.11.1.3 Solid Waste

MWSD has contracted with Recology for trash pickup, recycling, and waste hauling in the Montara and Moss Beach areas. To meet the State-mandated 50% landfill diversion requirements stipulated under Assembly Bill (AB) 939, residential recyclable waste and green waste are collected every week. Solid waste in the Moss Beach area is collected and transferred to Ox Mountain Sanitary Landfill (OMSL) in Half Moon Bay. The San Mateo County Environmental Health Division issued the current solid waste facilities permit for the OMSL in June 2001. OMSL is a Class III municipal solid waste landfill, which accepts all types of solid waste but is prohibited from accepting hazardous, radioactive, or medical waste. The OMSL has a maximum daily tonnage of 3,596 tons per day, a permitted capacity of 60,500,000 cubic yards, and a remaining capacity of approximately 22,000,000 cubic yards as of December 31, 2016. The estimated facility closure date is 2034.[376]

3.11.1.4 Electricity

Peninsula Clean Energy (PCE) PCE is the default electric generation provider for San Mateo County and all 20 of its cities and towns and for any new or relocated customers. PCE provides electricity to residents and businesses in San Mateo County, while Pacific Gas and Electric Company (PG&E) continues to maintain the electrical wires and other infrastructure, and PG&E meters customers' electricity usage and sends customers' bills. PCE goals include obtaining 100 percent greenhouse gas-free electricity by 2021, 100 percent California Renewable Portfolio Standard-eligible renewable energy by 2025, and a minimum of 20 megawatts of new local power by 2025.[377]

There is a 10-foot-wide easement for PG&E facilities under the unpaved road on the southwestern portion of the project site. The easement runs northeast-southwest diagonally along the southwest corner of the MWSD tanks and continues east along a proposed access loop. The project site contains some existing electrical infrastructure but no natural gas infrastructure.

[374] California RWQCB, 2018a.
[375] MWSD, 2017.
[376] California RWQCB, 2018b. Application for Solid Waste Facility Permit and Waste Discharge Requirements. July 11, 2018.
[377] Peninsula Clean Energy, 2023. "Background." Available online at: https://www.peninsulacleanenergy.com/background/. Accessed June 26, 2023.

3.11.2 Regulatory Setting

3.11.2.1 Federal

3.11.2.1.1 FEDERAL CLEAN WATER ACT, 33 U.S.C. 1251 ET SEQ. (1977)

The Clean Water Act (CWA) (33 United States Code [U.S.C.] 1251 et seq.), as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality. The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Numerous agencies have responsibilities for administration and enforcement of the CWA. At the federal level this includes the U.S. Environmental Protection Agency (EPA), the U.S. Army Corps of Engineers (USACE), the Bureau of Reclamation, and the major federal land management agencies such as the U.S. Forest Service and the Bureau of Land Management. At the state level, the primary responsibility for administering and enforcing the CWA has been delegated to Tribal lands and the California Environmental Protection Agency and its sub-agencies, including the State Water Resources Control Board (SWRCB).

Important sections of the act are as follows:

- **CWA Sections 303 and 304** provide the water quality standards, criteria, and guidelines. Under Section 303(d) of the CWA, the State of California is required to present the EPA with a list of impaired water bodies that do not meet water quality standards and objectives. California is required to establish a total maximum daily load (TMDL) for each pollutant/stressor. An essential component of a TMDL is the calculation of the maximum amount of a pollutant that a waterbody can receive while still meeting water quality standards. Based on the TMDL, the state allocates a loading capacity among the various point and nonpoint sources that discharge into the impaired waterbody. Permits for point sources are issued through the EPA's National Pollutant Discharge Elimination System (NPDES) program, as discussed below. The Pacific Ocean at Half Moon Bay is not on the CWA Section 303(d) list as an impaired water body. However, the Pacific Ocean at Venice Beach, approximately 1,000 feet north of the outfall, is listed under Section 303(d) as impaired by coliform bacteria.[378]
- **CWA Section 401 (Water Quality Certification)** requires an applicant for any federal permit that proposes an activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the CWA. The project site does not contain any aquatic resources which are anticipated to meet the criteria of waters of the state regulated under the Porter-Cologne Water Quality Control Act and/or Section 401 of the CWA.
- **CWA Section 402** establishes the NPDES program, a permitting system for the discharge of pollutants through a point source into waters of the U.S. Whereas the federal NPDES program mostly pertains to point source control, the current focus and regulation are shifting to nonpoint source pollution control under the authority of the Regional Water Quality Control Boards (RWQCBs). The NPDES program regulates the discharge of pollutants from municipal and industrial WWTPs and sewer collection systems, as well as stormwater discharges from industrial facilities, municipalities, and construction sites. In California, implementation and enforcement of the NPDES program are conducted through the SWRCB and the nine RWQCBs. The RWQCBs set standard conditions for each permittee in their region, which includes effluent limitations and monitoring programs. The proposed project would be subject to NPDES permits as described under the State regulatory framework, below.

[378] California San Francisco Regional Water Quality Control Board, 2017.

- **CWA Section 404** establishes a permit program for the discharge of dredged or fill material into waters of the U.S. This permit program is jointly administered by the USACE and the EPA.

3.11.2.1.2 SAFE DRINKING WATER ACT

The purpose of the Safe Drinking Water Act (SDWA) is to protect public health by regulating the nation's public drinking water supply. The SDWA authorizes the EPA to set national health-based standards for drinking water to protect against both naturally occurring and human-made contaminants that may be found in drinking water. Potential contaminants include improperly disposed of chemicals, animal wastes, pesticides, human threats, waste that has been injected underground, and naturally occurring substances. In addition, water that is not properly treated may pose a threat to drinking water. The SDWA applies to all public water systems across the nation. The EPA, individual states, and water systems work in coordination to ensure that these standards are met. The EPA identifies potential contaminants, determines an allowable maximum contaminant level, and enforces the set standards.

3.11.2.2 State

3.11.2.2.1 CALIFORNIA OCEAN PLAN

The State Water Board adopted the Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (Ocean Plan) in 1972 and has amended it several times, most recently in 2015. The most recent changes became effective on January 27, 2016. The Ocean Plan applies, in its entirety, to point source discharges to the Pacific Ocean. The Ocean Plan establishes water quality objectives and a program of implementation to protect beneficial uses.

The Ocean Plan establishes minimum protective bacteriological standards for coastal waters adjacent to public beaches and water contact recreation areas in ocean waters. Bacteriological effluent limits are necessary to meet Ocean Plan standards because of the nature of the discharge. Enterococcus limits were chosen because they are a better bacteriological indicator for human health risks from recreational uses in salt water than fecal or total coliform limits. Total coliform water quality-based effluent limitations are unnecessary to protect shellfish harvesting because there are no commercial shellfish beds or evidence of shellfish harvesting for human consumption within the vicinity of the discharge.

3.11.2.2.2 SUBDIVISION MAP ACT

The Subdivision Map Act (California Government Code Title 7, Division 2) describes general provisions, procedures, and requirements for the division of land, including the provision of public services and roadway and utilities improvements.

3.11.2.2.3 SUSTAINABLE GROUNDWATER MANAGEMENT ACT

The Sustainable Groundwater Management Act (SGMA) is a package of three bills (AB 1739, Senate Bill [SB] 1168, and SB 1319) that provides local agencies with a framework for managing groundwater basins in a sustainable manner. The SGMA establishes standards for sustainable groundwater management, roles, and responsibilities for local agencies that manage groundwater resources, and priorities and timelines to achieve sustainable groundwater management. Central to the SGMA are the identification of critically over-drafted basins and the prioritization of groundwater basins, establishment of groundwater sustainability agencies, and preparation and implementation of Groundwater Sustainability Plans (GSPs) for medium-priority, high-priority, and critically over-drafted basins. GSP objectives require that future groundwater use does not cause undesirable results, which include the following: declining water levels, reduction of groundwater storage, seawater intrusion, degraded water quality, land subsidence, and depletion of interconnected surface water. One requirement of a GSP is to establish

a monitoring network to track water level changes and groundwater storage, and to monitor pre-determined water level thresholds within each basin. Water level data for these basins will be available to the public through online portals. A basin may be managed by a single GSP or multiple, coordinated GSPs.

At the state level, the California Department of Water Resources has the primary role in the implementation, administration, and oversight of the SGMA, with the SWRCB stepping in should a local agency be found to not be managing groundwater in a sustainable manner.

The Half Moon Bay Terrace Groundwater Basin is currently designated as a very low-priority basin and is not subject to the SGMA, required to form a Groundwater Sustainability Agency, or implement a GSP.[379]

3.11.2.2.4 URBAN WATER MANAGEMENT PLANNING ACT

The Urban Water Management Planning Act of 1983 (California Water Code Sections 10610 et seq.) requires that every supplier providing water for municipal purposes to more than 3,000 customers or suppliers supplying more than 3,000 acre-feet of water annually must prepare an urban water management plan (UWMP) every 5 years. The UWMP shall include a description of the service area, existing and planned sources of water available to the supplier, how much water the agency has on a reliable basis, how much it needs for the foreseeable future, what the agency's strategy is for meeting its water needs, the challenges facing the agency, and any other information necessary to provide a general understanding of the agency's plan. In addition, every urban water supplier shall prepare and adopt a water shortage contingency plan as part of its UWMP that includes, but is not limited to, an analysis of water supply reliability over a 20-year planning timeframe, the procedures used to conduct an annual water supply and demand assessment, the defined standard water shortage levels corresponding to progressive ranges of up to 50% shortages and greater than 50% shortages, and the shortage response actions that align with the defined shortage levels.

3.11.2.2.5 CALIFORNIA SENATE BILL 610

SB 610 requires an additional assessment of whether available water supplies are sufficient to serve the demand generated by a proposed project, as well as the reasonably foreseeable cumulative demand in the region over the next 20 years under an average normal year, single dry year, and multiple dry year conditions.

3.11.2.2.6 CALIFORNIA INTEGRATED WASTE MANAGEMENT ACT

The California Integrated Waste Management Act of 1989 (AB 939) was originally enacted to require cities and counties in the State of California to divert 25% of their waste streams by the year 1995 and 50% by the year 2000. Later legislation mandates the 50% diversion requirement must be achieved each year. Specifically, AB 939 requires counties and cities to adopt a Source Reduction and Recycling Element of their Waste Management Plans to describe actions to be implemented to achieve waste reduction goals (Public Resources Code [PRC] Section 41750). The California Department of Resources Recycling and Recovery (CalRecycle) oversees and assists local governments as they develop and implement plans to meet the mandates of AB 939 and subsequent legislation.

[379] County of San Mateo Office of Sustainability. 2023. Groundwater. Available at: https://www.smcsustainability.org/water/groundwater/. Accessed June 22, 2023.

3.11.2.2.7 CALIFORNIA SOLID WASTE REUSE AND RECYCLING ACCESS ACT

The California Solid Waste Reuse and Recycling Access Act of 1991 (AB 1327) requires each local jurisdiction to adopt an ordinance requiring commercial, industrial, institutional building, marina, and/or residential buildings having five or more living units to provide an adequate storage area for the collection and removal of recyclable materials. The sizes of these storage areas are to be determined by the appropriate jurisdictions' ordinances. If no such ordinance exists within the jurisdiction, the CalRecycle model ordinance shall take effect.

3.11.2.2.8 MANDATORY COMMERCIAL RECYCLING PROGRAM

The Mandatory Commercial Recycling Program (AB 341) authorizes CalRecycle to develop and adopt regulations for mandatory commercial recycling. AB 341 requires all commercial businesses and public entities that generate 4 cubic yards or more of waste per week to have a recycling program in place. In addition, all multi-family homes with more than five units are also required to have a recycling program in place.

3.11.2.2.9 CALIFORNIA SENATE BILL 1374

SB 1374 was implemented to assist jurisdictions with diverting construction and demolition waste material. Per SB 1374, PRC Section 41821 requires public agencies to include a summary of the progress made in diverting construction and demolition waste according to diversion goals included in AB 939. Per SB 1374, PRC Section 41850 authorizes CalRecycle to fine jurisdictions that do not meet the required goals. Additionally, per SB 1734, PRC Section 42912 requires that CalRecycle adopt a model ordinance for diverting 50% to 75% of all construction and demolition waste from landfills.

3.11.2.3 Local

3.11.2.3.1 GENERAL PLAN

The Water Supply Policies[380] establish goals, policies, and implementation measures for the conservation and protection of important natural resources such as water supply.

- **Goal 10.1 Coordinate Planning:** Coordinate water supply planning with land use and wastewater management planning to assure that the supply and quality of water is commensurate with the level of development planned for an area.
- **Goal 10.2 Safeguarding Water Supplies:** Seek to safeguard the productive capacity of groundwater aquifers and storage reservoirs.
- **Goal 10.3 Water Conservation:** Promote the conservation and efficient use of water supplies.
- **Goal 10.4 Development of Water Supplies:** Promote the development of water supplies to serve: 1) agricultural uses, as the highest priority; 2) domestic uses; and 3) recreational uses.
- **Policy 10.8 Water Systems for Coastal Areas:** Support efforts to provide adequate water systems for the Mid-Coast, rural service centers, and other unincorporated urban areas.
- **Policy 10.12 Coordination of Water Suppliers:** Encourage water providers to coordinate the planned capacity of their facilities commensurate with the level of development permitted by adopted land use plans and wastewater management plans.

[380] County of San Mateo. 1986. General Plan. Available at: https://www.smcgov.org/planning/general-plan. Accessed June 2023.

- **Policy 10.13 Water Systems in Unincorporated Areas:** Support efforts to improve water distribution and storage systems in unincorporated neighborhoods and communities.
- **Policy 10.16 New Water Systems:** Allow the creation of new water systems in Rural Service Centers and Rural Subdivision areas only when demonstration is made of at least the following: 1) connections to existing systems are not available; 2) the new water system will use, as a source of supply, wells or springs; and 3) adequate financing for the new water system is available.
- **Policy 10.25 Efficient Water Use:**
  - a) Encourage the efficient use of water supplies through effective conservation methods.
  - b) Require the use of water conservation devices in new structural development.
  - c) Encourage exterior water conservation.
  - d) Encourage water conservation for agricultural uses by using efficient irrigation practices.
- **Policy 10.26 Wastewater Reuse:**
  - a) Encourage the reuse and recycling of water whenever feasible.
  - b) Encourage the use of treated wastewater that meets applicable County and State health agency criteria.
  - c) Support small-scale and on-site water recycling technologies, which meet public health and safety standards, for landscaping and agricultural purposes.

The Wastewater Policies[381] establish goals, policies, and implementation measures for the conservation and protection of important natural resources such as water supply.

- **Goal 11.1 Adequate Wastewater Management:** Plan for the provision of adequate wastewater management facilities to serve development to protect public health, wildlife habitats, and water quality.
- **Goal 11.2 Coordinate Planning**: Coordinate wastewater management planning with land use and water supply planning to assure that the capacity of sewerage facilities is commensurate with the level of development planned for an area.
- **Policy 11.4 Adequate Capacity for Unincorporated Areas:** Plan for the availability of adequate sewerage collection and treatment capacity for unincorporated urban areas.
- **Policy 11.5 Wastewater Management in Urban Areas:**
  - Consider sewerage systems as the appropriate method of wastewater management in urban areas.
  - Encourage the extension of sewerage systems to serve unincorporated urban areas presently using individual sewage disposal systems where warranted by public health concerns, environmental pollution, or the planned density of development.
  - Continue the use of existing individual sewage disposal systems in urban areas where lot sizes, site conditions, and planned densities are appropriate for these systems and where individual sewage disposal systems have functioned satisfactorily in the past.
- **Policy 11.7 Phasing Sewerage Improvements:** Phase the development of wastewater facility improvements in areas with substantial growth potential so that sufficient capacity becomes available when needed by new growth in accordance with adopted land-use plans.

[381] County of San Mateo, 1986. *General Plan*. Available online at: https://www.smcgov.org/planning/general-plan. Accessed June 2023.

- **Policy 11.9 Sewerage Capacity for Priority Land Uses:**
  - Provide for the reservation of sewerage capacity for priority land uses where required by State law or local policy.
  - Encourage sewerage districts, which are required to reserve capacity for priority land uses, to establish an equitable method of payment for such capacity.

3.11.2.3.2 CITY/COUNTY ASSOCIATION OF GOVERNMENTS, SAN MATEO COUNTYWIDE SUSTAINABLE STREETS MASTER PLAN

The City/County Association of Governments finalized the San Mateo Countywide Sustainable Streets Master Plan using grant funds from the California Department of Transportation.[382] The plan aims to identify and prioritize street improvements for adding green infrastructure to provide water quality, flood reduction, and community benefits throughout San Mateo County in the context of climate change. The goals of the project include identifying how climate change would affect future rainfall, planning to sustainably capture and clean runoff in San Mateo County roadways, and using nature-based solutions, while providing safer and more resilient streets for all users including motorists, bicyclists, and pedestrians. The plan is anticipated to include high-resolution drainage mapping, project concepts to aid in pursuing implementation, and a tracking tool to view progress over time.

3.11.2.3.3 LOCAL COASTAL PROGRAM

The LCP is the County's guiding document for implementation of the State Coastal Act administered by the California Coastal Commission. With information and policies pertaining to issues such as buildout and development, water supply capacity, wastewater treatment capacity, recreation, impervious surface zoning standards, nonpoint surface runoff controls, and sensitive species and habitat protection, the LCP governs land development in the unincorporated coastal area of San Mateo County. All development in the coastal zone must either comply with the policies and ordinances of the LCP in order to be issued a Coastal Development Permit (CDP) or be granted an exemption from the requirements. The County of San Mateo Planning and Building Department (Planning Department) released an updated LCP on June 18, 2013.

According to the San Mateo County LCP, new public water connections in the MWSD's service area are allowed only if they are consistent with the MWSD Public Works Plan (PWP) and amendments in effect, Chapter 2 of the LCP, and all other applicable policies of the LCP as amended. The following policies of the LCP apply to the proposed project:

- 2.1 Development Review of Public Works: After certification of the LCP, require a Coastal Development Permit from any public utility, government agency or special district wishing to undertake any development in the Coastal Zone, with the exceptions of State Universities and colleges and development on public trust lands or tidelands as described in Section 30519(b) of the California Coastal Act.
- 2.6 Capacity Limit: Limit development or expansion of public works facilities to a capacity which does not exceed that needed to serve buildout of the Local Coastal Program.
- 2.8 Reservation of Capacity for Priority Land Uses
  - For each public works development to serve vacant lands with new connections, reserve capacity adequate to allow priority land uses to develop in conjunction with the non-priority development that would be facilitated by the public works development.

[382] City/County Association of Governments. 2021. Sustainable Streets Master Plan. Available at: https://www.flowstobay.org/data-resources/plans/sustainable-streets-master-plan/. Accessed May 2023.

  - Where development of new public works facilities can accommodate only a limited amount of new connections on vacant land, the service provider shall ensure that adequate capacity is reserved for Coastal Act priority uses before reserving capacity for Local Coastal Program priority uses shown on Tables 2.7 and 2.17 (recreated herein as Table 3.11-2 and Table 3.11-3).

- 2.14 New and Expanded Sewage Treatment and Distribution Capacity
  - Allow new or expanded sewage treatment and distribution capacity to serve new development only when existing capacity has been consumed or will be consumed within the time period required to construct additional sewage treatment capacity, and only when capacity increases would not overburden the existing and probable future capacity of other public works facilities.
  - Projects to increase sewage collection, transmission, and storage capacity, in order to prevent wet weather overflows only, are permitted not with-standing traffic conditions on Highways 1 and 92 provided that the projects do not: (1) induce growth; or (2) increase the treatment capacity of the Sewer Authority Mid-Coastside (SAM) plant or the total number of sewer connections made available by the SAM treatment plant expansion permitted by Coastal Commission CDP No. 1-94-111.
  - Projects to upgrade the SAM treatment plant from secondary to tertiary treatment to produce recycled water are permitted notwithstanding traffic conditions on Highways 1 and 92 provided that the recycled water project does not:
    - induce growth inconsistent with the LCP;
    - provide potable water connections to new non-priority development; or
    - increase the total number of non-priority connections made available by either the El Granada Pipeline Project (Coastal Commission CDP A-2-SMC-99-063; A-1-HMB-99-020) or the Montara Water and Sanitary District (MWSD) Public Works Plan (Coastal Commission PWP No. 2-06-006). Recycled water projects that would provide new potable water connections to new commercial, residential, or industrial development are subject to subsection (a), Policy 2.22, and all other applicable policies of the LCP.
  - Sewage treatment, collection, storage, and transmission projects shall be consistent with the following standards:
    - Maximum Capacity. The maximum service capacity of the project shall not induce growth inconsistent with the protection of coastal resources and public access and recreation opportunities, and will assure that untreated wastewater will not be discharged into any coastal waters including streams, wetlands and the marine environment.
    - Priority Uses. The project shall demonstrate that sewage treatment, collection, and transmission capacity is available and allocations are for Coastal Act priority uses.
    - Siting. The project shall be sited and designed to minimize impacts to visual resources, prevent degradation of sensitive habitats, and shall be consistent with all applicable policies of the LCP.
    - The project shall minimize the use of energy.

- 2.16 Reservation of Capacity for Priority Land Uses
  - Reserve sewage treatment capacity for each land use given priority by the Coastal Act or the Local Coastal Program. These priority uses are shown on Table 2.7. (Table 3.11-2)
  - Amend this table to reflect all changes in the Land Use Plan which affect these priority land uses.

- Where existing or planned sewage treatment facilities can accommodate only a limited amount of new development, services to Coastal Act priority uses listed on Table 2.7 (Table 3.11-2) shall have priority over Local Coastal Program priority uses listed on Table 2.7. (Table 3.11-2)

Table 3.11-2. Sewage Treatment Capacity to be Reserved for Priority Land Uses

Allocation of Reserved Capacity to Priority Land Uses	Phase I		Buildout	
	Units	Gallons/Day	Units	Gallons/Day
Coastal Act Priorities				
Marine-Related Industrial	—	—	—	—
Commercial Recreation	0.56 acre	840	0.82 acre	1,230
Public Recreation	282 persons	2,820	408 persons	4,080
Local Coastal Program Priorities	148	32,708	365	66,430 to 94,900
Specific Developments on Designated Sites Containing Affordable Housing				
North Moss Beach Site (11 acres)				
South Moss Beach Site (12.5 acres)				
Total Sewage Treatment Capacity for Priority Land Uses		36,368		71,740 to 100,210
Percent of Total Sewage Treatment Capacity for Priority Land Uses		9.1%		9.0 to 17.3%
Percent of Buildout Allowed by Phase		50 to 69%		100%
Total Sewage Capacity		400,000		580,090 to 794,080

Source: San Mateo County Local Coastal Plan 2013. Table 2.7[383]

Table 3.11-3. Amount of Water Capacity to be Reserved for Priority Land Uses

Allocation of Reserved Capacity to Priority Land Uses	Phase I		Buildout	
	Units	Gallons/Day	Units	Gallons/Day
Coastal Act Priorities				
Marine-Related Industrial	—	—	—	—
Commercial Recreation	0.57 acre	1,100	0.82 acre	1,230
Public Recreation	282 persons	3,200	408 persons	4,080
Floriculture		13,800		10,000
Essential Public Services				5,000
Local Coastal Program Priorities				
Specific Developments on Designated Sites Containing	148	64,380	148	35,816 to 51,504
Affordable Housing				
(1) North Moss Beach Site (11 acres)				
Other Affordable Housing			20	5,000
Total Water Capacity for Priority Land Uses		82,480		61,126 to 76,814

[383] San Mateo County. 2013. Local Coastal Program Policies Table 2.7. Available at: https://www.smcgov.org/planning/local-coastal-program. Accessed June 25, 2023.

Allocation of Reserved Capacity to Priority Land Uses	Phase I		Buildout	
	Units	Gallons/Day	Units	Gallons/Day
Percent of Total Water Capacity for Priority Land Uses		10.6%		5.4 to 9.2%
Percent of Buildout Allowed by Phase		50 to 69%		100%
Total Water Capacity		778,800		836,300 to 1,128,700
Coastal Act Priorities				
Marine-Related Industrial	22.85 acres	55,770	29.29 acres	71,870
Commercial Recreation	33.15 acres	61,630	42.50 acres	79,395
Public Recreation	248 persons	2,900	318 persons	3,700
Floriculture		179,400		220,000
Essential Public Services		7,700		14,135
Local Coastal Program Priorities				
Specific Developments on Designated Sites Containing Affordable Housing	104	39,936	322	77,924 to 112,056
(1) North El Granada Site (6 acres)				
(2) South Moss Beach Site (12.5 acres)				
Other Affordable Housing			20	5,000
Consolidated Lots in Miramar	55	20,900	70	16,900 to 24,400
Historic Structures	1	1,480	1	1,480
(1) Johnston House				
Total Water Capacity for Priority Land Uses		369,716		490,404 to 532,036

Source: San Mateo County Local Coastal Plan 2013. Table 2.17[384]

3.11.2.3.4 SAN MATEO COUNTY MUNICIPAL CODE CHAPTER 4.105, RECYCLING AND DIVERSION OF CONSTRUCTION AND DEMOLITION DEBRIS

Under the California Waste Management Act (California PRC Sections 40000 et seq.), each county is required to prepare, adopt, and implement a source reduction and recycling element to reach reduction goals, and is required to make substantial reductions in the volume of waste materials going to landfills. Debris from construction and demolition of buildings represents a significant portion of the volume of solid waste currently coming from the unincorporated area of the County, and much of this debris is particularly suitable for recycling. Under Chapter 4.105 of the County Municipal Code, construction projects in unincorporated San Mateo County must divert 100% of inert construction and demolition materials and at least 50% of remaining construction and demolition debris tonnage from landfills for recycling or reuse. Every contractor must submit a Waste Management Plan, which indicates the intended salvage, reuse, and recycling facilities, chosen from a list of facilities approved by the County, for all construction and/or demolition debris from the project.

[384] San Mateo County. 2013. Local Coastal Program Policies Table 2.17. Available at: https://www.smcgov.org/planning/local-coastal-program. Accessed June 25, 2023.

3.11.3 Thresholds of Significance

The determinations of significance of project impacts are based on applicable policies, regulations, goals, and guidelines defined by the California Environmental Quality Act (CEQA) and the County. Specifically, the project would be considered to have a significant effect on utilities and service systems if the effects exceed the significance criteria described below:

1. Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.
2. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal years, single dry years, and multiple dry years.
3. 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.
4. 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.
5. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Each of these thresholds is discussed under Section 3.11.5, Impacts and Mitigation Measures, below.

3.11.4 Impact Assessment and Methodology

In order to evaluate utilities and service systems, an analysis of impacts to wastewater treatment requirements, water supply, wastewater treatment regulatory compliance, and solid waste regulatory compliance were evaluated according to the above-mentioned thresholds of significance.

3.11.5 Impacts and Mitigation Measures

Impact UT-1: Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? (Less Than Significant)

Water

The MWSD issues connections in conjunction with the Planning Department for new and existing projects inside the urban zones. The proposed project would connect to and be served by the existing MWSD public water system. The project would extend water lines to new project facilities on the project site for potable water and fire water supply, as well as irrigation of landscaping. The proposed water line would extend from the existing MWSD tanks along the existing 10-foot right-of-way along the eastern and northern portions of the project. New domestic water and fire water lines would be in the driveway loop and parking areas, with individual connections to each building. The fire water would connect to a flow meter in the northeast corner of the driveway loop. The project would also have water tanks

capable of supplying a flow of 100 gpm for 2 hours, as required by the California Fire Code, Section 507[385] and in compliance with the County General Plan.[386]

Construction of replacement water pipelines would be routed to provide setbacks between new facilities and existing water pipelines, and to avoid other existing utilities. All improvements related to the project would be within or adjacent to the existing water transmission system alignments, or at existing wells and pump stations. Pipeline construction would be engineered and implemented to minimize service disruptions to existing customers.

Excavation for the proposed water pipelines would include ground disturbance and exposure of surfaces, increasing the potential for erosion and downstream sedimentation. Vegetation would need to be cleared or mowed to provide access for construction vehicles, increasing the potential for erosion. Eroded materials transported in stormwater have the potential to affect receiving surface waters through impairment of beneficial uses and exceedance of water quality objectives. As discussed in Section 3.7, Hydrology and Water Quality, implementation of the erosion and sediment control plan, and the stormwater pollution prevention plan would manage stormwater and reduce erosion and runoff from the project site. Therefore, the project would result in the construction of new water infrastructure on-site but would not result in significant environmental effects. Impacts would be less than significant.

Wastewater

There is no existing sanitary sewer infrastructure on the project site. The project would install new wastewater pipelines that connect the project site to the existing MWSD sewer lines in Carlos Street. These new wastewater pipelines would be in the driveway loop and parking areas, with individual connections to each building. Construction of wastewater improvements would be routed to provide setbacks between new facilities and existing water and wastewater pipelines, and to avoid other existing utilities.

The proposed wastewater connections and improvements would comply with Chapter 4.24 – Sewer Connections of the San Mateo County Ordinance Code and Sanitary Sewer Standard Details and Specifications, in addition to the MWSD Code.[387] Therefore, the project would result in the construction of new wastewater infrastructure on-site but would not result in significant environmental effects. Impacts would be less than significant.

Stormwater

Section 3.7, Hydrology and Water Quality, provides a detailed description of stormwater drainage on the project site during construction and operation. Best management practices required for NPDES compliance would be applied during project construction to ensure that runoff from the project site would not impact the capacity of stormwater infrastructure. During project operation, stormwater would be directed to treatment areas and would not impact the capacity of stormwater infrastructure. Therefore, the project would have less than significant impacts to stormwater infrastructure.

[385] SWCA. 2023. *Wildfire and Evacuation Route Assessment for the Cypress Point Affordable Housing Community Project*. SWCA Environmental Consultants. (Included in Appendix N)
[386] San Mateo County. 2021. County of San Mateo General Plan: Updated January 2013. Chapter revisions 2021. Available at: https://www.smcgov.org/planning/general-plan-policies. Accessed March 2023.
[387] Montara Water and Sanitary District Code. Amended 2017. Available online at: https://mwsd.montara.org/assets/uploads/documents/MWSDCode[current020817AmndThruOrd184]020817.pdf. Accessed June 20, 2023.

Electricity

The proposed single-family project would receive electric services from PCE and PG&E. Extension of electric services to the 71 residential units would not require development of new generation or transmission facilities. Natural gas would not be used during project operation. This impact would be less than significant.

Impact UT-2: Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years? (Less Than Significant)

Within the MWSD, the average residential water consumption is approximately 66 gpd per person.[388] Peak day consumption is generally 1.8 times the annual average water consumption.[389] The overall water supply capacity needed for the MWSD to serve 1,000 new connections is approximately 483,458 gpd (annual average) and 773,533 gpd (maximum daily demand).[390]

The average daily demand within the Upper Moss Beach area encompassing the project site is 7,400 gpd.[391] The total MWSD water demand is 296,018 gpd. The project would house approximately 213 residents, equaling approximately 14,060 gpd. This would represent a substantial increase in water demand in the Upper Moss Beach area. However, the project is a priority land use that has designated water supply capacity reserved for it as shown in Table 2.17 of the 2013 San Mateo County LCP, recreated above as Table 3.11-2. The buildout of 148 potential total residential units includes an allocation capacity of 35,816 to 51,504 gpd.[392] The project proposes 71 residential units, less than half allowed under the existing LCP allocation. Therefore, the estimated water demand of 14,060 gpd is within the allocated capacity under the LCP priority uses. Given the project has a reserved water supply, the project would not contribute to the shortfall of water supply.

Therefore, the MWSD has adequate capacity to supply the project, and no new facilities would be needed. This impact would be less than significant. Compliance with the State of California Green Building Standards Code requirements, particularly through the use of water-efficient fixtures and landscaping, would further reduce this less-than-significant impact.

Impact UT-3: Would the project 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? (Less Than Significant)

The proposed project would not require or result in the construction of new wastewater treatment facilities, or the expansion of existing treatment facilities. The MWSD is continuously upgrading its wastewater transmission system, and the need to increase facility size due to anticipated growth, including the proposed project, is not anticipated.[393] Therefore, the MWSD will continue maintenance activities on its sanitary sewer system, and some of these maintenance improvements could support sewer collection

[388] MWSD, 2017.
[389] County of San Mateo. 2013. *Local Coastal Program*. Available at: https://www.smcgov.org/planning/local-coastal-program. Accessed June 22, 2023
[390] County of San Mateo, 2013. *Local Coastal Program*. Table 2.9.
[391] MWSD, 2017.
[392] County of San Mateo, 2013. *Local Coastal Program*. Table 2.17. Available at: https://www.smcgov.org/planning/local-coastal-program. Accessed June 22, 2023.
[393] MWSD. 2014. Sewer System Management Plan. Available online at: https://mwsd.montara.org/assets/uploads/documents/legal-regulatory/2014%20MWSD%20SSMP%20FINAL%20Elements%20I-XI.pdf. Accessed June 21, 2023

for the project. The MWSD has adequate capacity for the additional demands for wastewater collection, which could result from implementation of the project, to comply with the MWSD standard code. The SAM has sufficient capacity to accommodate the additional demands for wastewater treatment. In 2016, the average daily flow through the WWTP was 1.64 MGD and the design capacity is 4 MGD.[394]

The project is a priority land use that has wastewater service capacity reserved as shown in Table 2.7 in the 2013 San Mateo County LCP, recreated above as Table 3.11-2. The buildout of 365 total residential units under the LCP priority uses includes an allocation capacity of 66,340 to 94,900 gpd.[395] Residential wastewater treatment demand in the SAM service area is approximately 85 gpd per person.[396] The project would house approximately 213 residents, equaling approximately 18,105 gpd. Therefore, the estimated wastewater demand of 18,105 gpd is within the allocated capacity under the LCP priority uses.

As the project is a priority land use that has wastewater service capacity reserved as described in the 2013 San Mateo County LCP, the wastewater treatment demand of the proposed project would be supplied by SAM and MWSD's priority use capacity reserves for priority land uses. Therefore, this impact would be less than significant, and no mitigation is required.

Impact UT-4: Would the project 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? (Less than Significant)

Both project construction and operation would generate solid waste. Construction activities for the project involve demolition and site preparation that would generate solid waste (i.e., building material debris, cardboard, insulation, asphalt, concrete). Once constructed, the project residents would generate solid waste, which would be disposed in three waste enclosures on-site. On average, residential households generate 12.23 pounds of solid waste per day. The project would construct 71 residential units, resulting in approximately 868 pounds of solid waste per day. In 2018, the OMSL received an average daily tonnage of 1,700 tons per day.[397] The OMSL has a maximum daily tonnage of 3,596 tons per day and a remaining capacity of approximately 22,000,000 cubic yards as of December 31, 2016. Based on current waste disposal rates, average density of the waste, and daily cover usage at the facility, the estimated closure date for the landfill is 2034.[398] Therefore, there is adequate landfill capacity at the OMSL for the proposed Cypress Point project. This impact is less than significant, and no mitigation is required.

As described above, under Chapter 4.105 of the County Municipal Code, construction projects in unincorporated San Mateo County must divert 100% of inert construction and demolition materials and at least 50% of remaining construction and demolition debris tonnage from landfills for recycling or reuse. The project would comply with this requirement and submit a Waste Management Plan, summarizing the intended salvage, reuse, and recycling facilities for all construction and/or demolition debris from the project. Because the trash service provider complies with applicable federal, state, and local requirements regarding solid waste removal and diversion targets, and the landfill serving the project area has sufficient capacity to accommodate solid waste needs, no modification or expansion of solid waste facilities or

[394] California San Francisco Regional Water Quality Control Board, 2017.

[395] County of San Mateo. 2013. *Local Coastal Program*. Table 2.7. Available at: https://www.smcgov.org/planning/local-coastal-program. Accessed June 22, 2023

[396] County of San Mateo. 2013. *Local Coastal Program*. Table 2.3. Available at: https://www.smcgov.org/planning/local-coastal-program. Accessed June 22, 2023

[397] California RWQCB, 2018b. Application for Solid Waste Facility Permit and Waste Discharge Requirements. July 11, 2018.

[398] CalRecycle. 2017. *SWIS Facility Detail. Corinda Los Trancos (Ox Mtn) (41-AA-0002).* Available at: https://www2.calrecycle.ca.gov/SWFacilities/Directory/41-AA-0002/Detail. Accessed June 13, 2023.

operations would be necessary. Impacts to solid waste disposal would be less than significant and no mitigation is required.

Impact UT-5: Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste? (No Impact)

The project would comply with all state and local ordinances for water, energy, and waste reduction and management, including but not limited to, the State California Green Building Standards Code requirements; San Mateo County Municipal Code Chapter 4.105, Recycling and Diversion of Construction and Demolition Debris; Waste Management Plan for construction debris; and Low Impact Development treatment measures to control stormwater. Therefore, the project would comply with all federal, state, and local management and reduction statutes and regulations. No impact would occur.

3.11.6 Cumulative Impacts

Impact C-UT-1: Would the impacts of the proposed project, in combination with other past, present, and reasonably foreseeable future projects, contribute to a cumulative impact related to utilities and service systems? (Less Than Significant)

The MWSD planned for the regional infrastructure improvements included in the 2017 Master Plan. The proposed project does not currently include or require any significant off-site infrastructure improvements. In the event infrastructure improvements are needed to support the proposed project, any such improvements would be developed in previously developed rights-of-way. These improvements would be similar to other routine types of improvements undertaken by MWSD and other service providers and would not result in any significant direct or cumulative impacts. Also, the proposed project would be required to make water distribution improvements consistent with the 2017 Master Plan, there would be no cumulatively considerable contribution to this less-than-significant cumulative effect, and no mitigation is required.

The MWSD system currently has enough water supply to support the long-term demands that correspond to the addition of over 900 connections. This additional reliable supply can meet the demands of the population currently residing within the service area but not connected to the system, as well as provide a reliable supply for additional new connections.[399]

The proposed project's cumulative contribution would not require or result in the construction of new wastewater treatment facilities, or the expansion of existing treatment facilities. The total sewage treatment capacity needed to serve the combined residential and non-residential Mid-Coast buildout is 1.96 MGD.[400] SAM has sufficient capacity to accommodate the additional demands for wastewater treatment, and MWSD has adequate capacity for the additional demands for wastewater collection that could result from operation of the Cypress Point project, with implementation of expected MWSD conditions of approval. Because the proposed project is a priority land use that has wastewater service capacity reserved as described in the 2013 San Mateo County LCP, the wastewater treatment demand of the proposed project will be supplied by SAM and MWSD's capacity reserves for priority land uses. There would be a less-than-significant cumulative impact to which the Cypress Point project would make a less than cumulatively considerable contribution. No mitigation is required.

[399] MWSD, 2017.
[400] County of San Mateo, 2013.

3.12 WILDFIRE

This section describes the potential impacts of wildfire upon the development of the proposed multi-family residential use. Potential effects are evaluated relative to important vegetation, water supply, and fire department response. Impacts on wildfire are addressed through an evaluation of the changes to the existing environment and the modifications that would alter the environment in a post-fire environment. The evaluation of wildfire is based on the following technical studies:

- *Biological Impact Report,* SWCA, May 2023 (Appendix D)[401]
- *Wildfire and Evacuation Route Assessment*, SWCA, May 2023 (Appendix N)[402]
- *Geotechnical Investigation Cypress Point Family Community 16th And Carlos Streets Moss Beach, California.* Rockridge Geotechnical. 2022. (Appendix F)[403]

The Biological Impact Report included an extensive literature search of the 2-mile area surrounding the project site, followed by a field survey conducted on April 3, 2023. The field survey included the project site and a 250-foot buffer surrounding the site (biological survey area). The Wildfire and Evacuation Route Assessment included the use of a web-based application that models fire behavior and the use of Ladris Technologies' evacuation modeling software.

3.12.1 Existing Conditions

The proposed project is located on an 11.02-acre parcel adjacent to the northeast corner of Carlos and Sierra Streets in the unincorporated community of Moss Beach, San Mateo County, California.
The topography within the project site is generally flat and gently slopes westward toward the Pacific Ocean. The project site consists of developed uses, including neighboring residences and roadways, water tanks and an associated maintenance structure operated by Montara Water and Sanitary District (MWSD), concrete remnants of military facilities that are scattered throughout the project site, dirt access roads around the perimeter of the project area, and undeveloped land dominated by a mix of native and non-native vegetation.

Topography, Elevation, and Climate

The project site has a range of slopes from 10% to 50%. Elevations range from a high point of 205 feet above mean sea level (amsl) on the east side of the project adjacent to Lincoln Street to a low point of 95 feet amsl at the northwest boundary along 16th Street.[404] Montara Creek, a perennial stream, is approximately 250 feet northeast of the project site and runs parallel to the northern border of the site (prior to emptying into the Pacific Ocean). Residential communities occur to the east and south of the project site. These communities span approximately 250 and 200 acres, respectively. San Mateo County has a Mediterranean climate characterized by cool wet winters, with an average of 29.6 inches of rain per year, and relatively warmer dry summers with coastal fog.[405]

[401] SWCA. 2023a. *Biological Impact Report.* Half Moon Bay, California: SWCA Environmental Consultants
[402] SWCA. 2023b. *Wildfire and Evacuation Route Assessment*. Half Moon Bay, California: SWCA Environmental Consultants.
[403] Rockridge Geotechnical. 2022. *Geotechnical Investigation Cypress Point Family Community 16th And Carlos Streets Moss Beach, California.* June 2022.
[404] Pyatok Architects. 2022. Cypress Point Family Community. Coastal Development Permit Submittal. Pyatok Architects. June 2022.
[405] SWCA, 2023a.

Vegetation and Fuels

Vegetation communities present on the project site include Monterey cypress–Monterey pine woodland stands (*Hesperocyparis macrocarpa–Pinus radiata* Forest and Woodland Semi-Natural Alliance), coyote brush scrub (*Baccharis pilularis* Shrubland Alliance), perennial rye grass fields, and developed/disturbed areas. Thick vegetation also covers the majority of the project site outside the areas of the concrete building foundations.

Within the project site, fuel loadings vary from low to moderate depending on the species present, past activities on-site, and recent weather patterns.

Water Supply

The project site is served by the MWSD. The project would extend water lines from the existing MWSD tanks to the proposed new structures and facilities for potable water and fire water supply, as well as irrigation of landscaping. The proposed new water line would extend from the existing tanks within the existing 10-foot right-of-way along the eastern and northern parts of the project. New domestic water and fire water lines would be in the proposed project's driveway loop and parking areas, with individual connections to each building.

Fire History

From 2003 to 2022, three vegetation fires occurred within a 2-mile radius of the project site. All fires were less than 1 acre, with causes of "undetermined." Historically, the most common causes of wildfires in San Mateo County have been "undetermined" or due to equipment use, power line/electric power, and other miscellaneous causes.[406]

Fire Risk, Protection, and Response

The project site is not located within a California Department of Forestry and Fire Protection (CAL FIRE)–designated very high, high, or moderate fire hazard severity zone (FHSZ)[407] (Figure 3.12-1).

The Coastside Fire Protection District (Coastside FPD) would provide fire protection and emergency response services for the project site. The Coastside FPD serves the City of Half Moon Bay; the communities of Montara, Moss Beach, Princeton, El Granada, and Miramar; and the surrounding unincorporated areas. Its service area covers approximately 50 square miles and serves a population of approximately 30,000 residents. In addition to traditional fire services, the Coastside FPD provides advanced life support, cliff rescue, water rescue, confined space rescue, and vehicle and residential lock-out services, and responds to approximately 2,600 calls each year. These incidents include medical aid, fires and fire alarms, water rescue, cliff rescue, traffic accidents, odor investigations, hazardous materials, and public service assists.

[406] SWCA, 2023b.

[407] County of San Mateo. 2007. Very High Fire Hazard Severity Zones in LRA. Available at: https://www.smcgov.org/media/73036/download?inline=. Accessed June 10, 2023.

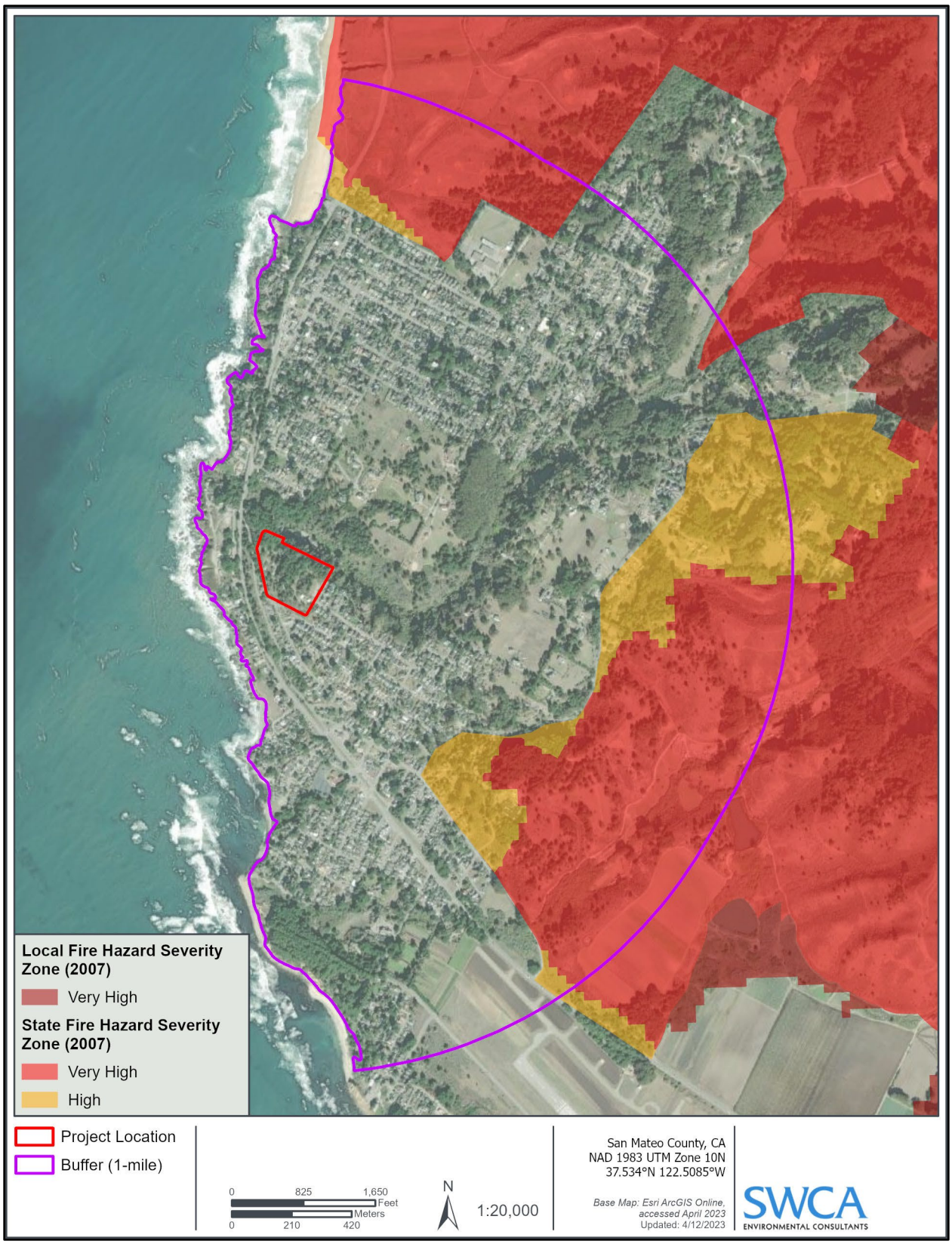


Figure 3.12-1. CAL FIRE FHSZ classifications.

Three fire stations operate within the Coastside FPD: Fire Station 44, located on Stetson Street in Moss Beach one block (approximately 300 feet) from the project site; Fire Station 40, located within the downtown area of the City of Half Moon Bay; and Fire Station 41, located within the unincorporated area of El Granada. Fire Station 40 serves as the Coastside FPD headquarters. Fire Station 44 (Moss Beach) would provide initial fire and emergency medical service response to the project site, and Fire Stations 41 (El Granada) and 40 (Half Moon Bay) would support the initial response if needed.

Coastside FPD's response time goal is within 6 minutes 59 seconds of receiving a call. In an email to SWCA on May 11, 2023, the Coastside FPD Chief confirmed that response times are currently met throughout the service area.[408] The proximity of Fire Station 44 to the project site indicates that response times would meet the established goal.

The Coastside FPD has 32 paid positions, along with 11 volunteer firefighter positions. Paid positions include one assistant fire chief, one fire marshal, one deputy fire marshal, four battalion chiefs, and two administrative support positions. All stations are staffed with one fire captain and two fire apparatus engineers, one of whom is a paramedic to provide advanced life support service. Shift personnel work a scheduled 3-day/72-hour work week.

The Half Moon Bay Volunteer Fire Department is a volunteer division of the Coastside FPD. The Volunteer Fire Department has approximately 15 members and is under the direction of the fire chief. The number of volunteers reflects the current needs of the Volunteer Fire Department and is determined by the chief of the volunteer division. The objectives of the Volunteer Fire Department are to operate within the boundaries of the Coastside FPD as a supplemental force to the regular paid department and to operate as a trained unit for both fire suppression and non-suppression situations.

3.12.1.1 Roadway Network

There is an extensive network of roads, both well-maintained dirt and major paved roads, surrounding the project site. Main roads in this network include SR-1, Carlos Street, Sierra Street, Stetson Street, Etheldore Street, California Avenue, and Airport Street. These roads can all support weight loads of fire apparatus and allow for project site access from all directions. There are main arteries from the nearest communities and fire stations that provide direct emergency response services.

3.12.2 Regulatory Setting

3.12.2.1 State

3.12.2.1.1 CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION (CAL FIRE)

The CAL FIRE has mapped fire hazard potential on State Responsibility Areas (SRAs) throughout California. CAL FIRE classifies fire hazards based on fuel loading and availability, topography, fire history, and climate, particularly wind. The classifications on SRA include moderate, high, and very high fire hazards. Additionally, CAL FIRE produced a 2018 Strategic Fire Plan[409] for California that contains goals, objectives, and policies to prepare for and mitigate the effects of fire on California's natural and built environments. CAL FIRE's Office of the State Fire Marshal provides oversight of enforcement of the California Fire Code (CFC) as well as overseeing hazardous liquid pipeline safety.

[408] Personal communication between Coastside Fire Department Chief and Erica Rippe, dated May 11, 2023.
[409] CAL FIRE, 2018. 2018 Strategic Fire Plan for California. Available at: https://osfm.fire.ca.gov/media/5590/2018-strategic-fire-plan-approved-08_22_18.pdf. Accessed June 2023.

3.12.2.1.2 CALIFORNIA FIRE CODE

The CFC is Part 9 of Title 24 of the CBC. The CFC is updated every 3 years and includes provisions and standards for emergency planning and preparedness, fire service features, fire protection systems, hazardous materials, fire water access and flow requirements, and the clearance of debris and vegetation within a determined distance from occupied structures in wildfire hazard areas. Fire protection is provided to the site by a cooperative fire protection contract between the Coastside FPD and CAL FIRE and, as such, the CFC is implemented and enforced at the project site.

3.12.2.1.3 CALIFORNIA PUBLIC RESOURCES CODE

The California Public Resources Code, Section 4291, states that a building or structure in or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land that is covered with flammable material, shall maintain 100 defensible feet of space from each side and the front and rear of the structure, but not beyond the property line unless modified by local regulations.
The amount of fuel modification necessary to create defensible space shall consider the flammability of the structure as affected by building material, building standards, location, and type of vegetation. Fuels shall be maintained in a condition so that a wildfire burning under average weather conditions would be unlikely to ignite the structure. This regulation does not apply to single specimens of trees or other vegetation that are well-pruned and maintained to effectively manage fuels and not form a means of rapidly transmitting fire from other nearby vegetation to a structure or from a structure to other nearby vegetation. The intensity of fuel management may vary within the 100-foot perimeter of the structure, the most intense being within the first 30 feet around the structure. Consistent with fuel management objectives, steps should be taken to minimize erosion.

3.12.2.1.4 SPRINKLER SYSTEMS: CALIFORNIA RESIDENTIAL CODE, CHAPTER 3, SECTION R313

All new dwellings, dwelling units, and one- and two-family townhomes must be equipped with an automatic fire sprinkler system that can protect the entirety of the dwelling. Dwellings and homes constructed prior to January 1, 2011, that do not have a sprinkler system may be retrofitted, but it is not required.

3.12.2.1.5 FIRE SAFETY STANDARDS: CALIFORNIA PUBLIC RESOURCES CODE 4290 AND 14 CALIFORNIA CODE OF REGULATIONS 1270

These regulations govern roads, driveway width, clearance, turnarounds, signing, and water related to fire safety throughout California. Public Resources Code 4290 is typically enacted through regulation at the county level, and 14 CCR 1270 is known as the State Minimum Fire Safe Regulations and constitutes the minimum wildfire protection standards of the California Board of Forestry and Fire Protection.

3.12.2.1.6 WILDLAND-URBAN INTERFACE BUILDING STANDARDS: CALIFORNIA GOVERNMENT CODE 51189

The Office of the State Fire Marshal is required to create building standards for wildfire resistance. Construction of buildings in the wildland-urban interface must use fire-resistant materials to save life and property. As of 2011, the standards relevant to fire-safe construction for all new structures in the SRA are the California Building Code (CBC), Chapter 7A (for commercial construction) and the California Residential Code, Chapter 3, Section R327 (for residential construction).

3.12.2.1.7 STATE RESPONSIBILITY AREA: PUBLIC RESOURCES CODE 4102, 4125–4229, AND 14 CCR 1220

These statutes and regulations establish the locations where CAL FIRE has the financial responsibility for preventing and suppressing fires. These designations define financial arrangements for fire protection services and establish the locations where fire-safe and defensible space laws or regulations apply.

3.12.2.1.8 HAZARDOUS FIRE AREAS: PUBLIC RESOURCES CODE 4251–4255 AND 14 CCR 1200

These laws and regulations allow petitioners to the Board of Forestry and Fire Protection or CAL FIRE to establish hazardous fire areas, providing for area closures and other restrictions for fire prevention.

3.12.2.2 Local

3.12.2.2.1 SAN MATEO COUNTY LOCAL COASTAL PROGRAM

The Local Coastal Program provides policies regarding development and project design standards in the coastal zone of San Mateo County.[410] This includes hazards such as high-risk fire areas and vegetation management. The Local Coastal Program policies are adopted by reference in the County of San Mateo's (County's) Zoning Regulations under Chapter 20B, Sections 6328.19 through 6328.30.

3.12.2.2.2 SAN MATEO COUNTY GENERAL PLAN

Chapter 15 (Natural Hazards) of the General Plan defines fire hazards as wildland or structural fires that occur in remote areas, have difficult access for fire vehicles, and/or contain potentially flammable vegetative communities.[411] The General Plan adopts CAL FIRE–designated FHSZs and other fire protection district hazardous areas relating to wildfire.

The following policies relate to wildfire hazards from the County of San Mateo General Plan.

15.30 Standards for Water Supply and Fire Flow for New Development

a. Require connection to a public water system or private water company or provision of an on-site water supply as a condition of approval for any new development proposal.

b. Determine the quantity of on-site water supply, fire flow requirements and spacing and installation of hydrants in accordance with the standards of the agency responsible for fire protection for the site proposed for development.

c. Consider the use of additional on-site fire protection devices including but not limited to the use of residential sprinkler systems and contracting the services of private alarm companies for development proposed in remote areas.

15.31 Standards for Road Access for Fire Protection Vehicles to Serve New Development

a. Consider the adequacy of access for fire protection vehicles during the review of any new development proposal.

[410] County of San Mateo. 2013. Local Coastal Program. Available at: https://www.smcgov.org/planning/local-coastal-program. Accessed May 20, 2023.
[411] San Mateo County. 2021a. County of San Mateo General Plan: Updated January 2013. Chapter revisions 2021. Available at: https://www.smcgov.org/planning/general-plan-policies. Accessed March 2023.

b. Determine the adequacy of access through evaluation of the length of dead-end roads, turning radius for fire vehicles, turnout requirements, road widths and shoulders, and other road improvement considerations for conformance with the standards of the agency responsible for fire protection for the site proposed for development.

c. To the maximum extent possible, design access for fire protection vehicles in a manner that will not result in unacceptable impacts on visual, recreational, and other valuable resources.

15.32 Street Signing

Support efforts to identify all roads, streets, and major public buildings in a manner so they are clearly visible to fire protection and other emergency vehicles.

15.33 Road Patterns

a. Ensure road patterns that facilitate access for fire protection vehicles and provide secondary access and emergency evacuation routes when reviewing proposals for new subdivisions.

b. Encourage the Department of Public Works to study existing road patterns that have access problems to determine the feasibility and costs of access improvements.

c. Encourage fire protection agencies to identify emergency access and evacuation routes for existing developed areas and to provide this information to area residents.

15.34 Vegetative Clearance Around Structures

a. Require clearance of flammable vegetation around structures as a condition of approval to new development in accordance with the requirements of the agency responsible for fire protection.

b. Conduct periodic inspections to ensure maintenance of required clearances.

15.35 Fire-Retardant Vegetation

Encourage the use of fire-retardant vegetation when reviewing new development proposals.

3.12.2.2.3 SAN MATEO COUNTY EMERGENCY OPERATIONS PLAN

The Emergency Operations Plan (EOP) establishes policies and procedures and assigns responsibilities to ensure the effective management of emergency operations within the San Mateo County Operational Area. The EOP provides information on the county emergency management structure of how and when the Emergency Operations Center staff is activated.

The overall objective of the EOP is to ensure the effective coordination of response forces and resources in preparing for and responding to situations associated with natural disasters, technological incidents, and national security emergencies. To carry out its responsibilities, the emergency management organization will complete the following tasks during an emergency/disaster:

- Maintain overall coordination/support of emergency response and recovery operations, including on-scene incident management as required.
- Coordinate and liaise with appropriate federal, state, and other local government agencies, as well as applicable segments of private sector entities and volunteer agencies. Establish priorities and resolve conflicting demands for support.
- Prepare and disseminate emergency information to alert, warn, and inform the public.
- Disseminate damage information and other essential data.

The EOP's goals are as follows:

- Provide effective life safety measures and reduce property loss and damage to the environment.
- Provide for the rapid resumption of impacted businesses and community services.
- Provide accurate documentation and records required for cost recovery efforts.

3.12.2.2.4 SAN MATEO COUNTY LOCAL HAZARD MITIGATION PLAN

Beginning in February 2021, a partnership of 36 local governments and special districts in San Mateo County began working together to update the San Mateo County Multijurisdictional Local Hazard Mitigation Plan (HMP).[412] This plan enables the jurisdictions to use pre- and post-disaster financial assistance to reduce the risk of natural hazards to people who live in San Mateo County.

The HMP identifies long-term and short-term policies, programs, projects, and other activities to alleviate death, injury, and property damage that can result from a disaster. The types of hazards identified and described throughout the HMP include earthquakes, dam failure, drought, wildfire, flooding, landslide, tsunami, and climate change. The HMP complies with requirements for hazard mitigation planning to maintain eligibility for funding under Federal Emergency Management Agency grant programs. The HMP also serves other purposes; it enhances public awareness, establishes a decision tool for management, promotes compliance with state and federal program requirements, enhances local policies for hazard mitigation, supports viability after a hazard event, and provides inter-jurisdictional coordination.[413]

3.12.2.2.5 CONNECT THE COASTSIDE

Connect the Coastside serves as the San Mateo County Midcoast Comprehensive Transportation Management Plan.[414] Connect the Coastside aims to improve safety and mobility for Midcoast residents, businesses, and visitors by recommending a suite of projects, policies, and programs to address current and future transportation conditions in the Midcoast Comprehensive Transportation Management Plan. The Midcoast area faces challenges in realizing community goals and vision for transportation. Climate change has accelerated sea level rise, coastal erosion, and the number and severity of emergencies like wildfires.

The following is an overview of different County departments and special projects related to emergency response and hazard mitigation planning:

- In the event of a disaster, the Department of Emergency Management coordinates countywide response and protection services. One of the missions of the Department of Emergency Management is to maintain and improve the Countywide EOP. This plan establishes policies and procedures and assigns responsibilities to keep residents safe during an emergency.
- During an emergency or disaster, law enforcement is responsible for evacuating and moving the public away from a hazard area. Representatives from law enforcement and public safety agencies were part of the Connect the Coastside Technical Advisory Committee that reviewed and helped refine the plan proposals.

[412] San Mateo County. 2021b. *2021 Multijurisdictional Local Hazard Mitigation Plan*. Prepared by Tetra Tech for County of San Mateo Department of Emergency Management. Available at: https://www.smcgov.org/media/53471/download?inline=. Accessed May 2023.
[413] San Mateo County, 2021b.
[414] San Mateo County. 2022. *Connect the Coastside*. Available at: https://www.smcgov.org/planning/connect-coastside. Accessed June 2023.

- In the event of an emergency, public safety agencies such as police and fire will be able to provide emergency information directly to people who have registered for the San Mateo County Alert service. These alerts may include life safety, fire, weather, accidents involving utilities or roadways, or disaster notifications. For example, the San Mateo County Alert service would be used to notify Coastside employees and citizens of available evacuation routes during an emergency.
- In March 2019, Supervisor Don Horsley allocated $75,000 of discretionary Measure K funds to launch the development of a countywide, standardized emergency evacuation zone project (Zonehaven). The goals of the project are to reduce the amount of time it takes to notify the public, create a common operating evacuation platform for all jurisdictions, share information, and help people safely and efficiently evacuate in case of an emergency. Since the project began, the CAL FIRE San Mateo Division has worked with every fire and law enforcement agency in San Mateo County to identify over 300 evacuation zones. The project includes a public webpage that shows a map of each evacuation zone and a software application that helps first responders call for evacuations using the standard zones. This will greatly reduce the time from when an evacuation is called to when the public is notified. Additionally, the application integrates with Waze and Google Maps, so as soon as a zone is closed people will be directed accordingly. Zonehaven was used to create an Evacuation Zone Map for the CZU Lightning Complex Fire in August 2020. The platform is available at https://community.zonehaven.com/.
- The County of San Mateo updated its HMP and will update the Safety Element of the General Plan. The County will be working with emergency service providers such as CAL FIRE, the Department of Emergency Management, and the new Flood and Sea Level Rise Resiliency District. These efforts will further evaluate hazard risks and identify safety measures for the Midcoast.

3.12.3 Thresholds of Significance

The determinations of significance of project impacts are based on applicable policies, regulations, goals, and guidelines defined by the California Environmental Quality Act (CEQA) and the County. Specifically, the project would be considered to have a significant effect on wildfires if the project is in or near state responsibility areas or lands classified as a very high FHSZ and effects exceed the significance criteria described below:

1. Substantially impair an adopted emergency response plan or emergency evacuation plan.
2. 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.
3. 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.
4. 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.

Each of these thresholds is discussed under Section 3.12.5, Impacts and Mitigation Measures, below.

3.12.4 Impact Assessment and Methodology

The analysis also considers existing regulations that apply to building design and construction, including the CBC. Through compliance with the existing codes and ordinances, the project would be required to demonstrate compatibility with the local wildfire conditions before issuing building permits.

3.12.5 Impacts and Mitigation Measures

Impact WF-1: Would the project substantially impair an adopted emergency response plan or emergency evacuation plan? (Less Than Significant)

The project site is not located in an SRA classified as a very high FHSZ. The site is in unincorporated San Mateo County. Local plans, such as the 2021 HMP and the Connect the Coastside Plan describe coordinated actions and recommendations to reduce wildfire risk and enhance emergency response; this includes the identification of alternative evacuation routes and establishment, as needed, for wildfire and other hazards. The County has not adopted an emergency evacuation plan.

Vehicular ingress/egress into the project site would be provided by a new 28-foot-wide single driveway from Carlos Street on the western boundary of the site, which exceeds the 20-foot road width requirement in the California Fire Code, Section 503.[415] In addition to the Carlos Street entrance, a 20-foot-wide emergency access route from Lincoln Street to the northeast corner of the project site would be constructed. As stated in Section 3.10, Transportation, the site would not result in inadequate emergency access.

The project site is located within 300 feet of Fire Station 44, ensuring sufficient emergency response if necessary. The Coastside FPD's response time goal is to respond within 6 minutes 59 seconds of receiving a call. In an email on May 11, 2023, the District Chief confirmed that response times are currently met throughout the district.[416]

An evacuation simulation of residents was run for the project as part of the Wildfire and Evacuation Technical Study.[417] Evacuation of residents during an emergency incident is a dynamic situation requiring coordination among different agencies and local residents and is recommended by authorities to reduce the risk of residents being impacted by hazards from natural and human-made disasters, such as fire, as well as secondary effects like road congestion. Evacuation recommendations (geographic area, timing, routes) by authorities are done in a manner to help minimize traffic blocks and aid emergency responders during incident operations. Evacuation processes also may be impacted in situations of increased population, such as during a large public event or high visitation seasons. Ladris Technologies' evacuation platform was used to model potential changes in evacuation times with the increase in residents from the project; it did not account for a potential increase in population due to employees or visitors in the analysis area.

All evacuation simulations were considered with a 1-hour maximum departure timeframe for residents, meaning all vehicles are entering roadways over a 1-hour window. Regional occupancy coverage was set to 100% for each simulation, indicating the maximum number of residents (vehicles) was modeled. All residents within Zonehaven's designated zone SMC-E029 (the zone where the project is located) were evacuated to the Coast Side Clinic located at 225 South Cabrillo Highway in Half Moon Bay. At the request of the County, this location was decided as the established shelter during emergency evacuation

[415] SWCA, 2023b.
[416] Personal communication between Coastside Fire Department Chief and Erica Rippe, dated May 11, 2023.
[417] SWCA, 2023b.

situations in the area.[418] Resident evacuation simulations indicate that the project would increase evacuation time by approximately 18% for median travel time and 1% for maximum travel time[419] (Table 3.12-1).

Table 3.12-1. Travel Times with and without Proposed Development

Project Status	Median Time (H, M)*	Percent Increase	Maximum Time (H, M)*	Percent Increase
No development	1H, 27M	–	2H, 22M	–
Development	1H, 43M	18.3%	2H, 23M	1%

Source: Ladris Technologies evacuation modeling software.

* H = hours; M = minutes

As the Midcoast area experiences further growth and development, the County anticipates that exposure to wildfire hazards will remain the same or decrease over time due to codes and regulations enforcement for new construction.[420] The project would follow all applicable local, state, and federal regulations designed to reduce wildfire risk for new developments, including defensible space measures, fire-resistant building materials and features, and emergency vehicle ingress/egress routes in compliance with California Fire Code Title 24.[421] Current programs—SMC Alert[422] and Coastside FPD's Community Connect[423]—are initiatives used to contact residents during an urgent or emergency situation as well as provide relevant information about residences to aid emergency responders during incident response. This may include instructions from County public safety officials to shelter in place during certain emergency situations when it is determined to be safer than evacuating. Local plans, such as the 2021 HMP and the Connect the Coastside Plan further describe coordinated actions and recommendations to reduce wildfire risk and enhance emergency response; this includes identification of alternative evacuation routes and establishment, as needed, for wildfire and other hazards. The project would not impair current adopted plans, including the San Mateo County EOP.

Impact WF-2: Would the project 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? (Less Than Significant)

The project is not located in an SRA classified as a very high FHSZ. Slopes on the project site range from 10% to 50%, and elevations range from the high point of 205 feet amsl on the east side of the project adjacent to Lincoln Street to the low point of 95 feet amsl at the northwestern boundary along 16th Street. The project site does not have any significant topographic features.

Project development would result in changes to vegetation on-site by removing grasses and trees and replacing an existing undeveloped area with 16 residential buildings, a community building, parking lots and access roads, landscaping, and other improvements (Figure 3.12-2). To minimize fire risk for future residents, the project incorporates measures such as development of an emergency access route from

[418] Teleconference call on April 27, 2023. Information from Steve Monowitz regarding anticipated location of emergency evacuation center.
[419] SWCA, 2023b.
[420] San Mateo County, 2021b.
[421] SWCA, 2023b.
[422] San Mateo County. 2023a. SMC Alert. Available at: https://www.smcgov.org/ceo/smc-alert. Accessed June 2023.
[423] Community Connect. 2023. Coastside Fire Protection District. Available at: https://www.communityconnect.io/info/ca-coastside. Accessed June 2023.

Lincoln Street to the northeast corner of the project site, fire flow water line, fire-resistant building materials, removal of approximately 295 trees,[424] and implementation of a 30-foot fire break area and a 100-foot reduced fuel zone surrounding the development as part of the project design pursuant to the HMP and Public Resource Code 4291.[425] The 30-foot fire break would be cleared of all flammable vegetation (except irrigated grass mowed to a vertical height of 4 inches or less), and the 100-foot reduced fuel zone would maintain vegetation (grass and shrubs) reduced to a maximum vertical height of 4 inches. The reduced fuel zone would ensure adequate spacing between any existing trees, which is a minimum of 10-foot spacing between the widest points of the crown of adjacent trees. Tree crowns would be limbed or trimmed to reach this spacing; some trees may also need to be removed. The 100-foot reduced fuel zone extends 70 feet beyond the 30-foot fire break area. Fire is an intrinsic part of the landscape, and during seasonal prevailing winds when fire season peaks, risks would be reduced to a less-than-significant level through the implementation of defensible space around the buildings, using ignition-resistant equipment, and the addition of domestic fire water lines on the project site.

In addition to the project's proposed design features to minimize fire risk, the minimal fire history, discontinuity of fuels across the landscape (both naturally and from human-made features), and the low-to-moderate predicted fire behavior (burn probability, rate of spread, and crown fire) in the project site and 1-mile buffer area indicate a low fire hazard.[426] While the proposed development could potentially increase human-caused ignitions, during construction and operation, modeled fire behavior does not indicate extreme fire behavior or fire spread; the project would not exacerbate wildfire risks and thus not expose future occupants to pollutant concentrations due to slope or prevailing winds.
The proposed project activities, such as the addition of paved roads and other nonburnable surfaces associated with project development, further fragment flammable fuels, preventing fire spread by acting as fuel breaks. Additionally, the suppression difficulty index shows a low difficulty in suppression efforts for the project site, indicating the likelihood of stopping fire progression, which would minimize fire size and adverse impacts to the environmental setting. Therefore, the impact is less than significant.

[424] HortScience | Bartlett Consulting. 2022. Arborist Report, Cypress Point. HortScience | Bartlett Consulting. July 1.
[425] San Mateo County, 2021b.
[426] SWCA, 2023b.

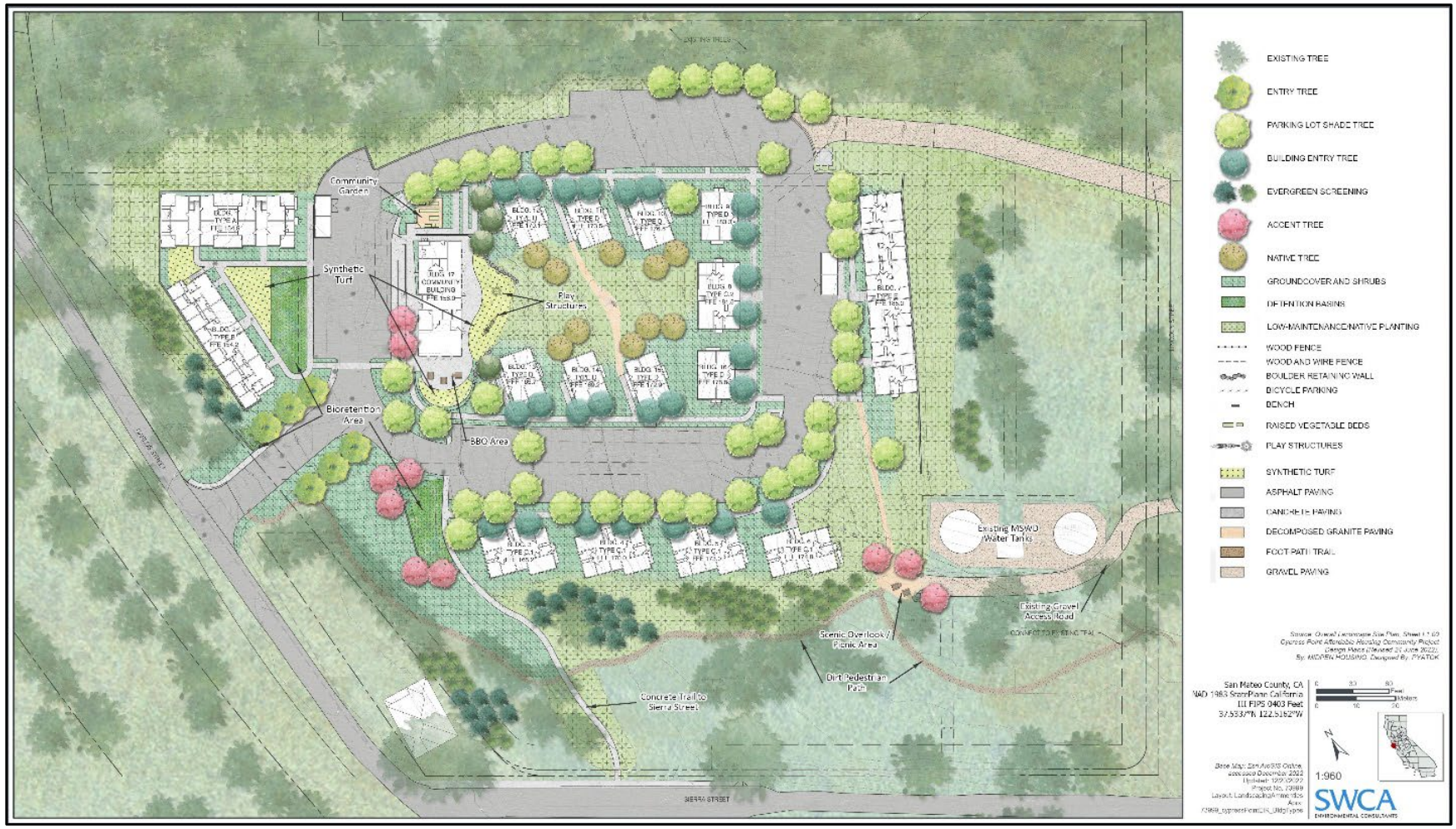


Figure 3.12-2. Landscaping amenities.

Impact WF-3: Would the project 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? (Less Than Significant)

The project is not located in an SRA classified as a very high FHSZ. Installation and maintenance of infrastructure are proposed to accommodate the project. These infrastructure characteristics include development of a new 28-foot-wide single driveway on Carlos Street on the western boundary of the project site and an emergency access route from Lincoln Street to the northeast corner of the project site. Public utility lines would be extended throughout the project site. A new, 10-foot-wide Pacific Gas and Electric easement would follow the driveway and parking areas, with individual electrical extensions to each building. Overhead utility lines in open areas and the scenic corridor would be trenched.

The project site contains easements for facilities operated by MWSD, including two water storage tanks with a height of 35 feet in the southeastern portion of the project site, a booster pump system, and distribution facilities within a fenced parcel of land adjacent to and west of the intersection of Lincoln Street and Buena Vista Street near the eastern boundary of the project site. The project would have water tanks capable of supplying a flow of 100 gallons of water per minute for 2 hours, as required by CFC, Section 507[427] and in compliance with the County General Plan.[428] The project would extend water lines to new project facilities for potable water and fire water supply, as well as for irrigation of landscaping. The proposed water line would extend from the existing MWSD tanks along the existing 10-foot right-of-way along the eastern and northern parts of the project site. New domestic water and fire water lines would be in the driveway loop and parking areas, with individual connections to each building. The fire water would connect to a flow meter in the northeast corner of the driveway loop. The project is considered an R-2 Residential Group occupancy and would have automatic fire sprinkler systems in compliance with CFC, Chapter 9.[429] Fire flows for the 63,374 square feet of residential buildings would be at least 1,500 gallons per minute at 20 pounds per square inch residual pressure for a minimum of 2 hours as required by Coastside FPD standards.[430] The fire supply systems meet the requirements listed in CFC, Chapter 5. Additionally, there are 31 fire hydrants located within a 1-mile buffer of the project site that could be used as additional water sources in the event of wildfire.

While the proposed development could potentially increase human-caused and electrical ignitions during construction and operation, increased water infrastructure and construction of roads (fuel breaks) would not exacerbate fire risk. Project construction does not require steep road cuts and would not be subject to landslide or soil failure that could hinder fire protection efforts or otherwise exacerbate fire risk. There would be no significant increase in fire risk from the associated utilities, and the project would have a less-than-significant impact.

[427] SWCA, 2023b.

[428] San Mateo County, 2021a.

[429] SWCA, 2023b.

[430] Coastside Fire Protection District. 2022. PLN:2022-00220 / Cypress Point Affordable Housing. Email to MP Moss Beach Associates. Email dated October 18, 2022.

Impact WF-4: Would the project 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? (Less Than Significant)

The project is not located in an SRA classified as a very high FHSZ. Given the relatively flat terrain and absence of significant topographic features in the vicinity, it is not likely the topography would exacerbate wildfire risks, and it is not likely a fire would result in landslides, post-fire slope instability, or drainage and debris flow issues.

Per Section 3.4, Geology and Soils, the project site is in an area where the cliff stability level is designated as high. The site-specific geotechnical investigation concluded the potential for landslides at the project site under both static and seismic conditions is low due to the lack of evidence of historical slope instability on-site, the high shear strength of the soil, weathered bedrock underlying the site, and the apparent absence of any significant seepage on the slope faces.[431] Compliance with the 2022 CBC and the recommendations contained in the geotechnical investigation would ensure the project does not impact post-fire slope stability at the project site or in the surrounding area. Therefore, impacts would be considered less than significant.

3.12.6 Cumulative Impacts

Impact C-WF-1: Would the impacts of the proposed project, in combination with other past, present, and reasonably foreseeable future projects, contribute to a cumulative impact related to wildfire? (Less Than Significant)

The project site is not located in an SRA classified as a very high FHSZ. The proposed Etheldore Apartments project is located nearby the project site (approximately 2,100 feet southeast). Ethledore Apartments is a project that includes the construction of an eight-unit, multiple-family housing development.[432] The Etheldore Apartments project is currently in the early planning and development stage of environmental review. No additional projects are currently planned to occur within 1 mile of the project site.

CAL FIRE reviewed preliminary project plans on October 18, 2022, and recommended incorporation of required development codes specific to access road dimensions, fire flow requirements, fire-resistant building materials, automatic sprinklers, alarm systems, vegetation management, and Knox Box access.[433] The project is adding new infrastructure and would meet all CBC and CFC requirements at the project site. Fire protection personnel at Coastside FPD Station 44 are located on Stetson Street in Moss Beach one block (approximately 300 feet) from the project site. As a result, the project impact of increased wildfire risk is localized to the project site and is unlikely to contribute toward a cumulative increase in wildfire risk. Thus, the project would have a less-than-significant cumulative impact.

[431] Rockridge Geotechnical, 2022.
[432] San Mateo County. 2023b. Etheldore Apartments. Available at: https://www.smcgov.org/planning/etheldore-apartments. Accessed May 12, 2023.
[433] Coastside Fire Protection District, 2022.

CHAPTER 4. ALTERNATIVES ANALYSIS

4.1 INTRODUCTION

Section 15126.6(a) of the California Environmental Quality Act (CEQA) requires an environmental impact report (EIR) to "describe a reasonable range of alternatives to a project, or to the location of a project, which could feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives." This chapter discusses a range of alternatives to the proposed Cypress Point project, including alternative designs, and a No Project Alternative. The State CEQA Guidelines provide direction for the discussion of alternatives to the project, including the following guidance:

- "An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives." (Section 15126.6(a))
- "Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly." (Section 15126.6(b))
- "The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison." (Section 15126.6(d))
- "The specific alternative of "no project" shall also be evaluated along with its impact. The purpose of describing and analyzing a no project alternative is to allow decisionmakers to compare the impacts of approving the project with the impacts of not approving the project." (Section 15126.6(e))
- "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." (Section 15126.6(e)(2))
- "The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project." (Section 15126.6(f))
- "Only [alternative] locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR." (Section 15126.6(f)(2)(A))

Given the CEQA mandates listed above, this section: 1) describes the range of reasonable alternatives to the project, including the No Project Alternative; 2) examines and evaluates resource issue areas where significant adverse environmental effects have been identified and compares the impacts of the alternatives to those of the project; and 3) identifies the Environmentally Superior Alternative.

4.2 ALTERNATIVES SELECTION

In accordance with the State CEQA Guidelines, appropriate alternatives for EIR analysis are those that meet most of the basic project objectives and avoid or substantially lessen any of the significant environmental effects of the project. Consequently, this section reviews the objectives that were identified for the project and any significant unavoidable environmental effects.

4.2.1 Project Objectives

As described in Chapter 2, Project Description, MidPen Housing Corporation (MidPen) seeks to achieve the following objectives by undertaking the proposed project to provide affordable housing on the coastal portion of San Mateo County:

1. Provide a significant number of low-income affordable housing units in a vibrant, safe, well-designed community that respects the coastal character of the region, consistent with the San Mateo County Housing Element Adequate Site Inventory.
2. Provide affordable housing in the region at cost-effective densities that are competitive for financing.
3. Address housing needs of households, families, and workers in the Midcoast and surrounding region.
4. Provide housing for a diverse range of low-income workers and families.
5. Improve the jobs/housing balance and jobs/housing fit in the region by providing affordable dwelling units near coastal jobs.
6. Provide informal recreational opportunities for residents in the region and the general public by providing access to a trail on undeveloped portions of the project site.
7. Be consistent with the character of the surrounding neighborhood by adhering to the existing development guidelines to the extent feasible.

4.2.2 Significant Impacts Resulting from the Proposed Project

Alternatives to be considered under CEQA are those that would avoid or substantially lessen one or more of the significant environmental effects identified during evaluation of the project. For this project, all the adverse environmental impacts described in Chapter 3, Environmental Impacts Analysis, were judged to be less than significant, less than significant with mitigation, or significant and unavoidable.

The project's significant unavoidable impacts are related to the following transportation impacts:

- **Impact TR-2:** The proposed project would exceed the County vehicle miles traveled (VMT) thresholds and therefore would not be consistent with State CEQA Guidelines Section 15064.3(b), requiring implementation of MM-TR-2: Implement C/CAG TDM Checklist Measure M4. Impacts would remain significant unavoidable with mitigation.
- **Impact TR-4:** Project-related pedestrians and bicyclists would be exposed to roadway-related hazards at the State Route 1 and Carlos Street intersection due to a geometric design feature (e.g., sharp curves or dangerous intersections), requiring implementation of TR-4b: Additional Transportation Demand Management Measures. Impacts would remain significant unavoidable.

Impacts that can be mitigated to less than significant are related to the following topics: air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, and noise and vibration. Impacts of the project that can be mitigated with the incorporation of mitigation measures identified in this EIR are primarily construction-related and would likely occur in varying degrees with any development of the project site. A detailed summary of impacts and associated mitigation measures identified for the project are provided in Table 4.2-1.

Table 4.2-1. Summary of Potentially Significant and Significant Impacts with Identified Mitigation Measures

Impact	Mitigations	Level of Significance after Implementation of Mitigation	No Project Alternative	Reduced Density Alternative	South Moss Beach Alternative	El Granada Alternative
AQ-2: Would the project 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?	AQ-2a Implement Bay Area Air Quality Management District BMPs	Less than significant (LTS) with Mitigation	No Impact	Similar to proposed project, LTS with Mitigation	Similar to proposed project, LTS with Mitigation	Similar to proposed project, LTS with Mitigation
	AQ-2b Use Low Diesel Particulate Matter Exhaust Construction Equipment	LTS with Mitigation	No Impact	Similar to proposed project, LTS with Mitigation	Similar to proposed project, LTS with Mitigation	Similar to proposed project, LTS with Mitigation
BIO-1: Would the project have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	BIO-1: General Biological Protections	LTS with Mitigation	No Impact	Similar to proposed project, LTS with Mitigation	Greater than proposed project, LTS with Mitigation	Similar to proposed project, LTS with Mitigation
BIO-3: Would the project 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?	BIO-3 Implement the following BMPs to prevent erosion and sedimentation to Montara Creek	LTS with Mitigation	No Impact	Similar to proposed project, LTS with Mitigation	Greater than proposed project, LTS with Mitigation	Similar to proposed project, LTS with Mitigation
BIO-4: Would the project 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?	BIO-4 Conduct Nesting Bird Surveys	LTS with Mitigation	No Impact	Similar to proposed project, LTS with Mitigation	Similar to but greater than proposed project, LTS with Mitigation	Similar to proposed project, LTS with Mitigation
BIO-5: Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (including the County Heritage and Significant Tree Ordinances)?	BIO-5 Tree Replacement and Maintenance Plan	LTS with Mitigation	No Impact	Similar to proposed project, LTS with Mitigation	Similar to proposed project, LTS with Mitigation	Similar to proposed project, LTS with Mitigation

Impact	Mitigations	Level of Significance after Implementation of Mitigation	No Project Alternative	Reduced Density Alternative	South Moss Beach Alternative	El Granada Alternative
CR- Initial Study Impact 2.5.b Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	CR-1 Additional Site Excavation	LTS with Mitigation	No Impact	Similar to proposed project, LTS with Mitigation	Similar to proposed project, LTS with Mitigation	Similar to proposed project, LTS with Mitigation
	CR-2 Archaeological Monitoring	LTS with Mitigation	No Impact	Similar to proposed project, LTS with Mitigation	Similar to proposed project, LTS with Mitigation	Similar to proposed project, LTS with Mitigation
	CR-3 Unanticipated Findings during Construction	LTS with Mitigation	No Impact	Similar to proposed project, LTS with Mitigation	Similar to proposed project, LTS with Mitigation	Similar to proposed project, LTS with Mitigation
CR- Initial Study Impact 2.5.c Would the project disturb any human remains, including those interred outside of dedicated cemeteries?	CR-4 Procedures for Discovery and Treatment of Human Remains.	LTS with Mitigation	No Impact	Similar to proposed project, LTS with Mitigation	Similar to proposed project, LTS with Mitigation	Similar to proposed project, LTS with Mitigation
GEO-6: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	GEO-1 Accidental Discovery of Paleontological Resources	LTS with Mitigation	No Impact	Similar to proposed project, LTS with Mitigation	Similar to but greater than proposed project, LTS with Mitigation	Similar but greater than proposed project, LTS with Mitigation

Impact	Mitigations	Level of Significance after Implementation of Mitigation	No Project Alternative	Reduced Density Alternative	South Moss Beach Alternative	El Granada Alternative
HAZ-1: Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	HAZ-1a Preconstruction Planning and Notification	LTS with Mitigation	No Impact	Similar to proposed project, LTS with Mitigation	Similar to but less than proposed project, LTS with Mitigation	Similar to but less than proposed project, LTS with Mitigation
	HAZ-1b Implement Site-Specific Health and Safety Worker Requirements	LTS with Mitigation	No Impact	Similar to proposed project, LTS with Mitigation	Similar to but less than proposed project, LTS with Mitigation	Similar to but less than proposed project, LTS with Mitigation
	HAZ-1c Construction Best Management Practices	LTS with Mitigation	No Impact	Similar to proposed project, LTS with Mitigation	Similar to but less than proposed project, LTS with Mitigation	Similar to but less than proposed project, LTS with Mitigation
	HAZ-1d Dust Control Measures	LTS with Mitigation	No Impact	Similar to proposed project, LTS with Mitigation	Similar to but less than proposed project, LTS with Mitigation	Similar to but less than proposed project, LTS with Mitigation
	HAZ-1e Retain a Hazardous Materials Specialist	LTS with Mitigation	No Impact	Similar to proposed project, LTS with Mitigation	Similar to but less than proposed project, LTS with Mitigation	Similar to but less than proposed project, LTS with Mitigation
N-1: Would the project generate 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?	N-1 Implement Construction Noise Best Management Practices	LTS with Mitigation	No Impact	Similar to proposed project, LTS with Mitigation	Greater than proposed project, LTS with Mitigation	Similar to proposed project, LTS with Mitigation
N-2: Would the project generate excessive groundborne vibration or groundborne noise levels?	N-2 Implement Construction Vibration Best Management Practices	LTS with Mitigation	No Impact	Similar to proposed project, LTS with Mitigation	Greater than proposed project, LTS with Mitigation	Similar to proposed project, LTS with Mitigation
TR-2: The proposed project would exceed the County VMT thresholds and therefore would not be consistent with State CEQA Guidelines Section 15064.3(b).	TR-2: Implement C/CAG TDM Checklist Measure M4	Significant and unavoidable with Mitigation (SUM)	No Impact	Similar to proposed project, SUM	Similar to proposed project, SUM	Similar to proposed project, SUM

Impact	Mitigations	Level of Significance after Implementation of Mitigation	No Project Alternative	Reduced Density Alternative	South Moss Beach Alternative	El Granada Alternative
TR-4: Project-related pedestrians and bicyclists would be exposed to roadway-related hazards at the State Route 1 and Carlos Street intersection due to a geometric design feature (e.g., sharp curves or dangerous intersections).	TR-4b: Augment C/CAG TDM Checklist Measure M3	SUM	No Impact	Similar to proposed project, SUM	Similar to but less than proposed project, LTS	Similar to but less than proposed project, LTS
	TR-4c: Implement Additional TDM Measures	SUM	No Impact	Similar to proposed project, SUM	Similar to but less than proposed project, LTS	Similar to but less than proposed project, LTS
Impact C-TR-2: The proposed project, in combination with other past, present, and reasonably foreseeable future projects, would result in a cumulatively considerable transportation impact related to VMT and consistency with State CEQA Guidelines Section 15064.3(b). (Significant and Unavoidable with Mitigation)	C-TR-2: Implement MM-TR-2, MM-TR-3, MM-TR-4b and MM-TR-4c	SUM	No Impact	Similar to proposed project, SUM	Similar to proposed project, SUM	Similar to proposed project, SUM
Impact C-TR-3: The proposed project, in combination with other past, present, and reasonably foreseeable future projects, would result in a cumulatively considerable transportation impact related to hazards. (Significant and Unavoidable with Mitigation)	C-TR-3: Implement MM-TR-2, MM-TR-3, MM-TR-4b and MM-TR-4c.	SUM	No Impact	Similar to proposed project, SUM	Less than proposed project, LTS with Mitigation	Less than proposed project, LTS with Mitigation

4.2.3 Alternatives Development and Analysis Process

In defining the feasibility of alternatives, the State CEQA Guidelines state: "Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site." If an alternative was found to be infeasible, as defined above, then it was dropped from further consideration in this analysis.

In addition, State CEQA Guidelines Section 15126.6 states that alternatives should "…attain most of the basic objectives of the project…". As further explained by the California Supreme Court:

> "[A]n EIR should not exclude an alternative from detailed consideration merely because it 'would impede to some degree the attainment of the project objectives.' But an EIR need not study in detail an alternative that is infeasible or that the lead agency has reasonably determined cannot achieve the project's underlying fundamental purpose . . .
>
> Although a lead agency may not give a project's purpose an artificially narrow definition, a lead agency may structure its EIR alternative analysis around a reasonable definition of underlying purpose and need not study alternatives that cannot achieve that basic goal." (In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings, 43 Cal.4th 1143, 1165-1166 [2008]).

CEQA also requires that the discussion of alternatives focus on alternatives to the project or its location that can avoid or substantially lessen any significant effects of the project. The key question and first step in the analysis is whether any of the project's significant effects would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any of the project's significant effects need to be considered for inclusion in the EIR (State CEQA Guidelines Section 15126[5][B][1]). An alternative site need not be considered when implementation is "remote and speculative," such as when the alternative site is beyond the control of a project applicant.

The alternatives selected for further analysis have been evaluated against the project to provide a comparison of environmental effects and to identify the Environmentally Superior Alternative. Note that the significance of impacts associated with the project, and the determination of impacts presented in this section for comparative purposes, are based on the respective identified changes in conditions relative to the environmental baseline (as described in Chapter 3, Environmental Impacts Analysis).

The alternatives analysis includes a preliminary alternatives screening process and alternative project evaluation process, as described below.

4.2.4 Preliminary Alternatives Screening Process

The alternatives analysis begins with the screening and evaluation of a list of preliminary alternatives to determine which alternatives will be selected for further analysis in the EIR.

Each of the identified alternatives was preliminarily assessed to determine which of the alternatives met the requirements of a viable alternative under CEQA by considering whether the alternative: 1) would be feasible; 2) would avoid or substantially lessen any of the significant effects of the project; and 3) could feasibly attain most of the basic objectives of the project. Those alternatives that met these three criteria were carried forward for a more detailed review in the EIR.

Alternatives carried forward for analysis in this EIR include a reduced density alternative, two designated affordable housing sites in the LCP, and the No Project Alternative. Given that the County of San Mateo (County) is the lead agency for this project, exploration of additional alternatives that do not include affordable housing land-use designations would not meet the basic objectives of the project.

4.2.5 Alternative Project Evaluation Process

The environmental impacts of the alternatives carried forward for review in the EIR, including the No Project Alternative, were then compared against the impacts of the project for each environmental issue area discussed in Chapter 3, Environmental Impacts Analysis, of this EIR. A significance determination was made about each alternative for each issue area, and a basis for that determination has been provided. The determination of comparative impacts used the following criteria:

- **No Impact:** The significance criteria do not apply, or no impact would result.
- **Similar:** Impacts would be identical or would be of the same general extent and severity as the impacts associated with the project; therefore, the significance determination would be the same.
- **Greater:** New potentially significant impacts or a substantial increase in the severity of the impacts associated with the project would occur; therefore, the significance determination would be greater.
- **Less:** Potentially significant impacts would be avoided or a substantial reduction in the severity of the impacts associated with the project would occur; therefore, the significance determination would be reduced.

As a result of this evaluation and comparison of potentially significant environmental impacts, an Environmentally Superior Alternative has been identified.

4.3 ALTERNATIVES CONSIDERED AND REJECTED

State CEQA Guidelines Section 15126.6(c) requires that an EIR disclose potential alternatives that were considered and eliminated along with a brief explanation of the reason for elimination. Factors used to eliminate alternatives from detailed consideration include: 1) failure to meet most of the basic project objectives, 2) infeasibility, and/or 3) inability to avoid significant environmental impacts.

The following two alternatives were considered but eliminated from further analysis, as described below.

4.3.1 Development of Entire Site Alternative

Under the Development of Entire Site Alternative, the same number of housing units would be developed as under the proposed project, but rather than preserving part of the project site as open space, the entire site would be developed. The overall density of the project would be the same as the proposed project. However, instead of the residences being concentrated in one portion of the site, with the remainder of the site being left as open space, the proposed 71 units would cover the entire site, so the overall density of the developed area would be lower. The units would be developed as attached, single-family homes, with each structure containing a single home. The only open space that would remain in this alternative would be the landscaped areas within the development. The unit count, bedroom sizes, amenities (except for open space), and parking would be the same as under the proposed project.

The Development of Entire Site Alternative was considered and rejected because while it would meet nearly all the project sponsor's objectives, excluding the objective for providing recreational opportunities on-site by preserving open space, it would result in technical challenges for developing the steep northern

slopes of the project site, likely resulting in challenges in achieving compliance with the American with Disabilities Act. Further development on steep slope areas would increase the area of land disturbance and would not be consistent with Local Coastal Program (LCP) Policy 9.18 which prohibits development on slopes of greater than 30 percent unless no alternative exists. This alternative would not avoid the significant and unavoidable VMT impact because of location and would not avoid the pedestrian safety impact because of existing conditions near the site. Therefore, the Development of Entire Site Alternative is considered and rejected from further analysis in this EIR.

4.3.2 Maximum Density Development Alternative

This alternative would result in development of 148 units, consistent with the maximum number of units that would be allowed under the prior Planned Unit Development District No. 124 (PUD-124) zoning. Under the Maximum Density Development Alternative, the project parcel would be developed as a mixture of market-rate and affordable condominium units, in accordance with the prior PUD-124 zoning. Because the existing zoning for the parcel was developed and approved for the proposed Farallon Vista housing project, this option/alternative assumes that the parcel would be developed according to those entitlements, which remain in place and are the current zoning for the project site.[434]

This alternative would result in the construction of 148 housing units on the parcel, including 52 affordable units and 96 market-rate units. Of the 52 affordable units, 31 would be designated as low-income and 21 would be designated as moderate-income. The market-rate units would include 60 townhouses with two bedrooms and two and a half bathrooms and 36 single-level units with two bedrooms and two bathrooms. The low- and moderate-income units would all be single-level units with two bedrooms and one bathroom. This development would house approximately 444 residents. The Maximum Density Development Alternative would be developed with a density of 13.4 units per acre. This development would be consistent with the General Plan designation of Medium-High Density Residential but would conflict with the current Planned Unit Development District 140 (PUD-140) zoning.

Site amenities include:

- Six tot lots, three barbecue areas, decks, gazebos, an exercise course/jogging trail, and some, but comparatively limited, open space areas compared to the proposed project.
- In total, 302 parking spaces would be provided, including 244 covered carports and 58 uncovered spaces.
- Approximately 46% of the parcel would be developed, and 54% would remain open space.
- This alternative would require development on the steep portions of the project site, which may conflict with the Americans with Disabilities Act and potentially LCP Policy 9.18, which prohibits development on slopes of greater than 30%.
- The LCP includes policies that reserve water and wastewater treatment capacity for affordable housing, this alternative would also include 96 market-rate housing units, and the availability of water for those units is not reserved. Information is not available at this time regarding whether sufficient water and sewer capacity is available for this alternative.

[434] On April 21, 2021, a lawsuit was filed challenging the Coastal Commission staff report under CEQA, the LCP amendment under the Coastal Act, and the hearing process under the Code of Civil Procedure Section 1094.5(b). The lawsuit was dismissed entirely on April 21, 2023. Evidence supporting the challenge was not provided, and the court found that the commission complied with CEQA and the Coastal Act and did not deprive the petitioner of a fair hearing. *(Superior Court of California, 2023. County of San Francisco. Order Denying Verified Petition for Writ of Mandate Case No. CPF-21-517430. April 21, 2023.)*

In total, the Maximum Density Development would create only 52 affordable units, which is fewer than the proposed project, which would not meet County Regional Housing Needs Allocation goals and would only partially meet Objective 1. All other project objectives would be only partially met. Specifically, this alternative requires development of most of the project parcel and would not offer public open space and therefore, thus would not meet Objective 6. Therefore, the Maximum Density Development Alternative is considered and rejected from further analysis in this EIR.

4.4 ALTERNATIVES IMPACTS ANALYSIS

The following alternatives (i.e., No Project Alternative, South Moss Beach Alternative, and El Granada Alternative) have been selected for further analysis and have been evaluated against the project to provide a comparison of environmental effects and to identify the Environmentally Superior Alternative. Note that the significance of impacts associated with the project, and the determination of impacts presented in this section for comparative purposes, are based on the respective identified changes in conditions relative to the environmental baseline (as described in Chapter 3, Environmental Impacts Analysis). MidPen does not currently own any properties in the greater vicinity of the project site, including either of the off-site alternative locations. The analysis in this chapter assumes that MidPen would be able to obtain ownership for the intent of constructing affordable housing.

4.4.1 Alternative 1: No Project Alternative

Section 15126.6(e) of the State CEQA Guidelines requires analysis of the No Project Alternative. In accordance with the State CEQA Guidelines, the No Project Alternative for a development project on an identifiable property consists of the circumstance under which the project does not proceed as provided by Section 15126.6(e)(3)(B) of the State CEQA Guidelines. Section 15126.6(e)(3)(B) provides that, "In certain instances, the no project alternative means 'no build' wherein the existing environmental setting is maintained." As stated in Section 15126.6(e)(2), "The 'no project' analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services."

In the No Project Alternative, implementation of the project would not occur, and any future buildout of the project site would need to be consistent with the allowable uses and density under existing PUD zoning. The project would not meet any of the objectives, as noted below in Table 4.4-1. Under the No Project Alternative, the project site would remain undeveloped. Current safety and transportation-related constraints at the project site and on the immediate road network would remain unchanged. Under the existing General Plan zoning of Medium-High Density Residential, the project site could ultimately accommodate the development of up to 191 residential units (8.8–17.4 units per acre); any project would be subject to a similar environmental review as the proposed project.

Table 4.4-1. Attainment of Project Objectives: Alternative 1, No Project Alternative

Project Objective	Alternative's Consistency with Project Objective
1. Provide a significant number of low-income affordable housing units in a vibrant, safe, well-designed community that respects the coastal character of the region, consistent with the San Mateo County Housing Element Adequate Site Inventory.	No. This alternative assumes the site would remain in its current condition.
2. Provide affordable housing in the region at cost-effective densities that are competitive for financing.	No. This alternative assumes the site would remain in its current condition.

Project Objective	Alternative's Consistency with Project Objective
3. Address housing needs of households, families, and workers in the Midcoast and surrounding region.	No. This alternative assumes the site would remain in its current condition.
4. Provide housing for a diverse range of low-income workers and families.	No. This alternative assumes the site would remain in its current condition.
5. Improve the jobs/housing balance and jobs/housing fit in the region by providing affordable dwelling units near coastal jobs.	No. This alternative assumes the site would remain in its current condition.
6. Provide informal recreational opportunities for residents in the region and the general public by providing access to a trail on undeveloped portions of the site.	Partial. This alternative assumes the site would remain in its current condition.
7. Be consistent with the character of the surrounding neighborhood by adhering to the existing development guidelines to the extent feasible.	No. This alternative assumes the site would remain in its current condition.

4.4.1.1 Comparison of Significant Effects of Alternative 1: No Project Alternative to the Project

This analysis assumes that the existing on-site foundations would remain and the existing physical conditions, as described in detail for each environmental topic in Chapter 3, Environmental Impacts Analysis, would remain the same.

If the No Project Alternative were implemented, none of the impacts associated with the Proposed Project, as described in Chapter 3, would occur. Additionally, none of the sponsor-initiated sustainability measures and on-site and off-site developments would occur, including the proposed Carlos Street intersection improvements. The No Project Alternative would not preclude future development of the project site with a range of land uses that are principally permitted at the project site; any future project would be subject to similar environmental review as the proposed project. Development and growth would continue within the vicinity of the project site as nearby projects are approved, constructed, and occupied. These projects would contribute to cumulative impacts in the vicinity, but under the No Project Alternative, the existing land-use activity on the project site would continue and would therefore not contribute to these cumulative impacts beyond existing levels.

AESTHETICS

In the No Project Alternative, the project would not be implemented, and development of the project site would not occur. Like the project, this alternative would not have a substantial effect on a scenic vista or damage scenic resources within a State Scenic Highway, as no such resources have been identified within the vicinity of the project site and no development would occur on-site. The project site would remain in its undeveloped condition and no change to the existing visual character of the project site and surroundings would occur. This alternative would also avoid adding new sources of light and glare on the project site. Therefore, impacts of the No Project Alternative related to aesthetics would have *no impact* in comparison to the project.

AIR QUALITY

This alternative would not result in an increase in criteria pollutant emissions or odors because no construction would occur, and no new operational sources would be created. This alternative would avoid the project's less-than-significant impact related to exposing nearby residential development to air quality impacts from the use of off-road diesel equipment during project construction. All air quality and odor impacts associated with the project would be avoided under this alternative.

Therefore, impacts of the No Project Alternative related to air quality emissions would have *no impact* in comparison to the project.

BIOLOGICAL RESOURCES

In the No Project Alternative, no grading or construction activities would take place on the project site and all existing vegetation and mature trees would remain undisturbed. This alternative would avoid potentially significant direct and indirect impacts related to construction activities to special-status wildlife species identified in Section 3.3, Biological Resources, including the California red-legged frog (*Rana draytonii*), nesting migratory birds and raptors, or the Choris' popcorn flower (*Plagiobothrys chorisianus* var. *chorisianus*). All existing trees would remain on the project site and support the local policies and ordinances protecting biological resources, specifically considerations under the County's Significant Tree Ordinance.

As discussed in the Initial Study, the project site is located within a habitat conservation plan (HCP) specific to Pacific Gas and Electric Company's (PG&E's) Bay Area Operations and Maintenance (O&M) activities.[435] Because Alternative 1 does not include construction activities, impacts would be *less* in comparison to the proposed project.

Therefore, impacts of the No Project Alternative related to biological resources would have *no impact* in comparison to the project.

GEOLOGY AND SOILS

The No Project Alternative would not introduce new habitable buildings and structures to the project site that would be susceptible to risk involving seismic-related or other ground-failure events. This alternative would not require any ground-disturbing activities that could increase erosion and loss of topsoil at the project site. In addition, this alternative would not result in impacts to paleontological resources because no earthwork activities would occur that would cut into the geologic units within which fossils are buried and physically destroy the fossil remains. Compliance with the California Building Code (CBC) and implementation of mitigation identified for the project would not be required to reduce the significance of potential impacts related to geology and soils.

As discussed in the Initial Study, there would be no impacts related to septic tanks. Additionally, Alternative 1 does not include construction activities nor use of septic tanks, there would be *no impacts* and *similar* in comparison to the project.

Therefore, impacts of the No Project Alternative related to geology and soils impacts would have *no impact* in comparison to the project.

GREENHOUSE GAS AND CLIMATE CHANGE

The No Project Alternative would not generate greenhouse gas (GHG) emissions as no construction would occur, and no permanent sources of emissions would be established. Therefore, impacts of the No Project Alternative related to GHG emissions and climate change would be *no impact* in comparison to the project.

[435] USFWS. 2017. Habitat Conservation Plan for Pacific Gas and Electric Company's San Francisco Bay Area Operations and Maintenance. 82 FR 15063 no. 2017-05856. Available at: https://www.federalregister.gov/documents/2017/03/24/2017-05856/habitat-conservation-plan-for-pacific-gas-and-electric-companys-san-francisco-bay-area-operations. Accessed January 31, 2023.

HAZARDS AND HAZARDOUS MATERIALS

Under the No Project Alternative, no physical changes to the project site would occur. The utility extensions proposed under the project would not occur. As such, the use of construction-related hazardous materials during project construction would not occur and compliance with existing policies to reduce the risk related to the use of hazardous materials would not be required. Ground disturbance would not occur, which would eliminate the potential to release lead-impacted soil or other soil contaminants, and mitigation would not be required to reduce the significance of these potential impacts.

As discussed in the initial study, the project site is not located within a quarter mile of a school nor within an airport land-use zone. Therefore, impacts of the No Project Alternative related to hazards and hazardous materials impacts would be *no impact* in comparison to the proposed project.

HYDROLOGY AND WATER QUALITY

Under the No Project Alternative, development of the project site would not occur. As a result, no physical changes to the existing drainage conditions at the site would occur and no new impervious surfaces would be introduced, nor would the existing on-site concrete slabs be removed. As such, the potential for substantial increases in soil erosion and sediment transport affecting water quality from runoff during construction and project operation would not occur. In addition, no new source pollutants or non-stormwater discharges that could adversely impact water quality would occur. Compliance with existing state water quality protection regulations as well as the project-specific mitigation measures would not be required to reduce the significance of potential impacts related to hydrology and water quality.

Therefore, impacts of the No Project Alternative related to hydrology and water quality would be *no impact* in comparison to the proposed project.

LAND USE AND PLANNING

Similar to the project, the No Project Alternative would not result in new features that could physically divide an established community. However, since no physical changes to the project site would occur, this alternative would be inconsistent with the LCP, which would not match land-use zoning.

Overall, impacts of the No Project Alternative related to land use and planning would be *similar* in comparison to the project.

NOISE

The No Project Alternative would not generate noise as no construction would occur, and no permanent sources of noise would be established. As stated in the Initial Study, the project site is not located in an airport zone and would not pose an impact to people residing on-site. Therefore, impacts of the No Project Alternative related to noise would be *no impact* in comparison to the proposed project.

TRANSPORTATION

Under the No Project Alternative, no new development would be introduced on the project site and no new traffic or changes to the local roadway network would be introduced. Traffic conditions would remain as they are under existing conditions, and current safety and transportation-related constraints at the project site and on the immediate road network would remain unchanged. This alternative would avoid the project's significant unavoidable impact related to VMT, traffic hazards at Carlos Street, and pedestrian safety concerns associated with crossing of State Route 1. Because the No Project Alternative

would not result in any significant transportation impacts, impacts related to transportation would be *less* in comparison to impacts associated with the project.

UTILITIES AND SERVICE SYSTEMS

Under the No Project Alternative, no new development would be introduced on the project site and there would be no need for the construction of new and expanded utility infrastructure to serve the project, including potable water, wastewater, stormwater, and other utilities, such as natural gas, electricity, telephone, and cable/data service. This alternative would not require infrastructure improvements beyond the boundary of the project site, as proposed by the project, and therefore impacts associated with construction and installment of utility infrastructure both on- and off-site would not occur.

Overall, impacts of the No Project Alternative related to utilities and service systems would be *no impact* in comparison to impacts associated with the project.

WILDFIRE

In the No Project Alternative, no tree removal or construction activities would take place on the project site and no residents with the potential to start fires would be introduced to the project site. All existing vegetation and mature trees would remain undisturbed. This alternative would not include the development of defensible space and would not slow response time in the case of an emergency.

Therefore, impacts of the No Project Alternative related to wildfires would be *similar* in comparison to the project.

INITIAL STUDY TOPICS

The County of San Mateo Planning and Building Department (Planning Department) distributed a Notice of Preparation (NOP) of an EIR and Notice of Public Scoping Meeting on December 9, 2022, announcing its intent to prepare an EIR, including an initial study, and to solicit comments from the public about the scope of this EIR (the NOP is presented in Appendix A). The Initial Study (Appendix B) determined that project-specific and cumulative impacts for certain resource topics would not require additional analysis in the EIR because the proposed project or project variants would have no impact, less-than-significant impact, or less-than-significant with mitigation incorporated impacts.

- Agriculture and Forestry Resources: The proposed project site contains no land that the California Department of Conservation (CDOC) designates as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.[436,437] Impacts would be *similar* to the proposed project.
- Cultural Resources: Because Alternative 1 does not include construction activities, Mitigation Measure (MM)-CR-1 through MM-CR-4 would not apply. Impacts would be *decreased* in comparison to the project.
- Energy: Because Alternative 1 does not include construction or operation activities that could use energy, impacts would be *decreased* in comparison to the project.
- Mineral Resources: Alternative 1 does not include construction activities; therefore, impacts would be *less* in comparison to the project.

[436] California Department of Conservation (CDOC). 2019. Important Farmland Categories. Available at: https://www.conservation.ca.gov/dlrp/fmmp/Pages/Important-Farmland-Categories.aspx. Accessed January 20, 2023.
[437] CDOC. 2012. DOC Maps: Agriculture. Available at: https://maps.conservation.ca.gov/agriculture/. Accessed January 20, 2023.

- Population and Housing: Alternative 1 does not include construction activities; therefore, impacts would be *less* in comparison to the project.
- Public Services: Because Alternative 1 does not include construction resulting in housing, impacts would be *less* in comparison to the project.
- Recreation: Because Alternative 1 does not include construction resulting in housing, impacts would be *less* in comparison to the project.
- Tribal Cultural Resources: Because Alternative 1 does not include construction activities, MM-CR-1 through MM-CR-4 would not apply. Impacts would be *less* in comparison to the project.

Alternative 1 would result in no project development. As a result, the construction and operational impacts for each of the environmental topics noted in Appendix B: Initial Study, there would be no impacts in comparison to the proposed project.

4.4.2 Alternative 2: Reduced Residential Units

Under Alternative 2: Reduced Residential Units, the project site would be developed with roughly half the number of units proposed for the Cypress Point project, totaling approximately 31 units. This number represents the number of low-income units under the existing zoning for both the LCP and General Plan.[438] All units would be designed for low-income renters, except for the manager's unit. The design would be similar to the project but result in smaller, single-story buildings. The overall area of disturbance would be similar to the proposed project.

The Reduced Residential Units Alternative would result in an overall density of 2.8 units per acre, and would include the following:

- In total, 31 apartment units would cover a similar portion of the project site as under the proposed project, including seven units with one bedroom, 16 units with two bedrooms, and eight units with three bedrooms, providing housing for approximately 93 total residents. All units would be designed for low-income renters, except for the manager's unit.
- In total, 71 parking spaces would be provided.
- Similar amenities and landscaping as the proposed project would be provided, a similar level of undeveloped open space would remain undisturbed compared to the proposed project.
- The existing LCP and General Plan land-use designations would be amended to allow for lower-density development.
- Steep portions of the project site would be avoided, consistent with state and local policies. This is similar to the proposed project.

The Reduced Residential Units Alternative would achieve some of the project objectives (Table 4.4-2). This alternative would only create 30 units of affordable housing, and a manager's unit, which would only partially meet Objectives 1 through 4, and would not meet County Regional Housing Needs Allocation goals. The alternative would partially meet County, State, or Proponent's goals.

[438] County of San Mateo. 2023. San Mateo County Housing Element Update 2023-2031. Available at: https://www.smcgov.org/planning/san-mateo-county-housing-element-update-2023-2031. Accessed June 2023.

Table 4.4-2. Attainment of Project Objectives: Alternative 2, Reduced Residential Units Alternative

Project Objective	Alternative's Consistency with Project Objective
1. Provide a significant number of low-income affordable housing units in a vibrant, safe, well-designed community that respects the coastal character of the region, consistent with the San Mateo County Housing Element Adequate Site Inventory.	Partial. The project site would provide approximately 31 units for approximately 93 residents. The site is located in a design review district and Coastal Zone.
2. Provide affordable housing in the region at cost-effective densities that are competitive for financing.	Partial. The alternative would provide housing in the Midcoast area and would serve the daily needs of the new residents and the surrounding community.
3. Address housing needs of households, families, and workers in the Midcoast and surrounding region.	Partial. The alternative would provide housing in the Midcoast area and would serve the daily needs of the new residents and the surrounding community.
4. Provide housing for a diverse range of low-income workers and families.	Partial. The housing would contribute to meeting the needs set forth in the Regional Housing Needs Allocation.
5. Improve the jobs/housing balance and jobs/housing fit in the region by providing affordable dwelling units near coastal jobs.	Yes. The alternative would provide housing in the Midcoast area and would serve the daily needs of the new residents and the surrounding community.
6. Provide informal recreational opportunities for residents in the region and the general public by providing access to a trail on undeveloped portions of the site.	Partial. Approximately half of the project site would remain open space. Although a trail is not located on-site, it would provide open space accessible to the general public.
7. Be consistent with the character of the surrounding neighborhood by adhering to the existing development guidelines to the extent feasible.	Partial. The alternative would represent a lower density than the surrounding neighborhood. Located in a design review district and Coastal Zone. The County General Plan and associated Municipal Code provide regulations, development standards, and design requirements for zoning districts (e.g., building setbacks, height restrictions, landscape plans, architectural review plans) would apply and protect visual resources.

4.4.2.1 Comparison of Significant Effects of Alternative 2: Reduced Residential Units Alternative to Proposed Project

Under Alternative 2, the buildout of the project site would occur and include development of affordable housing for fewer local residents compared to the proposed project. Development of the project site would require grading and ground-disturbing activities.

Impacts under this alternative would be similar to impacts associated with the project, as the alternative would disturb a similar area as the proposed project, and the significant unavoidable impacts would remain. Alternative 2 would partially meet project objectives.

AESTHETICS

Under Alternative 2, buildout of the project site would include construction of fewer new affordable housing units allowed by the development standards set forth in the County Code and LCP. Alternative 2 would allow for development at a lesser scale (31 units). The alternative would result in a change in the existing visual character of the site from undeveloped to developed with buildings throughout the site. Compared to the proposed project, the development density would appear less dense. Similar to the proposed project, this alternative would also include removal of existing vegetation on-site to accommodate development. Inhabitants of the surrounding residential land uses as well as motorists, cyclists, and pedestrians traveling along public roadways would notice this visual change; however, like the project, this alternative would not have a substantial effect on a scenic vista or damage scenic resources within a State Scenic Highway, as no such resources have been identified within the vicinity of the project site. Development under this alternative would be required to adhere to the same guidance and

requirements set forth in the County Code and LCP for design review, landscape standards, and lighting and glare requirements as the project.

Therefore, impacts of Alternative 2 related to aesthetics would be *similar but slightly decreased* in comparison to impacts associated with the project.

AIR QUALITY

Similar to the proposed project, implementation of this alternative would result in an increase in criteria pollutant emissions because construction activities would occur, and new operational sources would be created. Construction activities would result in a short-term increase in air pollutant emissions generated by construction equipment, vehicle use, and ground-disturbing activities. As identified for the project, this alternative would also be required to implement mitigation to reduce construction-related air pollutant emissions. This alternative would be similar to the project's less-than-significant impact related to exposing nearby residential development to toxic air contaminants from the use of off-road diesel equipment, since construction activities would occur within 1,000 feet of nearby sensitive receptors.

All other air quality and odor impacts associated with this alternative would be *similar* to the project. Mitigation Measures MM-AQ-2a and MM-AQ-2b would be applicable under this alternative.

BIOLOGICAL RESOURCES

Alternative 2 would result in less ground disturbance, requiring less grading and ground-disturbing activities necessary to prepare the site for development. As such, Alternative 2 would have a slightly lower potential than the project to result in direct and indirect impacts related to construction activities to special-status wildlife species identified in Section 3.3, Biological Resources, including the California red-legged frog, nesting migratory birds and raptors, or the Choris' popcorn flower. Like the project, this alternative would also involve the removal of existing trees on-site.

The project site is within an HCP specific to PG&E's Bay Area O&M activities. The U.S. Fish and Wildlife Service (USFWS) has issued PG&E an Endangered Species Act Section 10(a)(1)(B) incidental take permit for the company's Bay Area O&M HCP. This HCP is only designed to cover PG&E's activities; the HCP includes strategies to avoid, minimize, and offset potential direct, indirect, and cumulative effects of PG&E's operations, maintenance, and minor new construction activities on 32 species federally listed as threatened or endangered. Impacts on HCPs would be *similar* in comparison to the proposed project.

Therefore, the impacts of Alternative 2 related to biological resources would be *similar* in comparison to impacts associated with the project. Mitigation Measures MM-BIO-1 through MM-BIO-5 would be applicable under this alternative.

GEOLOGY AND SOILS

Alternative 2 would result in less grading and ground-disturbing activities necessary to prepare the site for development. Alternative 2 would include the development of new habitable buildings and structures and would have the same potential for seismic-related hazards, including fault rupture, ground shaking, liquefaction, and landslide, and the potential for other ground-failure events. This alternative would be required to implement mitigation and adhere to CBC and other applicable engineering standards to reduce potential impacts related to seismic and other ground-failure events. Under Alternative 2, ground-disturbance impacts are *similar* because there would be a similar area of disturbance and similar potential loss of topsoil during construction. This alternative would be required to comply with a State Water Resources Control Board (SWRCB) General Construction Permit. In addition, this alternative would have

the same potential to disturb paleontological resources if present within the proposed area of disturbance and would be required to implement mitigation to reduce potential disturbance to paleontological resources during project construction.

Because Alternative 2 does not include the use of septic tanks, there would be no impact regarding septic tanks, *similar* to the proposed project.

Impacts of Alternative 2 related to geology and soils impacts would be *similar* in comparison to impacts associated with the project. Mitigation Measure MM-GEO-1 would be applicable under this alternative.

GREENHOUSE GAS AND CLIMATE CHANGE

Alternative 2 would require the use of equipment and vehicles that would generate short-term GHG emissions. However, given that the scale of this alternative is similar but slightly less than the project, it would not generate GHG emissions above established Bay Area Air Quality Management District (BAAQMD) thresholds. Long-term GHG emissions would be generated by vehicle trips created by the project and operational energy use. This alternative includes construction equipment use at a similar scale to the proposed project, and would likely not exceed the operational GHG emissions thresholds, resulting in similar impacts as the project. Therefore, impacts of Alternative 2 related to air quality and GHG emissions would be *similar* in comparison to impacts associated with the project.

HAZARDS AND HAZARDOUS MATERIALS

Alternative 2 would result in development in a manner consistent with the project, requiring grading and ground-disturbing activities necessary to prepare the site for development. This would require the use of construction-related hazardous materials (e.g., fuels, gasoline, solvents, oils, paints) and would be required to comply with state and local regulations to reduce associated hazards. Alternative 2 would result in a *similar* impact regarding the threat of encountering lead-impacted soils during construction, and mitigation related to hazardous materials exposure and transport during project development would be required.

Alternative 2 is not located within 0.25 mile of any schools, like the project. There would be *no impact* related to schools.

Therefore, Alternative 2 would be *similar* in comparison to the project, and Mitigation Measures MM-HAZ-1a through MM-HAZ-1e would be applicable under this alternative.

HYDROLOGY AND WATER QUALITY

Alternative 2 would result in development of 31 units and would result in the creation of similar impervious surfaces. The proposed increase of impervious surface over existing conditions would have the potential to increase the pollutants and non-stormwater discharges that could adversely impact water quality. This alternative has a similar potential, like the project for substantial increases in soil erosion and sediment transport, which have the potential to affect water quality from runoff, particularly during construction phases that include excavation, grading, and other earthwork. Alternative 2 would be subject to the same mitigation measures as the project as well as all applicable state and local water quality protection requirements, which is also consistent with the project.

Therefore, impacts of Alternative 2 related to hydrology and water quality would be *similar* in comparison to impacts associated with the project.

LAND USE AND PLANNING

Alternative 2 would not result in new features that could physically divide an established community, consistent with the project. Under this alternative, implementation of the project would require approvals including a General Plan Amendment from Medium-High Density Residential to Medium Density Residential Use. The Medium-High Density Residential designation allows for development at densities between 8.8 and 17.4 housing units per acre.[439] In the LCP, this site is designated as a priority development site for affordable housing.[440] The current zoning of the site would not allow for development of the project as proposed and would require rezoning the PUD designation to allow for lower-density development. This alternative site would require a General Plan Amendment and rezoning for consistency to match the required PUD zoning.

Therefore, the impacts of Alternative 2 related to land use and planning would be *greater* in comparison to impacts associated with the project.

NOISE

Alternative 2 would result in development of 31 units, resulting in the generation of similar short-term, intermittent increases in ambient noise during the construction phase from initial site improvements, vehicle and equipment movement, and future construction of residential and commercial land uses. Like the project, construction activities in this alternative would have the potential to result in temporary exceedances of the maximum acceptable noise levels for residential land uses set forth in the County Code. In addition, this alternative would create similar long-term, permanent increases in ambient noise levels, primarily associated with potential increases in vehicle traffic and on-site activities. Alternative 2 would be required to implement the same mitigation measures as the project to reduce less-than-significant construction-related noise and vibration impacts.

Alternative 2 site would not expose people residing or working on this site to excessive noise levels. Impacts would be *similar* in comparison to the proposed project.

Therefore, the impacts of Alternative 2 related to noise would be *similar* in comparison to impacts associated with the project. Mitigation Measures MM-N-1 and MM-N-2 would be applicable under this alternative.

TRANSPORTATION

Alternative 2 would result in development of 31 units. Primary access to and from S.R. 1 would be via Carlos Street and California Avenue as with the proposed project. Alternative 2 would be developed under a Local Preference Agreement with a total of 31 residential units; the same agreement as the proposed project but fewer residential units. The project sponsor would also be required to implement the same set of required C/CAG Transportation Demand Management (TDM) measures identified for the proposed project (see Chapter 2, Project Description) to promote active transportation and limit use of single-occupancy vehicles for discretionary trips.

Alternative 2 would have less residential development than the proposed project, therefore it would generate less vehicular traffic. Under Alternative 2, consistency-related issues with transportation-related plans, programs, policies, or other ordinances such as Connect the Coastside that control the safety and effectiveness of the transportation system would be *similar* to those of the proposed project because they would be located on the site, use the same local transportation network, and have similar traffic-

[439] County of San Mateo, 1986.
[440] San Mateo County, 2013.

generating potentials (although somewhat reduced). Alternative 2 would not conflict with or result in an adverse effect on the circulation system, including transit, roadway, bicycle and pedestrian facilities, and parking.

Under Alternative 2, VMT-related impacts would be *similar* to those of the proposed project because of the location of the project and the countywide per capita VMT threshold for home-based VMT. Although eligible for project screening under current County guidance as an urban infill affordable housing project, a detailed VMT analysis would show that Alternative 2 would generate home-based VMT in excess of the County's threshold and that VMT reduction efforts would not reduce or eliminate the significant and unavoidable impact. As with the proposed project, Alternative 2 would conflict with CEQA Guidelines 15064.3(b) and the impact would be significant and unavoidable, *similar* to the proposed project.

Under Alternative 2, traffic hazard and pedestrian safety concerns related to Carlos Steet would remain significant and unavoidable. Project-related traffic would use Carlos Street to access S.R. 1 where the road geometrics and line-of-sight issues are known safety hazards. Future residents would need to cross S.R. 1 to access the closest bus stop for southbound travel, where line-of-sight concerns are a known safety hazard. Therefore, impacts of Alternative 2 related to traffic hazards and pedestrian and bicyclist safety would be significant and unavoidable, *similar* to the proposed project even with implementation of Mitigation Measure TR-3 (Temporary Closure of Carlos Street at State Route 1) to address hazards for drivers, and Mitigation Measure TR-4-c (Additional Transportation Demand Management Measures) to improve the local sidewalk, bicycle, and transit stop infrastructure to the extent feasible.

Under Alternative 2, emergency access impacts would be considered less than significant and *similar* to those of the proposed project.

Overall, the impacts of Alternative 2 related to transportation would be *similar* and considered significant and unavoidable in comparison to impacts associated with the proposed project.

Mitigation Measures MM-TR-2 through C-TR-3 would be applicable under this alternative.

UTILITIES AND SERVICE SYSTEMS

Alternative 2 would result in development of 31 housing units, resulting in the need for the construction of new and expanded infrastructure improvements on-site. The project would result in an increased demand for water over existing site conditions and would result in increased wastewater and solid waste generation rates over existing conditions, resulting in *similar but slightly decreased* impacts to the proposed project.

Overall, the impacts of Alternative 2 related to utilities and service systems would be *similar but slightly decreased* in comparison to impacts associated with the proposed project.

WILDFIRE

Alternative 2 would result in construction of 31 units, resulting in approximately 93 new residents on the project site. Vegetation would be cleared, and defensible space would be implemented. Development would occur on the same site as the proposed project; however, there would be less residents on-site that would need to evacuate in an emergency. The Alternative site is not in or adjacent to a very high fire hazard severity zone.[441]

[441] Association of Bay Area Governments, 2020.

Overall, the impacts of Alternative 2 related to wildfires would be *decreased* in comparison to the proposed project.

INITIAL STUDY TOPICS

The Planning Department distributed an NOP of an EIR and Notice of Public Scoping Meeting on December 9, 2022, announcing its intent to prepare an EIR, including an initial study, and to solicit comments from the public about the scope of this EIR (the NOP is presented in Appendix A). The initial study (see Appendix B) determined that project-specific and cumulative impacts for certain resource topics would not require additional analysis in the EIR because the proposed project or project variants would have no impact, less-than-significant impact, or less-than-significant with mitigation incorporated impacts. Additional analysis is not required for the following topics:

- Agriculture and Forestry Resources: The Alternative 2 site contains no land that the CDOC designates as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.[442, 443] Impacts would be *similar* to the proposed project.
- Cultural Resources: The Alternative 2 site is on the same site as the proposed project. The site is sensitive and MM-CR-1 through MM-CR-4 would apply. Impacts would be *similar* in comparison to the project.
- Energy: All energy consumed would not be considered wasteful or inefficient. The project would not conflict with any renewable energy plans. Impacts would be *similar but slightly decreased* in comparison to the proposed project.
- Mineral Resources: The Alternative 2 site is on the same site as the proposed project. The project is not within an area designated by the California Surface Mining and Reclamation Act Mineral Land Classification as a Mineral Resource Zone-2, which indicates the existence of a deposit that meets certain criteria for value and marketability.[444] Impacts would be *similar* in comparison to the proposed project.
- Population and Housing: The project proposes 31 units for approximately 93 residents. The Alternative 2 site is on the same site as the proposed project and would not displace any people during construction. Impacts would be *similar* in comparison to the proposed project.
- Public Services: The Alternative 2 site is on the same site as the proposed project. The project proposes 31 units for approximately 93 residents. The Alternative 2 site would increase demand for public services during construction and operation. Impacts would be *similar* in comparison to the proposed project.
- Recreation: The Alternative 2 site is on the same site as the proposed project. The project proposes 31 units for approximately 93 residents. The Alternative 2 site would increase demand for public services during construction and operation. Impacts would be *similar* in comparison to the proposed project.
- Tribal Cultural Resources: As noted above under Cultural Resources, the Alternative 2 site is on the same site as the proposed project. The site is sensitive and MM-CR-1 through MM-CR-4 would apply. Impacts would be *similar* in comparison to the project.

[442] CDOC, 2019.
[443] CDOC, 2012.
[444] CDOC, 1996.

Alternative 2 would develop 31 affordable housing units for approximately 93 residents, resulting in similar construction and operational impacts for each of the environmental topics. As noted in Appendix B, Initial Study (discussed above), impacts would be similar to those of the proposed project.

4.4.3 Alternative 3: South Moss Beach Site

Alternative 3: South Moss Beach Site is a 12.5-acre parcel located at 1181 Etheldore Street in South Moss Beach (Assessor's Parcel Number [APN] 037-320-270), approximately 4,500 feet southeast of the proposed project site (Figure 4.2-1). This site is designated for affordable housing in the San Mateo County Midcoast LCP. This property is owned by a private individual. This alternative is zoned R-3-A High Density Affordable Housing and Coastal Zone (, R-3-A/S-5/ DR/CZ).

Approximately half of this site has a zoning district associated with the Half Moon Bay Airport Safety Zone overlay zoning district, which limits development to one unit per 2 acres. With this overlay, three units could be constructed on this half of the site. The remaining half of the South Moss Beach site outside of the airport safety zone overlay zoning district could be developed at the same density as the proposed project, which would accommodate approximately 63,374 square feet of residential housing configured within 71 residential units. The portion of the site in the airport district could remain as open space to meet project objectives, no housing would be built on this portion of the project site due to safety hazards. However, there is a notable slope that could possibly exceed 30% on the portion of the site that is not covered by the airport safety zone overlay zoning district and which would necessitate excessive grading near a wetland area.

While the project site has environmental constraints, Alternative 3 meets most of the project objectives and would lessen the significant transportation impact related to pedestrian safety (Table 4.4-3).

Table 4.4-3. Attainment of Project Objectives: Alternative 3, South Moss Beach Site

Project Objective	Alternative's Consistency with Project Objective
1. Provide a significant number of low-income affordable housing units in a vibrant, safe, well-designed community that respects the coastal character of the region, consistent with the San Mateo County Housing Element Adequate Site Inventory.	Yes. The project site would provide approximately 71 units for approximately 213 residents. The site is located in a design review district and Coastal Zone.
2. Provide affordable housing in the region at cost-effective densities that are competitive for financing.	Yes. The alternative would provide housing in the Midcoast area and would serve the daily needs of the new residents and the surrounding community.
3. Address housing needs of households, families, and workers in the Midcoast and surrounding region.	Yes. The alternative would provide housing in the Midcoast area and would serve the daily needs of the new residents and the surrounding community.
4. Provide housing for a diverse range of low-income workers and families.	Yes. The housing would contribute to meeting the needs set forth in the Regional Housing Needs Allocation.
5. Improve the jobs/housing balance and jobs/housing fit in the region by providing affordable dwelling units near coastal jobs.	Yes. The alternative would provide housing in the Midcoast area and would serve the daily needs of the new residents and the surrounding community.
6. Provide informal recreational opportunities for residents in the region and the general public by providing access to a trail on undeveloped portions of the site.	Partial. Approximately half the project site would remain open space. While a trail is not located on-site, it would provide open space accessible to the general public.
7. Be consistent with the character of the surrounding neighborhood by adhering to the existing development guidelines to the extent feasible.	Yes. The alternative is located in a design review district and Coastal Zone. The County General Plan and associated Municipal Code provide regulations, development standards, and design requirements for zoning districts (e.g., building setbacks, height restrictions, landscape plans, architectural review plans) would apply and protect visual resources.

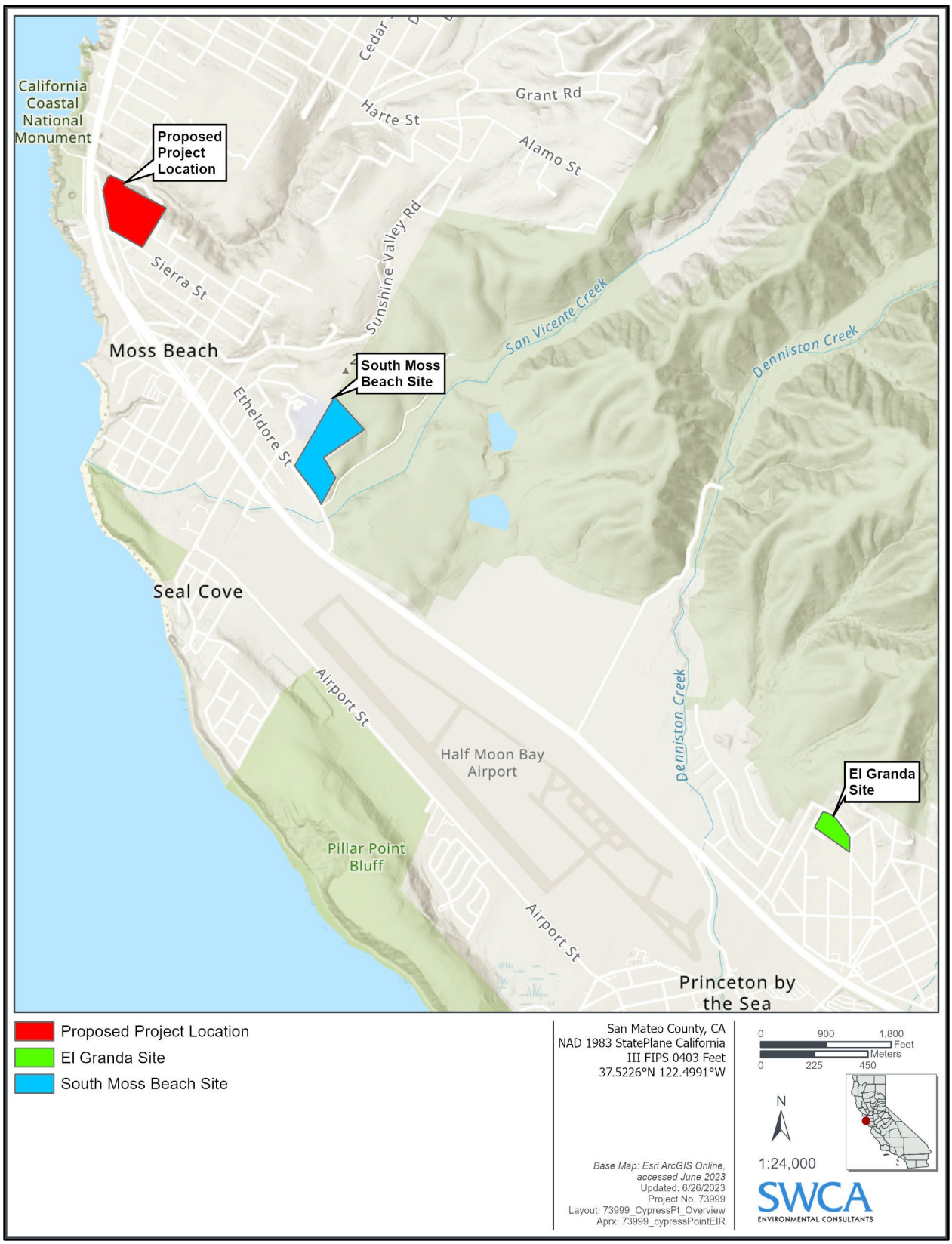


Figure 4.4-1. Off-Site Alternatives.

4.4.3.1 Comparison of Significant Effects of Alternative 2: South Moss Beach Site to the Proposed Project

Under Alternative 3, the buildout of the project site would include development of affordable housing for local residents. However, development of the project site in this alternate location would require grading and ground-disturbing activities on slopes adjacent to a mapped wetland area, conflicting with the Local Coastal Plan. As a result, impacts under this alternative would be generally similar to impacts associated with the project, as most project impacts are construction-related. Alternative 3 would partially meet the project objectives. MidPen does not currently own the South Moss Beach site, but it is designated as affordable housing in the LCP.

AESTHETICS

Under Alternative 3, future buildout of the project site would include construction of new affordable housing allowed by the development standards set forth in the LCP. Alternative 3 would allow for development at a similar scale (71 units, as proposed by the project). Similar to the project, this alternative would result in a similar change in the existing visual character of the site from undeveloped to developed. This alternative would also include removal of all or most of the existing vegetation on-site to accommodate development. Inhabitants of the surrounding residential land uses as well as motorists, cyclists, and pedestrians traveling along public roadways would notice this visual change, as they would with the project. However, like the project, this alternative would not have a substantial effect on a scenic vista or damage scenic resources within a State Scenic Highway, as the site is not visible from Highway 1 which is within the vicinity of the Alternative 3 site. Development under this alternative would be required to adhere to the same guidance and requirements set forth in the LCP for design review, landscape standards, and lighting and glare requirements as the project.

Therefore, impacts of the Alternative 3 related to aesthetics would be *similar* in comparison to the impacts associated with the project.

AIR QUALITY

Implementation of this alternative would result in an increase in criteria pollutant emissions because construction activities would occur, and new operational sources would be created. Construction activities would result in a short-term increase in air pollutant emissions generated by construction equipment, vehicle use, and ground-disturbing activities. As identified for the project, this alternative would also be required to implement mitigation to reduce construction-related air pollutant emissions. This alternative would be similar to the project's less-than-significant impact related to exposing nearby residential development to toxic air contaminants from the use of off-road diesel equipment since construction activities would occur within 1,000 feet of nearby sensitive receptors. All other air quality and odor impacts associated with this alternative would be *similar* to the proposed project. Mitigation Measures MM-AQ-2a and MM-AQ-2b would be applicable under this alternative.

BIOLOGICAL RESOURCES

Alternative 3 would result in buildout of half of the 12.5-acre parcel in a manner consistent with the proposed project, requiring similar grading and ground-disturbing activities necessary to prepare the site for development. As such, Alternative 3 would have similar potential as the project to result in direct and indirect impacts related to construction activities to special-status wildlife species identified in Section 3.3, Biological Resources, including the California red-legged frog, nesting migratory birds and raptors, or the Choris' popcorn flower. Alternative 3 would be required to implement the same mitigation measures as the project to reduce construction-related impacts. Like the project, this alternative would

also involve the removal of existing trees located on-site and impacts would be *similar* in comparison to the proposed project.

The project site is located within an HCP specific to PG&E's Bay Area O&M activities. The U.S. Fish and Wildlife Service (USFWS) has issued PG&E an Endangered Species Act Section 10(a)(1)(B) incidental take permit for the company's Bay Area O&M HCP. This HCP is designed only to cover PG&E's activities; the HCP includes strategies to avoid, minimize, and offset potential direct, indirect, and cumulative effects of PG&E's operations, maintenance, and minor new construction activities on 32 species federally listed as threatened or endangered. Impacts on HCPs would be *similar* in comparison to the proposed project.

However, the following would be required as part of Alternative 3:

- Based on information contained in the National Wetlands Inventory,[445] the project site is adjacent to and drains to San Vicente Creek, resulting in development within 100 feet of a wetland; and
- Development is adjacent to an environmentally sensitive habitat, which would significantly degrade the habitat and reduce its biological productivity.

Therefore, impacts of Alternative 3 related to biological resources impacts would be *greater* in comparison to impacts associated with the project. Mitigation Measures MM-BIO-1 through MM-BIO-5 would be applicable under this alternative.

GEOLOGY AND SOILS

Alternative 3 would result in buildout of half of the 12.5-acre parcel in a manner consistent with the project, requiring similar grading and ground-disturbing activities necessary to prepare the site for development. Alternative 3 would include the development of new habitable buildings and structures and would have the same potential for seismic-related hazards, including fault rupture, ground shaking, liquefaction, and landslide and the potential for other ground-failure events as the project. This alternative would be required to implement mitigation and adhere to CBC and other applicable engineering standards to reduce potential impacts related to seismic-related and other ground-failure events. Under Alternative 3, ground-disturbance impacts are increased, and have a higher potential to increase erosion and loss of topsoil during construction. This alternative would be required to comply with an SWRCB General Construction Permit. In addition, this alternative would have the same potential to disturb paleontological resources if present within the proposed area of disturbance and would be required to implement mitigation to reduce potential disturbance to paleontological resources during project construction.

Because Alternative 3 does not include the use of septic tanks, impacts would be *similar* in comparison to the proposed project.

Therefore, impacts of the Alternative 3 related to geology and soils impacts would be *greater* in comparison to impacts associated with the project. Mitigation Measure MM-GEO-1 would be applicable under this alternative.

GREENHOUSE GAS AND CLIMATE CHANGE

This alternative would allow for buildout of the project site, requiring the use of equipment and vehicles that would generate short-term GHG emissions. However, given that the scale of this alternative is similar to the project, it would not generate GHG emissions above established BAAQMD thresholds. Long-term

[445] U.S. Fish and Wildfire Service. 2023. National Wetlands Inventory. Available at: https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper. Accessed June 2023.

GHG emissions would be generated by vehicle trips created by the project and operational energy use. This alternative includes construction equipment use at a similar scale to the proposed project, and would likely not exceed the operational GHG emissions thresholds, resulting in similar impacts as the project. Therefore, impacts of Alternative 2 related to air quality and GHG emissions would be *similar* in comparison to impacts associated with the project.

HAZARDS AND HAZARDOUS MATERIALS

Alternative 3 would result in buildout of half of the 12.5-acre parcel in a manner consistent with the project, requiring similar grading and ground-disturbing activities necessary to prepare the site for development. This would require the use of construction-related hazardous materials (e.g., fuels, gasoline, solvents, oils, paints) and would be required to comply with state and local regulations to reduce associated hazards. The alternative site location removes the threat of encountering lead-impacted soils during construction. This alternative would result in *less* impacts related to hazardous materials exposure and transport during project development.

However, approximately half of the site has a zoning district associated with the Half Moon Bay Airport zoning district, which limits development to one unit per 2 acres and has the potential to create land uses that may be inconsistent with the applicable airport land-use policies or create a potential safety hazard for land uses located within Inner Turning Zone 3 (western portion of the site) as stated in the 2014 Draft Half Moon Bay Airport Land Use Compatibility Plan (ALUCP).[446] The proposed project is in Zone 7 of the airport influence area, the outermost area indicated in the ALUCP. The aircraft accident risk level in Zone 7 is considered to be low.[447] The ALUCP places no limits on the number of dwelling units per acre within the airport influence area. The ALUCP provides height requirements for new development within Zone 7, allowing structures to be no taller than 300 feet.[448]

Alternative 3 is further from Farallone View Elementary School than the proposed project. There would be *no impact* related to schools and would be *similar* in comparison to the proposed project. Alternative 3 is closer to the proposed project and has an airport overlay. Impacts would be *greater* in comparison to the project.

Therefore, some of the less-than-significant hazards and hazardous materials impacts under Alternative 3 would be less in comparison to the project, other less-than-significant impacts would be greater. However, all impacts would be less-than-significant and s*imilar* in comparison to the project.

HYDROLOGY AND WATER QUALITY

The project site is currently undeveloped, consisting of largely pervious surfaces. The alternative site is located adjacent to San Vicente Creek. Alternative 3 would result in buildout of the site in a manner consistent with the project and is likely to result in the creation of similar acreages of impervious surfaces (approximately 143,254 square feet) as the proposed project. These increases would have the potential to increase the pollutants and non-stormwater discharges that could adversely impact water quality. This alternative has a slightly higher potential for substantial increases in soil erosion and sediment transport, due to slope and proximity of San Vicente Creek, and has the potential to affect water quality from runoff as the project, particularly during construction phases that include excavation, grading, and other earthwork. As such, this alternative would result in a large amount of soil disturbance, require the use of construction equipment and vehicles during construction, and result in a large amount of new impervious

[446] City/County Association of Governments (C/CAG). 2014. *Airport Land Use Compatibility Plan for the Environs of Half Moon Bay Airport*. https://ccag.ca.gov/wp-content/uploads/2014/10/HAF-ALUCP-Final.pdf. Accessed January 20, 2023.
[447] C/CAG, 2014.
[448] C/CAG, 2014.

surface area at the project site, which is consistent with the project. Further, this alternative would be subject to the same mitigation measures as the project as well as all applicable state and local water quality protection requirements, which is also consistent with the project.

Therefore, impacts of Alternative 3 related to hydrology and water quality would be *greater* in comparison to impacts associated with the project.

LAND USE AND PLANNING

Alternative 3 will not result in new features that could physically divide an established community, consistent with the project. Under this alternative, implementation of the project would require approvals including a General Plan Amendment from Medium-High Density Residential to Medium Density Residential Use. The Medium-High Density Residential designation allowed for development at densities between 8.8 and 17.4 housing units per acre.[449] In the LCP, the alternative site is designated as a priority development site for affordable housing.[450] This alternative would be inconsistent with the LCP, which would not match Land Use Zoning and would require a General Plan Amendment for consistency. Therefore, impacts of Alternative 3 related to land use and planning would be *similar* in comparison to impacts associated with the project.

The Alternative 3 site has the potential to conflict with the following LCP Policies:

- Policy 7.3 because it would involve development adjacent to an Environmentally Sensitive Habitat Area.
- Policies 7.18 and 7.19 which prohibit development within 100 feet of wetlands;
- Policy 8.7 involving development on a ridgeline or hilltop;
- Policy 8.13 because of the need for extensive grading; and
- Policy 9.18 which prohibits development on slopes greater than 30%

Further, development on this site would require that MidPen obtain an agreement of ownership or lease of the subject parcel. MidPen was not able to facilitate communication with the property owner(s) to advance any potential land acquisition or development discussions.[451]

NOISE

Alternative 3 would result in buildout of half of the 12.5-acre parcel in a manner consistent with the project, resulting in the generation of similar short-term, intermittent increases in ambient noise during the construction phase from initial site improvements, vehicle and equipment movement, and future construction of residential and commercial land uses. Like the project, construction activities in this alternative would have the potential to result in temporary exceedances of the maximum acceptable noise levels for residential land uses set forth in the County Code. In addition, this alternative would create similar long-term, permanent increases in ambient noise levels, primarily associated with potential increases in vehicle traffic and on-site activities. Alternative 3 would be required to implement the same mitigation measures as the project to reduce less-than-significant construction-related noise and vibration impacts.

[449] County of San Mateo. 1986. General Plan. Available at: https://www.smcgov.org/planning/general-plan. Accessed May 15, 2023.
[450] San Mateo County. 2013. *Local Coastal Program Policies.* Available at: https://www.smcgov.org/planning/local-coastal-program. Accessed March 30, 2023.
[451] Stevens Consulting. 2019. Alternatives Analysis.

As stated in the Initial Study, the Half Moon Bay Airport, is located approximately 0.2 mile south of the proposed project site.[452] The project site is not located within the 2012 or projected 2032 noise exposure contour limits of 60, 65, and 70 community noise equivalent level.[453] However, Alternative 3 is within Inner Turning Zone 3 (western portion of the site) as stated in the 2014 Draft ALUCP, and therefore is more likely to experience disruptive or potentially damaging airplane noise.[454] Impacts would be *greater* in comparison to the proposed project.

Therefore, impacts of Alternative 3 related to noise would be *greater* due to the proximity to the airport in comparison to impacts associated with the project. Mitigation Measures MM-N-1 and MM-N-2 would be applicable under this alternative.

TRANSPORTATION

Alternative 3 would provide for development of affordable housing on a site located approximately 4,500 feet south of the Cypress Point project site. Primary access from and to S.R. 1would be from South Etheldore Street or Marine Boulevard [the two closest points] rather than Carlos Street and California Avenue to the north as with the proposed project. Alternative 3 would be developed under the Local Preference Agreement with a total of 71 residential units; the same as the proposed project. The project sponsor would also be required to implement the same set of required C/CAG Transportation Demand Management (TDM) measures identified for the proposed project (see Chapter 2, Project Description) to promote active transportation and limit use of single-occupancy vehicles for discretionary trips.

Alternative 3 would have the same residential development program as the proposed project therefore it would generate a similar level of vehicular traffic. Vehicle trips, pedestrians, and cyclists would be distributed to a different portion of the Moss Beach road network, would access S.R. 1 at different locations than under the proposed project, e.g., at South Etheldore Street or Marine Boulevard; and would access public transit at a different location than under the proposed project, e.g., at Marine Boulevard and South Etheldore Street, that would not require crossing of S.R. 1 to travel north or south. Although the immediate pedestrian network in the vicinity of the Alternative 3 project site is discontinuous, similar to that of the proposed project, the pedestrian safety concerns would be reduced due to the proximity of the San Mateo County bus stops for routes 117 and 18.

Under Alternative 3 consistency-related issues with transportation-related plans, programs, policies or other ordinances such as Connect the Coastside and the Moss Beach/SR-1 Safety Improvement Project that control the safety and effectiveness of the transportation system would be similar to those of the proposed project because they would have similar traffic-generating potentials. Thus, Alternative 3 would not conflict with or result in an adverse effect on the circulation system, including transit, roadway, bicycle and pedestrian facilities, and parking.

Under Alternative 3, VMT-related impacts would be similar to those of the proposed project because of the location of the project and the countywide per capita VMT threshold for home-based VMT. Although eligible for project screening under current County guidance as an urban infill affordable housing project, a detailed VMT analysis would show that Alternative 3 would generate home-based VMT in excess of the County's threshold and that VMT reduction efforts would not reduce or eliminate the significant and unavoidable impact. As with the proposed project, Alternative 3 would conflict with CEQA Guidelines 15064.3(b) and the impact would be significant and unavoidable.

[452] City/County Association of Governments (C/CAG). 2014.
[453] C/CAG, 2014.
[454] C/CAG, 2014.

Under Alternative 3 traffic hazard and pedestrian safety concerns related to Carlos Steet would not occur. Project-related traffic would not use Carlos Street to access S.R. 1 where the road geometrics and line-of sight issues are known safety hazards. Furthermore, future residents would not need to cross S.R. 1 to access the most convenient bus stops for southbound travel, i.e., there are northbound and southbound stops on Etheldore Street north of site. Therefore, impacts of Alternative 3 related to traffic hazards and pedestrian and bicyclist safety would be *decreased* in comparison to impacts associated with the project.

Under Alternative 3, emergency access impacts would be considered less than significant, *similar* to those of the proposed project.

In comparison to transportation impacts associated with the proposed project, the impacts of Alternative 3 would be *decreased* except for the significant and unavoidable VMT impact.

Mitigation Measure MM-TR-2 would be applicable under this alternative to address VMT impacts. Mitigation Measures TR-3, TR-4b, and TR-4c would not be applicable because they address site-specific hazards for drivers, pedestrians and cyclists associated with the proposed project.

UTILITIES AND SERVICE SYSTEMS

Alternative 3 would result in buildout of half of the 12.5-acre parcel in a manner similar to the project, resulting in the need for the construction of new and expanded infrastructure improvements on-site. The project would result in an increased demand for water, as well as increased wastewater and solid waste generation rates over existing conditions, resulting in impacts *similar* to the proposed project.

Overall, impacts of Alternative 3 related to utilities and service systems would be *similar* in comparison to impacts associated with the project.

WILDFIRE

Alternative 3 would result in buildout of half of the 12.5-acre parcel in a manner similar to the project, resulting in approximately 213 new residents on the project site. Some vegetation would be cleared. The Alternative 3 site is in a very high fire hazard severity zone.[455]

Overall, impacts of Alternative 3 related to wildfires would be *greater* in comparison to the project.

INITIAL STUDY TOPICS

The Planning Department distributed an NOP of an EIR and Notice of Public Scoping Meeting on December 9, 2022, announcing its intent to prepare an EIR, including an initial study, and to solicit comments from the public about the scope of this EIR (the NOP is presented in Appendix A). The initial study (see Appendix B) determined that project-specific and cumulative impacts for certain resource topics would not require additional analysis in the EIR because the proposed project or project variants would have no impact, less-than-significant impact, or less-than-significant with mitigation incorporated impacts.

- Agriculture and Forestry Resources: The Alternative 3 site has prime soils on-site. However, due to the Airport Overlay, soils would remain undisturbed during construction of the housing. The Alternative 3 site contains no land that the CDOC designates as Prime Farmland, Unique

[455] Association of Bay Area Governments. 2020. MTC/ABAG Hazard Viewer Map. Available at: https://mtc.maps.arcgis.com/apps/webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8. Accessed June 2023.

Farmland, or Farmland of Statewide Importance.[456, 457] Impacts would be *greater* than the proposed project.

- Cultural Resources: There are no obvious historical resources in the vicinity, like the lighthouse and Montara Water and Sanitary District office. Impacts would be decreased in comparison to the proposed project. Archaeologically, Alternative 3 would be similar in site sensitivity to the proposed project. Alternative 2 is located far from the coast in a steep area but is located in close proximity to San Vicente Creek. The site is sensitive and MM-CR-1 through MM-CR-4 would apply. Impacts would be *similar* in comparison to the proposed project.
- Energy: All energy consumed would not be considered wasteful or inefficient. The project would not conflict with any renewable energy plans. Impacts would be *similar* in comparison to the proposed project.
- Mineral Resources: The Alternative 3 site is not located within an area designated by the California Surface Mining and Reclamation Act Mineral Land Classification as a Mineral Resource Zone-2, which indicates the existence of a deposit that meets certain criteria for value and marketability.[458] The classification for the project site is Mineral Resource Zone-3, which is defined as "Areas containing mineral deposits the significance of which cannot be evaluated from available data."[459] Impacts would be *similar* in comparison to the proposed project.
- Population and Housing: The Alternative 3 site proposes a similar number of residential units to the proposed project. The Alternative 3 site is vacant and would not displace any people during construction. Impacts would be *similar* in comparison to the proposed project.
- Public Services: The project proposes a similar number of residential units to the proposed project. Alternative 3 would increase demand for public services during construction and operation. Impacts would be *similar* in comparison to the proposed project.
- Recreation: The project proposes a similar number of residential units to the proposed project. Alternative 3 would increase demand for public services during construction and operation. Impacts would be *similar* in comparison to the proposed project.
- Tribal Cultural Resources: As noted above under Cultural Resources, the Alternative 3 site is sensitive and MM-CR-1 through MM-CR-4 would apply. Impacts would be *similar* in comparison to the project.

Alternative 3 would occupy the same project site footprint as the proposed project and would have a similar, development intensity. The construction and operational impacts of Alternative 3 are *similar to* the proposed project. However, because the Alternative 3 site is located within an airport overlay, the impacts related to airport noise would be *greater* from the proposed project.

4.4.4 Alternative 4: El Granada Site

The El Granada site is a 6-acre parcel located in the community of El Granada, approximately 2.4 miles southeast of the proposed project site (APN 047-054-100) (Figure 4.2-1). The site is designated for affordable housing in the LCP. The parcel is owned by the Cabrillo Unified School District. This alternative is zoned R-3-A/S-5/DR/CZ. Approximately 71 housing units could be constructed on this

[456] CDOC, 2019.
[457] CDOC, 2012.
[458] CDOC. 1996. Designated Areas Update, Regionally Significant Construction Aggregate Resource Areas in the South San Francisco Bay Production-Consumption Region. Montara Mountain Quadrangle, Open-File Report 96-03, Plate 18 of 29.
[459] CDOC. 1996. Page xi.

property if the entire parcel was developed. The project site is vacant and surrounded by single-family homes. Rancho Corral De Tierra hiking trails could be accessed from the northern corner of the site.

Based on a February 21, 2018, site visit, the site is heavily vegetated, similar to the proposed project site. Additionally, the site slopes steeply at the northern end, which could potentially exceed slopes of 30 percent. The slope could present grading-related obstacles to development and potential conflicts with the following LCP Policies, as noted in Alternative 2:

- Policy 8.7 involving development on a ridgeline or hilltop;
- Policy 8.13 because of the need for extensive grading; and
- Policy 9.18 which prohibits development on slopes greater than 30%.

The site is heavily vegetated and has many trees on-site. The tree removal would likely result in similar impacts to the proposed project. Many of the trees are non-native species such as eucalyptus. While the project site has environmental constraints, Alternative 4 meets all but one of the project objectives and would lessen the significant transportation impacts related to pedestrian safety (Table 4.4-4).

Table 4.4-4. Attainment of Project Objectives: Alternative 4. El Granada Site

Project Objective	Alternative's Consistency with Project Objective
1. Provide a significant number of low-income affordable housing units in a vibrant, safe, well-designed community that respects the coastal character of the region, consistent with the San Mateo County Housing Element Adequate Site Inventory.	Yes. The project site would provide approximately 71 units for approximately 213 residents. The site is in a design review district and Coastal Zone.
2. Provide affordable housing in the region at cost-effective densities that are competitive for financing.	Yes. The alternative would provide housing in the Midcoast area and would serve the daily needs of the new residents and the surrounding community.
3. Address housing needs of households, families, and workers in the Midcoast and surrounding region.	Yes. The alternative would provide housing in the Midcoast area and would serve the daily needs of the new residents and the surrounding community.
4. Provide housing for a diverse range of low-income workers and families.	Yes. The housing would contribute to meeting the needs set forth in the Regional Housing Needs Allocation.
5. Improve the jobs/housing balance and jobs/housing fit in the region by providing affordable dwelling units near coastal jobs.	Yes. The alternative would provide housing in the Midcoast area and would serve the daily needs of the new residents and the surrounding community.
6. Provide informal recreational opportunities for residents in the region and the general public by providing access to a trail on undeveloped portions of the site.	No. To meet the 71 units, the entire site would have to be developed and there would be no public open space.
7. Be consistent with the character of the surrounding neighborhood by adhering to the existing development guidelines to the extent feasible.	Yes. The alternative site is located in a design review district and Coastal Zone. The County General Plan and associated Municipal Code provide regulations, development standards, and design requirements for zoning districts (e.g., building setbacks, height restrictions, landscape plans, architectural review plans) would apply and protect visual resources.

4.4.4.1 Comparison of Significant Effects of Alternative 4: El Granada Site to the Proposed Project

Under Alternative 4, buildout of the project site would include development of affordable housing for local residents. However, development of the project site in this alternate location would require grading and ground-disturbing activities on slopes, potentially conflicting with the LCP. Further, MidPen staff discussed with the Superintendent of the Cabrillo Unified School District whether the site would be

available for development during a phone call on September 19, 2017.[460] The Superintendent indicated that the District is reserving this property for a potential school facility or other district-related uses. The School District was not interested in selling the property and MidPen may not be able to develop this site.

Impacts under this alternative would be generally similar to impacts associated with the project, as most project impacts are construction-related. Alternative 4 would meet all project objectives except for Objective 6.

AESTHETICS

Under Alternative 4, future buildout of the project site would include construction of new affordable housing allowed by the development standards set for in the County Code and LCP. Alternative 4 would allow for development at a similar scale (71 units, as proposed by the project). The alternative would result in a notable change in the existing visual character of the site from undeveloped to developed. This alternative would also include removal of all or most of the existing vegetation on-site to accommodate development. Inhabitants of the surrounding residential land uses as well as motorists, cyclists, and pedestrians traveling along public roadways would notice this visual change, as they would with the project. However, like the project, this alternative would not have a substantial effect on a scenic vista or damage scenic resources within a State Scenic Highway, as no such resources have been identified within the vicinity of the project site. Development under this alternative would be required to adhere to the same guidance and requirements set forth in the County Code and LCP for design review, landscape standards, and lighting and glare requirements as the project.

Therefore, impacts of Alternative 4 related to aesthetics would be *similar* in comparison to impacts associated with the project.

AIR QUALITY

Implementation of this alternative would result in an increase in criteria pollutant emissions because construction activities would occur, and new operational sources would be created. Construction activities would result in a short-term increase in air pollutant emissions generated by construction equipment, vehicle use, and ground-disturbing activities. As identified for the project, this alternative would also be required to implement mitigation to reduce construction-related air pollutant emissions. This alternative would be similar to the project's less-than-significant impact related to exposing nearby residential development to toxic air contaminants from the use of off-road diesel equipment, since construction activities would occur within 1,000 feet of nearby sensitive receptors.

All other air quality and odor impacts associated with this alternative would be *similar* to the project. Mitigation Measures MM-AQ-2a and MM-AQ-2b would be applicable under this alternative.

BIOLOGICAL RESOURCES

Alternative 4 would result in buildout of the entire 6-acre parcel in a manner consistent with the project, requiring increased grading and ground-disturbing activities necessary to prepare the site for development; however, the disturbance area would be smaller. As such, Alternative 4 would have a similar potential than the project to result in direct and indirect impacts related to construction activities to special-status wildlife species identified in Section 3.3, Biological Resources, including the California red-legged frog, nesting migratory birds and raptors, or the Choris' popcorn flower. Like the project, this alternative would also involve the removal of existing trees located on-site.

[460] Stevens Consulting, 2019.

The project site is located within an HCP specific to PG&E's Bay Area O&M activities. The U.S. Fish and Wildlife Service (USFWS) has issued PG&E an Endangered Species Act Section 10(a)(1)(B) incidental take permit for the company's Bay Area O&M HCP. This HCP is designed only to cover PG&E's activities; the HCP includes strategies to avoid, minimize, and offset potential direct, indirect, and cumulative effects of PG&E's operations, maintenance, and minor new construction activities on 32 species federally listed as threatened or endangered. Impacts on HCPs would be *similar* in comparison to the proposed project.

Therefore, the impacts of Alternative 4 related to biological resources would be *similar* in comparison to impacts associated with the project. Mitigation Measures MM-BIO-1 through MM-BIO-5 would be applicable under this alternative.

GEOLOGY AND SOILS

Alternative 4 would result in buildout of the entire 6-acre parcel in a manner consistent with the project, but due to slope, would require increased grading and ground-disturbing activities necessary to prepare the site for development. Alternative 4 would include the development of new habitable buildings and structures and would have the same potential for seismic-related hazards, including fault rupture, ground shaking, liquefaction, and landslide and the potential for other ground-failure events as the project. This alternative would be required to implement mitigation and adhere to CBC and other applicable engineering standards to reduce potential impacts related to seismic and other ground-failure events. Under Alternative 4, ground-disturbance impacts are *increased* and have a higher potential to increase erosion and loss of topsoil during construction due to slope and grading intensity. This alternative would be required to comply with an SWRCB General Construction Permit. In addition, this alternative would have the same potential to disturb paleontological resources if present within the proposed area of disturbance and would be required to implement mitigation to reduce potential disturbance to paleontological resources during project construction.

Because Alternative 4 does not include the use of septic tanks, there would be no impact with regards to septic tanks and impacts would be *similar* in comparison to the proposed project.

Therefore, impacts of Alternative 4 related to geology and soils impacts would be *greater* in comparison to impacts associated with the project. Mitigation Measure MM-GEO-1 would be applicable under this alternative.

GREENHOUSE GAS AND CLIMATE CHANGE

Alternative 4 would allow for buildout of the project site, requiring the use of equipment and vehicles that would generate short-term GHG emissions. However, given that the scale of this alternative is similar to the project, it would not generate GHG emissions above established BAAQMD thresholds. Long-term GHG emissions would be generated by vehicle trips created by the project and operational energy use. This alternative includes construction equipment use at a similar scale to the proposed project, and would likely not exceed the operational GHG emissions thresholds, resulting in similar impacts as the project. Therefore, impacts of Alternative 4 related to air quality and GHG emissions would be *similar* in comparison to impacts associated with the project.

HAZARDS AND HAZARDOUS MATERIALS

Alternative 4 would result in buildout of the entire 6-acre parcel in a manner consistent with the project, requiring increased grading and ground-disturbing activities necessary to prepare the site for development. This would require the use of construction-related hazardous materials (e.g., fuels, gasoline, solvents, oils, paints) and would be required to comply with state and local regulations to reduce

associated hazards. The alternative site location removes the threat of encountering lead-impacted soils during construction. This alternative would require less mitigation related to hazardous materials exposure and transport during project development.

Alternative 4 is not located within 0.25 mile of any schools, and impacts would be *similar* to the proposed project. However, the airport is closer to Alternative 4 and impacts would be *greater* due to increased airport noise in comparison to the proposed project.

Some of the less-than-significant hazards and hazardous materials impacts related to lead-impacted soil would be less under Alternative 4. However, the hazards related to airports would be greater than the under Alternative 4. Therefore, the impacts of Alternative 4 related to hazard and hazardous material impacts would be *similar but less* in comparison to the project.

HYDROLOGY AND WATER QUALITY

The project site is currently undeveloped and consists of largely pervious surfaces. Alternative 4 would result in buildout of the 6-acre site in a manner consistent with the project and is likely to result in the creation of slightly less impervious surfaces. Considering the size of the site, buildings would be developed closer to each other. The proposed increases over existing conditions would have the potential to decrease the pollutants and non-stormwater discharges that could adversely impact water quality. This alternative has a slightly higher potential for substantial increases in soil erosion and sediment transport, which have the potential to affect water quality from runoff, as the project, particularly during construction phases that include excavation, grading, and other earthwork. As such, this alternative would result in a large amount of soil disturbance, require the use of construction equipment and vehicles during construction, and result in a large amount of new impervious surface area at the project site, which is consistent with the project. Further, this alternative would be subject to the same mitigation measures as the project as well as all applicable state and local water quality protection requirements, which is also consistent with the project.

Therefore, impacts of Alternative 4 related to hydrology and water quality would be *decreased* in comparison to impacts associated with the project.

LAND USE AND PLANNING

Alternative 4 would not result in new features that could physically divide an established community, consistent with the project. Under this alternative, implementation of project would require approvals including a General Plan Amendment from Medium-High Density Residential to Medium Density Residential Use. The Medium-High Density Residential designation allowed for development at densities between 8.8 and 17.4 housing units per acre.[461] In the LCP, this alternative site is designated as a priority development site for affordable housing.[462] The current zoning of Alternative 4 would not allow for development of the project as proposed and would require rezoning to a PUD designation to allow for development of the 71 units and the community building in a manner similar to the currently proposed Project. This alternative site would require a General Plan Amendment and rezoning for consistency to match the required PUD zoning.

Therefore, the impacts of Alternative 4 related to land use and planning would be *greater* in comparison to impacts associated with the project.

[461] County of San Mateo, 1986.
[462] San Mateo County, 2013.

NOISE

Alternative 4 would result in buildout of the entire 6-acre parcel manner consistent with the project, resulting in the generation of similar short-term, intermittent increases in ambient noise during the construction phase from initial site improvements, vehicle and equipment movement, and future construction of residential and commercial land uses. Like the project, construction activities in this alternative would have the potential to result in temporary exceedances of the maximum acceptable noise levels for residential land uses set forth in the County Code. In addition, this alternative would create similar long-term, permanent increases in ambient noise levels, primarily associated with potential increases in vehicle traffic and on-site activities. Alternative 4 would be required to implement the same mitigation measures as the project to reduce less-than-significant construction-related noise and vibration impacts.

The Half Moon Bay Airport is located approximately 0.4 mile east of the proposed project site.[463] The project site is not located within the 2012 or projected 2032 noise exposure contour limits of 60, 65, and 70 community noise equivalent level.[464] Given the intervening topography and distance, development of the Alternative 4 site would not expose people residing or working on this site to excessive noise levels. Impacts would be *similar* in comparison to the proposed project.

Therefore, the impacts of Alternative 4 related to noise would be *similar* in comparison to impacts associated with the project. Mitigation Measures MM-N-1 and MM-N-2 would be applicable under this alternative.

TRANSPORTATION

Alternative 4 would provide for development of affordable housing on a site located approximately 2.5 miles from the Cypress Point Project site in El Granada. Primary access from and to S.R. 1would be from Coral Reef Avenue rather than Carlos Street and California Avenue as with the proposed project. Alternative 4 would be developed under Local Preference Agreement with a total of 71 residential units; the same as the proposed project. The project sponsor would also be required to implement the same set of required C/CAG Transportation Demand Management (TDM) measures identified for the proposed project (see Chapter 2, Project Description) to promote active transportation and limit use of single-occupancy vehicles for discretionary trips.

Alternative 4 would have the same residential development program as the proposed project therefore it would generate a similar level of vehicular traffic. Vehicle trips, pedestrians, and cyclists would be distributed to a different portion of the road network along the Midcoast closer to El Granada, would access S.R. 1 at different locations than under the proposed project; and would access public transit at different locations than under the proposed project. The closest S.R. 1 crossing locations are at Coral Reef Avenue which is a side-stop controlled intersection and at Capistrano Road which is a signalized intersection. Although the immediate pedestrian network in the vicinity of the Alternative 4 project site is missing sidewalks, similar to that of the proposed project, the connecting and adjacent streets such as Avenida Granada to the south and Coral Reef Avenue to the north and west have complete sidewalk networks. In addition, pedestrian safety concerns would be reduced due to the location of the San Mateo County bus stops for routes 117 and 18, i.e., at Avenida Alhambra, which runs parallel to and east of S.R. 1, and Vallejo Street. Although more distant, access to transit would not require crossing of S.R. 1.

Under Alternative 4 consistency-related issues with transportation-related plans, programs, policies or other ordinances such as Connect the Coastside that control the safety and effectiveness of the

[463] C/CAG, 2014.
[464] C/CAG, 2014.

transportation system would be similar to those of the proposed project because they would have similar traffic-generating potentials. Thus, Alternative 4 would not conflict with or result in an adverse effect on the circulation system, including transit, roadway, bicycle and pedestrian facilities, and parking.

Under Alternative 4, VMT-related impacts would be similar to those of the proposed project because of the location of the project and the countywide per capita VMT threshold for home-based VMT. Although eligible for project screening under current County guidance as an urban infill affordable housing project, a detailed VMT analysis would show that Alternative 4 would generate home-based VMT in excess of the County's threshold and that VMT reduction efforts would not reduce or eliminate the significant and unavoidable impact. As with the proposed project, Alternative 4 would conflict with CEQA Guidelines 15064.3(b) and the impact would be significant and unavoidable, *similar* to the proposed project.

Under Alternative 4 traffic hazard and pedestrian safety concerns related to Carlos Steet would not occur. Project-related traffic would not use Carlos Street to access S.R. 1 where the road geometrics and line-of sight issues are known safety hazards. Although future residents would need to cross S.R. 1 to access bus stops for southbound travel and be aware of the travel speed of traffic on SR-1 1, the flat topography and roadway geometry do not create line-of-sight concerns at the intersection with Coral Reef Avenue. Therefore, impacts of Alternative 3 related to traffic hazards and pedestrian safety would be *decreased* in comparison to impacts associated with the project.

Under Alternative 4 emergency access impacts would be considered less than significant and *similar* to those of the proposed project.

In comparison to transportation impacts associated with the proposed project, the impacts of Alternative 4 would be *decreased* except for the significant and unavoidable VMT impact.

Mitigation Measure MM-TR-2 would be applicable under this alternative to address VMT impacts. Mitigation Measures TR-3, TR-4b, and TR-4c would not be applicable because they address site-specific hazards for drivers, pedestrians and cyclists associated with the proposed project.

UTILITIES AND SERVICE SYSTEMS

Alternative 4 would result in buildout of the entire 6-acre parcel in a manner similar to the project, resulting in the need for the construction of new and expanded infrastructure improvements on-site. This alternative would be required to implement the project's identified mitigation to reduce potential adverse impacts on the environment. The project would result in an increased demand for water, as well as increased wastewater and solid waste generation rates over existing conditions, resulting in *similar* impacts to the proposed project.

Overall, the impacts of Alternative 4 related to utilities and service systems would be *similar* in comparison to impacts associated with the proposed project.

WILDFIRE

Alternative 4 would result in buildout of the entire 6-acre parcel in a manner similar to the project, resulting in approximately 213 new residents on the project site. All vegetation would be cleared, but the site may not be able to accommodate a defensible space. This project is located adjacent to a very high fire hazard severity zone.[465]

Overall, the impacts of Alternative 4 related to wildfires would be *greater* in comparison to the proposed project.

[465] Association of Bay Area Governments, 2020.

INITIAL STUDY TOPICS

The Planning Department distributed an NOP of an EIR and Notice of Public Scoping Meeting on December 9, 2022, announcing its intent to prepare an EIR, including an initial study, and to solicit comments from the public about the scope of this EIR (the NOP is presented in Appendix A). The initial study (see Appendix B) determined that project-specific and cumulative impacts for certain resource topics would not require additional analysis in the EIR because the proposed project or project variants would have no impact, less-than-significant impact, or less-than-significant with mitigation incorporated impacts. Additional analysis is not required for the following topics:

- Agriculture and Forestry Resources: The proposed project site contains no land that the CDOC designates as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.[466, 467] Impacts would be *similar* to the proposed project.
- Cultural Resources: The Alternative 4 site is located near eligible/listed properties in the historic area of El Granada. A review of historical aerial photographs showed some that creeks used to run through the project site, increasing sensitivity. The site is sensitive and MM-CR-1 through MM-CR-4 would apply. Impacts would be *similar* in comparison to the project.
- Energy: All energy consumed would not be considered wasteful or inefficient. The project would not conflict with any renewable energy plans. Impacts would be *similar* in comparison to the proposed project.
- Mineral Resources: The project is not located within an area designated by the California Surface Mining and Reclamation Act Mineral Land Classification as a Mineral Resource Zone-2, which indicates the existence of a deposit that meets certain criteria for value and marketability.[468] The classification for the project site is Mineral Resource Zone-3, which is defined as "Areas containing mineral deposits the significance of which cannot be evaluated from available data."[469] Impacts would be *similar* in comparison to the proposed project.
- Population and Housing: The project proposes a similar number of residential units to the proposed project. The Alternative 4 site is vacant and would not displace any people during construction. Impacts would be *similar* in comparison to the proposed project.
- Public Services: The project proposes a similar number of residential units to the proposed project. The Alternative 4 site would increase demand for public services during construction and operation. Impacts would be *similar* in comparison to the proposed project.
- Recreation: The project proposes a similar number of residential units to the proposed project. The Alternative 4 site would increase demand for public services during construction and operation. Impacts would be *similar* in comparison to the proposed project.
- Tribal Cultural Resources: As noted above under Cultural Resources, the Alternative 3 site is sensitive and MM-CR-1 through MM-CR-4 would apply. Impacts would be *similar* in comparison to the project.

Alternative 4 would develop 71 housing units on approximately 6 acres and would require more intensive development throughout the site. However, the construction and operational impacts of Alternative 4, for each of the environmental topics noted in Appendix B: Initial Study (discussed above), impacts would be similar to those of the proposed project.

[466] CDOC, 2019.
[467] CDOC, 2012.
[468] CDOC, 1996.
[469] CDOC, 1996. Page xi.

4.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires the selection of an environmentally superior alternative; however, if the environmentally superior alternative is the "No Project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives (CEQA Guidelines Section 15126.6(e)(2)). In the case of the Cypress Point project, the No Project Alternative is the most effective of the evaluated alternatives in reducing or avoiding the environmental effects of the proposed project. However, based on a comparative evaluation of all the action alternatives, Alternative 4: El Granada Site would reduce the magnitude of the most environmental impacts because it would result in a reduction of one significant an unavoidable impact while meeting the majority of the project objectives, except for Objective 6 which seeks to provide onsite open space as an amenity to residents. Alternative 4 would require that the entire site be developed, leaving no room for onsite open space. However, MidPen does not own the El Granada site; Cabrillo Unified School District owns the site and does not appear receptive to selling the property. While the project site has environmental constraints such as steep grades and thick vegetation, Alternative 4 would eliminate the significant and unavoidable transportation impacts related to pedestrian safety under TR-4 and the cumulative safety hazard under C-TR-3. All remaining potentially significant impacts would be similar to but slightly less that the proposed project with mitigation. This alternative would be the environmentally superior alternative.

CHAPTER 5. OTHER CEQA CONSIDERATIONS

This chapter discusses other potential environmental effects for which the California Environmental Quality Act (CEQA) requires analysis, in addition to the specific issue areas evaluated in Chapter 3, Environmental Impacts Analysis. These additional effects include the potential for the project to result in growth-inducing impacts, the irreversible commitment of resources, and significant unavoidable environmental effects.

5.1 GROWTH-INDUCING IMPACTS

CEQA Guidelines Section 15126.2(e) requires that an Environmental Impact Report (EIR) provide a discussion of the growth-inducing impacts of the proposed project. Growth-inducing impacts could be caused by projects that foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Growth-inducing impacts also can be caused by removing obstacles to population growth, such as an expansion of a wastewater treatment plant, and can result from population increases that require the construction of new community services facilities.

In general terms, a project may induce spatial, economic, or population growth in a geographic area if it meets any of these four criteria:

1. Removal of an impediment to growth (e.g., establishment of an essential public service or the provisions of new access to an area);
2. Economic expansion or growth (e.g., changes in revenue base, employment expansion);
3. Establishment of a precedent-setting action (e.g., an innovation, a change in zoning, or general plan amendment approval); or
4. Development or encroachment into an isolated area or one adjacent to open space (being different from an "infill" type of project).

Should a project meet any one of the above-listed criteria, it can be considered growth-inducing. The impacts of the proposed project are evaluated below with regard to these four criteria.

5.1.1 Removal of an Impediment to Growth

The project site is currently accessible from Buena Vista Street, Lincoln Street, Carlos Street, and Highway 1. Therefore, implementation of the project would not establish new access to an undeveloped area.

While the project would result in the extension and expansion of water and wastewater system infrastructure on the project site, it is located within the existing service area of the Montara Water and Sanitary District (MWSD). Water and wastewater services currently serve as a direct constraint on development in the Montara and Moss Beach areas.[470] However, the extension of MWSD infrastructure to the project site would not remove an impediment to future unplanned growth in the project vicinity or provide an essential public service that could induce additional population growth. Expansion of existing MWSD infrastructure capacity would be designed to serve existing MWSD customers, the population induced by the project, and future planned population growth within the MWSD and Sewer Authority Mid-Coastside service areas. Therefore, the project and implementation of associated water and

[470] MWSD, 2017. *2017 Water System Master Plan*. Available at: https://mwsd.montara.org/assets/uploads/documents/MWSD_2017%20Master%20Plan%20Update_Rev17_082417_Full.pdf. Accessed June 2023.

wastewater system improvements would not have a substantial growth-inducing effect on surrounding land uses beyond the project's direct population growth discussed in Appendix B**, Initial Study Section 2.14, Population and Housing**. Impacts would be less than significant.

5.1.2 Economic Expansion or Growth

All residential units of the project, except for the manager's apartment, will be affordable to households earning up to 80% of the area's median income. In addition, the project proposes to include a preference for individuals who live and/or work in the region for 75% of the units. Eligible households are those that include at least one member who lives or works in the City of Pacifica, the City of Half Moon Bay, and/or the unincorporated County of San Mateo (County) region between the City of Pacifica and the City of Half Moon Bay, or the Greater Moss Beach Region. This preference structure increases the chances for individuals who meet these criteria to live in this development, although it does not restrict individuals who do not live and work in the area from being accepted.

Based on the most recent available data from the 2019 U.S. Census Bureau, there are 12,177 jobs located in the coastal region (Princeton, Miramar, El Granada, Montara, and Moss Beach) and the neighboring coastal cities of Pacifica and Half Moon Bay. Among these jobs, 7,892 (64.8%) are held by individuals commuting from outside the Greater Moss Beach Region. In total, 2,839 of these jobs require commutes between 10 and 24 miles, and 3,033 additional jobs require commutes of 25 miles or more.[471] Therefore, the project's expansion of residential units would serve the existing community and would not be expected to encourage significant economic growth. The project would result in a 3.4% increase in population (213 residents) within the combined communities of Montara and Moss Beach (6,269 residents); however, it is planned growth that is consistent with the land-use designation and zoning. The project could encourage a limited amount of growth as a result of the provision of jobs/uses that are not currently present in the immediate project vicinity. Impacts would be less than significant.

5.1.3 Establishment of a Precedent-Setting Action

In 1986, the County approved and the California Coastal Commission certified a rezoning of the project site to Planned Unit Development District No. 124/Coast Development District (PUD-124/CD) to enable the construction of a mixed-market rate/affordable housing development consisting of 148 dwelling units. The project site land-use designation in the San Mateo County Local Coastal Program (LCP) has since been amended to Medium Density Residential and zoned as Planned Unit Development District 140/Coastal Development District (PUD-140/CD), which allows for a total of 71 units on the project site. The LCP designates the site as infill and a priority development site for affordable housing.[472] As part of the project's approvals, a General Plan amendment from Medium-High Density Residential to Medium Density Residential would ensure the project is consistent with its zoning and land-use designations. Amending the General Plan would match the LCP PUD-140/CD zoning designation. The project would not newly designate undeveloped land for development, and the project has been zoned for residential development since 1986. The project also would not allow for increased density of development.

Compared to existing conditions, establishment of the project may increase the attractiveness of surrounding rural residential land for future residential development at similarly higher densities, including construction of accessory dwelling units and/or subdivisions and future commercial development. However, with implementation of the proposed General Plan amendment, the project would

[471] U.S. Census Bureau, 2019. Quickfacts: San Mateo County, California. Available at: https://www.census.gov/quickfacts/sanmateocountycalifornia. Accessed June 22, 3023.
[472] County of San Mateo. 2013. *Local Coastal Program Policies.* Available at: https://www.smcgov.org/planning/local-coastal-program#. Accessed June 2023.

be consistent with its zoning and land-use designation and would not establish a precedent-setting action. Impacts would be less than significant.

5.1.4 Development or Encroachment into an Isolated Area

The project site is bounded by vacant land to the southwest (toward Highway 1), residential properties along 16th Street to the northwest (in the community of Montara), and residential properties along Carlos, Sierra, and Lincoln Streets on the other two sides. As stated above, the project site has existing access from Buena Vista Street, Lincoln Street, and Carlos Street. The project is readily accessible from the City of Half Moon Bay and the communities of Montara and Moss Beach and is not considered an Isolated Area. Construction of residential units within the region would help alleviate the heightened housing demand within the County and would not foster the need for future construction of additional housing. Therefore, implementation of the project would not result in development or encroachment into an isolated area, and impacts would be less than significant.

5.2 IRREVERSIBLE COMMITMENT OF RESOURCES

CEQA Guidelines Section 15126.2(c) requires an EIR to consider significant, irreversible environmental changes, such as the use of nonrenewable resources and irretrievable commitment of resources. Section 15126.2(c) states that the use of nonrenewable resources during the initial and continued phases of a project may be irreversible if a large commitment of these resources makes their removal, indirect removal, or use thereafter unlikely. Nonrenewable resources such as natural gas, petroleum products, asphalt, steel, copper and other metals, sand, and gravel are considered to be commodities that are available in a finite supply. Several irreversible commitments of limited resources would result from implementation of the project. Such resources include, but are not limited to, the loss of lumber, gravel, concrete, asphalt, petrochemical construction materials, metals, and water consumption.

The project would develop residential uses within the currently undeveloped project site, the construction of which would irreversibly commit construction materials and nonrenewable energy resources (e.g., fossil fuels, wood). Nonrenewable resources used during construction for the project would no longer be used for other purposes. Consumption of building materials and energy is associated with all development projects in the region, and these commitments of resources are not unique or unusual to the project. Construction of residential and commercial structures are subject to the California Building Code, which regulates the method of use, properties, performance, and types of building materials used in construction. Construction equipment would be subject to state and local fuel efficiency standards and idling restrictions.

The buildout of the project would also result in an incremental contribution to the long-term consumption of energy resources associated with the establishment of residential and commercial uses within the project site. Future residential development would be serviced by the Pacific Gas and Electric Company, which supplies 48% of its energy mix from renewable resources, 39% from nuclear energy, 4% from large hydrological energy sources, and 9% from natural gas.[473] The project proposes the use of rooftop solar arrays and would partially rely on energy generated from those arrays, resulting in an energy mix with more renewables than the energy mix provided by Pacific Gas and Electric Company. The project would meet or exceed the requirements of the California Building Code and California Title 24 in effect at the time of construction. Compliance with these standards would include implementation of water conservation measures, energy- and water-efficient appliances, and energy-efficient heating and cooling systems. These sustainable building features would reduce new energy demand and the consumption of

[473] Pacific Gas and Electric Company, 2022. Renewable Energy and Storage. Available at: https://www.pgecorp.com/corp_responsibility/reports/2022/pf03_renewable_energy_storage.html. Accessed June 19, 2023.

water and nonrenewable fossil fuels to a level consistent with or better than other development within the project vicinity. Therefore, the commitment of these resources for project development has been planned for, and the impacts associated with the commitment of resources would be less than significant.

5.3 SIGNIFICANT UNAVOIDABLE ENVIRONMENTAL EFFECTS

CEQA Guidelines Section 15126.2(c) requires that EIRs provide a discussion of significant impacts that cannot be mitigated to a level of insignificance without imposing an alternative design, their implications, and the reasons why the project is proposed, notwithstanding their effect. The project's potential impacts on the environment were evaluated concerning the specific resource areas in Chapter 3, Environmental Impacts Analysis. Based on the analysis provided in Chapter 3, the project would have four significant unavoidable impacts associated with transportation (see Section 3.10, Transportation).

The project's daily home-based vehicle miles traveled (VMT) per capita by resident would be above the VMT threshold for the Bay Area regional average, the County average, or the coastal transportation analysis zone average. The project would implement **MM-TR-2** to reduce VMT, however, the proposed project's VMT impact would remain significant and unavoidable with mitigation. The project would also cumulatively contribute to a significant cumulative transportation impact related to VMT. With implementation of **C-TR-2,** impacts would remain significant and unavoidable.

There are transportation-related hazards on Highway 1 including a lack of sidewalks, lack of crossing opportunities, high-speed traffic, vegetation and roadway design that limits visibility or safe lines-of-sight, and limited lighting. In the project site, pedestrians and bicyclists currently travel along Highway 1 or cross Highway 1 at unsignalized intersections in Moss Beach, such as Carlos and Etheldore Streets or at the midblock, all of which are identified hazards due to the lack of facilities, line-of-sight deficiencies, and traffic speeds. The project would implement **MM-TR-4** for additional transportation demand management measures and commit to gap closures of sidewalk improvements. However, the project's pedestrian safety impact would remain significant and unavoidable with mitigation. The project would also cumulatively contribute to a significant cumulative transportation impact related to hazards. With implementation of **C-TR-3,** impacts would remain significant and unavoidable.

In accordance with State CEQA Guidelines Section 15093, if an EIR demonstrates that implementation of a proposed project would cause significant and unavoidable impacts, the lead agency must issue a Statement of Overriding Considerations before approving the project to provide the specific reasons to support its action. Therefore, the County, as the lead agency, will be required to adopt a Statement of Overriding Considerations to address the significant impacts identified above and discussed in detail in Chapter 3 prior to approval of the project. For this document, the County may determine that the long-term benefits of the project, such as providing regional affordable housing opportunities, provide substantial overriding considerations for approving the project despite the identified adverse environmental impacts that would result from implementation of the project. To facilitate consideration of this determination, this EIR includes an evaluation of potential impacts and identifies a range of project alternatives that could reduce and/or fully negate adverse environmental effects. In addition, Appendix B, Initial Study Section 2.11, Land Use and Planning, provides a detailed analysis of the project's consistency with applicable local policies and objectives. Each of these resources may be used in consideration of the significant unavoidable effects that would result from the project.

CHAPTER 6. REPORT PREPARATION

This Environmental Impact Report (EIR) has been prepared by SWCA Environmental Consultants, in association with the San Mateo County Planning and Building Department (California Environmental Quality Act [CEQA] Lead Agency), and Fehr & Peers. The following is a list of the individuals responsible for the preparation of this EIR.

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Coastal Development Permit Sources:

https://www.smcgov.org/planning/cypress-point-affordable-housing-community-project-2022-cdp-application.

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APPENDIX A

Notice of Preparation

Notice of Preparation

To: California State Clearinghouse

1400 10th St #12, Sacramento, CA 95814 (Address)

From: Michael Schaller, Senior Planner

San Mateo County

455 County Center, Redwood City, CA 9406 (Address)

Subject: Notice of Preparation of a Draft Environmental Impact Report

San Mateo County will be the Lead Agency and will prepare an environmental impact report for the project identified below. We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

The project description, location, and the potential environmental effects are contained in the attached materials. A copy of the Initial Study (☐ is ☒ is not) attached.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to Michael Schaller, Senior Planner at the address shown above. We will need the name for a contact person in your agency.

Project Title: Cypress Point Affordable Housing Community Project

Project Applicant, if any: MidPen Housing

Date December 1, 2022

Signature Michael Schaller

Title Senior Planner

Telephone (650) 363-1849

Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375.

NOTICE OF PREPARATION (NOP) OF A DRAFT ENVIRONMENTAL IMPACT REPORT AND PUBLIC SCOPING MEETING FOR THE CYPRESS POINT AFFORDABLE HOUSING COMMUNITY PROJECT

Date: December 9, 2022

To: Responsible/Trustee Agencies and Interested Parties

From: County of San Mateo

Subject: Notice of Preparation (NOP) of a Draft Environmental Impact Report and Public Scoping Meeting for the Cypress Point Affordable Housing Community Project

The County of San Mateo, as Lead Agency, will prepare a Draft Environmental Impact Report (EIR) for the Cypress Point Affordable Housing Community Project ("project"). The specifics of the project are described below. The County of San Mateo is soliciting written and oral comments on the scope and content of the Draft EIR. This NOP is being sent to the California State Clearinghouse, San Mateo County Clerk, adjacent cities, potential responsible agencies, and other interested parties. Responsible agencies are those public agencies, in addition to the County of San Mateo, that may have a role in approving or carrying out the project. When the Draft EIR is published, a Notice of Availability of a Draft EIR will be sent to Responsible Agencies, other public agencies, and interested parties and individuals who have indicated that they would like to review the Draft EIR.

Location of Documents Available for Public Review: The NOP and all public review documents for this project will be available for review online at https://www.smcgov.org/planning/cypress-point-affordable-housing-community-project.

Project Title: Cypress Point Affordable Housing Community Project

Project Applicant: MidPen Housing

Project Location: The project site is located on an 11.02-acre parcel adjacent to the northeast corner of Carlos Street and Sierra Street in the unincorporated community of Moss Beach, San Mateo County, California (see Figures 1 and 2). The parcel is designated as Assessor's Parcel Number (APN) 037-022-070. The project site is bounded by vacant land to the southwest (towards State Route 1), residential properties along 16th Street to the northwest (in the community of Montara), and residential properties along Carlos, Sierra, and Lincoln Streets on the other two sides. Individual houses along Stetson Street and Buena Vista Street also border the property.

Existing Conditions and Site History: During the World War II era, the property was occupied by the Point Montara Artillery Training Station. The Montara Elementary School District acquired the site in 1948 and used one of the buildings for the Farallon View Elementary School.

The project site is currently vacant and contains numerous concrete slab-on-grade building foundations and retaining walls located in the central portion of the parcel. These buildings are the only remnants of the Point Montara Artillery Training Station and school buildings. In some areas, these foundations are covered by thick vegetation consisting of trees and shrubs and by graffiti. Thick vegetation also covers the majority of the project site outside the areas of the building foundations.

Unpaved internal roadways extend northwest-southeast across the north and central portions of the project site. In addition, two water tanks owned by the Montara Water and Sanitary District also occupy the site. They will remain in place but are not part of the project. A perennial stream (Montara Creek) is located approximately 250 feet to the northeast of the project site and runs in parallel to the northern border of the site (prior to emptying into the Pacific Ocean).

The project site is located within the Coastal Zone, and development of the site is regulated by San Mateo County's Local Coastal Program (LCP). The project site is currently designated as Medium Density Residential in the San Mateo County LCP, which allows for development at densities from 6.1 to 8.0 units per acre. The project site is zoned Planned Unit Development District 140/Coastal Development District (PUD-140/CD). This zoning designation allows for a total of 71 units on the site.[1]

Project Background: In 2021, San Mateo County (on behalf of the project applicant) received approval from the California Coastal Commission for an amendment to the San Mateo County LCP to accommodate the land uses requested in the project application. The requested approvals included the following:

- Amend the LCP Implementation Plan and existing Planned Unit Development Zoning for the site to reduce the number of units from 148 to 71;
- Amend the LCP Land Use Plan to change the site's land use designation from Medium-High Density Residential to Medium Density Residential; and
- Amend section 3.15(d) of the LCP to allow for 100% of the units, apart from a resident manager's unit, to serve low- or moderate-income households.

Project Description: After receiving approval of the San Mateo County LCP amendments, the project applicant subsequently applied to the County for a Coastal Development Permit. The project proposes the development of 71 affordable housing units, contained in 16 two-story buildings, and a community building (see Figure 3). Five different building layouts and unit configurations, all with a maximum building height of 28 feet are proposed. Public utility lines will be extended throughout the site.

The project will provide a mixture of one-, two-, and three-bedroom units, including a combination of two-story townhouses and Americans with Disabilities Act-accessible one-story flats. All units, except for the manager's apartment, will be affordable to households earning up to 80% of the Area Median Income. As part of the resident selection process, the project proposes to include a preference for individuals who live and/or work in the region for 75% of the units. Eligible households are those that include at least one member who lives or works in the City of Pacifica, the City of Half Moon Bay, and/or the unincorporated County region between the City of Pacifica and the City of Half Moon Bay ("MidCoast Area").

In addition to the housing units, the project will include an approximately 3,300-square-foot community building, which will contain the general office, the manager's office, a community room, kitchen, computer room, laundry, and maintenance and storage areas. The project also includes several outdoor recreational amenities, including a community garden, children's play area, and picnic areas.

Vehicular access to and from the project site will be provided by a new single driveway on Carlos Street. A second new access route, which will be restricted to emergency vehicles only, will connect with Lincoln Street. There will be 142 parking spaces on site, forming a ring around the central core of apartment buildings. Accessible walkways will provide internal pedestrian access to the site, and trails will be provided around most of the perimeter of the site for recreational use by both residents and the general public.

The project will seek an amendment of the County General Plan land use designation from Medium-High Density Residential to Medium Density Residential. A General Plan land use designation of Medium Density Residential allows for development at densities of 6.1 to 8.7 housing units per acre. The LCP allows for development at densities of 6.1 to 8.0 housing units per acre in the LCP.

Project construction will take place in one phase over a period of 18 months. The project will excavate approximately 9,506 cubic yards on site and import approximately 19,388 cubic yards of fill.

[1] County of San Mateo, 2022. "Zoning Regulations." January 2022. Available online at: https://www.smcgov.org/media/101461/download?inline=

Potential Environmental Effects: Potential physical and environmental effects of the project that are anticipated to be evaluated in the Draft EIR include the following:

Aesthetics	Land Use and Planning
Agriculture and Forestry Resources	Mineral Resources
Air Quality	Noise and Vibration
Biological Resources	Population and Housing
Cultural Resources	Public Services
Energy	Recreation
Geology and Soils	Transportation
Greenhouse Gas Emissions	Tribal Cultural Resources
Hazards and Hazardous Materials	Utility and Service Systems
Hydrology and Water Quality	Wildfire

In compliance with CEQA Guidelines Section 15126.6, the Draft EIR will describe and evaluate the effects of a reasonable range of alternatives to the proposed project and will compare the impacts of the alternatives to the impacts of the proposed project. The EIR will also identify any alternatives that were considered but rejected by the Lead Agency as infeasible and briefly explain their reasoning. The EIR will provide an analysis of the No Project Alternative and will also identify the Environmentally Superior Alternative. The alternatives to be analyzed in the EIR will be developed during the environmental review process and will consider input received during the public scoping period.

NOP Response Deadline: Written responses to this notice regarding the scope of the Draft EIR will be accepted until **5:00 PM, Monday January 9, 2023.** All written comments should be sent to the Lead Agency as follows:

By U.S. Mail:

County of San Mateo
Planning and Building Department
Michael Schaller, Senior Planner
455 County Center, Redwood City, CA 94063

Or via email: **mschaller@smcgov.org;** include "Cypress Point Affordable Housing Community Project – NOP Scoping Comments" in the subject line.

Public Scoping Meeting: Pursuant to State CEQA Guidelines Sections 15082 and 15206, the County will conduct a public scoping meeting to solicit written and oral comments regarding the scope and content of the EIR from interested parties, responsible agencies, and any other interested persons, organizations, or agencies.

The scoping meeting will be held at the San Mateo County Planning Commission meeting of **Wednesday, December 14, 2022,** which begins at **9 a.m.** and will be conducted via video conference. The meeting may be accessed online through Zoom at **https://smcgov.zoom.us/j/97838867686.** The meeting ID is **978 3886 7686.**

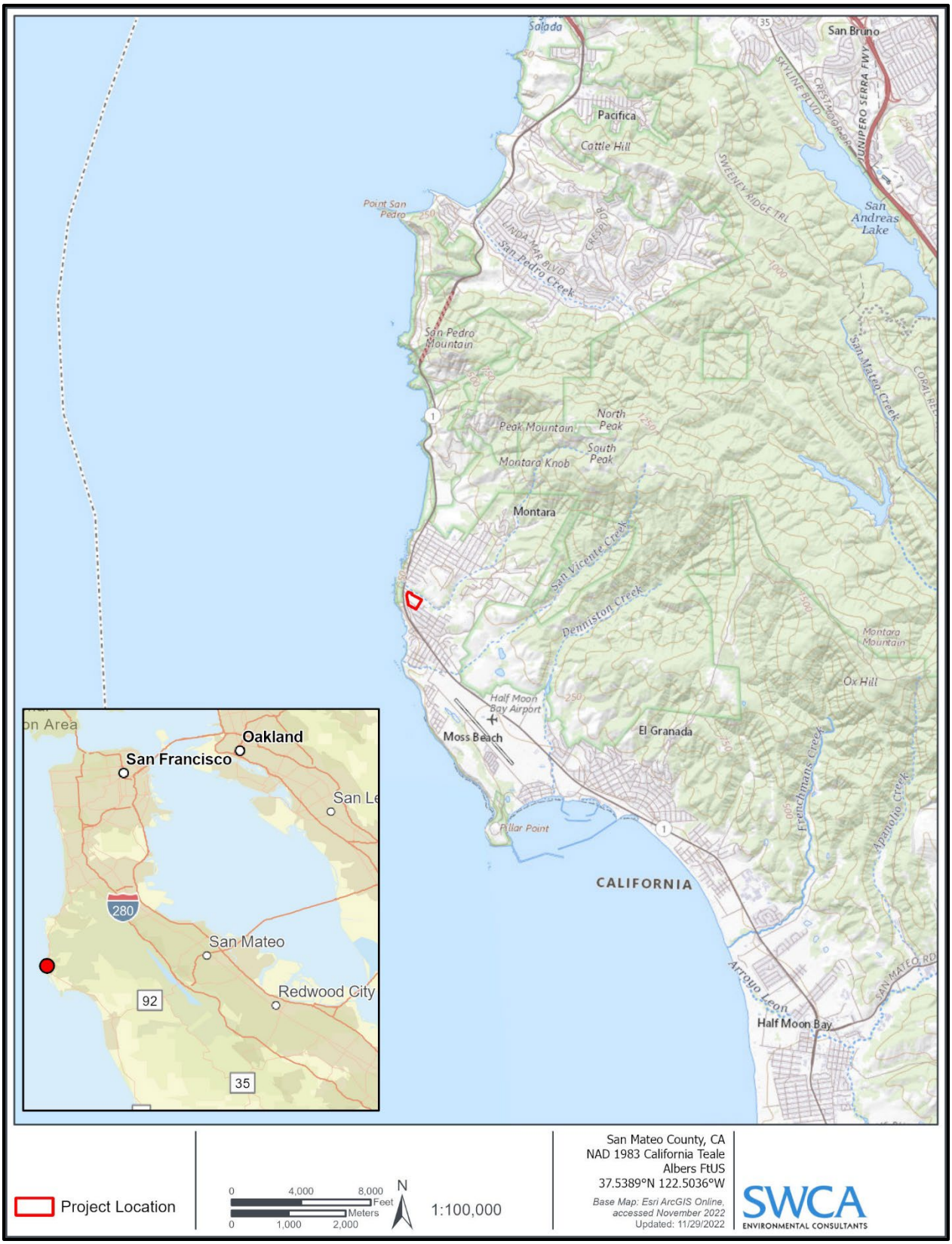


Figure 1. Project Vicinity



Figure 2. Project Location

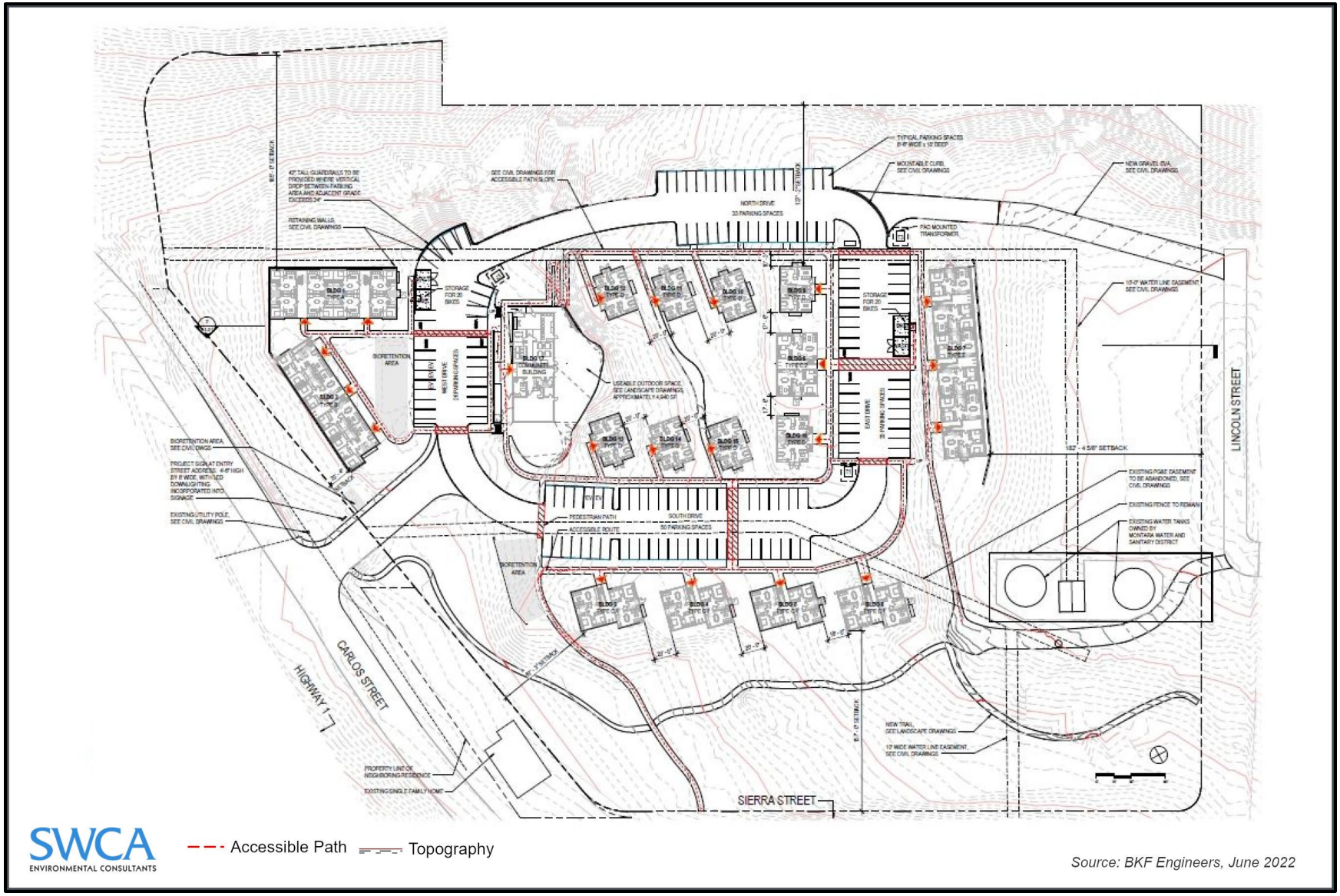


Figure 3. Proposed Site Plan

APPENDIX B

CEQA Initial Study

Appendix B Initial Study for the Cypress Point Affordable Housing Community Project, San Mateo County, California

JULY 2023

PREPARED FOR

County of San Mateo

PREPARED BY

SWCA Environmental Consultants

DRAFT INITIAL STUDY FOR THE CYPRESS POINT AFFORDABLE HOUSING COMMUNITY PROJECT, SAN MATEO COUNTY, CALIFORNIA

Prepared for

County of San Mateo
455 County Center
Redwood City, California 94063
Attn: Michael Schaller

Prepared by

SWCA Environmental Consultants
60 Stone Pine Road, Suite 100
Half Moon Bay, California 94019
www.swca.com

SWCA Project No. 73999

July 2023

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1 INTRODUCTION

The Cypress Point Affordable Housing Community Project (proposed project) is described in Chapter 2, Project Description, of the environmental impact report (EIR), to which this initial study is attached and included as Appendix B.

The County of San Mateo (County) Planning and Building Department (Planning Department, CEQA Lead Agency) distributed a Notice of Preparation (NOP) of an EIR and Notice of Public Scoping Meeting on December 9, 2022, announcing its intent to prepare an EIR, including an initial study, and to solicit comments from the public about the scope of this EIR (the NOP is presented as EIR Appendix A). This initial study determined that project-specific and cumulative impacts in certain resource topic areas would not require additional analysis in the EIR because the proposed project or project variants would have no impact, less than significant impacts, or less than significant impacts with mitigation included. These topic areas consist of the following:

Agricultural and Forestry Resources (all topics)

Cultural Resources (all topics)

Tribal Cultural Resources (all topics)

Energy (all topics)

Geology and Soils (septic tanks)

Greenhouse Gas Emissions (all topics)

Population and Housing (all topics)

Noise (aviation-related topics)

Recreation (all topics)

Utilities and Service Systems (all topics)

Public Services (all topics)

Biological Resources (all topics)

Hydrology and Water Quality (all topics)

Hazards and Hazardous Materials (all topics)

Mineral Resources (all topics)

Wildfire (all topics)

This initial study provides a discussion and the impact analysis of the proposed project or project variants with respect to these resource topics.

1.1 Project Location and Environmental Setting

The project location, environmental setting, and land use characteristics are described in EIR Chapter 2, Project Description. The cumulative setting is provided in EIR Chapter 3, Environmental Impacts Analysis.

1.2 Project Description

Chapter 2, Project Description, of the EIR, provides a detailed description of the proposed project. This chapter includes a project background, objectives, location, existing site land use characteristics, project components and characteristics, and construction schedule (including anticipated construction activities), and identifies required project approvals.

2 ENVIRONMENTAL CHECKLIST AND ENVIRONMENTAL EVALUATION

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The proposed project could have a Potentially Significant Impact for environmental factors checked below. Please refer to the attached pages for discussion of mitigation measures or project revisions that would either reduce these impacts to less than significant levels or require further study.

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

ENVIRONMENTAL DETERMINATION

On the basis of this initial evaluation:

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

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

☒ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" 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 measure based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR 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.

Date: _____ **Signed:** _____

2.1 Aesthetics

Environmental Issues		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:					
(a)	Have a substantial adverse effect on a scenic vista?	☒	☐	☐	☐
(b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☒	☐	☐	☐
(c)	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☒	☐	☐	☐
(d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☒	☐	☐	☐
(e)	Be adjacent to a designated Scenic Highway or within State or County Scenic Corridor?	☒	☐	☐	☐
(f)	If within a Design Review District, conflict with applicable General Plan or Zoning Ordinance provisions?	☒	☐	☐	☐
(g)	Visually intrude into an area having natural scenic qualities?	☒	☐	☐	☐

Environmental Evaluation

EIR Section 3.1, Aesthetics, provides a detailed analysis of effects on scenic resources, views, visual character, and light and glare associated with the proposed project, including explanation of initial study checklist topics (a) through (g) indicated above. The EIR includes a complete description of the existing visual setting and regulatory framework, the approach to the analysis, an impact evaluation of the proposed project, and cumulative impacts, and, if appropriate, identification of mitigation measures. The significance of the proposed project's aesthetic effects is based on local policies and standards, photographic documentation of the project site, and viewshed analysis.

a) Would the project have a substantial adverse effect on a scenic vista?

See EIR Section 3.1, Aesthetics, for the project-specific and cumulative analysis related to scenic vistas.

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

See EIR Section 3.1, Aesthetics, for the project-specific and cumulative analysis related to scenic resources within a State Scenic Highway.

c) In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

See EIR Section 3.1, Aesthetics, for the project-specific and cumulative analysis related to visual character and public views.

d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

See EIR Section 3.1, Aesthetics, for the project-specific and cumulative analysis related to light and glare.

e) Would the project be adjacent to a designated Scenic Highway or within State or County Scenic Corridor?

See EIR Section 3.1, Aesthetics, for the project-specific and cumulative analysis related to Scenic Corridors.

f) If within a Design Review District, would the project conflict with applicable General Plan or Zoning Ordinance provisions?

See EIR Section 3.1, Aesthetics, for the project-specific and cumulative analysis related to General Plan or Zoning Ordinance provisions.

g) Would the project visually intrude into an area having natural scenic qualities?

See EIR Section 3.1, Aesthetics, for the project-specific and cumulative analysis related to visual intrusion.

2.2 Agriculture and Forestry Resources

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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:				
(a) For lands outside the Coastal Zone, 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?	☐	☐	☐	☒

Environmental Issues		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(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?	☐	☐	☐	☒
(f)	For lands within the Coastal Zone, convert or divide lands identified as Class I or Class II Agriculture Soils and Class III Soils rated good or very good for artichokes or Brussels sprouts?	☐	☐	☐	☒
(g)	Result in damage to soil capability or loss of agricultural land?	☐	☐	☐	☒

Environmental Evaluation

a) For lands outside of the Coastal Zone, would the project 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?

The California Department of Conservation (CDOC) Division of Land Resource Protection lists Prime Farmland, Unique Farmland, Farmland of Local Importance, and Farmland of Statewide Importance under the general category of Important Farmland in California. The project site is split between Urban and Built-Up Land and Other Land. Other Land is designated as land not included in other mapping categories. The project site contains no land that the CDOC designates as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.[1,2] Therefore, the project would have no impact on the conversion of farmland to non-agricultural uses and this topic will not be discussed further in the EIR.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

The Williamson Act of 1965 allows local governments to enter into agreements with local landowners with the purpose of trying to limit specific parcels of land to agricultural or other related open space use. Given the project site is zoned Planned Unit Development District 140/Coastal Development District (PUD-140/CD), is not subject to a Williamson Act contract, and is not located adjacent to a designated

[1] CDOC. 2019. Important Farmland Categories. Available at: https://www.conservation.ca.gov/dlrp/fmmp/Pages/Important-Farmland-Categories.aspx. Accessed January 20, 2023.

[2] CDOC. 2012. DOC Maps: Agriculture. Available at: https://maps.conservation.ca.gov/agriculture/. Accessed January 20, 2023.

agricultural use, the project would not conflict with any agricultural use.[3,4] Therefore, no impact with respect to land zoned for agricultural use or land under a Williamson Act contract would occur, and this topic will not be discussed further in the EIR.

c) Would the project 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))?

The project site is zoned PUD-140/CD and surrounded by roadways, residential land uses, and open space. It is not located on forest land, timberland, or timberland zoned Timberland Production as defined by California Government Code Section 51104. Therefore, no impact related to conflicts with existing zoning for forest land, timberland, or timberland zoned Timberland Production would occur, and this topic will not be discussed further in the EIR.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

The project site is zoned PUD-140/CD; surrounded by roadways, residential land uses, and open space; and is not located on forest land. Therefore, no impact related to the loss or conversion of forest land would occur, and this topic will not be discussed further in the EIR.

e) Would the project 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?

The project site is zoned PUD-140/CD. Neither the project site nor the surrounding parcels are used for agricultural uses or forest land for timber production. There is no agricultural production or forest land in the immediate vicinity of the project site. Therefore, no impacts related to conversion of farmland to a non-agricultural use or conversion of forest land to non-forest use would occur and this topic will not be discussed further in the EIR.

f) For lands within the Coastal Zone, would the project convert or divide lands identified as Class I or Class II Agriculture Soils and Class III Soils rated good or very good for artichokes or Brussels sprouts?

The project site is located in the Coastal Zone. The San Mateo County Prime Soils Map shows areas of unincorporated San Mateo County with soils rated and mapped by the National Resources Conservation Service (NRCS) as Class I, Class II, and Class III soils capable of growing artichokes or Brussels sprouts.[5] The Prime Soils Map shows the closest mapped soils as being several miles east of the project site. The map does not show the project site as being located in or adjacent to soils rated good or very good for artichokes or Brussels sprouts. Therefore, no impacts related to the conversion or division of lands identified as Class I, Class II, and Class III soils rated good or very food for artichokes or Brussels sprouts would occur and this topic will not be discussed further in the EIR.

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[3] County of San Mateo. 2013. Local Coastal Program. Available at: https://www.smcgov.org/planning/local-coastal-program. Accessed January 20, 2023.

[4] California Williamson Act Enrollment Finder. 2021. Williamson Act County Participation 2021. Available at: https://gis.conservation.ca.gov/portal/home/webmap/viewer.html?webmap=18f7488c0a9d4d299f5e9c33b312f312. Accessed January 20, 2023.

[5] County of San Mateo. 2009. Prime Soils Map. Available at: https://www.smcgov.org/media/73091/download?inline=. Accessed April 5, 2023.

g) Would the project result in damage to soil capability or loss of agricultural land?

The project site contains concrete building foundations and retaining walls from when the site was developed as the Point Montara Artillery Training Station. In some areas, these foundations are covered by graffiti and thick vegetation. Thick vegetation also covers the majority of the project site outside the areas of the building foundations. While grading is proposed throughout the site as part of project development, the soil has already been developed and there would be no damage to capabilities over existing conditions.

As stated in Sections 2.2a, 2.2e, and 2.2f, the project site is zoned PUD-140/CD and has been classified as Urban and Built-Up Land and Other Land. Neither of these CDOC-designated categories are considered agricultural. Additionally, the San Mateo County Prime Soils Map does not map the project site as agricultural. Therefore, no impacts related to soil capability and loss of agricultural land would occur and this topic will not be discussed further in the EIR.

Cumulative Discussion

There is no agricultural or forest land on the project site or in the immediate vicinity of the project site. Therefore, there would be no cumulative impact on farmland or forest resources and no contribution by the proposed project to a significant cumulative impact with respect to agricultural or forest resources. No mitigation measures are necessary.

2.3 Air Quality

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
(a) Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐
(b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☒	☐	☐	☐
(c) Expose sensitive receptors to substantial pollutant concentrations, as defined by the Bay Area Air Quality Management District?	☒	☐	☐	☐
(d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☒	☐	☐	☐

Environmental Evaluation

EIR Section 3.2, Air Quality, provides a detailed analysis of construction and operation air quality impacts associated with the proposed project, including explanation of initial study checklist topics (a) through (d) indicated above. The EIR includes a complete description of the existing air quality setting and regulatory framework, the approach to the analysis, an impact evaluation of the proposed project and its variants and cumulative impacts, and, if appropriate, identification of mitigation measures. The significance of the proposed project's local and regional air quality effects is based on detailed air quality study modeling.

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

See EIR Section 3.2, Air Quality, for the project-specific and cumulative analysis related to the applicable air quality plan.

b) Would the project 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?

See EIR Section 3.2, Air Quality, for the project-specific and cumulative analysis related to criteria pollutants.

c) Would the project expose sensitive receptors to substantial pollutant concentrations, as defined by the Bay Area Air Quality Management District?

See EIR Section 3.2, Air Quality, for the project-specific and cumulative analysis related to sensitive receptors and pollutant concentrations.

d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

See EIR Section 3.2, Air Quality, for the project-specific and cumulative analysis related to other emissions and odors.

2.4 Biological Resources

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(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, 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?	☒	☐	☐	☐

	Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (including the County Heritage and Significant Tree Ordinances)?	☒	☐	☐	☐
(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?	☐	☐	☒	☐
(g)	Be located inside or within 200 feet of a marine or wildlife reserve?	☒	☐	☐	☐
(h)	Result in loss of oak woodlands or other non-timber woodlands?	☒	☐	☐	☐

Environmental Evaluation

EIR Section 3.3, Biological Resources, provides a detailed analysis of construction and operation biological impacts associated with the proposed project, including explanation of initial study checklist topics (a) through (h) indicated above. The EIR includes a complete description of the existing biological resources setting and regulatory framework, the approach to the analysis, an impact evaluation of the proposed project, and cumulative impacts, and, if appropriate, identification of mitigation measures. As discussed below, initial study checklist topic (f) is less than significant and is not addressed within EIR Section 3.3, Biological Resources.

a) Would the project 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?

See EIR Section 3.3, Biological Resources, for the project-specific and cumulative analysis related to candidate, sensitive, or special status species.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

See EIR Section 3.3, Biological Resources, for the project-specific and cumulative analysis related to riparian habitat or other sensitive natural communities.

c) Would the project 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?

See EIR Section 3.3, Biological Resources, for the project-specific and cumulative analysis related to wetlands.

d) Would the project 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?

See EIR Section 3.3, Biological Resources, for the project-specific and cumulative analysis related to migratory wildlife corridors.

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (including the County Heritage and Significant Tree Ordinances)?

See EIR Section 3.3, Biological Resources, for the project-specific and cumulative analysis related to local policies or ordinances protecting biological resources.

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

The project site is located within a habitat conservation plan (HCP) specific to Pacific Gas and Electric Company's (PG&E's) Bay Area Operations and Maintenance (O&M) activities. The U.S. Fish and Wildlife Service (USFWS) has issued PG&E an Endangered Species Act Section 10(a)(1)(B) incidental take permit for the company's Bay Area O&M HCP. This HCP is designed only to cover PG&E's activities; the HCP includes strategies to avoid, minimize, and offset potential direct, indirect, and cumulative effects of PG&E's operations, maintenance, and minor new construction activities on 32 species federally listed as threatened or endangered.[6] The purpose of the Bay Area O&M HCP is to enable PG&E to continue to conduct current and future O&M activities within the nine counties of the Bay Area while avoiding, minimizing, and mitigating for temporary and permanent impacts on threatened and endangered species habitat that could result from PG&E's ongoing O&M activities.

As the HCP is designed only to cover PG&E's activities, aspects of the proposed project outside of PG&E's activities are not subject to the provisions contained within the PG&E O&M HCP. To the extent that PG&E conducts maintenance activities on their facilities on the project site, these activities would be subject to the HCP, but they would not be part of the proposed project, and thus project activities would not be subject to that HCP.

There are no other HCPs or natural community conservation plans in effect on the project site. As the project does not include PG&E O&M activities on the project site, and no other HCPs exist that contain the project site, implementation of the proposed project would have a less than significant impact.

g) Would the project be located inside or within 200 feet of a marine or wildlife reserve?

See EIR Section 3.3, Biological Resources, for the project-specific and cumulative analysis related to marine or wildlife reserves.

[6] USFWS. 2017. Habitat Conservation Plan for Pacific Gas and Electric Company's San Francisco Bay Area Operations and Maintenance. 82 FR 15063 no. 2017-05856. https://www.federalregister.gov/documents/2017/03/24/2017-05856/habitat-conservation-plan-for-pacific-gas-and-electric-companys-san-francisco-bay-area-operations. Accessed January 31, 2023.

h) Would the project result in loss of oak woodlands or other non-timber woodlands?

See EIR Section 3.3, Biological Resources, for the project-specific and cumulative analysis related to woodlands.

Cumulative Discussion

The project would not conflict with the PG&E O&M HCP. Therefore, there would be no contribution by the proposed project to a significant cumulative impact with respect to HCPs, natural community conservation plans, or other approved local, regional, or state HCPs. No mitigation measures are necessary.

2.5 Cultural Resources

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	☐	☐	☒	☐
(b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☒	☐	☐
(c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

Environmental Evaluation

A combined cultural resources evaluation was prepared by Archaeological Resource Management (ARM) dated June 1, 2018, to address potential cultural resources related to the project.

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?

Historically, the proposed project site was part of the Point Montara Artillery Training Station, a World War II–era military complex in use between 1943 and 1945. Several structures within this complex were located on the proposed project site, including barracks, offices, a mess hall, a library, a garage, a boiler room, an incinerator, a hanger, and a drill field.[7]

A combined cultural resources evaluation was completed for the Cypress Point project on June 1, 2018, by ARM. The evaluation included a California Historical Resources Information System (CHRIS) records search conducted at the Northwest Information Center (NWIC) in 2017 (NWIC No. 17-0815). The records search and supplemental archival research revealed that there were no previously recorded cultural resources within the project site, while four previously recorded resources were located within a 0.25-mile radius of the proposed project site. These four previously recorded resources within the vicinity of the project site are as follows:

[7] ARM. 2018a. *Cultural Resources Evaluation of the Cypress Point Project in Moss Beach, County of San Mateo.* Archaeological Resource Management.

- CA-SMA-55: Referred to as Nelson 405, this prehistoric site was a shell mound documented in 1908 by N. Nelson. During the early twentieth century, Nelson investigated shell mounds along the Central California Coast, many of which have been damaged or destroyed.

- CA-SMA-171H: The Point Montara Artillery Training Station and Point Montara Light Station Historic District was originally identified in 1973. The combined cultural resources evaluation notes that none of the recorded elements associated with the historic district are located within the project site.

- P-41-2108: The Montara Cottage is a historic building that was recorded by D. Painter and C. Losee in 2003.

- P-41-2154: The Montara Water and Sanitary District Office at Point Montara Training Station is a historic resource was recorded in 2005 by D. Edwards. It is described as the Montara Water and Sanitary District Office at Point Montara Training Station.[8]

The studies above did not identify any potential historic resources within the project site, including various elements associated with the Point Montara Artillery Training Station Historic District. This recording occurred after the proposed project site had been transitioned to use as a training facility for firefighters in the 1960s, during which time the former Point Montara Artillery Training Station buildings on the project site were destroyed by controlled burns, leaving only concrete foundations, as described in the 2018 combined cultural resources evaluation. A general surface reconnaissance survey conducted by a field archaeologist on all open land surfaces on the project site found only building foundations and other concrete features such as culverts and other infrastructure associated with military activities on the site.

None of the extant structures within the project site are currently listed in the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), or designated a County Historic Landmark. The extant foundations and concrete infrastructure within the project site were found to not appear eligible for listing in any historic register, inventory, or landmark program in the 2018 combined cultural resources evaluation, as they do not convey the architectural design, materiality, and functionality of the buildings in association with the Point Montara Artillery Training Station's operations to a degree that would support their eligibility. Given this, they do not qualify as historic resources.

Although the combined cultural resources evaluation prepared by ARM mentioned the Point Montara Light Station as part of the 1973 documentation of the Point Montara Artillery Training Station Historic District, the report did not identify that the Point Montara Light Station—located outside of the project site but in the vicinity—is also listed on the NRHP, as well as the CRHR.[9] The Point Montara Light Station was documented as part of the California Light Station Multiple Property Documentation project, and subsequently listed in the NRHP in 1991, and automatically listed in the CRHR. The property was determined significant as an example of a late nineteenth and early twentieth century lighthouse, and for its associations with maritime transportation in California. The property is a cohesive complex of support buildings centered around the prominent lighthouse tower located on the bluffs of Point Montara, east of Highway 1 at 16th Street. The complex features a series of contributing elements:

- Lighthouse Tower (constructed 1928)
- Fog-Signal Building (constructed 1902)
- Keeper's Quarters (constructed 1875)

[8] ARM, 2018a, pp. 7–8.

[9] California Office of Historic Preservation. 2022. Built Environment Resource Directory: San Mateo County. Available at: https://ohp.parks.ca.gov/?page_id=30338. Accessed February 10, 2023.

- Coal Shed Building (constructed 1902)

These buildings correspond to the established period of significance for the resource, which is 1875 to 1940, and correlates with the initial founding of the property by the federal government as a fog-signal station and continued use as a light station in support of maritime travel.[10] The cutoff date of 1940 was derived from the 50-year age threshold used for assessing NRHP eligibility, although it is likely appropriate chronologically as well due in part to the change in use in the area with U.S. involvement in World War II. The NRHP listing also notes multiple non-contributing elements of the light station property, namely the Assistant Keeper's Quarters (constructed 1961), the Garage and Tank House (constructed 1907, extensively altered 1939), and two World War II–era storage facilities.[11] The nomination states that the property generally retains its integrity of setting due to its prominence on the coastal bluff overlooking the Pacific Ocean and the surrounding cypress trees, although the encroachment of suburban residential development surrounding the property is noted.[12]

Although the Point Montara Light Station is not within the project site and will not be physically impacted, it is within the vicinity of the project. However, there is no potential for visual, atmospheric, or audible impacts from the project. The light station is over 900 feet from the project site, reducing the potential for any audible or vibratory impacts, both of which would be temporary in nature and associated with construction activities. Visually, the potential for impacts is limited due to the distance between the light station and the project site but is reduced further through the presence of extensive tree groves and the varied topography of the intermediate area. Furthermore, any changes to the setting related to the project will be consistent with the existing character of the area surrounding the light station, which features Highway 1 directly east, and suburban residential developments surrounding the property to the north, east, and south. As a historic resource, the Point Montara Light Station would retain its existing levels of integrity and would not be significantly impacted by the project.

Therefore, the proposed project would have less than significant impacts to historical resources and this topic will not be discussed further in the EIR.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

The 2018 combined cultural resource evaluation prepared by ARM identified a portion of the proposed project site as containing potentially significant archaeological resources (a midden site). The report concluded that "based upon the lack of diagnostic artifactual material within the deposit, and its heavily disturbed nature, CA-SMA-431 does not appear to have the potential to yield important prehistoric or historic information, and thus does not appear eligible for either the CRHR or the NRHP. However, there is the possibility that isolated artifacts/remains are present."[13]

Archaeological testing for the purpose of determining the boundaries, depth, and constituents of the archaeological deposit within the proposed project site was recommended. In February 2018, ARM returned to the proposed project site, and testing excavation was carried out. Testing determined that the proposed earthmoving activities at the project site have the potential to impact cultural materials. A treatment plan was designed to mitigate the specific impacts of earthmoving during the proposed project construction. Preservation in place was determined not to be feasible as the proposed project could not

[10] Bookwalter, Jack. 1989. National Register of Historic Places Registration Form for Point Montara Light Station. Reference No. 91001094. Washington, D.C.: U.S. Department of the Interior, National Park Service.

[11] Bookwalter, 1989.

[12] California Office of Historic Preservation, 2022.

[13] ARM. 2018b. *Archaeological Testing Program for CA-SMA-431 at the Cypress Point Project in Moss Beach*. Archaeological Resource Management.

avoid the resource. Mitigation Measure (MM)-CR-1: Additional Site Excavation, MM-CR-2: Archaeological Monitoring, and MM-CR-3: Unanticipated Findings during Construction are recommended to reduce potential impacts to cultural resources to less than significant with mitigation incorporated.[14]

CR-1 **Additional Site Excavation**. An archaeological salvage program shall take place prior to the earthmoving activities and shall consist of four hand-excavated 1 × 1–m mitigation units. Placement of the units shall be based on available archival background data, field observations, and proposed project plans. Hand excavation shall be conducted using standard archaeological techniques with trowels, picks, and shovels at arbitrary levels and dry screened through ¼-inch mesh. All identified artifactual material shall be collected from each level. Collected material shall be placed in level bags, and each level shall be recorded using level forms. Artifacts, soil type, color, stratigraphy, and features present shall be recorded. All artifactual material from this process shall then be placed within its appropriate level bag during the field process.

CR-2 **Archaeological Monitoring.** Archaeological monitoring shall be conducted during all earthmoving activities involved with the project in accordance with the schedule coordinated between the general contractor and project archaeologist. This shall consist of full-time monitoring during all earthmoving activities within 50 feet of CA-SMA-431. Archaeological spot-check monitoring, consisting of periodic monitoring of the project site during ground-disturbing activities, including during demolition of the existing concrete foundations, shall take place for the remainder of the project. The timing and frequency of these spot checks shall be determined throughout the course of earthmoving activities for the proposed project based upon the construction schedule and the nature of any cultural materials encountered. Per the schedule, the archaeologist shall inspect the site and shall subsequently provide an archaeological monitoring report. This report shall document all cultural materials encountered and be submitted to project representatives within 40 working days of the completion of earthmoving activities for the project.

Considering that cultural resources frequently exist below the surface, their location is often not visible. Field archaeologists therefore monitor earthmoving activities to observe whether artifactual remains, soil changes indicating cultural use, and/or other indicators of human activity are present within a project site. Monitoring consists of a qualified archaeological field technician observing the ground-disturbing activities in native soil.

CR-3 **Unanticipated Findings during Construction.** If any individual artifacts (prehistoric or historic), features, potential midden soils, or other indicators of cultural use are noted by the archaeological monitor during the earthmoving activities, work within 50 feet of the find shall be stopped until appropriate measures are formulated by the project archaeologist and accepted by the County and the project representative. If the project archaeologist is not present on the site, the County, owner, and project archaeologist shall be notified by telephone, and the project archaeologist shall examine the materials encountered within 24 hours. Any archaeological materials found at the site shall be collected and stored for further analysis by a qualified archaeologist and may require consultation with appropriate Tribal representatives, as dictated by the California Native American Heritage Commission (NAHC) and County.

[14] ARM, 2018b.

If an intact archaeological deposit is discovered during archaeological mitigation/monitoring, construction activities shall be halted within 50 feet of the find for the purpose of identifying and mapping the deposit, and appropriate investigative methods and approaches shall be formulated by the project archaeologist and discussed with the project representative. It these materials are determined to be significant, a preservation plan or data recovery program shall be prepared and submitted to the County for approval prior to implementation.

Impacts related to archaeological resources would be less than significant with implementation of MM-CR-1 through MM-CR-3 and this topic will not be discussed further in the EIR.

c) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

There are no known subsurface human remains within the project site. If human remains are discovered, MM-CR-4: Procedures for Discovery and Treatment of Human Remains shall be implemented. Adherence to the guidance under MM-CR-4 would mitigate impacts to a less than significant level.

CR-4 **Procedures for Discovery and Treatment of Human Remains**. If human remains are found during excavation or construction, work shall be halted at a minimum of 50 feet from the find, the area shall be staked off, and the owner and project archaeologist shall be notified. The owner shall contact the County Coroner, and no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains shall be performed until the coroner determines that no investigation of the cause of death is required. If the coroner determines the remains to be Native American, the coroner shall contact the NAHC within 24 hours of this determination. The NAHC shall identify the person or persons it believes to be the most likely descendent (MLD) of the deceased. The MLD may then make recommendations to the owner and execute an agreement for the means of treating or disposing of, with appropriate dignity, the human remains and associated grave goods, as provided in Public Resources Code Section 5097.98.

If required, reinternment of human remains shall be performed according to California law for Native American burials (Chapter 1492, Statutes of 1982). The intent of the California state law is to protect Native American burials, isolated and disarticulated human remains, and associated cultural materials found during the course of an undertaking. It also serves to insure proper analysis prior to their final disposition. The location and procedures of this undertaking shall be recorded by the project archaeologist. Reinternment shall take place with all due speed upon completion of all necessary analysis. This information shall be included in the final report prepared by the project archaeologist, or if necessary, as an addendum to the report.

The owner shall rebury the Native American human remains and associated grave goods with the appropriate dignity on the property in a location not subject to further disturbance if:

1. The NAHC is unable to identify a MLD or the MLD failed to make a recommendation within 24 hours after being notified by the commission.

2. The descendent identified by the NAHC fails to make a recommendation for burial and mediation by the NAHC fails to provide measures acceptable to the owner.

> Any associated grave goods and soil samples from the burial site shall be analyzed per the agreement between the owner and the MLD. Dependent upon the nature of this agreement, diagnostic artifacts such as projectile points, shell beads, and ground stone artifacts may be studied and illustrated in the final report to be prepared by the project archaeologist. Radiocarbon dating and obsidian hydration and sourcing may be undertaken in order to provide a chronology for newly identified features.

Impacts related to archaeological resources would be less than significant with implementation of MM-CR-4 and this topic will not be discussed further in the EIR.

Cumulative Discussion

The proposed project's potential contribution to cumulative impacts on cultural resources is evaluated in the context of past, present, and reasonably foreseeable probable future development expected in the San Mateo County. As described in MM-CR-1 above, the proposed project would have no impact on historic architectural resources, and therefore would not result in a cumulatively considerable impact on the built environment.

The project's cumulative archaeological resource impacts, including disturbance to any human remains, are evaluated in the context of past, present, and reasonably foreseeable probable future development expected in San Mateo County. Archaeological resources (a midden site) were identified on the project site and could be disrupted by project construction. However, with implementation of MM-CR-1 through MM-CR-4, potential impacts to these resources would be less than significant. Cumulative impact contributions to these cultural resources are site-specific and are assessed on a site-by-site basis. The extent of the cultural resources (if any) that occur at the sites of the potential future projects is unknown, and thus, it is not known whether any of the potential projects would result in significant impacts to cultural resources. A determination of project-specific impacts would be made on a case-by-case basis and, if necessary, the applicants of each reasonably foreseeable project would be required to implement the appropriate mitigation measures. Therefore, with implementation of MM-CR-1 through MM-CR-4, the project's contribution to cultural resources would not be cumulatively considerable and the project's cumulative impact would be less than significant.

2.6 Energy

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Result in a 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?	☐	☐	☒	☐

Environmental Evaluation

An Energy Technical Report was prepared by RCH Group (RCH) dated April 3, 2019, to address potential energy impacts related to the project.[15] The report is included as Appendix S.

Energy use, especially through fossil fuel consumption and combustion, relates directly to environmental quality since it can adversely affect air quality and generate GHG emissions that contribute to climate change. Electrical power is generated through a variety of sources, including fossil fuel combustion, hydropower, wind, solar, biofuels, and others. Natural gas is widely used to heat buildings, prepare food in restaurants and residences, and fuel vehicles, among other uses. Fuel use for transportation is related to the fuel efficiency of cars, trucks, and public transportation; choice of different travel modes such as auto, carpool, and public transit; and miles traveled by these modes, and generally based on petroleum-based fuels such as diesel and gasoline. Electric vehicles may not have any direct emissions but do have indirect emissions via the source of electricity generated to power the vehicle. Construction and routine operation and maintenance of transportation infrastructure also consume energy.

a) Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Construction Energy Usage

During construction, the project would result in energy consumption through the combustion of fossil fuels in construction vehicles, worker commute vehicles, and construction equipment. No natural gas would be utilized as part of construction. Fossil fuels used for construction vehicles and other energy-consuming equipment would be used during construction activities. The types of equipment could include gasoline- and diesel-powered construction and transportation equipment, including trucks, tractor/loader/backhoes, excavators, dozers, and graders. Other equipment could include electrically driven equipment such as pumps and other tools. Limitations on idling of vehicles and equipment and requirements that equipment be properly maintained would result in fuel savings. Idling from both on- and off-road diesel-powered equipment is limited in 13 CCR Sections 2449(d)(3) and 2485 and enforced by the California Air Resources Board (CARB). In addition, given the cost of fuel, contractors and owners have a strong financial incentive to avoid wasteful, inefficient, and unnecessary consumption of energy during construction. Because of the temporary nature of construction and the financial incentives for developers and contractors to implement energy-efficient practices, project construction activities would not result in wasteful, inefficient, and unnecessary consumption of energy.

Project construction would require demolition, site preparation, site grading and excavation, building construction, architectural finishing, paving and landscaping. Construction would be typical for the region and building type, and the project site does not include unusual building challenges that would require unusually high energy usage. The importation of fill material, exportation of any contaminated soils and transport of building materials would require haul truck trips to and from the project, as indicated in the California Emissions Estimator Model (CalEEMod) modelling estimates in Appendix C, Air Quality and Greenhouse Gas Technical Report.[16]

Potential fuel consumption during construction was calculated using information provided by CalEEMod, a statewide land use emissions computer model developed for the California Air Pollution Officers Association (CAPCOA) in collaboration with the California Air Districts. The model inputs assumed

[15] RCH Group. 2019. *Energy Technical Report*. Available at: https://www.smcgov.org/media/104206/download?inline=. Accessed June 20, 2023.

[16] SWCA. 2023. Air Quality and Greenhouse Gas Technical Report. June 2023. (Appendix XX)

project construction would occur eight hours per day, five days per week, for a period of 18 months. The project would be constructed in six phases: 1) demolition (including removal of the existing impervious surface and tree removal/wood chip dispersion); 2) site preparation (including site clearing, leveling, and transport of building materials); 3) grading (excavation, import fill and export any contaminated soils); 4) building construction (including surveying, excavation/leveling for foundations, hydrostatic testing, watermain connections tested and connected, utility trenches, importation of building materials for residential buildings and the Community Building, all building construction); 5) paving (paving of onsite parking and roads and site concrete (curb, gutter, flatwork, etc.)); and 6) finishing (including finishing activities, architectural coatings, final landscaping, and removal of temporary fencing and erosion control). Worker, vendor and haul truck trips vary for each phase and CalEEMod calculated the emissions and related fuel use for each construction phase.

Based on CalEEMod results for project construction and standard fuel consumption conversion factors, construction would require approximately 120 gallons of gasoline and 59,202 gallons of diesel fuel. This includes all off-road construction equipment, hauling, vendor, and worker trips over an approximate 380-working day construction period. For the finishing phase of construction, some electricity may be used (e.g., for power tools and work lighting). While this electricity usage cannot be quantified at this time, it is anticipated to be relatively minor compared to normal building operations. When not in use, electric equipment would be powered off so as to avoid unnecessary energy consumption. Natural gas would not be used during construction.

In 2022, 13.6 billion gallons of gasoline were sold Statewide, according to the California Department of Tax and Fee Administration. If it is conservatively assumed that all of the fuel used during construction would be consumed in one year, gasoline consumption would represent approximately 0.00044 percent of Statewide gasoline consumption in 2022. According to the state Board of Equalization, in 2015 4.2 billion gallons of diesel, including offroad diesel, was sold in California. The proposed project's diesel consumption during construction would represent 0.000003 percent of Statewide consumption in 2015. This increase in consumption would be temporary, of relatively short duration, and would cease once project construction is completed. This minor increase in fuel consumption would not require development of new petroleum supplies or construction of new production or distribution facilities.

For all proposed projects, the Bay Area Air Quality Management District (BAAQMD) recommends the implementation of BMPs, regardless of whether construction-related emissions exceed applicable thresholds of significance. In addition, several other basic measures to control dust and exhaust during construction are included as part of **Mitigation Measure (MM) AQ-2a and 2b**. Implementation of the mitigation measures during construction would ensure that fuel powering the equipment would not be used in an inefficient or wasteful manner.

MidPen Housing Corporation (the project sponsor) has also committed to the following construction actions that would reduce the energy consumption from project construction:

- Preserve a portion of the site as undeveloped land.
- Make best efforts to use of at least 10 percent local building materials.
- Recycle or reuse at least 50 percent of construction waste or demolition materials.

Therefore, for the reasons stated above, the consumption of fuel and other energy during project construction would have a less-than-significant impact on energy resources and no mitigation is required.

Operations

Project operations would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. Once the project is operational, transportation fuels (predominantly gasoline) would continue to be consumed through vehicle trips by residents, visitors, maintenance workers, delivery truck drivers, etc. Similar to the construction analysis, operational fuel consumption was calculated using CalEEMod assumptions. CalEEMod calculates energy consumption and associated emissions for transportation, areas sources, electricity consumption, electricity usage associated with water usage and wastewater discharge, and transport and disposal of solid waste. Key assumptions used in the analysis included the default trip lengths and trip types specified by CalEEMod for San Mateo County. Approximately 188,883 trips per year was assumed which is approximately 515 trips per day.

CalEEMod does not break down fuel usage into gasoline and diesel components; since the majority of residential vehicles are gasoline-fueled, it was assumed that all of the fuel consumption would be gasoline, resulting in estimated annual fuel consumption of approximately 107,139 gallons of gasoline. This would represent approximately 0.001 percent of Statewide gasoline consumption in 2022. However, this is a conservative estimation because EV spaces are required as part of project design, and the actual fuel consumption would be less than the CalEEMod outputs.

The CalEEMod was also used to estimate the consumption of electricity associated with space and water heating and landscape maintenance (i.e., electricity to control irrigation equipment) expected to occur during operation of the project. No natural gas use is proposed as part of the project. The project land use type and size and other project- specific information were input to the CalEEMod. The CalEEMod results indicated that the project's estimated electricity consumption would be approximately 353,265 kWh of electricity. The project's annual electricity usage would represent approximately 0.00014 percent of Statewide electricity sales in 2021.

While implementation of the project would result in consumption of non-renewable energy resources, such consumption is an inherent characteristic of typical development projects. The energy demands of the project would be reduced by energy conservation features that are required in the project type (new multi-family construction using the current Title 24 Building Code and CalGreen), the location (coastal zone with minimal annual air conditioning and heating needs) and energy conservation features that are included in MidPen additional environmental commitments.

As listed in the Project Description, MidPen has agreed to a list of environmental commitments to minimize the environmental effects. From that list, the commitments outlined below would reduce the consumption of non-renewable energy resources.

- Operational Energy Saving Features - MidPen has agreed that the project would be developed in accordance with the minimum requirements of one of the following programs: Leadership in Energy & Environmental Design (LEED); Green Communities; Passive Housing; Living Building Challenge; National Green Building Standard, or the GreenPoint Rated program. The following are features that may be included:
    - Natural cross-ventilation of every unit with windows in 3 sides of most units (2-3 BR), and 2 sides of 1 BR units;
    - Cool roofs with low reflectance for reduced heat-island effect;
    - High-efficacy lighting fixtures throughout; "Night-sky" compliant site lighting;
    - Drought-tolerant landscaping with native species and minimized and efficient irrigation;

- Passive on-site storm water management;
- PV ready roofs;
- No air conditioning;
- Shared laundry facilities;
- Secure bike parking facilities to encourage less vehicle use;
- Install toilets using less than 1.6 gallons per flush;
- Install showerheads providing maximum flows of 2.5 gallons per minute or less;
- Install self-closing faucets in non-residential lavatories; and
- Install high-efficiency washing machines with a water factor of 5 or less.

The energy savings from the operational energy savings features above cannot be estimated at this time because the actual program and features that would be included have not been selected. However, it is clear that adopting the minimum requirements of one of the programs would improve the project energy efficiency beyond Title 24 building standards and would comply with CalGreen.

The project sponsor would also implement Transportation Demand Management (TDM) measures to provide options to future residents to allow use of non-auto modes; strategies to encourage carpooling, biking, walking, and transit use; and site design features to promote shifts from automobiles to transit and non-auto modes such as walking and bicycling, reducing energy demand. Furthermore, the project sponsor has committed to set aside 52 of the 70 affordable housing units as Local Preference Units where eligible households are those that include at least one member who lives or works in the City of Pacifica, the City of Half Moon Bay, and/or the unincorporated County region between the City of Pacifica and the City of Half Moon Bay (Greater Moss Beach Region). The below market rate housing provides greater opportunity for lower income families to live closer to job centers and achieve a jobs/housing match near transit.

The project would not consume energy resources in a wasteful or inefficient manner and would therefore have a less-than-significant impact on the consumption of energy resources and no mitigation is required.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. The project would comply with all plans, policies and goals for energy usage and conservation at the federal, State, and local level. For building projects, Title 24 (California Code of Regulations) is of particular importance, as it sets standards for energy performance. There is also the California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code and the 2022 Building Energy Efficiency Standards, which are energy conservation standards for new residential and nonresidential buildings adopted by the California Energy Resources Conservation and Development Commission (now the CEC). The project would comply with applicable State standards.

The project has also been reviewed relative to the San Mateo County General Plan Energy and Climate Change and the San Mateo County Community Action Plan (CCAP). The project would not conflict with or obstruct either of these plans. The project would provide energy efficiency consistent with Title 24 and

CalGreen requirements and would support the intent of the General Plan and CCAP, which is to reduce GHG emissions in San Mateo County. Therefore, the project would not conflict with or obstruct a state or local plan and any project effect would be a less-than significant impact.

In 2002, the California State Legislature passed SB 1389, which required the CEC to develop an integrated energy plan every two years for electricity, natural gas, and transportation fuels for the Integrated Energy Policy Report. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the integrated energy plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for ZEVs and their infrastructure needs, and encouragement of urban designs that reduce VMT and accommodate pedestrian and bicycle access.

The most recently adopted reports include the 2021 Integrated Energy Policy Report and the 2022 Integrated Energy Policy Report Update. The Integrated Energy Policy Report provides the results of the CEC's assessments of a variety of energy issues facing California. The State integrated energy plan, as well as the local San Mateo County General Plan and San Mateo County CCAP help to address renewable energy or energy efficiency.

The expected energy consumption during construction and operation of the proposed project would be consistent with typical usage rates for residential uses; however, energy consumption is largely a function of personal choice and the physical structure and layout of buildings. Because California's energy conservation planning actions are conducted at a regional level, and because the proposed project's total impact on regional energy supplies would be minor, the proposed project would not conflict with or obstruct California's energy conservation plans as described in the CEC's Integrated Energy Policy Report. Additionally, as demonstrated above, the proposed project would not result in the inefficient, wasteful, and unnecessary consumption of energy. Potential impacts related to conflict with or obstruction of a State or local plan for renewable energy or energy efficiency would be less than significant, and no mitigation is required.

Cumulative Discussion

The proposed project would have a significant effect on the environment if it, in combination with other projects, would contribute to a significant cumulative impact related to energy.

The geographic area for cumulative analysis of electricity and natural gas is the PG&E service area. The proposed project would result in an increased service demand for electricity. In 2020, a total of 31 percent of PG&E's delivered electricity came from renewable sources, including solar, wind, geothermal, small hydroelectric and various forms of bioenergy. PG&E reached California's 2020 renewable energy goal in 2017 and is positioned to meet the State's 60 percent by 2030 renewable energy mandate set forth in SB 100 (. In addition, PG&E plans to continue to provide reliable service to their customers and upgrade their distribution systems as necessary to meet future demand.

The proposed project would be all-electric and would not include natural gas infrastructure or use. Although the proposed project would result in a net increase in demand for electricity, this increase would be minimal and would not require PG&E to expand or construct infrastructure that could cause significant environmental impacts. In addition, the proposed project would be required to comply with Energy Efficiency Standards (CCR Title 24, Part 6) the CALGreen Code (CCR Title 24, Part 11), San Mateo County General Plan and San Mateo County CCAP, which are also aimed at reducing energy consumption. Further, the project includes certain design features that meet or exceed standards that contribute to the overall energy efficiency (e.g., increase in EV-ready charging capabilities, increased solar capabilities, and elimination of natural gas associated with residential space and water heating), well

beyond projects designed or constructed in the recent past. As such, the proposed project would not contribute to potential cumulative impacts associated with the potential inefficient, wasteful and unnecessary consumption of energy within the PG&E service area.

Transportation energy use would also increase; however, this transportation energy use would not represent a major amount of energy use when compared to the amount of existing development and to the total number of vehicle trips and VMT throughout San Mateo County and the region. The proposed project and related projects are required to comply with federal and State legislation to improve energy efficiency in buildings, equipment, and appliances, and reduce VMT. Therefore, the proposed project's contribution to impacts related to the inefficient, wasteful, and unnecessary consumption of energy would not be cumulatively considerable, and no mitigation is required.

2.7 Geology and Soils

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(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?	☒	☐	☐	☐
(v) Coastal cliff/bluff instability or erosion?	☒	☐	☐	☐
(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?	☒	☐	☐	☐

Environmental Evaluation

EIR Section 3.4, Geology and Soil, provides a detailed analysis of the impacts to geology and soils associated with the proposed project, including an explanation of initial study checklist topics (a) through (d) and (f) indicated above. The EIR includes a complete description of the existing geologic setting and regulatory framework, the approach to the analysis, an impact evaluation of the proposed project, cumulative impacts, and, if appropriate, identification of mitigation measures. As discussed below, initial study checklist topic (e) is less than significant and is not addressed within EIR Section 3.4.

a) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

a-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.

See EIR Section 3.4, Geology and Soils, for the project-specific and cumulative analysis related to earthquake faults.

a-ii) Strong seismic ground shaking?

See EIR Section 3.4, Geology and Soils, for the project-specific and cumulative analysis related to seismic ground shaking.

a-iii) Seismic-related ground failure, including liquefaction?

See EIR Section 3.4, Geology and Soils, for the project-specific and cumulative analysis related to seismic-related ground failure.

a-iv) Landslides?

See EIR Section 3.4, Geology and Soils, for the project-specific and cumulative analysis related to landslides.

a-v) Coastal cliff/bluff instability or erosion?

See EIR Section 3.4, Geology and Soils, for the project-specific and cumulative analysis related to coastal cliff/bluff instability and erosion.

b) Would the project result in substantial soil erosion or the loss of topsoil?

See EIR Section 3.4, Geology and Soils, for the project-specific and cumulative analysis related to soil erosion and topsoil.

c) Would the project 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?

See EIR Section 3.4, Geology and Soils, for the project-specific and cumulative analysis related to unstable soils.

d) Would the project 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?

See EIR Section 3.4, Geology and Soils, for the project-specific and cumulative analysis related to expansive soil.

e) Would the project 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?

The new buildings associated with the proposed project would connect to the existing combined sewer system associated with Montara Water and Sanitary District and would not use septic tanks or alternative wastewater disposal systems. Therefore, the project would have no impact on soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems and this topic will not be discussed further in the EIR.

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

See EIR Section 3.4, Geology and Soils, for the project-specific and cumulative analysis related to paleontological resources, sites, and unique geologic features.

Cumulative Discussion

The proposed project's potential contribution to cumulative impacts on soils incapable of supporting septic tanks is evaluated in the context of past, present, and reasonably foreseeable probable future development expected in the San Mateo County. The project does not propose using septic tanks or alternative wastewater disposal systems. Therefore, there would be no cumulative contribution to this specific geology and soils cumulative impact. The proposed project would not substantially contribute to a significant cumulative impact and no mitigation is required.

2.8 Greenhouse Gas Emissions and Climate Change

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(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?	☒	☐	☐	☐
(c) Result in the loss of forestland or conversion of forestland to non-forest use, such that it would release significant amounts of GHG emissions, or significantly reduce GHG sequestering?	☒	☐	☐	☐
(d) Expose new or existing structures and/or infrastructure (e.g., leach fields) to accelerated coastal cliff/bluff erosion due to rising sea levels?	☒	☐	☐	☐

	Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(e)	Expose people or structures to a significant risk of loss, injury or death involving sea level rise?	☒	☐	☐	☐
(f)	Place structures within an anticipated 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☒	☐	☐	☐
(g)	Place within an anticipated 100-year flood hazard area structures that would impede or redirect flood flows?	☒	☐	☐	☐

Environmental Evaluation

EIR Section 3.5, Greenhouse Gas Emissions and Climate Change, provides a detailed analysis of the construction and operation greenhouse gas impacts associated with the proposed project, including explanation of initial study checklist topics (a) through (g) indicated above. The EIR includes a complete description of the existing air quality and greenhouse gas setting and regulatory framework, the approach to the analysis, an impact evaluation of the proposed project, and cumulative impacts, and, if appropriate, identification of mitigation measures.

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

See EIR Section 3.5, Greenhouse Gas Emissions and Climate Change, for the project-specific and cumulative analysis related to greenhouse gas emissions.

b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

See EIR Section 3.5, Greenhouse Gas Emissions and Climate Change, for the project-specific and cumulative analysis related to greenhouse gas emission reductions.

c) Would the project result in the loss of forestland or conversion of forestland to non-forest use, such that it would release significant amounts of GHG emissions, or significantly reduce GHG sequestering?

See EIR Section 3.5, Greenhouse Gas Emissions and Climate Change, for the project-specific and cumulative analysis related to greenhouse gas sequestering.

d) Would the project expose new or existing structures and/or infrastructure (e.g., leach fields) to accelerated coastal cliff/bluff erosion due to rising sea levels?

See EIR Section 3.5, Greenhouse Gas Emissions and Climate Change, for the project-specific and cumulative analysis related to coastal cliff and bluff erosion.

e) Would the project expose people or structures to a significant risk of loss, injury or death involving sea level rise?

See EIR Section 3.5, Greenhouse Gas Emissions and Climate Change, for the project-specific and cumulative analysis related to sea level rise.

f) Would the project place structures within an anticipated 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

A similar question is asked in the Hydrology and Water Quality section. See EIR Section 3.7, Hydrology and Water Quality, for the project-specific and cumulative analysis related to flood hazard delineation maps.

g) Would the project place within an anticipated 100-year flood hazard area structures that would impede or redirect flood flows?

A similar question is asked in the Hydrology and Water Quality section. See EIR Section 3.7, Hydrology and Water Quality, for the project-specific and cumulative analysis related to 100-year flood flows.

2.9 Hazards and Hazardous Materials

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(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 or excessive noise for people residing or working in the project area?	☐	☐	☒	☐
(f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☒	☐	☐	☐
(g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☒	☐	☐	☐
(h) Place housing within an existing 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☒	☐	☐	☐
(i) Place within an existing 100-year flood hazard area structures that would impede or redirect flood flows?	☒	☐	☐	☐

Environmental Issues		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(j)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☒	☐	☐	☐
(k)	Inundation by seiche, tsunami, or mudflow?	☒	☐	☐	☐

Environmental Evaluation

EIR Section 3.6, Hazards and Hazardous Materials, provides a detailed analysis of hazards and hazardous material impacts associated with the proposed project, including explanation of initial study checklist topics (a) through (k) indicated above. The EIR includes a complete description of the existing environmental setting and regulatory framework, the approach to the analysis, an impact evaluation of the proposed project, and cumulative impacts, and, if appropriate, identification of mitigation measures. As discussed below, initial study checklist topics (c) and (e) are less than significant and are not addressed within EIR Section 3.6.

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

See EIR Section 3.6, Hazards and Hazardous Materials, for the project-specific and cumulative analysis related to the transport, use, or disposal of hazardous materials.

b) Would the project 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?

See EIR Section 3.6, Hazards and Hazardous Materials, for the project-specific and cumulative analysis related to the release of hazardous materials into the environment.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

There are no schools located within ¼ mile of the project site. The nearest school is Farallone View Elementary School, 1 mile northeast of the project site; therefore, hazardous emissions or handling of hazardous materials, substances, or waste within ¼ mile of a school would not occur. Given this, the project would have no impact on an existing or proposed school, and this topic will not be discussed further in the EIR.

d) Would the project 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?

See EIR Section 3.6, Hazards and Hazardous Materials, for the project-specific and cumulative analysis related to hazardous materials sites.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

The Half Moon Bay Airport, a public airport owned and operated by the County, is located approximately 0.9 mile south of the proposed project site.[17] The airport is subject to the Half Moon Bay Airport Land Use Compatibility Plan (ALUCP), as adopted by the City/County Association of Governments (C/CAG) in 2014.[18] The ALUCP is designed to encourage compatible land uses in the vicinity surrounding an airport. The project site falls within Zone 7 of the airport influence area (AIA), the outermost area indicated in the ALUCP. The aircraft accident risk level in Zone 7 is considered to be low.[19] The ALUCP places no limits on the number of dwelling units per acre within the AIA. The ALUCP provides height requirements for new development within Zone 7, allowing structures to be no taller than 300 feet.[20]

With a base elevation of up to 186.5 feet above mean sea level (amsl) for the building pads of the proposed buildings and a maximum building height of 36 feet, all new development on the project site would comply with the height and residential density limitations of the ALUCP. Residents of the proposed housing units may experience over-flights from airplanes traveling to or from the Half Moon Bay Airport; however, the project does not require or attract large numbers of people to the site and does not include facilities or processes that create hazards to aircraft. The buildings and residents would not be exposed to or contribute to safety hazards; therefore, the impacts would be less than significant, and this topic will not be discussed further in the EIR.

f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

See EIR Section 3.6, Hazards and Hazardous Materials, for the project-specific and cumulative analysis related to an emergency response plan and emergency evacuation plan.

g) Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

See EIR Section 3.12, Wildfire, for the project-specific and cumulative analysis related to wildland fires.

h) Would the project place housing within an existing 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

See EIR Section 3.7, Hydrology and Water Quality, for the project-specific and cumulative analysis related to 100-year flood hazards.

[17] County of San Mateo. 2023a. Half Moon Bay Airport. Available at: https://www.smcgov.org/publicworks/half-moon-bay-airport. Accessed January 20, 2023.

[18] C/CAG. 2014. *Airport Land Use Compatibility Plan for the Environs of Half Moon Bay Airport*. https://ccag.ca.gov/wp-content/uploads/2014/10/HAF-ALUCP-Final.pdf. Accessed January 20, 2023.

[19] C/CAG, 2014.

[20] C/CAG, 2014.

i) Would the project place within an existing 100-year flood hazard area structures that would impede or redirect flood flows?

See EIR Section 3.7, Hydrology and Water Quality, for the project-specific and cumulative analysis related to structures that may impede or redirect flood flows in a 100-year flood hazard area.

j) Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

See EIR Section 3.7, Hydrology and Water Quality, for the project-specific and cumulative analysis related to flooding due to the failure of a levee or dam.

k) Would the project cause inundation by seiche, tsunami, or mudflow?

See EIR Section 3.7, Hydrology and Water Quality, for the project-specific and cumulative analysis related to inundation.

Cumulative Discussion

The proposed project's potential contribution to cumulative impacts on hazards and hazardous emissions within 0.25 mile of a school or safety hazards and excessive noise within 2 miles of a public airport or public use airport or for a project located within an airport land use plan is evaluated in the context of past, present, and reasonably foreseeable probable future development expected in San Mateo County. San Mateo County, in general, is subject to potential regional hazards and hazardous materials risks. The magnitude of this risk would be dependent on the site-specific conditions present at each future project site. Regardless of the potential risk, each cumulative project would be required to comply with hazardous materials regulations including storage, transport, and disposal practices intended to reduce and/or avoid hazardous materials risks.

The project is not located near a school and would not emit hazardous materials that would be considered cumulatively considerable. The project is within an airport land use plan, but the project would not result in a safety hazard or excessive noise for people residing or working on the project site. In combination with the foreseeable projects, the cumulative impacts would be less than significant to hazardous materials with respect to schools and airports. Therefore, cumulative impacts on hazards and hazardous materials would be less than significant. The proposed project would not substantially contribute to a significant cumulative impact. No mitigation is required.

2.10 Hydrology and Water Quality

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(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?	☒	☐	☐	☐

	Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(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	☒	☐	☐	☐
	(iv) Impede or redirect flood flows?	☒	☐	☐	☐
(d)	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☒	☐	☐	☐
(e)	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☒	☐	☐	☐
(f)	Significantly degrade surface or ground-water water quality?	☒	☐	☐	☐
(g)	Result in increased impervious surfaces and associated increased runoff?	☒	☐	☐	☐

Environmental Evaluation

EIR Section 3.7, Hydrology and Water Quality, provides a detailed analysis of hydrology and water quality impacts associated with the proposed project, including explanation of initial study checklist topics (a) through (g) indicated above. The EIR includes a complete description of the existing hydrologic resources setting and regulatory framework, the approach to the analysis, an impact evaluation of the proposed project, and cumulative impacts, and, if appropriate, identification of mitigation measures.

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

See EIR Section 3.7, Hydrology and Water Quality, for the project-specific and cumulative analysis related to surface or ground water quality.

b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

See EIR Section 3.7, Hydrology and Water Quality, for the project-specific and cumulative analysis related to groundwater resources.

c) Would the project 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:

c-i) Result in substantial erosion or siltation on- or off-site?

See EIR Section 3.7, Hydrology and Water Quality, for the project-specific and cumulative analysis related to erosion.

c-ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

See EIR Section 3.7, Hydrology and Water Quality, for the project-specific and cumulative analysis related to surface runoff and flooding.

c-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?

See EIR Section 3.7, Hydrology and Water Quality, for the project-specific and cumulative analysis related to surface runoff and stormwater drainage systems.

c-iv) Impede or redirect flood flows?

See EIR Section 3.7, Hydrology and Water Quality, for the project-specific and cumulative analysis related to flood flows.

d) In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

See EIR Section 3.7, Hydrology and Water Quality, for the project-specific and cumulative analysis related to project inundation.

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

See EIR Section 3.7, Hydrology and Water Quality, for the project-specific and cumulative analysis related to the water quality control plan or sustainable groundwater management plan.

f) Would the project significantly degrade surface or ground-water water quality?

See EIR Section 3.7, Hydrology and Water Quality, for the project-specific and cumulative analysis related to surface or groundwater water quality.

g) Would the project result in increased impervious surfaces and associated increased runoff?

See EIR Section 3.7, Hydrology and Water Quality, for the project-specific and cumulative analysis related to impervious surface and runoff.

2.11 Land Use and Planning

	Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(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?	☒	☐	☐	☐
(c)	Serve to encourage off-site development of presently undeveloped areas of increase development intensity of already developed areas (examples include the introduction of new or expanded public utilities, new industry, commercial facilities or recreation activities)?	☒	☐	☐	☐

Environmental Evaluation

EIR Section 3.8, Land Use and Planning, provides a detailed analysis of land use and planning impacts associated with the proposed project, including an explanation of initial study checklist topics (a) through (c) indicated above. The EIR includes a complete description of the land use planning and regulatory framework, the approach to the analysis, an impact evaluation of the proposed project, and cumulative impacts, and, if appropriate, identification of mitigation measures.

a) Would the project physically divide an established community?

See EIR Section 3.8, Land Use and Planning, for the project-specific and cumulative analysis related to physical division of an established community.

b) Would the project 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?

See EIR Section 3.8, Land Use and Planning, for the project-specific and cumulative analysis related to conflict with a land use plan, policy, or regulation.

c) Would the project serve to encourage off-site development of presently undeveloped areas of increase development intensity of already developed areas (examples include the introduction of new or expanded public utilities, new industry, commercial facilities or recreation activities)?

See EIR Section 3.8, Land Use and Planning, for the project-specific and cumulative analysis related to off-site development.

2.12 Mineral Resources

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(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?	☐	☐	☐	☒

Environmental Evaluation

a) Would the project 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?

The project is zoned PUD-140/CD and is not located within an area designated by the California Surface Mining and Reclamation Act Mineral Land Classification as a Mineral Resource Zone-2, which indicates the existence of a deposit that meets certain criteria for value and marketability.[21] The classification for the project site is Mineral Resource Zone-3, which is defined as "Areas containing mineral deposits the significance of which cannot be evaluated from available data."[22]

There are two areas designated Mineral Resource Zone-2 greater than 3 miles from the project site. However, neither the project site nor the surrounding area is identified as an area containing mineral deposits of local, statewide, or regional significance. No active mining operations are present on, or near, the project site. Implementation of the proposed project would not interfere with the extraction of any known mineral resource. Therefore, no impacts to mineral resources of local, regional, or statewide significance or a locally important mineral resource recovery site would occur, and this topic will not be discussed further in the EIR.

b) Would the project 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?

Please refer to analysis under checklist topic (a) above. No impacts to a locally important mineral resource recovery site would occur.

Cumulative Discussion

The project site does not contain any known mineral resources. Therefore, it would not make any contribution to a cumulative impact on these resources. There would be no cumulative impacts and no mitigation measures would be necessary.

[21] CDOC. 1996. Designated Areas Update, Regionally Significant Construction Aggregate Resource Areas in the South San Francisco Bay Production-Consumption Region. Montara Mountain Quadrangle, Open-File Report 96-03, Plate 18 of 29.

[22] CDOC. 1996. Page xi.

2.13 Noise

	Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project 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?	☒	☐	☐	☐
(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?	☐	☐	☒	☐

Environmental Evaluation

EIR Section 3.9, Noise, provides a detailed analysis of construction and operation noise and vibration impacts associated with the proposed project, including explanation of initial study checklist topics (a) through (c) indicated above. The EIR includes a complete description of the existing noise setting and regulatory framework, the approach to the analysis, an impact evaluation of the proposed project and its variants, and cumulative impacts, and, if appropriate, identification of mitigation measures. The project site is located within an area covered by an airport land use plan but would have less than significant impacts. Therefore, initial study checklist topic (c) is not addressed within EIR Section 3.9. The significance of the proposed project's noise effects is based on detailed noise measurements, modeling, and calculations.

a) Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

See EIR Section 3.9, Noise, for the project-specific and cumulative analysis related to ambient noise levels.

b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

See EIR Section 3.9, Noise, for the project-specific and cumulative analysis related to groundborne vibration or 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?

As discussed under Section 2.9 Hazards and Hazardous Materials in this Initial Study, the Half Moon Bay Airport, is located approximately 0.9 mile south of the proposed project site.[23] The ALUCP outlines the airport noise exposure contours, which are graphical representations of projected noise exposure levels associated with aircraft operations in areas adjacent to an airport. The project site is not located within the 2012 or projected 2032 noise exposure contour limits of 60, 65, and 70 Community Noise Equivalent Level.[24] Given the intervening topography and distance, the project would not expose people residing or working on the project site to excessive noise levels. Therefore, the impacts would be less than significant, and this topic will not be discussed further in the EIR.

Cumulative Discussion

The proposed project's potential contribution to cumulative impacts on excessive noise impacts within 2 miles of an area covered by an airport land use plan is evaluated in the context of past, present, and reasonably foreseeable probable future development expected in San Mateo County. Noise impacts are dependent upon the location of noise, the wind conditions, and intensity of the noise source. The County evaluates noise impacts in comparison to the existing noise environment and Zoning Ordinance provisions. The project site is in a residential area within the ALUCP of Half Moon Bay, however, it is not located within the 2012 or projected 2032 noise exposure contour limits of 60, 65, and 70 Community Noise Equivalent Level.

The nearest cumulative project is located 0.05 mile to the southeast. Given the intervening topography and distance, the project would not expose people residing or working in the project site to excessive noise levels. None of the cumulative projects would contribute to excessive noise impacts within the Half Moon Bay Airport; therefore, the proposed project would not cumulatively contribute to localized cumulative impacts on the existing noise environment. Therefore, cumulative impacts on excessive noise impacts would be less than significant. The proposed project would not substantially contribute to a significant cumulative impact. No mitigation is required.

2.14 Population and Housing

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(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?	☐	☐	☐	☒

[23] County of San Mateo, 2023a.

[24] C/CAG, 2014.

Environmental Evaluation

a) Would the project 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)?

Construction

Project construction is anticipated to occur over a period of 18 months, beginning in December 2024. On any given day, there would be an average of 30 construction workers on-site per day, and up to 60 workers at peak times.[25] It is anticipated that construction workers would commute from their residences, and workers who live outside of San Mateo County would be expected to commute rather than permanently relocate from more distant locations, which is typical of the construction trades. Once construction activities begin, construction workers would typically seek employment at other job sites in the region. Thus, construction of the proposed project would not result in substantial, unplanned employment-generated growth in San Mateo County or the region.

While there would be some increase in employment both during the construction phase and during project operation, the number of employees would be small in relation to the overall workforce in San Mateo County.

Operation

In 2021, the California Coastal Commission (CCC) approved the amendment to the County Local Coastal Program (LCP) which changed the site's land use designation from Medium-High Density Residential to Medium Density Residential. This land use designation allows for development at densities from 6.1 to 8.7 units per acre. In 2022, the County Board of Supervisors adopted a resolution rezoning the site from PUD-124/CD to PUD-140/CD, decreasing the allowed density of residential units on-site from 148 to 71.

The project is expected to house approximately 213 residents, based on occupancy rates at other properties owned or managed by MidPen Housing Corporation (MidPen). This number represents a nominal increase relative to the County's 2021 estimated population of 737,888 residents. This number of residents would be a significant increase compared to Moss Beach's population of 3,436 residents[26] and Montara's population of 2,833 residents.[27] However, the population increase associated with implementation of the project would be lower than originally expected (under the previous land use designation) and would be considered planned growth.

The project site is surrounded by urban land uses and served by existing utilities (roadways, potable water, sewer, electricity, natural gas, etc.). The project proposes the extension of existing utilities, including water lines to new project facilities for potable water and fire water supply, as well as irrigation for landscaping. The project includes the installation of a new connection to the existing storm drain main on Carlos Street, which ultimately outfalls to Montara Creek. Stormwater runoff on the project would be collected by overland flow to three stormwater bioretention basins in the western portion of the project site. Vehicular ingress/egress to and from the project site would be provided by a new 28-foot-wide single driveway on Carlos Street on the western boundary of the site.

An agreement between the County Department of Housing and the project applicant states that 52 of the 71 residential units shall include a preference for individuals who live and/or work in the region. Eligible

[25] MidPen Housing. 2023. 23_0504 SWCA Cypress Point EIR Data Request – additional responses. MidPen Housing.

[26] Data USA. 2023. Moss Beach, California. Available at: https://datausa.io/profile/geo/moss-beach-ca. Accessed April 7, 2023.

[27] Data USA. 2023. Montara, California. Available at: https://datausa.io/profile/geo/montara-ca. Accessed April 7, 2023.

households are those that include at least one member who lives or works in the city of Pacifica, the city of Half Moon Bay, and/or the unincorporated San Mateo County region between the city of Pacifica and the city of Half Moon Bay. This preference structure increases chances for individuals who meet these criteria to live in this development, although it does not restrict individuals who do not live and/or work in the area from being accepted. Therefore, this requirement would draw individuals who already live and/or work in the Greater Moss Beach region.

Although the project would introduce new residents to the area, development of the project site was planned for in the County LCP and the implementation of the project would not induce substantial population growth within San Mateo County. The project would not induce substantial unplanned population growth in an area, either directly or indirectly. Impacts would be less than significant, and this topic is not discussed further in the EIR.

b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The proposed project would be situated on a vacant parcel. There are no housing units or any other developed uses on the project site. As the site is undeveloped and has no existing housing units, there would be no displacement of housing units or substantial numbers of people; replacement housing in another location would not be required. There would be no impact and this topic is not discussed further in the EIR.

Cumulative Discussion

The proposed project's potential contribution to cumulative impacts on population and housing is evaluated in the context of past, present, and reasonably foreseeable probable future development expected in San Mateo County. The project would not induce unplanned population growth and would not displace residents. Because the housing has a local preference, it is anticipated that a large percentage of future residents of the project already live in the Greater Moss Beach region. In combination with the foreseeable projects, the cumulative impacts would be less than significant compared to population growth throughout San Mateo County. Therefore, cumulative impacts on population and housing would be less than significant. The proposed project would not substantially contribute to a significant cumulative impact. No mitigation is required.

2.15 Public Services

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☒	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☒	☐

Environmental Setting

Fire Protection

The Coastside Fire Protection District (District) would provide fire protection services for the project site. The District also serves the city of Half Moon Bay; the communities of Montara, Moss Beach, Princeton, El Granada, and Miramar; and the surrounding unincorporated areas. The District service area covers approximately 50 square miles and serves a population of approximately 30,000 residents.

In addition to traditional fire service, the District provides advanced life support, cliff rescue, water rescue, confined space rescue, and vehicle and residential lock-out services. The District responds to approximately 2,600 calls for service each year.[28] These incidents include medical aid, fires and fire alarms, water rescue, cliff rescue, traffic accidents, odor investigations, hazardous materials, and public service assists.[29]

Three fire stations operate within the District: Fire Station 44, located on Stetson Street in Moss Beach one block (approximately 300 feet) from the project site; Fire Station 40, located within the downtown area of the city of Half Moon Bay; Fire Station 41, located within the unincorporated area of El Granada. Fire Station 40 serves as the District headquarters. The District opened a new 12,425-square-foot Fire Station 41 in 2018.[30] Station 44 (Moss Beach) would provide initial fire and emergency medical service response to the project site, and Stations 41 (El Granada) and 40 (Half Moon Bay) would support the initial response, if needed.

As noted above, depending on the type of emergency, the proposed project would primarily be served by Station 44 (Moss Beach), located less than $^{1}/_{10}$ mile southeast of the project site on Stetson Street. The District's response time goal is to respond within 6 minutes 59 seconds of receiving the call. In an email on May 11, 2023, the District Chief confirmed that response times are currently met throughout the district.[31] The proximity of Fire Station 44 to the project site indicates that the response times would meet established District response time goals.

The District has 32 paid positions, along with 11 volunteer firefighter positions. Paid positions include one assistant fire chief, one fire marshal, one deputy fire marshal, four battalion chiefs, and two administrative support positions. All stations are staffed with one fire captain and two fire apparatus engineers, one of which is a paramedic to provide advanced life support service. Shift personnel work a scheduled 3-day/72-hour workweek.[32]

[28] Coastside Fire Protection District. 2020. 2020 Annual Report. Available at: https://www.coastsidefire.org/files/2f82a78c4/032421+tab+3+b.+2020+Coastside+Annual+Report.pdf. Accessed January 30, 2023.
[29] Coastside Fire Protection District, 2020.
[30] Coastside Fire Protection District. 2023a. New Fire Station 41. Available at: https://www.coastsidefire.org/new-fire-station-41. Accessed January 30, 2023.
[31] Personal communication between Coastside Fire Department Chief and Erica Rippe, dated May 11, 2023.
[32] Coastside Fire Protection District, 2020.

The Half Moon Bay Volunteer Fire Department (Volunteer Fire Department) is a Volunteer Division of the District. The Volunteer Fire Department consists of approximately 15 members and is under the direction of the Fire Chief. The number of volunteers reflects the current needs of the Volunteer Fire Department and is determined by the Chief of the Volunteer Division. The objectives of the Volunteer Fire Department are to operate within the boundaries of the district as a supplemental force to the regular paid department, and to operate as a trained unit for both fire suppression and non-suppression situations.[33]

Police Protection

The County of San Mateo Sheriff's Department (Sheriff's Department) would provide police protection services for the project site. The Sheriff's Department also serves the cities of Half Moon Bay, Millbrae, San Carlos, Eichler Highlands, the towns of Portola Valley and Woodside, as well as the Peninsula Corridor Joint Powers Board and the San Mateo County Transit District. The Sheriff's Department handled 116,335 service calls in 2021.[34]

The Sheriff's Department is divided into seven separate divisions—Administration, Homeland Security, Support Services, Patrol Services, Investigations Bureau, Multi-Jurisdictional, and Corrections—that are staffed by 800 employees (including both sworn and civilian employees). Patrol Services in the vicinity of the proposed project would be provided by the Coastside Patrol Bureau, based at the Moss Beach Substation in Moss Beach, approximately 0.5 mile southeast of the project site. A second substation, the Half Moon Bay Substation, serves the southern coastal portion of the County. The Coastside Patrol Bureau is staffed with 27 full-time deputy sheriffs, four sergeants, and one lieutenant. The Bureau is staffed with sufficient resources to respond on a 24-hour basis for any emergency. Additionally, two full-time community policing deputies are assigned to address the needs of the community, including both law enforcement and quality-of-life issues.[35] The Moss Beach Station's staffing and equipment inventory are adequate to meet the current demand for police protection services on the project site, and would be considered adequate to serve the future needs of the project.[36]

Schools

The Cabrillo Unified School District (CUSD) provides public education services in the Moss Beach area and encompasses an area of approximately 135 square miles. CUSD currently operates one comprehensive high school, one alternative school, one middle school, four elementary schools, one preschool, and one adult school.[37] Approximately 2,800 students were enrolled in CUSD schools for the 2021 to 2022 school year, a significant decrease from an enrollment of 3,200 students in 2017 to 2018.[38,39] CUSD implements an open enrollment policy, which allows students to apply to transfer to any of the District's elementary schools.

The following schools currently serve the project site and would serve residents of the project:

[33] Coastside Fire Protection District, 2023b. Coastside Volunteer Firefighters. Available at: https://www.coastsidefire.org/coastside-volunteer-firefighters. Accessed January 30, 2023.

[34] San Mateo County Sheriff's Office. 2023a. Administration. Available at: https://www.smcsheriff.com/index.php/administration. Accessed April 7, 2023.

[35] San Mateo County Sheriff's Office. 2023b. Coastside Patrol Bureau. Available at: https://www.smcsheriff.com/patrol-services/coastside-patrol-bureau. Accessed April 7, 2023.

[36] Stevens Consulting, 2018. Public Services and Utilities – County Review Draft.

[37] CUSD. 2022. LCFF Budget Overview for Parents - 2022-2023 School Year. Available at: https://drive.google.com/file/d/1TyW9RwAKmsDta39dbSIu7zHwcAAY3GNF/view?usp=sharing. Accessed April 7, 2023.

[38] CUSD, 2022.

[39] Education Data Partnership. 2023. Ed-Data: Cabrillo Unified. Available at: http://www.ed-data.org/district/San-Mateo/Cabrillo-Unified. Accessed April 7, 2023.

- Farallone View Elementary School, located at 1100 LeConte Avenue in Montara (approximately 1 mile northeast of the project site), includes grades K through 5.
- Manual F. Cunha Intermediate School, located at 600 Church Street in Half Moon Bay (approximately 7 miles southeast of the project site), includes grades 6 through 8.
- Half Moon Bay High School, located at 498 Kelly Avenue in Half Moon Bay (approximately 7 miles southeast of the project site), includes grades 9 through 12.

Pursuant to Section 17620(a)(1) of the California Education Code, the governing board at any school district is authorized to levy a fee, charge, dedication, or other requirement against any construction within the boundaries of the district, for the purpose of funding the construction or reconstruction of school facilities. Effective May 10, 2012, CUSD school impact fee rates are $3.20 per square foot of residential development and $0.51 per square foot of commercial development.[40] Fees are used only for construction and reconstruction of school facilities. As provided in Section 65996 of the California Government Code, the payment of such fees is deemed to fully mitigate the impacts of new development on school services.

Parks

The California Department of Parks and Recreation (DPR) owns and operates 8,353 acres of recreational facilities in San Mateo County, in the form of parks, beaches, and marine reserves.[41] These facilities are located along the coast and in the southern portion of San Mateo County. The DPR recreational facilities nearest to the project site include the Gray Whale Cove and Montara State Beaches. The DPR operates the following 16 parks and recreational areas in San Mateo County:

- Año Nuevo State Park
- Bean Hollow State Beach
- Burleigh H. Murray Ranch
- Butano State Park
- Gray Whale Cove State Beach
- Half Moon Bay State Beach
- Montara State Beach
- Pacifica State Beach
- Pescadero State Beach
- Pigeon Point Light Station State Historic Park
- Pomponio State Beach
- Portola Redwoods State Park
- San Bruno Mountain State Park
- San Gregorio State Beach
- Thornton State Beach

The County of San Mateo Department of Parks (County Parks Department) operates 24 parks that encompass over 17,000 acres. It features approximately 190 miles of county and local trails, including three regional trails.[42] James Fitzgerald Marine Reserve and Pillar Point Bluff are the county parks nearest the project site. Moss Beach Park is a playground facility located approximately 1 mile south of the project site. The parks, trails, and facilities are located throughout San Mateo County and represent a wide variety of natural settings, including a marine reserve, a bayside recreational area, coastal mountain woodland areas, and urban sites. Camping, hiking, swimming, windsurfing, and horseback riding are some of the recreational activities offered at the following county parks:

- Coyote Point Recreation Area and Marina
- Crystal Springs Regional Trail
- Devil's Slide Trail
- Edgewood Park and Natural Preserve
- Fitzgerald Marine Reserve
- Flood Park
- Friendship Park
- Huddart Park
- Junipero Serra Park
- Memorial Park

[40] CUSD. 2023a. Developer Fees. Available at: https://www.cabrillo.k12.ca.us/our_departments/business_services/developer_fees. Accessed April 7, 2023.

[41] DPR. 2023. Find a California State Park. Available at: https://www.parks.ca.gov/ParkIndex. Accessed April 7, 2023.

[42] County of San Mateo. 2023b. About the San Mateo County Parks Department. Available at: https://www.smcgov.org/parks/about-san-mateo-county-parks-department. Accessed April 7, 2023.

- Mirada Surf
- Moss Beach Park
- Pescadero Creek Park
- Pillar Point Bluff
- Quarry Park
- Sam McDonald Park
- San Bruno Mountain State and County Park
- San Pedro Valley Park
- Sanchez Adobe
- Tunitas Creek Beach
- Woodside Store
- Wunderlich Park

The County Parks Department has 18 infrastructure projects outlined in their Five Year Capital Improvement Plan for Fiscal Year (FY) 2021 to 2026 with a total cost of $65,265,849 over the 5 years.[43] These projects will address deferred maintenance, expand visitor amenities, and expand recreational facilities. These projects include the Coyote Point Eastern Promenade Rejuvenation Project, Tunitas Creek Beach Improvement Project, Reimagine Flood Park Project, Memorial Park Facilities Improvement Project, and Homestead Trail Bridge Replacement Project.

The County Parks Department budget is augmented by Ordinance Code 2.64.070(a), the Park and Recreation Development Fees Ordinance, which established mitigation fees for new residential development and for residential reconstruction or remodeling projects that increase the size of an existing residence. Additionally, the San Mateo County Sales Tax Increase, Measure A, was approved by voters in San Mateo County in November 2012. Measure K, passed in November 2016, replaced the sales tax increase. Measure K increased the sales tax paid on the purchase of goods and services in San Mateo County by ½ cent for 10 years. In fiscal year (FY) 2020 to 2021, Measure A funds provided $5,849,702, or approximately 26% of the County's total budget for parks.[44,45]

Libraries

The San Mateo County Libraries (SMCL) is a joint powers authority composed of the cities of Atherton, Belmont, Brisbane, East Palo Alto, Foster City, Half Moon Bay, Millbrae, North Fair Oaks, Pacifica, Portola Valley, San Carlos, and Woodside, as well as unincorporated areas of San Mateo County. The SMCL has a rich history of providing library services to the residents of San Mateo County.[46] The 13 community libraries, bookmobile, and eBranch provide books, magazines, newspapers, and information in multiple languages to residents.

The Half Moon Bay Library is the branch closest to the project site. The Half Moon Bay Library serves a 270-square-mile area, including the city of Half Moon Bay and the nearby unincorporated Coastside area. The new library building opened in 2018. In the Half Moon Bay Library FY 2016 to 2017, the total circulation was 195,433, there were 154,261 library visitors, and 21,254 area residents attended programs at the library.[47]

[43] County of San Mateo. 2023c. County Executive Office: Five Year Capital Improvement Plan: Parks Department. Available at: https://www.smcgov.org/ceo/five-year-capital-improvement-plan-parks-department. Accessed April 7, 2023.
[44] County of San Mateo. 2023d. County Executive Office: Financial Summary. Available at: https://www.smcgov.org/ceo/financial-summary. Accessed April 7, 2023.
[45] County of San Mateo. 2022. Fiscal Year 2022–2023 Recommended Budget. Available at: https://www.smcgov.org/sites/default/files/2022-05/FY%202022-23%20Recommended%20Budget.pdf. Accessed April 7, 2023.
[46] San Mateo County Libraries. 2023. Locations. Available at: https://smcl.bibliocommons.com/locations/list. Accessed April 7, 2023.
[47] County of San Mateo Performance. San Mateo County will Fund New Library Facilities and Existing Library Remodels. Available at: https://performance.smcgov.org/. Accessed April 7, 2023.

Environmental Evaluation

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?

Construction

Construction of the proposed project would increase the potential for accidental on-site fires from sources such as the operation of mechanical equipment and use of flammable construction materials. In most cases, compliance with building and fire codes, including implementation of basic housekeeping procedures by the construction contractors and work crews, would minimize these hazards.

Construction activities also have the potential to affect fire protection, such as emergency vehicle response times, by adding construction traffic to the street network and potentially by requiring partial lane closures during street improvements and utility installation.

The Coastside Fire Protection District Station 44 is located on Stetson Street in Moss Beach, approximately one block from the southern boundary of the proposed project site. Construction impacts would be temporary in nature, and partial lane closures, if necessary, would not significantly impact emergency vehicle response times. For more information related to response times, please see EIR Section 3.6 Hazards and Hazardous Materials, and Section 3.12 Wildfire. Based on the above information, construction of the proposed project would not be expected to substantially increase fire risks or increase emergency service response times. Therefore, potential impacts to fire services during construction would be less than significant.

Operation

The project would develop 71 residential units on a 11.02-acre project site. Project implementation would result in a population increase of approximately 213 residents, resulting in an increase in demand for fire protection services relative to the population of the project vicinity. Although there is not a direct proportional relationship between increases in land use activity and increases in demand for fire and emergency services, it is anticipated that the number of calls for fire and emergency services would increase with implementation of the proposed project.

The project site is not located within a mapped Fire Hazard Severity Zone, however, per the Association of Bay Area Governments (ABAG) Hazard Viewer, the site is surrounded by high and very high fire hazard severity zones.[48] Additionally, while the project site is not within a hazardous fire area, there are open space areas approximately 0.5 mile to the southeast of the project site that extend to the foothills of the Santa Cruz Mountains. These areas are within the high and very high fire hazard severity zones. The project site could be vulnerable to these wildland fires, should they occur. See EIR Section 3.12 Wildfire, for a discussion of wildfire impacts.

The project would conform to the 2022 California Building Standards Code (Cal. Code Regs., Title 24), which includes the California Fire Code. Furthermore, the project would comply with County Code

[48] MTC/ABAG. 2023. MTC/ABAG Hazard Viewer GIS Map. Available at: https://mtc.maps.arcgis.com/apps/webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8. Accessed May 10, 2023.

Section 9135, Automatic Sprinkler Systems, which requires the installation and maintenance of an automatic fire sprinkler system in all newly constructed buildings, including each multifamily dwelling unit.[49] The project would also comply with all applicable Fire Code requirements associated with adequate fire access, fire flows, and number of hydrants. The likelihood that a structural fire would expand into a wildland fire before it can be brought under control is therefore significantly reduced. Similarly, wildfires would be less able to burn these buildings because of the preventative measures in place.

Project implementation has the potential to increase the County's response times to the project site or surrounding vicinity; however, no additional fire personnel or equipment would be necessary to serve the project. The project would not physically alter existing fire protection facilities, nor require the construction of new facilities. In addition, the project site is located within an urban, built-up area of San Mateo County with adequate response times and infrastructure; thus, the project would not significantly increase the demand for fire protection services. Therefore, buildout of the project site is not expected to increase exposure and vulnerability to wildfire hazard, and the impacts would be less than significant. See EIR Section 3.12 Wildfire, for a discussion of wildfire impacts.

Based on the above information, implementation of the project would not be expected to overload firefighting and emergency services to the extent that there would be a need for new, expanded, consolidated, or relocated fire facilities. Therefore, potential impacts to fire services would be less than significant, and no mitigation measures are required.

Police protection?

The construction of 71 new housing units would provide housing for approximately 213 people. There would be an increased demand for police services on the project site. There is not a direct proportional relationship between increases in land use activity and increases in demand for police protection, and it is logical, to some extent, to anticipate that the number of calls for police response to home burglaries, vehicle burglaries, damage to vehicles, traffic-related incidents, and crimes against persons would increase with the increase in on-site activity, population, and increased traffic on adjacent streets and arterials. However, because a number of other factors also contribute to crime rates, such as police presence, crime prevention measures, and ongoing legislation and funding, the potential for increased crime rates is not necessarily directly proportional to increases in land use activity.

Although the project would increase the number of persons and level of activity on the project site, given the type of use and its similarity to the surrounding area, there is no indication that implementation of the proposed project would result in increased crime in surrounding neighborhoods, or that the design of the project would increase calls for service beyond that considered normal and appropriate within the area. The project would not require new or altered public safety facilities.[50] Therefore, project impacts on police services would be less than significant, and no mitigation measures are required.

Schools?

The proposed 71 new housing units would provide housing to approximately 213 people. Per the U.S. Census Bureau, the population of student-age children between ages 6 and 18 years old in San Mateo County is approximately 14.5% of the total population.[51] Given the anticipated Cypress Point population

[49] San Mateo County. 2016. Municipal Code Section 9135. Automatic Sprinkler Systems. Available at: https://www.cfsfire.org/wp-content/uploads/2018/08/Fire-Sprinklers.pdf. Accessed May 22, 2023.

[50] Stevens Consulting. 2018. Public Services and Utilities – County Review Draft. Stevens Consulting.

[51] U.S. Census Bureau. 2023. QuickFacts – San Mateo County, California. Available at: https://www.census.gov/quickfacts/fact/table/sanmateocountycalifornia,CA/HSD410221#HSD410221. Accessed May 10, 2023.

and County housing data, the project would introduce approximately 31 additional students in grades kindergarten through high school who would need to be accommodated in public schools. Students residing in the project would attend Farallone View Elementary School, Manual F. Cunha Intermediate School, and Half Moon Bay High School. As discussed, these schools have adequate capacity to accommodate the increase in students expected from the project.[52] Given that CUSD enrollment has significantly decreased, the addition of 31 new students would not exceed the CUSD's capacity.

As described above, CUSD instituted development fees to assist in paying for the costs of construction or reconstruction of facilities. Additionally, the voters in the CUSD passed the Measure M Bond Building Fund in 2018 to fund school updates, repairs, equipment, and construction.[53] Measure I, an annual education parcel tax of $150 per parcel is also in effect until FY 2027–2028.[54] Thus, the CUSD has anticipated the need for adequate school facilities within the attendance area of the project and has developed funding sources to address these needs. Therefore, with the payment of school impact fees, impacts related to schools would be less than significant.

Parks?

The addition of 71 housing units for 213 residents on the project site represent an increase of approximately 0.03% in population in relation to the County's 2021 estimated population of 737,888 residents. The project would not result in a substantial increase in the use or demand for neighborhood or regional parks, or other recreational facilities beyond the uses and demands contemplated by the County's General Plan.

As described above, the County also charges impact fees to all new residential developments to mitigate a project's impacts on park and recreation facilities. These impact fees are used to address the identified future needs for the County's park system. The impact fees and the voter-approved tax measures to fund the County's budget for parks would ensure any impacts from this project would be less than significant.

Other public facilities?

Residential development in this area was anticipated in the County's General Plan. There are no unique aspects of the project that would increase service demands beyond those anticipated in the General Plan, or that would render the current service levels to be inadequate. No new library facilities to accommodate the project's service demands would be necessary. Therefore, this impact would be less than significant.

Cumulative Discussion

The proposed project's potential contribution to cumulative impacts on public services is evaluated in the context of past, present, and reasonably foreseeable probable future development expected in San Mateo County.

FIRE PROTECTION: Construction of the project, along with cumulative development of projects within the Coastside Fire Protection District jurisdiction, would increase population and demand for fire services. The project and cumulative development projects are currently served by the District. The District operates on a regional aid approach where emergency response units are dispatched as needed based on unit availability, rather than municipal or determined service boundaries. Since cumulative development would occur in the District response area, cumulative development is not anticipated to

[52] Stevens Consulting, 2018.

[53] CUSD. 2023b. Bond Measures. Available at: https://www.cabrillo.k12.ca.us/about_us/parcel_tax_bonds/bond_measures. Accessed March 12, 2023.

[54] CUSD, 2023b.

result in adverse physical impacts associated with the provision of new/physically altered fire protection facilities. Therefore, the impact on fire protection would not be cumulatively considerable. No mitigation is necessary.

POLICE PROTECTION: Construction of the project, along with cumulative development of projects within the Sheriff's Department jurisdiction, would increase population and demand for police services. Through the County's design review process, the Sheriff's Department and Planning Department would review the cumulative development projects on a project-by-project basis concerning safety measures. Cumulative development would occur in suburban areas where services and facilities are already provided. Cumulative development is not anticipated to result in adverse physical impacts associated with the provision of new/physically altered police facilities, as no additional police services are required to serve the project. Combined with other cumulative development, the project would result in less than significant cumulative environmental impacts concerning police protection. Therefore, the impact on police protection would not be cumulatively considerable. No mitigation is necessary.

SCHOOLS: Construction of the project, along with cumulative development of projects within CUSD jurisdiction, would incrementally increase student population and demand for CUSD facilities. The project and cumulative development projects are all located within the CUSD. The potential growth associated with cumulative development within the CUSD is not anticipated to require new or physically altered school facilities, as capacity for growth currently exists in the CUSD. Therefore, the project, combined with other cumulative development, would not result in significant cumulative environmental impacts concerning schools. Therefore, the project's impact on schools would not be cumulatively considerable.

PARKS: Development of the proposed project, combined with other cumulative development, would create additional demand on the existing city parks and recreational facilities due to population growth. Through the development review process, cumulative developments would be evaluated on a project-by-project basis to determine their parkland demands and the conditions for their establishment and operation. Payment of impact fees for the cumulative projects would mitigate the impacts from cumulative demands for parkland to less than significant levels. The project, combined with other cumulative development, would not result in significant cumulative environmental impacts concerning parks and recreational facilities. Therefore, the project's impact on parks and recreational facilities would not be cumulatively considerable.

OTHER PUBLIC FACILITIES: Development of the proposed project, combined with other cumulative development, would create additional demand on the existing facilities due to population growth. The proposed cumulative development projects would be evaluated on a project-by-project basis to determine their library demands and the conditions for their establishment and operation. The cumulative projects would occur in suburban areas where services and facilities are already provided, and cumulative development is not anticipated to result in adverse physical impacts associated with the provision of new/physically altered library facilities. The project would not result in significant cumulative environmental impacts concerning libraries. Therefore, the project's impact on other public facilities would not be cumulatively considerable.

2.16 Recreation

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

Environmental Evaluation

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

As discussed above in Section 2.15 Public Services, the County Parks Department operates 24 parks that encompass over 17,000 acres. It features approximately 190 miles of county and local trails, including three regional trails.[55] James Fitzgerald Marine Reserve and Pillar Point Bluff are the county parks nearest the project site.

The project would provide recreational opportunities for Cypress Point residents by building an informal trail on undeveloped portions of the site. The pathways would be privately maintained public open space, and the accessible path would end in a trellis-covered area with barbecue equipment, picnic tables, and benches. Other outdoor areas would include a basketball half court and a paved overlook with seating. In addition, the central outdoor space adjacent to the community building would include two play structures and open grassy terraces with flowering trees and planting. These on-site recreational facilities would create opportunities for residents and would lessen the use and demand of off-site parks or recreational facilities. The County charges impact fees to all new residential development to mitigate a project's impact on park and recreation facilities. These impact fees are used to address the identified future needs for the County's park system. Impacts would be less than significant, and this topic will not be discussed further in the EIR.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The proposed project includes privately maintained, on-site recreational amenities including accessible walking paths, a basketball half court, and two play structures. The project does not propose off-site recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. Impacts would be less than significant, and this topic will not be discussed further in the EIR.

[55] County of San Mateo, 2023b.

Cumulative Discussion

The proposed project's potential contribution to cumulative impacts on recreation is evaluated in the context of past, present, and reasonably foreseeable probable future development expected in San Mateo County. The project would result in less than significant adverse physical impacts associated with park facilities. The proposed project, combined with cumulative development projects, would result in an incremental increase in regional parks and recreational facilities, as residential and non-residential use would increase. However, project and cumulative projects would be charged impact fees for all new residential development to mitigate a project's impact on park and recreation facilities. These impact fees are used to address the identified future needs for the County's park system; therefore, the project's cumulative impact would be less than significant and no mitigation is needed.

2.17 Transportation

	Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities and parking?	☒	☐	☐	☐
(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 equipment)?	☒	☐	☐	☐
(d)	Result in inadequate emergency access?	☒	☐	☐	☐

Environmental Evaluation

EIR Section 3.10, Transportation, provides a detailed analysis of construction and operation transportation and emergency access impacts associated with the proposed project, including an explanation of initial study checklist topics (a) through (d) indicated above. The EIR includes a complete description of the existing transportation setting and regulatory framework, the approach to the analysis, an impact evaluation of the proposed project, and cumulative impacts, and, if appropriate, identification of mitigation measures.

a) Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities and parking?

See EIR Section 3.10, Transportation, for the project-specific and cumulative analysis related to the circulation system.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

See EIR Section 3.10, Transportation, for the project-specific and cumulative analysis related to vehicle-miles traveled.

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)?

See EIR Section 3.10, Transportation, for the project-specific and cumulative analysis related to design hazards or incompatible uses.

d) Would the project result in inadequate emergency access?

See EIR Section 3.10, Transportation, for the project-specific and cumulative analysis related to emergency access.

2.18 Tribal Cultural Resources

	Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Would the project cause a substantial adverse change in the significance of a Tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
	(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.	☐	☒	☐	☐

Environmental Evaluation

a) Would the project cause a substantial adverse change in the significance of a Tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a-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)?

The proposed project is located on the ancestral lands of the Ohlone and Costanoan Indian Tribes. A combined cultural resources evaluation was completed for the Cypress Point Project on June 1, 2018, by

ARM.[56] In preparation of the report, ARM contacted the NAHC and requested a Sacred Lands File search of the project site. The NAHC responded on December 11, 2017 that the search returned negative results for the project site and provided a list of Native American contacts. The County distributed letters to the list of Native American contacts on December 21, 2017, requesting information on Tribal cultural resources in or near the project site.

As the lead agency, the County has not received notification requests from any Native American tribes per the requirements of Assembly Bill (AB) 52. Therefore, no notices were provided under AB 52 related to Tribal cultural resources. No responses were received from the following contacts:

- Amah Mutsun Tribal Band of Mission San Juan Bautista: Irene Zwierlein, Chairperson
  - As part of the archaeological testing program,[57] Irene Zwierlein of the Amah Mutsun Tribal Band of Mission San Juan Bautista was contacted, and a Native American monitor was present during the archaeological testing within CA-SMA-431.
- Coastanoan Rumsen Carmel Tribe: Tony Cera, Chairperson
- Indian Canyon Mutsun Band of Costanoan: Ann Marie Savers, Chairperson
- Muwekma Ohlone Indian Tribe of the San Francisco Bay Area: Rosemary Cambra, Chairperson
- Ohlone Indian Tribe: Andrew Galvan, Representative

With implementation of MM-CR-1: Additional Site Excavation; MM-CR-2: Archaeological Monitoring; MM-CR-3: Unanticipated Findings during Construction; and MM-CR-4: Procedures for Discovery and Treatment of Human Remains, impacts with regards to accidental discovery of Tribal cultural resources would be less than significant with mitigation.

a-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.

Background research, survey results, and Native American coordination identified a shell mound (CA-SMA-55: Referred to as Nelson 405), within the area of potential effect. Based upon the lack of other artifacts in the deposit, and the site's heavily disturbed nature, CA-SMA-55 is not eligible for the NRHP or CRHR. If appropriate, the archaeologist and Tribal Historic Preservation Officer may introduce archaeological and Tribal cultural monitoring on-site, and an archaeological report should be written detailing all archaeological finds and submitted to the County in consultation with the Tribe's Tribal Historic Preservation Officer.

With implementation of MM-CR-4: Procedures for Discovery and Treatment of Human Remains, impacts to Tribal cultural resources would be less than significant with mitigation.

Cumulative Discussion

The proposed project's potential contribution to cumulative impacts on Tribal cultural resources is evaluated in the context of past, present, and reasonably foreseeable probable future development expected in San Mateo County. Impacts to Tribal cultural resources are site-specific and are assessed on a

[56] ARM, 2018a.

[57] ARM, 2018b.

site-by-site basis. The extent of Tribal cultural resources (if any) that occur at the sites of the potential future projects is unknown; therefore, it is not known whether any of the potential projects would result in significant impacts to Tribal cultural resources. A determination of project-specific impacts would be made on a case-by-case basis and, if necessary, the applicants of each reasonably foreseeable project would be required to implement the appropriate mitigation measures. Therefore, implementation of the cumulative projects, together with the proposed project, would result in impacts that would be considered less than significant with mitigation. However, with implementation of MM-CR-4, potential impacts to these resources would not be cumulatively considerable, and the project's cumulative impact would be less than significant with mitigation.

2.19 Utilities and Service Systems

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☒	☐	☐	☐
(b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☒	☐	☐	☐
(c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☒	☐	☐	☐
(d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☒	☐	☐	☐
(e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☒	☐	☐	☐

Environmental Evaluation

EIR Section 3.11, Utilities and Service Systems, provides a detailed analysis of construction and operation impacts to utilities and service systems associated with the proposed project, including explanation of initial study checklist topics (a) through (e) indicated above. The EIR includes a complete description of the existing utilities conditions, regulatory framework, the approach to the analysis, an impact evaluation of the proposed project, and cumulative impacts, and, if appropriate, identification of mitigation measures.

a) Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

See EIR Section 3.11, Utilities and Service Systems, for the project-specific and cumulative analysis related to utility facilities.

b) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

See EIR Section 3.11, Utilities and Service Systems, for the project-specific and cumulative analysis related to water supplies.

c) Would the project 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?

See EIR Section 3.11, Utilities and Service Systems, for the project-specific and cumulative analysis related to wastewater capacity.

d) Would the project 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?

See EIR Section 3.11, Utilities and Service Systems, for the project-specific and cumulative analysis related to solid waste generation.

e) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

See EIR Section 3.11, Utilities and Service Systems, for the project-specific and cumulative analysis related to solid waste statutes and regulations.

2.20 Wildfire

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
(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?	☒	☐	☐	☐

	Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(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?	☒	☐	☐	☐

Environmental Evaluation

EIR Section 3.12, Wildfire, provides a detailed analysis of wildfire impacts associated with the proposed project, including explanation of initial study checklist topics (a) through (d) indicated above. The EIR includes a complete description of the existing wildfire setting and regulatory framework, the approach to the analysis, an impact evaluation of the proposed project and its variants, and cumulative impacts, and, if appropriate, identification of mitigation measures.

a) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

See EIR Section 3.12, Wildfire, for the project-specific and cumulative analysis related to fire hazard severity zones and emergency response and evacuation plans.

b) Due to slope, prevailing winds, and other factors, if located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

See EIR Section 3.12, Wildfire, for the project-specific and cumulative analysis related to pollutant concentrations and uncontrolled spread of wildfire.

c) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project 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?

See EIR Section 3.12, Wildfire, for the project-specific and cumulative analysis related to fire hazard severity zones and the installation of infrastructure.

d) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project 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?

See EIR Section 3.12, Wildfire, for the project-specific and cumulative analysis related to post-fire slope instability.

2.21 Mandatory Findings of Significance

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

Environmental Evaluation

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?

See EIR Section 3.3, Biological Resources for the project-specific and cumulative analysis related to endangered species, plant and animal communities, fish and wildlife habit, and other biological resources impacts.

The project site is not known to have any association with an important example of California's history or prehistory. Testing on-site determined that the proposed earthmoving activities have the potential to impact cultural materials. A treatment plan designed to mitigate the destruction of cultural materials would be implemented during project construction. MM-CR-1 through MM-CR-4 would ensure that impacts related to cultural, Tribal, and paleontological resources would be less than significant with mitigation.

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)?

The project's contributions to cumulative impacts are individually evaluated by topic in this Initial Study. The project would have less than significant impacts or no impacts on agriculture, cultural and Tribal cultural resources (with MM-CR-1 through MM-CR-4), energy, minerals, population and housing, public

services, and recreation. For the topic areas covered in this Initial Study, the proposed project would not contribute to cumulatively considerable impacts. Potentially significant impacts are analyzed in EIR Chapter 3, Environmental Impact Analysis.

The project is required to implement the required mitigation measures, and the project is consistent with General Plan goals and policies as well as County development standards. Given implementation of mitigation measures to reduce all potential impacts, the incremental construction effects of the proposed project would not contribute to a cumulatively considerable impact. Therefore, impacts would be less than significant with mitigation.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

The new housing development would provide affordable housing options for residents of the mid-coast region. The project lessens the use of fossil fuels through infill development and improves community health by offering affordable housing options. There would be no substantial, adverse impacts on human beings, directly or indirectly, and impacts would be less than significant.

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APPENDIX C

Air Quality and Greenhouse Gas

Technical Report

Air Quality & Greenhouse Gas Technical Report

Cypress Point Affordable Housing Community Project

San Mateo County, California

June 2023

PREPARED FOR

MidPen Housing Corporation

PREPARED BY

SWCA Environmental Consultants

AIR QUALITY & GREENHOUSE GAS TECHNICAL REPORT CYPRESS POINT AFFORDABLE HOUSING COMMUNITY PROJECT SAN MATEO COUNTY, CALIFORNIA

Prepared for

MidPen Housing Corporation

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June 2023

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ACRONYMS AND ABBREVIATIONS

$\mu g/m^3$	micrograms per cubic meter
AB	Assembly Bill
ABAG	Association of Bay Area Governments
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
Air Basin	Mountain County Air Basin
AQMP	Air Quality Management Plan
BAAQMD	Bay Area Air Quality Management District
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emission Estimator Model
CalEPA	California Environmental Protection Agency
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAT	California Action Team
CCAA	California Clean Air Act
CCAP	Alameda County General Plan Community Climate Action Plan
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	County of San Mateo
County General Plan	County of San Mateo General Plan
DPM	diesel particulate matter
EO	Executive Order
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gas
GWP	global warming potential
H_2S	hydrogen sulfide
HFCs	hydrofluorocarbons
HRA	health risk assessment

HVAC	heating, ventilation, and air conditioning
IPCC	Intergovernmental Panel on Climate Change
IWMA	Integrated Waste Management Act
LCFS	Low Carbon Fuel Standard
MMT	million metric tons
MT	metric tons
MTC	Metropolitan Transportation Commission
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NHTSA	National Highway Traffic Safety Administration
NO_2	nitrogen dioxide
NO_X	oxides of nitrogen
O_3	ozone
OEHHA	California Office of Environmental Health Hazard Assessment
OPR	Governor's Office of Planning and Research
PFCs	perfluorocarbons
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PM_{10}	particulate matter less than 10 microns in diameter
ppb	parts per billion
ppm	parts per million
project	Cypress Point Affordable Housing Community Project
RPS	Renewable Portfolio Standard
RTP	Regional Transportation Plan
SB	Senate Bill
SCOTUS	Supreme Court of the United States
SCS	Sustainable Community Strategy
SF_6	sulfur hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SO_2	sulfur dioxide
SO_x	sulfur oxides
SRA	source receptor area
TAC	toxic air contaminant
TSCA	Toxic Substances Control Act
VMT	vehicle miles traveled
VOC	volatile organic compound
ZEV	Zero Emission Vehicle

1 INTRODUCTION

MidPen Housing Corporation (MidPen) retained SWCA Environmental Consultants (SWCA) to conduct an air quality and greenhouse gas emissions (GHGs) technical report to supplement and update the Illingworth and Rodkin, Inc 2018 *Cypress Point Affordable Housing Project Air Quality and Greenhouse Gas Emissions Assessment* in support of the proposed Cypress Point Affordable Housing Community Project (project) in San Mateo County, California (county). The project is an affordable housing development located within the unincorporated community of Moss Beach in the County of San Mateo, designed to provide affordable housing in the San Mateo Midcoast region. The intention of the project sponsors and San Mateo County is to improve the jobs/housing balance and jobs/housing fit by providing preference for those who live or work on the San Mateo Coast.

In 2018, Illingworth and Rodkin, Inc assessed the project's emissions in the 2018 *Cypress Point Affordable Housing Project Air Quality and Greenhouse Gas Emissions Assessment* (Illingworth and Rodkin, Inc 2018) (Appendix A). The purpose of this report is to describe the methodologies used to quantify project air pollutant and greenhouse gas (GHG) emissions and to evaluate the air quality and GHG emissions impacts on ambient air quality & GHGs associated with the project utilizing updated project details and the current emission estimator model. This air quality technical report also addresses the consistency of the project with current applicable federal, state, and local regulatory policies pertaining to air quality and GHG emissions, and analysis of whether the project would cause an exceedance of an ambient air quality standard or significance threshold. The 2018 Illingworth and Rodkin, Inc assessment (2018 Report) will be referenced throughout, where applicable.

The evaluation of project impacts was conducted as recommended in the Bay Area Air Quality Management District (BAAQMD) California Environmental Quality Act (CEQA) Guidelines dated May 2017 (BAAQMD 2017a), which is incorporated into this technical document by reference. In April 2022, the BAAQMD published the Thresholds of Significance Justification Report which presents the BAAQMD thresholds of significance for use in determining whether a proposed project will have a significant impact on climate change and provides the substantial evidence that lead agencies will need to support their use of these thresholds, which is also incorporated into this technical document by reference (BAAQMD 2022).

2 PROJECT LOCATION AND DESCRIPTION

2.1 Project Location

The proposed project is located on a 11.02-acre parcel adjacent to the northeast corner of Carlos Street and Sierra Street in the unincorporated community of Moss Beach, San Mateo County, California (Figure 1). The project site is bounded by vacant land to the southwest (towards State Route 1), residential properties along 16th Street to the northwest (in the community of Montara), and residential properties along Carlos, Sierra, and Lincoln Streets on the other two sides (Figure 2). Individual houses along Stetson Street and Buena Vista Street also border the property. The project site is approximately 750 feet east of the Pacific Ocean and is within 250 feet of Montara Creek at its closest point.

The project site is currently unoccupied and contains concrete building foundations and retaining walls in the center. Thick vegetation covers the majority of the project site outside the areas of the building foundations. Pacific Gas & Electricity (PG&E) provides natural gas and electricity to unincorporated San Mateo County through existing infrastructure. The project site contains some existing electrical infrastructure but no natural gas infrastructure. Natural gas would not be used during project operation.

The project proposes the development of 71 affordable housing units, which would house approximately 213 residents, contained in 16 two-story buildings and a community building for a total of 66,738 square feet. The project includes six different building layouts and unit configurations, ranging in height from 23 to 28 feet. Each unit would have bicycle parking and one assigned parking space. The project would cluster the residential units toward the northwestern corner of the site, retaining the forested open space on the northernmost portion of the site, and leaving room for landscaping and public trails to the south and east. The project does not include changes to the two existing water tanks on the site. The project would also involve construction of 3,364 square feet Community Building in the western portion of the project site, on the inner side of the access loop. The Community Building would contain an office for residential and leasing services, laundry facilities, maintenance and storage areas, a meeting room, computer room, and kitchen. A children's play area would be constructed adjacent to the Community Building with play structures for age 2-5 years and age 5-12 years. A barbeque and picnic area south of the Community Building, and a scenic overlook and picnic area at the southeast corner of the development would also be constructed. Three areas of synthetic turf between Building A and Building B and adjacent to the Community Building to the east and south would provide areas for outdoor recreation. All units, except for the manager's apartment, will be affordable to households earning up to 80% of the Area Median Income. In addition, the project proposes to include a preference for individuals who live and/or work in the region for 75% of the units.

The project would have a fenced community garden north of the Community Building with raised planting beds and a compost area. A network of pedestrian pathways linking residential buildings and community facilities and amenities throughout the project site would be available for recreational use by both residents and the general public. These pathways would include new unpaved pedestrian trails along the southern side of the property that connect to the driveway on Carlos Street and follow the alignment of an existing trail in the southeast corner of the site. A concrete multi-modal path from the driveway south to Sierra Street would be constructed.

Vehicular ingress/egress to and from the project site would be provided by a new 28-foot-wide single driveway on Carlos Street on the western boundary of the site. In addition to the main entrance, there would be an emergency access route from Lincoln Street to the northeast corner of the project. The project includes a total of 142 vehicular parking spaces in four separate parking areas, forming a loop around the central core of apartment buildings. Of these 142 spaces, there would be 6 designated ADA accessible parking spaces and 5 electric vehicle charging spaces. In addition to vehicle parking, there would be two secure bicycle parking enclosures on the east and west sides of the central driveway. These enclosures would each contain space for up to 20 bicycles. There would also be bicycle racks available in most of the building types and adjacent to the Community Building.

The project proposes development of approximately 5 acres of the 11.02-acre site for the Cypress Point Housing development. In order to ensure the efficient use of water, the landscaping elements to be added to the site would be irrigated with a permanent automated irrigation system and include all parts compatible with a remote- or satellite-controlled system. Vegetation would be selected which is low maintenance, water conserving, native to the project area, or adaptive to thrive under local conditions.

The project includes construction of solar panels on rooftops of all buildings which would supply the majority of the electricity demand for the project. The project also includes water-efficient appliances, including high efficiency washers with a water factor of 5 or less, toilets that use less than 1.6 gallons per flush in all residential units, and metering or self-closing faucets in all non-residential lavatories. The project's irrigation system would include an automatic weather-based controller, manual shut-off valves, matched precipitation rate sprinkler heads, a proper setback from non-permeable surfaces, and separate valves for different hydrozones. It would be designed to prevent runoff, low head drainage, and overspray.



Figure 1. Vicinity map.



Figure 2. Project location.

2.2 Construction Time Frame and Phasing

Construction of the project, from mobilization to the site to final completion, is expected to occur over an approximately 18-month period, from December 2024 until June 2026. The project would be constructed in six phases: 1) demolition (including removal of the existing impervious surface of approximately 20,840 cubic yards and tree removal/wood chip dispersion); 2) site preparation (including site clearing, leveling, and transport of building materials); 3) grading (excavation, import approximately 7,500 cubic yards of fill); 4) building construction (including surveying, excavation/leveling for foundations, hydrostatic testing, watermain connections tested and connected, utility trenches, importation of building materials for residential buildings and the Community Building, all building construction); 5) paving (paving of onsite parking and roads and site concrete (curb, gutter, flatwork, etc.)); and 6) finishing (including finishing activities, architectural coatings, final landscaping, and removal of temporary fencing and erosion control). All construction activities, including construction staging of equipment, would be situated entirely within the project site. Typical construction equipment would be used during all phases of project construction and would be stored within the staging area, potentially including graders, excavators, dozers, and backhoes. Once construction is completed the project would be operational affordable housing units.

3 ENVIRONMENTAL SETTING

The project is located in San Mateo County within the San Francisco Bay Area Air Basin (SFBAAB), which consists of the entirety of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties; the western portion of Solano County; and the southern portion of Sonoma County. The BAAQMD has jurisdiction within this portion of the air basin. The BAAQMD has full jurisdiction within all San Mateo County. Ambient air quality within SFBAAB is affected by the climate, topography, and the type and amount of pollutants emitted.

3.1 Overview of Air Pollution and Potential Health Effects

3.1.1 Criteria Air Pollutants

Both the federal and state governments have established ambient air quality standards for outdoor concentrations of specific pollutants in order to protect the public health and welfare. These pollutants are referred to as "criteria air pollutants" and the national and state standards have been set at levels considered safe to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly with a margin of safety; and to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

Certain air pollutants have been recognized to cause notable health problems and consequential damage to the environment, either directly or in reaction with other pollutants due to their presence in elevated concentrations in the atmosphere. Such pollutants have been identified and regulated as part of the overall endeavor to prevent further deterioration and facilitate improvement in the air quality with the Air Basin. The criteria air pollutants for which national and state standards have been promulgated and which are most relevant to current air quality planning and regulation in the Air Basin include carbon monoxide (CO), ozone (O_3), particulate matter (PM), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead, sulfates, and hydrogen sulfide (H_2S). These pollutants, as well as volatile organic compounds (VOCs) and toxic air contaminants (TACs), are discussed in the following paragraphs. The national and state criteria pollutants and the applicable ambient air quality standards are listed in Table 1.

3.1.1.1 OZONE

O_3 is a strong-smelling, pale blue, reactive, toxic chemical gas consisting of three oxygen atoms. It is a secondary pollutant formed in the atmosphere by a photochemical process involving the sun's energy and O_3 precursors. These precursors are mainly oxides of nitrogen (NO_x) and VOCs. The maximum effects of precursor emissions on O_3 concentrations usually occur several hours after they are emitted and many miles from the source. Meteorology and terrain play major roles in O_3 formation, and ideal conditions occur during summer and early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. O_3 exists in the upper atmosphere O_3 layer (stratospheric ozone) and at the Earth's surface in the troposphere (ozone). The O_3 that the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) regulate as a criteria air pollutant is produced close to the ground level, where people live, exercise, and breathe. Ground-level O_3 is a harmful air pollutant that causes numerous adverse health effects and is thus considered "bad" O_3. Stratospheric, or "good" O_3 occurs naturally in the upper atmosphere, where it reduces the amount of ultraviolet light (i.e., solar radiation) entering the Earth's atmosphere. Without the protection of the beneficial stratospheric O_3 layer, plant and animal life would be seriously harmed.

O_3 in the troposphere causes numerous adverse health effects; short-term exposures (lasting for a few hours) can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes (EPA 2022a). These health problems are particularly acute in sensitive receptors such as the sick, the elderly, and young children.

3.1.1.2 NITROGEN DIOXIDE

NO_2 is a brownish, highly reactive gas that is present in all urban atmospheres. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide (NO), which is a colorless, odorless gas. NO_x plays a major role, together with VOCs, in the atmospheric reactions that produce O_3. NO_x is formed from fuel combustion under high temperature or pressure. In addition, NO_x is an important precursor to acid rain and may affect both terrestrial and aquatic ecosystems. The two major emissions sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers.

NO_2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections (EPA 2022a).

3.1.1.3 CARBON MONOXIDE

CO is a colorless, odorless gas formed by the incomplete combustion of hydrocarbon, or fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, such as the project location, automobile exhaust accounts for the majority of CO emissions. CO is a nonreactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions—primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, which is a typical situation at dusk in urban areas from November to February. The highest levels of CO typically occur during the colder months of the year, when inversion conditions are more frequent.

In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions (EPA 2022a).

3.1.1.4 SULFUR DIOXIDE

SO_2 is a colorless, pungent gas formed primarily from incomplete combustion of sulfur-containing fossil fuels. The main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels.

SO_2 is an irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. When combined with particulate matter, SO_2 can injure lung tissue and reduce visibility and the level of sunlight. SO_2 can also yellow plant leaves and erode iron and steel (EPA 2022a).

3.1.1.5 PARTICULATE MATTER

Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Coarse particulate matter (PM_{10}) is 10 microns or less in diameter and is about 1/7 the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. Fine particulate matter ($PM_{2.5}$) is 2.5 microns or less in diameter and is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., from motor vehicles and power generation and industrial facilities), residential fireplaces, and woodstoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides (SOx), NO_x, and VOCs.

$PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances such as lead, sulfates, and nitrates can cause lung damage directly or be absorbed into the bloodstream, causing damage elsewhere in the body. Additionally, these substances can transport adsorbed gases such as chlorides or ammonium into the lungs, also causing injury. Whereas PM_{10} tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper into the lungs and damage lung tissue. Suspended particulates also damage and discolor surfaces on which they settle and produce haze and reduce regional visibility.

People with influenza, people with chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death as a result of breathing particulate matter. People with bronchitis can expect aggravated symptoms from breathing in particulate matter. Children may experience a decline in lung function due to breathing in $PM_{2.5}$ and PM_{10} (EPA 2022a).

3.1.1.6 LEAD

Lead in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline; the manufacturing of batteries, paints, ink, ceramics, and ammunition; and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phaseout of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the

phaseout of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emissions sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient (IQ) performance, psychomotor performance, reaction time, and growth. Children are highly susceptible to the effects of lead (EPA 2022a).

3.1.1.7 OTHERS

Sulfates. Sulfates are the fully oxidized form of sulfur, which typically occur in combination with metals or hydrogen ions. Sulfates are produced from reactions of SO_2 in the atmosphere. Sulfates can result in respiratory impairment, as well as reduced visibility.

Vinyl Chloride. Vinyl chloride is a colorless gas with a mild, sweet odor, which has been detected near landfills, sewage plants, and hazardous waste sites, due to the microbial breakdown of chlorinated solvents. Short-term exposure to high levels of vinyl chloride in air can cause nervous system effects, such as dizziness, drowsiness, and headaches. Long-term exposure through inhalation can cause liver damage, including liver cancer.

Hydrogen Sulfide. H_2S is a colorless and flammable gas that has a characteristic odor of rotten eggs. Sources of H_2S include geothermal power plants, petroleum refineries, sewers, and sewage treatment plants. Exposure to H_2S can result in nuisance odors, as well as headaches and breathing difficulties at higher concentrations.

3.1.2 Volatile Organic Compounds

VOCs are typically formed from combustion of fuels and/or released through evaporation of organic liquids. Some VOCs are also classified by the State as TACs. While there are no specific VOC ambient air quality standards, VOC is a prime component (along with NO_x) of the photochemical processes by which such criteria pollutants as O_3, NO_2, and certain fine particles are formed. They are, thus, regulated as "precursors" to the formation of those criteria pollutants.

3.1.3 Toxic Air Contaminants

TACs refer to a diverse group of "non-criteria" air pollutants that can affect human health but have not have ambient air quality standards established for them. This is not because they are fundamentally different from the pollutants discussed above, but because their effects tend to be local rather than regional. TACs are identified by federal and state agencies based on a review of available scientific evidence. In the state of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act, Assembly Bill (AB) 2588, was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere. The law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hot spots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years.

The federal TACs are air pollutants that may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health, although there are no ambient standards established for TACs. Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or other acute (short-term) or chronic (long-term) health problems. For TACs that are known or suspected carcinogens, the CARB has consistently found that there are no levels or thresholds below which exposure is risk free. Individual TACs vary greatly in the risks they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another. For certain TACs, a unit risk factor can be developed to evaluate cancer risk. For acute and chronic health effects, a similar factor, called a Hazard Index, is used to evaluate risk. TACs are identified and their toxicity is studied by the California Office of Environmental Health Hazard Assessment (OEHHA). Examples of TAC sources include industrial processes, dry cleaners, gasoline stations, paint and solvent operations, and fossil fuel combustion sources. The TAC that is relevant to the implementation of the project include diesel particulate matter (DPM).

DPM was identified as a TAC by the CARB in August 1998 (CARB 1998). DPM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled vehicles contribute approximately 40% of the statewide total, with an additional 57% attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources, contributing about 3% of emissions, include shipyards, warehouses, heavy-equipment repair yards, and oil and gas production operations. Emissions from these sources are from diesel-fueled internal combustion engines. Stationary sources that report DPM emissions also include heavy construction, manufacturers of asphalt paving materials and blocks, and diesel-fueled electrical generation facilities.

Exposure to DPM can have immediate health effects. DPM can have a range of health effects including irritation of eyes, throat, and lungs, causing headaches, lightheadedness, and nausea. Exposure to DPM also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks. Children, the elderly, and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to fine-particle pollution. In California, DPM has been identified as a carcinogen.

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 CEQA. Diesel exhaust is the predominant TAC in air in urban areas and is estimated to contribute more than eighty-five percent of a 2006 inventory of Bay Area cancer risk from TACs (BAAQMD 2014). According to 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.

CARB has adopted and implemented a number of regulations to reduce emissions of DPM from stationary and mobile sources. Several of these regulatory programs affect medium- and heavy duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008, CARB approved a new regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles, including those used at construction sites. The regulation requires affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. Therefore, as of January 1, 2023 all trucks and buses are 2010 or newer model year engines.

Naturally occurring asbestos areas are identified based on the type of rock found in the area. Asbestos-containing rocks found in California are ultramafic rocks, including serpentine rocks. Asbestos has been designated a TAC by the CARB and is a known carcinogen. When this material is disturbed in connection with construction, grading, quarrying, or surface mining operations, asbestos-containing dust can be generated. Exposure to asbestos can result in adverse health effects such as lung cancer, mesothelioma (cancer of the linings of the lungs and abdomen), and asbestosis (scarring of lung tissues that results in constricted breathing) (Van Gosen and Clinkenbeard 2011).

Naturally Occurring Asbestos (NOA) is prevalent in at least 44 of California's 58 counties. Asbestos is the name for a group of naturally occurring silicate minerals. Asbestos may be found in serpentine, other ultramafic and volcanic rock. When rock containing NOA is broken or crushed, asbestos may become released and become airborne, causing a potential health hazard. BAAQMD Regulation 11, Rule 2, controls emissions of asbestos to the atmosphere during demolition, renovation, milling and manufacturing and establish appropriate waste disposal procedures. The project is not located in a geologic setting with a potential to host asbestos and, therefore, an asbestos will not be an issue for this project (CARB 2000a).

Table 1. State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards	
			Primary	Secondary
Ozone (O3)	1 hour	0.09 ppm (180 µg/m³)	--	Same as Primary
	8 hour	0.070 ppm (137 µg/m³)	0.070 ppm (137 µg/m³)	
Respirable particulate matter (PM10)	24 hour	50 µg/m³	150 µg/m³	Same as Primary
	Annual mean	20 µg/m³	--	
Fine particulate matter (PM2.5)	24 hour	--	35 µg/m³	Same as Primary
	Annual mean	12 µg/m³	12.0 µg/m³	15 µg/m³
Carbon monoxide (CO)	1 hour	20 ppm (23 µg/m³)	35 ppm (40 mg/m³)	--
	8 hour	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	--
Nitrogen dioxide (NO2)	1 hour	0.18 ppm (339 µg/m³)	100 ppb (188 µg/m³)	--
	Annual mean	0.030 ppm (57 µg/m³)	0.053 ppm (100 µg/m³)	Same as Primary
Sulfur dioxide (SO_2)	1 hour	0.25 ppm (655 µg/m³)	75 ppb (196 µg/m³)	--
	3 hour	--	-	0.5 ppm (1300 µg/m³)
	24 hour	0.04 ppm (105 µg/m³)	0.14 ppm	--
	Annual mean	--	0.030 ppm	--
Lead	30-day average	1.5 µg/m³	-	--
	Calendar quarter	--	1.5 µg/m³	Same as Primary
	Rolling 3-month average	--	0.15 µg/m³	Same as Primary
Visibility reducing particles	8 hour	10-mile visibility standard, extinction of 0.23 per kilometer	No National Standards	
Sulfates	24 hour	25 µg/m³		
Hydrogen sulfide (H2S)	1 hour	0.03 ppm (42 µg/m³)		
Vinyl chloride	24 hour	0.01 ppm (265 µg/m³)		

Source: CARB (2016)
Notes: ppm = parts per million; ppb = parts per billion; µg/m³ = micrograms per cubic meter; -- = no standard.
National annual $PM_{2.5}$ primary standard is currently being proposed to be reduced to 9-10 µg/m³

3.1.4 Odors

A qualitative assessment should be made as to whether a project has the potential to generate odorous emissions of a type or quantity that could meet the statutory definition for nuisance, i.e., odors "which cause detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which may endanger the comfort, repose, health, or safety of any such person or the public, or which may cause, or have a natural tendency to cause, injury or damage to business or property" (Health & Safety Code § 41700). While offensive odors usually do not cause any physical harm, they can be unpleasant enough to lead to considerable distress among the public and generate citizen complaints to local governments and the BAAQMD. The Air District's Regulation 7, Odorous Substances, places general limitations on

odorous substances and specific emission limitations on certain odorous compounds. Odors are also regulated under the Air District Regulation 1, Rule 1-301, Public Nuisance, which states that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property." Under the Air District's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

3.2 Existing Air Quality Conditions in the Project Area

3.2.1 Regional Air Quality

The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. The Coast Range splits in the Bay Area, creating a western coast gap, the Golden Gate, and an eastern coast gap, the Carquinez Strait, which allows air to flow in and out of the Bay Area and the Central Valley. The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below the surface because of the northwesterly flow produces a band of cold water off the California coast. The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold-water band, resulting in condensation and the presence of fog and stratus clouds along the Northern California coast. In the winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.

Summertime temperatures in the SFBAAB are determined in large part by the effect of differential heating between land and water surfaces. On summer afternoons, the temperatures at the coast can be 35 degrees Fahrenheit cooler than temperatures 15 to 20 miles inland; at night, this contrast usually decreases to less than 10 degrees Fahrenheit. In the winter, the relationship of minimum and maximum temperatures is reversed. During the daytime the temperature contrast between the coast and inland areas is small, whereas at night the variation in temperature is large.

The SFBAAB is characterized by moderately wet winters and dry summers. Winter rains (November through March) account for about 75 percent of the average annual rainfall. The amount of annual precipitation can vary greatly from one part of the SFBAAB to another, even within short distances. In general, total annual rainfall can reach 40 inches in the mountains, but it is often less than 16 inches in sheltered valleys. During rainy periods, ventilation (rapid horizontal movement of air and injection of cleaner air) and vertical mixing (an upward and downward movement of air) are usually high, and thus pollution levels tend to be low (i.e., air pollutants are dispersed more readily into the atmosphere rather than accumulate under stagnant conditions). However, during the winter, frequent dry periods do occur, where mixing and ventilation are low and pollutant levels build up.

3.2.2 Regional Attainment Status

Depending on whether the applicable ambient air quality standards are met or exceeded, the air basin is classified on a federal and state level as being in "attainment" or "nonattainment." The EPA and CARB determine the air quality attainment status of designated areas by comparing ambient air quality

measurements from state and local ambient air monitoring stations with the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). These designations are determined on a pollutant-by-pollutant basis. Consistent with federal requirements, an unclassifiable/unclassified designation is treated as an attainment designation. The SFBAAB is currently designated a nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS. Therefore, is considered a "attainment/unclassified" area for all other pollutants (EPA 2023).

3.2.3 Local Air Quality

Air pollutants emissions are generated in the local vicinity by stationary and area-wide sources, such as commercial and industrial activity, space and water heating, landscape maintenance, consumer products, and mobile sources primarily consisting of automobile traffic. Area-wide sources are the primary source of pollutants in the local vicinity.

3.2.3.1 EXISTING CRITERIA POLLUTANT LEVELS AT NEARBY MONITORING STATIONS

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project area have been documented and measured by the BAAQMD. BAAQMD has 24 permanent monitoring stations located around the Bay Area. The nearest station is the Redwood City – 897 Barron Avenue Monitoring Station, which monitors O_3, NO_2, and $PM_{2.5}$. Data from this monitoring stations are summarized in Table 2, Ambient Air Quality Monitoring Summary. The data show violations of the State and federal O_3 standards and federal $PM_{2.5}$ standard. In recent years, California has been plagued by an unprecedented number of wildfires that have produced dense palls of smoke in the Bay Area. The air quality data collected by BAAQMD in Table 2 include exceptional events, including wildfires. The GHG inventory for California for years 2015–2019 is presented in Table 3. The national and state criteria pollutants and the applicable ambient air quality standards are listed above in Table 1.

Table 2. Summary of Ambient Air Quality Monitoring Summary

Pollutant		Year		
		2019	2020	2021
O3	Maximum 1-hour concentration (ppm)	0.083	0.098	0.085
	Days exceeding CAAQS (0.09 ppm)	0	1	0
	Maximum 8-hour concentration (ppm)	0.077	0.077	0.063
	Days exceeding NAAQS (0.07 ppm)	2	1	0
	Days exceeding CAAQS (0.07 ppm)	2	1	0
NO2	Maximum 1-hour concentration (ppb)	0.0549	0.0459	0.0405
	Days exceeding CAAQS (0.18 ppm)	0	0	0
PM2.5	Maximum 24-hour concentration (µg/m^3)	29.5	124.1	30.1
	Days exceeding NAAQS (35 µg/m^3)	0	9	0

Source: CARB (2023a)
Notes: AAM = annual arithmetic mean; ppm = parts per million; µg/m^3 = micrograms per cubic meter
Data for O3, NO2, and PM2.5 was obtained from the Livermore – 793 Rincon Avenue Monitoring

BAAQMD also provides data that show areas in the SFBAAB that have elevated pollution levels and are identified as "impacted areas." Based on BAAQMD's Community Risk Evaluation Program maps, the project site is not within an "impacted area".

Table 3. California Greenhouse Gas Inventory

Parameter	Unit*	Year				
		2015	2016	2017	2018	2019
Transportation	MMT CO_2e	166.2	169.8	171.2	169.6	166.1
	Percentage	38.5%	40.4%	41.2%	40.7%	40.6%
Electric power	MMT CO_2e	84.8	68.6	62.1	63.1	58.8
	Percentage	19.6%	16.3%	14.9%	15.2%	14.4%
Industrial	MMT CO_2e	90.3	89	88.8	89.2	88.2
	Percentage	20.9%	21.2%	21.4%	21.4%	21.5%
Commercial and residential	MMT CO_2e	38.8	40.6	41.3	41.4	43.8
	Percentage	9.0%	9.7%	9.9%	9.9%	10.7%
Agriculture	MMT CO_2e	33.5	33.3	32.5	32.7	31.8
	Percentage	7.8%	7.9%	7.8%	7.9%	7.8%
High global warming potential (GWP)	MMT CO_2e	18.6	19.2	20	20.4	20.6
	Percentage	4.3%	4.6%	4.8%	4.9%	5.0%
Total Net Emissions	MMT CO_2e	**432.2**	**420.5**	**415.9**	**416.4**	**409.3**

Source: California GHG Inventory for 2000–2019 (CARB 2021)

* MMT CO2e = million metric tons carbon dioxide equivalent

3.2.3.2 EXISTING HEALTH RISK IN THE PROJECT VICINITY

OEHHA, on behalf of the California EPA (CalEPA), provides a screening tool called CalEnviroScreen that can be used to help identify California communities disproportionately burdened by multiple sources of pollution. The project is located in Census Tract 6081613600, which has 6,108 people. To determine the existing level of TACs in the area, the CalEnviroScreen indicator that represents modeled air concentration of chemical releases from large facility emissions in and nearby the census tract was identified. This indicator takes the air concentration and toxicity of the chemical to determine the toxic release score. The data is averaged over 2017 to 2019 and the toxic release indicator scores range from 0 to 96,985. The score for this census tract is 139.07 which means the toxic release percentile for this census tract is 28, meaning it is higher than 28% of the census tracts in California (OEHHA 2021).

The CalEnviroScreen for diesel particulate matter was also determined, as diesel particulate matter is also a TAC. This indicator represents how much diesel particulate matter is emitted into the air within and near the populated parts of the census tracts. The data from 2016 indicate that sources of diesel PM within and nearby the populated parts of this census tract emit 0.080 tons per year. The diesel PM percentile for this census tract is 30, meaning it is higher than 30% of the census tracts in California. Diesel emissions in California range between 0 - 15 tons per year. These indicators show that health risk in the project vicinity is low. Overall, according to CalEnviroScreen, the project is located in the 14th percentile, which

means the project area is about less than average in comparison to other communities within California (OEHHA 2021).

3.2.3.3 SENSITIVE USES

Some population groups, including children, elderly, and acutely and chronically ill persons (especially those with cardiorespiratory diseases), are considered more sensitive to air pollution than others. A sensitive receptor is a person in the population who is particularly susceptible to health effects due to exposure to an air contaminant. The following are land uses where sensitive receptors are typically located:

- schools, playgrounds and childcare centers
- long-term health care facilities
- rehabilitation centers
- convalescent centers
- hospitals
- retirement homes
- residences

Sensitive receptors (residences) are located adjacent to the north, east and south of the project site, with additional residences located southwest of the site, as shown in Figure 1 of the 2018 Report. The maximally exposed individual (MEI) is the receptor exposed to the maximum excess cancer risk and annual $PM_{2.5}$ concentration. Project impacts are quantified only for these nearest sensitive receptors. However, implementation of the proposed project would not result in the long-term operation of any emission sources that would adversely affect nearby sensitive receptors. Short-term (18 months) construction activities could result in temporary increases in pollutant concentrations. The construction-related emissions would be short term and located at different locations within the project site. Although construction would occur over 18 months, construction at any one site would last for a much shorter time. The limited duration and limited quantities of construction emissions ensure that no individual receptor would be exposed to substantial pollutant concentrations. During construction, the BAAQMD BMPs would minimize construction impacts by reducing dust and exhaust emissions.

3.3 Greenhouse Gas Setting

Global climate change refers to the changes in average climatic conditions on Earth as a whole, including changes in temperature, wind patterns, precipitation, and storms. Global warming, a related concept, is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades. There is a general scientific consensus that global climate change is occurring, caused in whole or in part by increased emissions of GHGs that keep the Earth's surface warm by trapping heat in the Earth's atmosphere, in much the same way as glass traps heat in a greenhouse. The Earth's climate is changing because human activities, primarily the combustion of fossil fuels, are altering the chemical composition of the atmosphere through the buildup of GHGs. GHGs are released by the combustion of fossil fuels, land clearing, agriculture, and other activities, and lead to an increase in the greenhouse effect. While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy.

Regarding the adverse effects of global warming, as reported by Assembly Bill 2538: "Global warming poses a serious threat to the economic well-being, public health, natural resources and the environment of California." Over the past few decades, energy intensity of the national and state economy has been

declining due to the shift to a more service-oriented economy. California ranked fifth lowest among the States in carbon dioxide (CO_2) emissions from fossil fuel consumption per unit of gross state product. However, in terms of total CO_2 emissions California is second only to Texas in the nation and is the 16th largest source of climate change emissions in the world, exceeding most nations.

3.3.1 Greenhouse Gas Background

GHGs include CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Carbon is the most abundant GHG. Other GHGs are less abundant but have higher global warming potential than CO_2. Thus, emissions of other GHGs are frequently expressed in the equivalent mass of CO_2, denoted as CO_2e. Forest fires, decomposition, industrial processes, landfills, and consumption of fossil fuels for power generation, transportation, heating, and cooking are the primary sources of GHG emissions. The primary GHGs attributed to global climate change are described below.

3.3.1.1 CARBON DIOXIDE (CO_2)

In the atmosphere, carbon generally exists in its oxidized form, as CO_2. Natural sources of CO_2 include the respiration (breathing) of humans, animals, and plants, volcanic outgassing, decomposition of organic matter, and evaporation from the oceans. Anthropogenic sources of CO_2 include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. Anthropogenic sources of CO_2 amount to over 30 billion tons per year, globally (Friedlingstein et al. 2022). Natural sources release substantially larger amounts of CO_2. Nevertheless, natural removal processes, such as photosynthesis by land and ocean-dwelling plant species, cannot keep pace with this extra input of human-made CO_2, and, consequently, the gas is building up in the atmosphere.

3.3.1.1.1 Methane (CH_4)

Methane is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands, termites, and oceans. Decomposition occurring in landfills accounts for the majority of human-generated CH_4 emissions in California and in the United States as a whole. Agricultural processes such as intestinal fermentation, manure management, and rice cultivation are also significant sources of CH_4 in California.

3.3.1.1.2 Nitrous Oxide (N_2O)

Nitrous oxide is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. Nitrous oxide is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion produce N_2O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in California.

3.3.1.1.3 Hydrofluorocarbons, Perfluorocarbons, Sulfur Hexafluoride

Hydrofluorocarbons (HFCs) are primarily used as substitutes for ozone-depleting substances regulated under the Montreal Protocol (1987), an international treaty that was approved on January 1, 1989, and was designated to protect the ozone layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for ozone depletion. Perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6) are emitted from various industrial processes, including aluminum smelting,

semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no primary aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry leads to greater use of PFCs.

The magnitude of the impact on global warming differs among the GHGs. The effect each GHG has on climate change is measured as a combination of the volume of its emissions, and its global warming potential (GWP). GWPs are one type of simplifies index based upon radiative properties used to estimate the potential future impacts of emissions of different gases upon the climate system, expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG emissions are typically measured in terms of pounds or tons of CO_2 equivalents (CO_2e). GWP are based on a number of factors, including the radiative efficiency (heat-absorbing ability) of each gas relative to that of CO_2, as well as the decay rate of each gas (the amount removed from the atmosphere over a given number of years) relative to that of CO_2. The larger GWP, the more that a given gas warms the Earth compared to CO_2 over that time period. HFCs, PFCs, and SF_6 have a greater "global warming potential" than CO_2. In other words, these other GHGs have a greater contribution to global warming than CO_2 on a per-mass basis. However, CO_2 has the greatest impact on global warming because of the relatively large quantities of CO_2 emitted into the atmosphere.

A summary of the atmospheric lifetime and GWP of selected gases is presented in Table 4. As indicated in this table, GWPs range from 1 to 23,500 based on IPCC Assessment Reports. IPCC has released three assessment reports (AR4, AR5, and AR6) with updated GWPs, however, CARB reports the statewide GHG inventory using the AR4 GWPs, which is consistent with international reporting standards. By applying the GWP ratios, project-related equivalent mass of CO_2, denoted as CO_2e emissions can be tabulated in metric tons per year.

Table 4. Global Warming Potentials

Greenhouse Gas	GWP Values for 100-year Time Horizon		
	AR4*	AR5	AR6
Carbon dioxide (CO_2)	1	1	1
Methane (CH_4)	25	28	Fossil origin – 29.8 Non-fossil origin – 27.2
Nitrous oxide (N_2O)	298	265	273
Select hydrofluorocarbons (HFCs)	124–14,800	4–12,400	–
Sulfur hexafluoride (SF_6)	22,800	23,500	–

Sources: IPCC (2007, 2013).

* For consistency with the EPA and its Inventory of Greenhouse Gas Reporting, we have represented values from AR4 of the IPCC report in this report.

3.3.2 Greenhouse Gas Emissions Inventories

3.3.2.1 UNITED STATES GHG EMISSIONS

Per the EPA's *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2020* (EPA 2022b), total U.S. GHG emissions have decreased by 6.6% from 1990 to 2020; 2005 emissions were 15.8% above 1990 levels. The largest source of GHG emissions from human activities in the United States is from burning of fossil fuels for electricity, heat, and transportation. The latest national GHG emissions are for calendar year 2020, in which total gross U.S. GHG emissions were reported at 5,981.4 million metric tons carbon dioxide equivalent (MMT CO_2e). Emissions decreased from 2019 to 2020 by 543.4 MMT CO_2e and net emissions (including sinks) were 5,222.4 MMT CO_2e.

3.3.2.2 STATEWIDE GHG EMISSIONS

According to California's 2000–2019 GHG emissions inventory, California emitted 409.3 MMT CO_2e in 2019 (CARB 2021). The sources of GHG emissions in California include transportation, industrial uses, electric power production from both in-state and out-of-state sources, commercial and residential uses, agriculture, high global-warming potential substances, and recycling and waste. The California GHG emission source categories (as defined in CARB's 2008 Scoping Plan) and their relative contributions in 2019 are presented in Table 3. Total GHG emissions in 2019 were approximately 22.9 MMT CO_2e less than 2016 emissions. Based on data presented, the 2016 statewide GHG inventory fell below 1990 levels, consistent with AB 32. The declining trend in GHG emissions, coupled with programs that will continue to provide additional GHG reductions going forward, demonstrates that California will continue to reduce emissions below the 2020 target of 431 $MTCO_2e$ (CARB 2022a).

4 REGULATORY SETTING

Federal, state, and local agencies have set ambient air quality standards for certain air pollutants through statutory requirements and have established regulations and various plans and policies to maintain and improve air quality, as described below.

4.1 Federal

4.1.1 Federal Clean Air Act

4.1.1.1 AIR QUALITY

The federal Clean Air Act (CAA), which was passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The CAA delegates primary responsibility for clean air to the EPA. The EPA develops rules and regulations to preserve and improve air quality and delegates specific responsibilities to state and local agencies. Under the act, the EPA has established the NAAQS for six criteria air pollutants that are pervasive in urban environments and for which state and national health-based ambient air quality standards have been established. Ozone (O_3), CO, NO_2, SO_2, lead, and particulate matter (PM_{10} and $PM_{2.5}$) are the six criteria air pollutants. Ozone is a secondary pollutant; NO_X and VOCs are of particular interest as they are precursors to ozone formation. The NAAQS are divided into primary and secondary standards; the primary standards are set to protect human health within an adequate margin of safety, and the secondary standards are set to protect environmental values, such as plant and animal life. The standards for all criteria pollutants are presented in Table 1.

The CAA requires the EPA to designate areas as attainment, nonattainment, or maintenance (previously nonattainment and currently attainment) for each criteria pollutant based on whether the NAAQS have been achieved. The act also mandates that the State submit and implement a State Implementation Plan for areas not meeting the NAAQS. These plans must include pollution control measures that demonstrate how the standards will be met.

4.1.1.2 GREENHOUSE GAS EMISSIONS

The Supreme Court of the United States (SCOTUS) ruled in Massachusetts v. Environmental Protection Agency, 127 S.Ct. 1438 (2007), that CO_2 and other GHGs are pollutants under the federal CAA, which the EPA must regulate if it determines they pose an endangerment to public health or welfare. SCOTUS did not mandate that the EPA enact regulations to reduce GHG emissions. Instead, SCOTUS found that

the EPA could avoid taking action if it found that GHGs do not contribute to climate change or if it offered a "reasonable explanation" for not determining that GHGs contribute to climate change.

On April 17, 2009, the EPA issued a proposed finding that GHGs contribute to air pollution that may endanger public health or welfare. On April 24, 2009, the proposed rule was published in the Federal Register under Docket ID No. EPA-HQ-OAR-2009~0171. The EPA stated that high atmospheric levels of GHGs "are the unambiguous result of human emissions and are very likely the cause of the observed increase in average temperatures and other climatic changes." The EPA further found that "atmospheric concentrations of greenhouse gases endanger public health and welfare within the meaning of Section 202 of the Clean Air Act." The findings were signed by the EPA Administrator on December 7, 2009. The final findings were published in the Federal Register on December 15, 2009. The final rule was effective on January 14, 2010. While these findings alone do not impose any requirements on industry or other entities, this action is a prerequisite to regulatory actions by the EPA, including, but not limited to, GHG emissions standards for light-duty vehicles.

On July 20, 2011, the EPA published its final rule deferring GHG permitting requirements for CO_2 emissions from biomass-fired and other biogenic sources until July 21, 2014. Environmental groups challenged the deferral. In September 2011, EPA released an "Accounting Framework for Biogenic CO2 Emissions from Stationary Sources," which analyses accounting methodologies and suggests implementation for biogenic CO_2 emitted from stationary sources.

On April 4, 2012, the EPA published a proposed rule to establish, for the first time, a new source performance standard for GHG emissions. Under the proposed rule, new fossil fuel–fired generating units larger than 25 megawatts are required to limit emissions to 1,000 pounds of CO_2 per megawatt-hour on an average annual basis, subject to certain exceptions.

On April 17, 2022, the EPA issued emission rules for oil production and natural gas production and processing operations, which are required by the CAA under Title 40 of the Code of Federal Regulations (CFR) Parts 60 and 63. The final rules include the first federal air standards for natural gas wells that are hydraulically fractured, along with requirements for several other sources of pollution in the oil and gas industry that currently are not regulated at the federal level.

4.1.2 Toxic Substance Control Act

The Toxic Substances Control Act (TSCA) of 1976 provides the EPA with authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. TSCA became law on October 11, 1976, and became effective on January 1, 1977. The TSCA authorized the EPA to secure information on all new and existing chemical substances, as well as to control any of the substances that were determined to cause unreasonable risk to public health or the environment. Congress later added additional titles to the Act, with this original part designated at Title I – Control of Hazardous Substances. TSCA regulatory authority and program implementation rests predominantly with the federal government (i.e., the EPA). However, the EPA can authorize States to operate their own, EPA-authorized programs for some portions of the statute. TSCA Title IV allows States the flexibility to develop accreditation and certification programs and work practice standards for lead-related inspection, risk assessment, renovation, and abatement that are at least as protective as existing federal standards.

4.1.3 National Emission Standards for Hazardous Air Pollutants (Asbestos)

The EPA's air toxics regulation for asbestos is intended to minimize the release of asbestos fibers during activities involving the handling of asbestos. Asbestos was one of the first hazardous air pollutants

regulated under the air toxics program as there are major health effects associated with asbestos exposure (lung cancer, mesothelioma, and asbestosis). On March 31, 1971, the EPA identified asbestos as a hazardous pollutant, and on April 6, 1973, EPA promulgated the Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP), currently found in 40 CFR 61(M). The Asbestos NESHAP has been amended several times, most comprehensively in November 1990. In 1995, the rule was amended to correct cross-reference citations to Occupational Safety and Health Administration, Department of Transportation, and other EPA rules governing asbestos. Air toxics regulations under the CAA have guidance on reducing asbestos in renovation and demolition of buildings; institutional, commercial, and industrial building; large-scale residential demolition; exceptions to the asbestos removal requirements; asbestos control methods; waste disposal and transportation; and milling, manufacturing, and fabrication.

4.2 State

4.2.1 California Clean Air Act

The California Clean Air Act (CCAA) was adopted by the CARB in 1988. The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for Ozone, CO, SO_2, and NO_2 by the earliest practical date. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. The CARB and local air districts are responsible for achieving CAAQS, which are to be achieved through district-level AQMPs that would be incorporated into the State Implementation Plan. In California, the EPA has delegated authority to prepare State Implementation Plans to CARB, which in turn, has delegated that authority to individual air districts. Each district plan is required to either 1) achieve a 5% annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or 2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

The State of California began to set its ambient air quality standards (i.e., CAAQS) in 1969, under the mandate of the Mulford-Carrell Act. The CCAA requires all air districts of the state to achieve and maintain the CAAQS by the earliest practical date. Table 1 shows the CAAQS currently in effect for each of the criteria pollutants, as well as the other pollutants recognized by the State. As shown in Table 1, the CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, H_2S, vinyl chloride, and visibility-reducing particles.

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- Title 20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards
- Title 24, Part 6, CCR: Building Energy Efficiency Standards
- Title 24, Part 11, CCR: Green Building Standards Code

4.2.2 California Code of Regulations

The California Code of Regulations (CCR) is the official compilation and publication of regulations adopted, amended, or repealed by the state agencies pursuant to the Administrative Procedure Act. The CCR includes regulations that pertain to air quality emissions. Specifically, Section 2485 in Title 13 of the CCR states that the idling of all diesel-fueled commercial vehicles (weighing over 10,000 pounds) during construction shall be limited to 5 minutes at any location. In addition, Section 93115 in Title 17

of the CCR states that operation of any stationary, diesel-fueled, compression-ignition engine shall meet specified fuel and fuel additive requirements and emission standards.

4.2.3 Toxic Air Contaminants Regulations

California regulates TACs primarily through the Toxic Air Contaminant Identification and Control Act of 1983 (AB 1807, also known as the Tanner Air Toxics Act) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588 – Connelly). In the early 1980s, the CARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Tanner Air Toxics Act (AB 1807) created California's program to reduce exposure to air toxics. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) supplements the AB 1807 program by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks (CARB 2011).

In August 1998, CARB identified DPM emissions from diesel-fueled engines as a TAC. In September 2000, CARB approved a comprehensive diesel risk reduction plan to reduce emissions from both new and existing diesel-fueled engines and vehicles (CARB 2000b). The goal of the plan is to reduce diesel PM_{10} (inhalable particulate matter) emissions and the associated health risk by 75% in 2010, and by 85% by 2020. The plan identified 14 measures that target new and existing on-road vehicles (e.g., heavy-duty trucks and buses, etc.), off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats), portable equipment (e.g., pumps, etc.), and stationary engines (e.g., stand-by power generators, etc.). During the control measure phase, specific statewide regulations designed to further reduce DPM emissions from diesel-fueled engines and vehicles were evaluated and developed. The goal of each regulation is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce DPM emissions. The project would be required to comply with applicable diesel control measures.

Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment (HRA), and if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

CARB has promulgated the following specific rules to limit TAC emissions:

- 13 CCR Chapter 10, Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling.
- 13 CCR Chapter 10, Section 2480, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools.
- 13 CCR Section 2477 and Article 8, Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate.

4.2.4 Executive Order S-3-05, Executive Order B-30-15, and Executive Order B-55-18

In 2005, the governor issued EO S-3-05, establishing statewide GHG emissions reduction targets, as well as a process to ensure the targets are met. The order directed the Secretary of the CalEPA to report every 2 years on the State's progress toward meeting the governor's GHG emission reduction targets. The statewide GHG targets established by Executive Order S-3-05 are as follows:

- By 2010, reduce to 2000 emission levels,
- By 2020, reduce to 1990 emission levels, and
- By 2050, reduce to 80 percent below 1990 levels.

EO B-30-15, issued by Governor Brown in April 2015, established an additional statewide policy goal to reduce GHG emissions 40% below their 1990 levels by 2030. Reducing GHG emissions by 40% below 1990 levels in 2030 and by 80% below 1990 levels by 2050 (consistent with EO S-3-05) aligns with scientifically established levels needed in the United States to limit global warming below 2 degrees Celsius.

The State Legislature adopted equivalent 2020 and 2030 statewide targets in the California Global Warming Solutions Act of 2006 (also known as AB 32) and Senate Bill (SB) 32, respectively, both of which are discussed below. However, the legislature has not yet adopted a target for the 2050 horizon year. As a result of EO S-3-05, the California Action Team (CAT), led by the Secretary of CalEPA, was formed. The CAT is made of representatives from a number of state agencies and was formed to implement global warming emission reduction programs and to report on the progress made toward meeting statewide targets established under the EO. The CAT reported several recommendations and strategies for reducing GHG emissions and reaching the targets established in the EO.

The CAT stated that "smart" land use is an umbrella term for strategies that integrate transportation and land use decisions. Such strategies generally encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors. These strategies develop more efficient land use patterns within each jurisdiction or region to match population increases, workforce, and socioeconomic needs for the full spectrum of the population. "Intelligent transportation systems" is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and the movement of people, goods, and service.

EO B-55-18, issued by Governor Brown in September 2018, establishes a new statewide goal to achieve caron neutrality as soon as possible, but no later than 2045, and achieve and maintain net negative emissions thereafter. Based on this executive order, CARB would work with relevant state agencies to develop a framework for implementation and accounting that tracks progress toward this goal, as well as ensuring future scoping plans identify and recommend measures to achieve the carbon neutrality goal.

4.2.5 Assembly Bill 32 — California Global Warming Solution Act

The California Global Warming Solutions Act of 2006 (also known as AB 32) commits the State to achieving the following:

- By 2010, reduce to 2000 GHG emission levels, and
- By 2020, reduce to 1990 levels.

To achieve these goals, which are consistent with the California CAT GHG targets for 2010 and 2020, AB 32 mandates that the CARB establish a quantified emissions cap, institute a schedule to meet the cap, implement regulations to reduce statewide GHG emissions from stationary sources consistent with the CAT strategies, and develop tracking, reporting, and enforcement mechanisms to ensure that reductions are achieved. In order to achieve the reductions, AB 32 requires CARB to adopt rules and regulations in

an open, public process that achieves the maximum technologically feasible and cost-effective GHG reductions.

SB 32, signed September 8, 2016, updates AB 32 to include an emissions reduction goal for the year 2030. Specifically, SB 32 requires CARB to ensure that statewide GHG emissions are reduced to 40% below the 1990 level by 2030. The new plan, outlined in SB 32, involves increasing renewable energy use, imposing tighter limits on the carbon content of gasoline and diesel fuel, putting more electric cars on the road, improving energy efficiency, and curbing emissions from key industries.

4.2.6 Climate Change Scoping Plan

In 2008, CARB approved a Climate Change Scoping Plan, as required by AB 32. Subsequently, CARB approved updates of the Climate Change Scoping Plan in 2014 (First Update) and 2017 (2017 Update), with the 2017 Update considering SB 32 (adopted in 2016) in addition to AB 32 (CARB 2014, 2017a). The First Update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals (to the level of 427 MMT CO_2e) defined in the original Scoping Plan. It also evaluates how to align the State's longer-term GHG reduction strategies with other State policy priorities, such as for water, waste, natural resources, clean energy and transportation, and land use. In November 2022, the final 2022 Scoping Plan Update and Appendices was released. This 2022 Scoping Plan Update assesses progress toward the statutory 2030 target, while laying out a path to achieving carbon neutrality no later than 2045 (CARB 2022c). The 2022 Scoping Plan Update, , focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

4.2.7 Assembly Bill 197

AB 197, signed September 8, 2016, is a bill linked to SB 32 that prioritizes efforts to reduce GHG emissions in low-income and minority communities. AB 197 requires the CARB to make available, and update at least annually on its website, the emissions of GHGs, criteria pollutants, and TACs for each facility that reports to CARB and air districts. In addition, AB 197 adds two members of the legislature to the CARB board as ex officio, non-voting members, and also creates the Joint Legislative Committee on Climate Change Policies to ascertain facts and make recommendations to the legislature concerning the State's programs, policies, and investments related to climate change.

4.2.8 Cap-and-Trade Program

The 2008 Climate Change Scoping Plan identified a cap-and-trade program as one of the strategies for California to reduce GHG emissions. The cap-and-trade program is a key element in California's climate plan. It sets a statewide limit on sources responsible for 85 percent of California's GHG emissions and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The cap-and-trade rules came into effect on January 1, 2013, and apply to large electric power plants and large industrial plants. In 2015, fuel distributors, including distributors of heating and transportation fuels, also became subject to the cap-and-trade rules. At that stage, the program will encompass around 360 businesses throughout California and nearly 85 percent of the state's total GHG emissions. Covered entities subject to the cap-and-trade program are sources that emit more than 25,000 metric tons CO_2e ($MTCO_2e$) per year. Triggering of the 25,000 $MTCO_2e$ per year "inclusion threshold" is measured against a subset of emissions reported and verified under the California Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (Mandatory Reporting Rule).

Under the cap-and-trade regulation, companies must hold enough emission allowances to cover their emissions and are free to buy and sell allowances on the open market. California held its first auction of GHG allowances on November 14, 2012. California's GHG cap-and-trade system is projected to reduce GHG emissions to 1990 levels by the year 2020 and would achieve an approximate 80 percent reduction from 1990 levels by 2050.

4.2.9 Assembly Bill 1493 (Pavley I)

AB 1493, passed in 2002, requires the development and adoption of regulations to achieve the maximum feasible reduction in GHG emitted by noncommercial passenger vehicles, light-duty trucks, and other vehicles used primarily for personal transportation in the state. CARB originally approved regulations to reduce GHG from passenger vehicles in September 2004, which took effect in 2009. On September 24, 2009, CARB adopted amendments to these regulations that reduce GHG emissions and new passenger vehicles from 2009 through 2016. Although setting emission standards on automobiles is solely the responsibility of the EPA, the federal CAA allows California to set state-specific emission standards on automobiles, and the State first obtains a waiver from the EPA. The EPA granted California that waiver until July 1, 2009. The comparison between the AB 1493 standards and the federal Corporate Average Fuel Economy standards was completed by CARB, and the analysis determined the California emission standards were 16% more stringent through the 2016 model year and 18% more stringent for the 2020 model year. CARB is also committed to further strengthening these standards beginning with 2020 model year vehicles, to obtain a 45% GHG reduction in comparison to 2009 model years.

In March 2020, the EPA issued the Safer Affordable Fuel-Efficient Vehicles Rule (SAFE) which would roll back feel economy standards and revoke California's waiver. Under this rule, EPA would amend certain average fuel economy and GHG standards for passenger cars covering model years 2021 through 2026. In September 2019, the EPA withdrew the waiver had previously provided in California for the states GHG and Zero Emission Vehicle (ZEV) programs under Section 209 of the Clean Air Act. The withdrawal of the waiver beginning effective on Novembe[r] 26th, 2019. In response, several states including California have a lawsuit challenging the withdrawal of the EPA waiver. These actions continue to be challenged in court. As noted above, on January 20, 2021, President Biden issued an executive order directing all executive departments and agencies to take action, as appropriate, to address federal regulations and other actions taken during the last 4 years that conflict with the administration's climate and environmental justice goals, which include SAFE.

4.2.10 Executive Order S-01-07 (California Low Carbon Fuel Standard)

EO S-01-07, the Low Carbon Fuel Standard (LCFS) (issued January 18, 2007), requires a reduction of at least 10% in the carbon intensity of California transportation fuels by 2020. Regulatory proceedings and implementation of the LCFS was directed to CARB. CARB released a draft version of the LCFS in October 2008. The final regulation was approved by the Office of Administrative Law and filed with the Secretary of State on January 12, 2010; the LCFS became effective on the same day.

The 2017 update has identified LCFS as a regulatory measure to reduce GHG emission to meet the 2030 emissions target. In calculating statewide emissions and targets, the 2017 update has assumed the LCFS be extended to an 18% reduction in carbon intensity beyond 2020. On September 27, 2018, CARB approved a rulemaking package that amended the LCFS to relax the 2020 carbon intensity reduction from 10% to 7.5%, and to require a carbon intensity reduction of 20% by 2030.

4.2.11 Advanced Clean Car Regulations

In 2012, CARB approved the Advanced Clean Cars program, a new emissions control program for model years 2015 through 2025. The components of the advance clean car standards include the Low-Emission Vehicle regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the Zero Emission Vehicle regulation, which requires manufacturers to produce an increasing number of pure ZEVs, with provisions to also produce plug-in hybrid electric vehicles in the 2018 through 2025 model years period. In March 2017, CARB voted unanimously to continue with the vehicle GHG emission standards and the ZEV programs for cars and light trucks sold in California through 2025.

4.2.12 Senate Bill 375

This bill requires CARB to set regional emissions reduction targets for passenger vehicles. The Metropolitan Planning Organization for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land use, and housing policies to plan how it will achieve the emissions target for its region. If the SCS is unable to achieve the regional GHG emissions reductions targets, then the Metropolitan Planning Organization is required to prepare an alternative planning strategy that shows how the GHG emissions reduction target can be achieved through alternative development patterns, infrastructure, and/or transportation measures.

As required under SB 375, CARB is required to update regional GHG emission targets every 8 years, with last update formally adopted March 2018. As part of the 2018 update, CARB has adopted a passenger vehicle–related GHG reduction target of 19% by 2035 for the SCAG region, which is more stringent than the previous reduction target of 13% for 2035.

4.2.13 Senate Bill 97

Senate Bill 97 (SB 97) was enacted in 2007. SB 97 required Governor's Office of Planning and Research (OPR) to develop, and the Natural Resources Agency to adopt, amendments to the CEQA Guidelines addressing the analysis and mitigation of GHG emissions (OPR 2008, 2018). Those CEQA Guidelines amendments clarified several points, including the following:

- Lead agencies must analyze the GHG emissions of proposed projects and must reach a conclusion regarding the significance of those emissions.
- When a project's GHG emissions may be significant, lead agencies must consider a range of potential mitigation measures to reduce those emissions.
- Lead agencies must analyze potentially significant impacts associated with placing projects in hazardous locations, including locations potentially affected by climate change.
- Lead agencies may significantly streamline the analysis of GHGs on a project level by using a programmatic GHG emissions reduction plan meeting certain criteria.
- CEQA mandates analysis of a proposed project's potential energy use (including transportation-related energy), sources of energy supply and ways to reduce energy demand, including through the use of efficient transportation alternatives.

As part of the administrative rulemaking process, the California Natural Resources Agency developed a Final Statement of Reasons explaining the legal and factual bases, intent, and purpose of the CEQA Guidelines amendments. The amendments to the CEQA Guidelines implementing SB 97 became effective on March 18, 2010. SB 97 applies to any environmental impact report (EIR), negative

declaration, mitigated negative declaration, or other document required by CEQA, which has not been finalized.

4.3 Regional

4.3.1 Bay Area Air Quality Management District

The BAAQMD is the agency responsible for ensuring that the National and California AAQS are attained and maintained in the SFBAAB. Air quality conditions in the SFBAAB have improved significantly since the BAAQMD was created in 1955. The BAAQMD prepares air quality management plans (AQMP) to attain ambient air quality standards in the SFBAAB. The BAAQMD prepares ozone attainment plans for the National O_3 standard and clean air plans for the California O_3 standard. The BAAQMD prepares these air quality management plans in coordination with Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) to ensure consistent assumptions about regional growth.

4.3.1.1 BAY AREA AIR QUALITY MANAGEMENT DISTRICT 2017 CLEAN AIR PLAN

BAAQMD adopted the 2017 "Clean Air Plan: Spare the Air, Cool the Climate" (2017 Clean Air Plan) on April 19, 2017, making it the most recently adopted comprehensive plan. The 2017 Clean Air Plan incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools (CARB 2017b). The 2017 Clean Air Plan serves as an update to the adopted Bay Area 2010 Clean Air Plan and continues to provide the framework for SFBAAB to achieve attainment of the California and National AAQS. The 2017 Clean Air Plan updates the Bay Area's ozone plan, which is based on the "all feasible measures" approach to meet the requirements of the California Clean Air Act. It sets a goal of reducing health risk impacts to local communities by 20 percent between 2015 and 2020 and lays the groundwork for reducing GHG emissions in the Bay Area to meet the State's 2030 GHG reduction target and 2050 GHG reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following:

- Construct buildings that are energy efficient and powered by renewable energy.
- Walk, bicycle, and use public transit for the majority of trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.
- Live a low-carbon lifestyle by purchasing low-carbon foods and goods in addition to recycling and putting organic waste to productive use.

A multipollutant control strategy was developed to be implemented in the next three to five years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, TACs, and GHG from a full range of emission sources. These control measures cover the following sectors: 1) stationary (industrial) sources; 2) transportation; 3) energy; 4) agriculture; 5) natural and working lands; 6) waste management; 7) water; and 8) super-GHG pollutants and 9) buildings. The proposed control strategy is based on the following key priorities:

- Reduce emissions of criteria air pollutants and toxic air contaminants from all key sources.
- Reduce emissions of "super-GHGs" such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
- Increase efficiency of the energy and transportation systems.
- Reduce demand for vehicle travel, and high-carbon goods and services.
- Decarbonize the energy system.
- Make the electricity supply carbon-free.
- Electrify the transportation and building sectors.

4.3.1.2 COMMUNITY AIR RISK EVALUATION PROGRAM

The BAAQMD Community Air Risk Evaluation program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor TACs in the Bay Area, primarily DPM. The last update to this program was in 2014.Based on findings of the latest report, DPM was found to account for approximately 85 percent of the cancer risk from airborne toxics. Carcinogenic compounds from gasoline-powered cars and light duty trucks were also identified as significant contributors: 1,3-butadiene contributed 4 percent of the cancer risk-weighted emissions, and benzene contributed 3 percent. Collectively, five compounds—DPM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90 percent of the cancer risk attributed to emissions. All of these compounds are associated with emissions from internal combustion engines. The most important sources of cancer risk-weighted emissions were combustion-related sources of DPM, including on-road mobile sources (31 percent), construction equipment (29 percent), and ships and harbor craft (13 percent). Overall, cancer risk from TAC dropped by more than 50 percent between 2005 and 2015, when emissions inputs accounted for State diesel regulations and other reductions.

The major contributor to acute and chronic non-cancer health effects in the Air Basin is acrolein (C_3H_4O). Major sources of acrolein are on-road mobile sources and aircraft near freeways and commercial and military airports (BAAQMD 2006). Currently CARB does not have certified emission factors or an analytical test method for acrolein. Since the appropriate tools needed to implement and enforce acrolein emission limits are not available, the Air District does not conduct health risk screening analysis for acrolein emissions (BAAQMD 2010).

4.3.1.3 ASSEMBLY BILL 617 COMMUNITY ACTION PLANS

AB 617 was signed into law in July 2017 to develop a new community-focused program to reduce exposure more effectively to air pollution and preserve public health in environmental justice communities. AB 617 directs CARB and all local air districts to take measures to protect communities disproportionally impacted by air pollution through monitoring and implementing air pollution control strategies.

On September 27, 2018, CARB approved BAAQMD's recommended communities for monitoring and emission reduction planning. The State approved communities for year 1 of the program as well as communities that would move forward over the next five years. Bay Area recommendations included all the Community Air Risk Evaluation areas, areas with large sources of air pollution (refineries, seaports,

airports, etc.), areas identified via statewide screening tools as having pollution and/or health burden vulnerability, and areas with low life expectancy (BAAQMD 2019).

4.3.2 County of San Mateo 2020 Climate Action Plan

The San Mateo County 2022 Community Climate Action Plan (CCAP) outlines priority actions to achieve a 45% reduction of GHG emissions over 1990 levels by 2030 and carbon neutrality by 2040. The CCAP streamlines the development process by meeting the Bay Area Air Quality Management District's requirements for a Qualified GHG Reduction Strategy. The CCAP also supports the goals and policies of AB 32 –The California Global Warming Solutions Act of 2006. The County's strategies and actions are structured around four focus areas: building energy, transportation, waste and working lands.

Buildings are the second largest contributor to GHG emissions in unincorporated areas of the County, accounting for 32% of all emissions. These emissions stem primarily from the use of natural gas in residential and commercial buildings.

Emissions in the transportation sector come from people driving vehicles (vehicle miles traveled or VMT) on roads within the county. In 2017, this represented 40% of the County's emissions inventory and remains the largest contributor when compared to the other sectors. the County's Reducing this emissions source will require reducing VMT as well as increasing the community adoption of electric vehicles (EVs). While making this change will require multijurisdictional action beyond the County's jurisdiction, and will rely upon individual behavior change, the County can still play a critical role. San Mateo County can facilitate EV adoption, build the necessary charging infrastructure to enable widespread EV use, increase access to jobs, goods and services in neighborhoods, help its communities shift to active transportation (human-powered forms of transportation including walking, rolling, and biking), and work in partnership to enhance and improve public transit access and ridership.

Waste produced in unincorporated communities is sent to Ox Mountain Landfill where the organic materials decompose and produce methane, which is a GHG. Waste represents a smaller share of overall county emissions at 26%. There are measures designed to prevent materials from entering the landfill through source reduction and waste diversion actions such as reducing waste generated, reusing materials, composting organics, and recycling.

Rangeland and cropland, including publicly and privately managed lands, comprise a large portion of the land base in California and in San Mateo County. These working lands have significant potential for sequestering carbon from the atmosphere, thus serving as a climate mitigation strategy. Active management of working lands can enhance the rate of carbon sequestration in soils and vegetation, therefore carbon farming (i.e. the suite of practices that brings about more sequestration) has a critical role to play in helping San Mateo County develop resilience to climate change while simultaneously reducing atmospheric greenhouse gases driving climate change.

4.3.3 County of San Mateo General Plan

The General Plan is the County's vision for future development. It identifies goals, policies, and objectives to govern the physical development of the County. State law requires each city and county to adopt a General Plan with a minimum of seven elements: Land Use, Circulation, Housing, Conservation, Open-Space, Noise, and Safety. The San Mateo General Plan contains seventeen chapters addressing each of the required elements and additional elements like transportation and climate element. Many of the general plan policies affect air quality and greenhouse gas emissions for the County. For example, this General Plan Climate Change Element demonstrates San Mateo County's commitment to achieve energy

efficiency and mitigate its impact on climate change by reducing GHG emissions consistent with state legislation.

4.3.4 California Coastal Act

California Coastal Act Section 30253(c) requires that new development in the Coastal Zone shall "be consistent with requirements imposed by an air pollution control district or the State Air Resources Board as to each particular development." In this case, the air pollution control district is BAAQMD.

5 THRESHOLDS OF SIGNIFICANCE

5.1 Air Quality

Based upon the environmental checklist presented in Appendix G of the State CEQA Guidelines, the project would have a significant impact on air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under applicable federal or state ambient air quality standards;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

A discussion of applicable thresholds of significance and significance determination follow.

The BAAQMD CEQA Air Quality Guidelines 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, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and greenhouse gas emissions. These thresholds are designed to establish the level at which the Applicant believed air pollution emissions would cause significant environmental impacts under CEQA.

Table 5. BAAQMD Regional (Mass Emission) Criteria Air Pollutant Significance Thresholds

Pollutant	Construction Phase	Operational Phase	
	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (tons/year)
ROG	54	54	10
NO_x)	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	82 (exhaust)	54	10
PM_{10} and $PM_{2.5}$ Fugitive Dust	Best Management Practices	None	None

Sources: BAAQMD 2017a

Projects that do not exceed the emissions in Table 5 would not cumulatively contribute to health effects in the Air Basin. If projects exceed the emissions in Table 5, emissions would cumulatively contribute to the nonattainment status and would contribute to elevating health effects associated with these criteria air

pollutants. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would further contribute to reducing possible health effects related to criteria air pollutants.

However, for projects that exceed the emissions in Table 5, it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health effects cited above. The Air District is the primary agencies responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of air quality in the Air Basin and at the present time, it has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health in order to address the issue raised in *Sierra Club v. County of Fresno (Friant Ranch, L.P.) (2018) 6 Cal.5th 502, Case No. S21978* (Friant Ranch).

Ozone concentrations are dependent upon a variety of complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground-level ozone concentrations in relation to the NAAQS and CAAQS, it is speculative to link health risks to the magnitude of emissions exceeding the significance thresholds. To achieve the health-based standards established by the EPA, the air districts prepare air quality management plans that details regional programs to attain the AAQS. However, if a project within the Air District exceeds the regional significance thresholds, the project could contribute to an increase in health effects in the basin until such time the attainment standards are met in the Air Basin.

Congested intersections have the potential to create elevated concentrations of CO, referred to as CO hotspots. The significance criteria for CO hotspots are based on the California AAQS for CO, which are 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology, the SFBAAB is in attainment of the California and National AAQS, and CO concentrations in the SFBAAB have steadily declined. Because CO concentrations have improved, the BAAQMD does not require a CO hotspot analysis if the following criteria are met (CARB 2014):

- The project is consistent with an applicable congestion management program established by the County Congestion Management Agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans.
- The project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project traffic would not increase traffic volumes at affected intersection to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

5.1.1 Toxic Air Contaminants

The BAAQMD's significance thresholds for local community risk and hazard impacts apply to both the siting of a new source and to the siting of a new receptor. Local community risk and hazard impacts are associated with TACs and $PM_{2.5}$ because emissions of these pollutants can have significant health impacts at the local level. The proposed project would generate TACs and $PM_{2.5}$ during construction activities that

could elevate concentrations of air pollutants at the nearby residential, day care, and school-based sensitive receptors. The thresholds for construction-related local community risk and hazard impacts are the same as for project operations. BAAQMD has adopted screening tables for air toxics evaluation during construction (CARB 2017b). Construction-related TAC and $PM_{2.5}$ impacts should be addressed on a case-by-case basis, taking into consideration the specific construction-related characteristics of each project and proximity to off-site and on-site receptors, as applicable (CARB 2018).

Project-level emissions of TACs or $PM_{2.5}$ from individual sources that exceed any of the thresholds listed below are considered a potentially significant community health risk:

- An excess cancer risk level of more than 10 in one million, or a noncancer (i.e., chronic or acute) hazard index greater than 1.0 would be a significant project contribution.
- An incremental increase of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$) annual average $PM_{2.5}$ from a single source would be a significant project contribution.

Cumulative sources represent the combined total risk values of each of the individual sources within the 1,000-foot evaluation zone. A project would have a cumulative considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius from the fence line of a source or location of a receptor, plus the contribution from the project, exceeds any of the following:

- An excess cancer risk level of more than 100 in one million or a chronic noncancer hazard index (from all local sources) greater than 10.0.
- 0.8 $\mu g/m^3$ annual average $PM_{2.5}$.

In February 2015, Office of Environmental Health Hazard Assessment (OEHHA) adopted new health risk assessment guidance that includes several efforts to be more protective of children's health. These updated procedures include the use of age sensitivity factors to account for the higher sensitivity of infants and young children to cancer causing chemicals, and age-specific breathing rate (OEHHA 2015).

5.2 Greenhouse Gases

Consistent with Appendix G of the State CEQA Guidelines, a project would have a significant GHG impact if it would:

- Generate GHG emissions, either directly or indirectly, that may have an adverse effect on the environment; or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

State CEQA Guidelines Section 15064.4 recommends that lead agencies quantify GHG emissions projects and consider several other factors that may be used in the determination of significance of project-related GHG emissions, including: the extent to which the project may increase or reduce GHG emissions; whether the project exceeds an applicable significant threshold; and the extent to which the project complies with the regulations or requirements adopted to implement a reduction or mitigation of GHG.

Section 15064.4 does not establish a threshold of significance. Lead agencies have the discretion to establish significance thresholds for their respective jurisdictions, and in establishing those thresholds, a lead agency may appropriately look at thresholds developed by other public agencies, or suggested by

other experts, such as the CAPCOA, as long as any threshold chosen is supported by substantial evidence (see State CEQA Guidelines Section 15064.7(c)). The State CEQA Guidelines also clarify that the events of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see State CEQA Guidelines Section 15130(f)). It is noted that the State CEQA Guidelines were amended in response to SB 97. In particular, the State CEQA Guidelines were amended to specify that compliance with the GHG emissions reduction plan renders a cumulative impact less than significant.

Per State CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions" (14 CCR Section 15064(h)(3)). Put another way, State CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with adopted programs, plans, policies, and/or other regulatory strategies to reduce GHG emissions.

Although GHG emissions can be quantified, CARB, BAAQMD, and the County have not adopted quantitative project-level significance thresholds for GHG emissions that would be applicable to the project. Per State CEQA Guidelines Section 15064.4(b), "in determining the significance of a project's greenhouse gas emissions, the lead agency should focus its analysis on the reasonably foreseeable incremental contribution of the project's emissions to the effects of climate change. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national or global emissions." When determining the significance of GHG impacts, lead agencies should consider the project's impact as compared to the existing environmental setting, whether the project exceeds a threshold of significance, and compliance with relevant GHG-related plans (see, for example, State CEQA Guidelines Section 15064.4(b)). Regarding the latter criterion, lead agencies should consider "the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions (see, for example, State CEQA Guidelines Section 15183.5(b)). Per State CEQA Guidelines Section 15064.4(b)(3), such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of GHG emissions.

For the project, no quantitative threshold has been adopted to evaluate significance for GHG emissions to address the State's more recent GHG-reduction target of achieving carbon neutrality by 2045, per Executive Order B-55-18 (2018). To achieve carbon neutrality by 2045, it is recommended that future development include measures to support building decarbonization, including the replacement of natural gas service with other alternatives, such as use of electrically-powered equipment (CARB 2022b, CEC 2021). Based on recent GHG threshold updates and supportive documentation prepared by the Bay Area Air Quality Management District (BAAQMD), it is recommended that future development prohibit the installation of natural gas infrastructure/use of natural-gas fired appliances, to the maximum extent possible, and incorporate electric-vehicle charging stations beyond what is required by current building standards in order to contribute its "fair share" of what would be required for the State to achieve its carbon neutrality goal (BAAQMD 2022). As a result, project-generated GHG emissions would also be considered to have a potentially significant impact if the project would not prohibit the installation of natural gas fired appliances/equipment, to the maximum extent possible, or encourage the installation of electric-vehicle charging stations beyond what is required by current building standards. As an additional

significance criterion, consistency with the applicable plans and policies to reduce GHG emissions, including the emissions reduction policies, strategies, and measures discussed within CARB's Climate Change Scoping Plan, was additionally evaluated.

6 METHODOLOGY

This analysis focuses on the potential change in the air quality environment due to implementation of the project. Air pollution emissions would result from both construction and operation of the project. Specific methodologies used to evaluate these emissions are discussed below.

The analysis is based on project specifics and default values in the latest versions of CalEEMod. Accordingly, this analysis has been conducted with the most recent available tools prepared and accepted by the regulatory agencies.

6.1 Construction Emissions

The project's emissions will be evaluated based on significance thresholds established by BAAQMD, as discussed above. Daily emissions during construction are estimated by assuming a conservative construction schedule and applying the multiple source and fugitive dust emission factors derived from the BAAQMD-recommended CalEEMod latest version. Details of the modeling assumptions and emission factors are provided in Appendix B. The calculations of the emissions generated during project construction activities reflect the types and quantities of construction equipment that would be used to complete the project.

6.1.1 Construction Assumptions

Construction emissions associated with the project, including emissions associated with the operation of off-road equipment, haul-truck trips, on-road worker vehicle trips, vehicle travel on paved and unpaved surfaces, and fugitive dust from material handling activities, were calculated using CalEEMod version 2022.1 (CAPCOA 2022). CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operation of a variety of land use projects. The model uses widely accepted federal and state models for emission estimates and default data from sources such as EPA AP-42 emission factors, CARB vehicle emission models, and studies from California agencies such as CEC. The model quantifies direct emissions from construction and operations, as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. The model was developed in collaboration with the air districts in California. Default data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions.

Emissions modeling included emissions generated during the project have been grouped into six phases in CalEEMod based on the types of equipment and workload: 1) demolition (including removal of the existing impervious surface of approximately 20,840 cubic yards and tree removal/wood chip dispersion); 2) site preparation (including site clearing, leveling, and transport of building materials); 3) grading (excavation, import approximately 7,500 cubic yards of fill); 4) building construction (including surveying, excavation/leveling for foundations, hydrostatic testing, watermain connections tested and connected, utility trenches, importation of building materials for residential buildings and the Community Building, all building construction); 5) paving (paving of onsite parking and roads and site concrete (curb,

gutter, flatwork, etc.)); and 6) finishing (including finishing activities, architectural coatings, final landscaping, and removal of temporary fencing and erosion control). The project is within a 11.02-acre parcel, however, the total acres involved for the Cypress Point Housing development totals approximately 5 acres. Two CalEEMod land uses were utilized 'Residential – Condo/Townhouse' for the 71 dwelling units and 'Parking – Parking lot' for the 142 parking spots. This analysis includes quantification of construction and operation off-road equipment, fugitive dust, and on-road mobile sources, as well as the operational emissions for the affordable housing units.

Modeling input data were based on this anticipated construction schedule and phasing. Construction equipment and usage required for each phase were obtained using CalEEMod defaults for the land use types which make up the project site, information provided by Midpen, and default parameters contained in the model for the project site (San Mateo County) and land uses. The construction duration is assumed to be approximately 18 months, from December 2024 until June 2026. Project construction would consist of different activities undertaken in phases, through to the operation of the project. Typical construction equipment would be used during all phases of project construction and would be stored within the staging area, potentially including dozers, backhoes, graders, and excavators. Table 6 shows the project's anticipated construction schedule, presents an estimate of the maximum number of pieces of equipment for each construction phase, and assumes equipment would be operating 5 days per week for the construction phase duration. The construction emissions were mitigated in the CalEEMod model to comply with any BAAQMD measures and mitigation measures identified in the 2018 Report.

Table 6. Construction Anticipated Schedule, Trips, and Equipment

	Equipment Used			
Phase (Duration)	**Type**	**Number**	**Hours/Day**	**Daily Vehicle Trips**
1. Demolition 12/1/2024–1/17/2025 (35 working days)	Tractors/Loaders/Backhoes	5	8	40 one-way worker trips 6 one-way vendor trips 60 one-way haul truck trips 2 miles of onsite truck travel
	Concrete/Industrial Saws	2	8	
	Excavators	5	8	
2. Site Preparation 1/18/2025–2/15/2025 (20 working days)	Rubber Tired Dozers	2	5	40 one-way worker trips 6 one-way vendor trips 300 one-way haul truck trips 2 miles of onsite truck travel
	Tractors/Loaders/Backhoes	3	8	
3. Grading 2/16/2025–4/05/2025 (35 working days)	Scrapers	2	8	40 one-way worker trips 6 one-way vendor trips 18 one-way haul truck trips 2 miles of onsite truck travel
	Compactor	1	8	
	Dump/Tenders	1	8	
	Off-Highway Truck	1	8	
	Graders	1	8	
	Rubber Tired Dozers	1	8	
4. Building Construction 3/1/2025–3/29/2026 (280 working days)	Cranes	1	7	78 one-way worker trips 8 one-way vendor trips 20 one-way haul truck trips 3 miles of onsite truck travel
	Forklifts	3	8	
	Generator Sets	1	8	
	Tractors/Loaders/Backhoes	3	7	
	Welders	1	8	

5. Paving 3/2/2026–6/20/2026 (80 working days)	Pavers	3	8	40 one-way worker trips 6 one-way vendor trips 2 one-way haul truck trips 2 miles of onsite truck travel
	Tractors/Loaders/Backhoes	1	8	
	Rollers	2	8	
	Grader	1	1	
	Off-Highway Truck	1	8	
	Scraper	1	1	
	Compactor	1	1	
6. Finalization 5/10/2026–6/20/2026 (30 working days)	Air Compressors	1	6	10 one-way worker trips 2 one-way vendor trips 0 one-way haul truck trips 1 miles of onsite truck travel

Notes: For the parameters that are not provided in the table (e.g., equipment horsepower and load factor, on-road trip lengths), CalEEMod defaults were used.

6.2 Operational Emissions

Once construction is completed the project would be an operational affordable housing community. Criteria pollutant and GHG emissions from the operations of the affordable housing community were estimated using CalEEMod Version 2022.1. Year 2027 was assumed as the first full year of operations after completion of construction. The operational emissions were calculated based on CalEEMod defaults associated with the project's land use types, removing any natural gas processes. Analysis of the project's likely impact on regional air quality during project operation takes into consideration three types of sources: 1) area, 2) energy, and 3) mobile.

Area Sources

CalEEMod was used to estimate operational emissions from area sources, including emissions from consumer product use, architectural coatings, and landscape maintenance equipment. Emissions associated with natural gas usage in space heating, water heating, and stoves are not calculated as part of building energy use in CalEEMod since the project will not include any natural gas.

Consumer products are chemically formulated products used by household and institutional consumers, including detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. Other paint products, furniture coatings, or architectural coatings are not considered consumer products (CAPCOA 2022). Consumer product VOC emissions are estimated in CalEEMod based on the floor area of residential and nonresidential buildings and on the default factor of pounds of VOC per building square foot per day. For parking lot land uses, CalEEMod estimates VOC emissions associated with use of parking surface degreasers based on a square footage of parking surface area and pounds of VOC per square foot per day.

VOC off-gassing emissions result from evaporation of solvents contained in surface coatings, such as in paints and primers using during building maintenance. CalEEMod calculates the VOC evaporative emissions from application of residential and nonresidential surface coatings based on the VOC emission factor, the building square footage, the assumed fraction of surface area, and the reapplication rate. The VOC emission factor is based on the VOC content of the surface coatings, and SCAQMD's Rule 1113 (Architectural Coatings) governs the VOC content for interior and exterior coatings. The model default reapplication rate of 10% of area per year is assumed. Architectural coating for the parking surface area was also estimated with CalEEMod defaults.

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chainsaws, and hedge trimmers. The emissions associated with landscape equipment use are estimated based on CalEEMod default values for emission factors (grams per square foot of nonresidential building space per day) and number of summer days (when landscape maintenance would generally be performed) and winter days. For San Mateo County, the average annual "summer" days are estimated to 180 days; and it is assumed that landscaping equipment would operate 180 days per year in CalEEMod. Emissions associated with potential landscape maintenance equipment were included and no emission reduction features related to electric landscape equipment were assumed, to conservatively capture potential project operational emission sources.

Energy Sources

As represented in CalEEMod, energy sources include emissions associated with building and parking lot electricity. Electricity use would contribute indirectly to criteria air pollutant emissions; however, the emissions from electricity use are only quantified for GHGs in CalEEMod, since criteria pollutant emissions occur at the site of the power plant, which is typically off-site.

Mobile Sources

The project would generate criteria pollutant emissions from mobile sources (vehicular traffic) as a result of project operations. Emissions from mobile sources during operation of the project were estimated using CalEEMod default trip rates, trip lengths, fleet mix, and emissions factors for each vehicle.

6.3 Greenhouse Gas

This analysis quantifies the project's total annual GHG emissions from construction, taking into account any GHG emission reduction measures that would be incorporated into the project's design. However, given the lack of a formally adopted numerical significance threshold or a formally adopted local plan for reducing GHG emission applicable to this project, this analysis evaluates the significance of the project's GHG emission by assessing the project's consistency with regulatory schemes and policies.

6.4 Toxic Air Contaminants Impacts (Construction and Operations)

Potential TAC impacts were evaluated in this analysis and in the 2018 Report by conducting a qualitative analysis consistent with the CARB Handbook (2005) and BAAQMD guidance, followed by a more detailed analysis (i.e., dispersion modeling). Although consistent with TAC-related rules and regulations, due to the project location a health risk assessment was conducted for construction DPM and $PM_{2.5}$. The health risk assessment modeling is discussed in greater detail in the 2018 Report (Appendix A).

7 IMPACT ANALYSIS

Impact AQ-1 Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. The 2017 Clean Air Plan is the current applicable regional Air Quality Plan (AQP) for the Air Basin (BAAQMD 2017). The primary goals of the 2017 Clean Air Plan are to protect public health and protect the climate, and the plan acknowledges that the BAAQMD's two stated goals of protection are closely related. As such, the 2017 Clean Air Plan identifies a wide range of control measures intended to decrease both criteria pollutants and GHG emissions. The development of the project would

improve the jobs/housing balance and jobs/housing fit by providing preference for those who live or work on the San Mateo Coast, redispersing existing county residences and reducing distances traveled between work and home. The proposed project does not involve employment growth. Determining consistency with the 2017 Clean Air Plan involves assessing whether applicable control measures contained in the 2017 Clean Air Plan are implemented and whether implementation of the proposed project would disrupt or hinder implementation of AQP control measures. The control measures are organized into five categories: 1) stationary and area source control measures; 2) mobile source measures; 3) transportation control measures; 4) land use and local impact measures; and 5) energy and climate measures. The control measures are geared toward traditional land uses (e.g., residential, commercial, industrial uses) and buildings. None of the control measures contained in the 2017 Clean Air Plan are applicable to the project; however, all projects within BAAQMD's jurisdiction are required to implement the BAAQMD Best Management Practices (BMPs) during construction activities. As discussed in below, the proposed project would implement all BMPs for construction activities and would be consistent with the assumptions in the AQP. Furthermore, the proposed project would not include any special features that would disrupt or hinder implementation of the AQP control measures. Therefore, the proposed project would not obstruct implementation of the 2017 Clean Air Plan.

Furthermore, the thresholds of significance, adopted by BAAQMD, determine compliance with the goals of attainment plans in the region. As such, emissions below the BAAQMD significance thresholds would not conflict with or obstruct implementation of the applicable air quality plans. As Table 7, Table 8, and Table 9 shows, the emissions from project construction and operations are below the thresholds of significance; therefore, the project does not conflict with implementation of the BAAQMD applicable air quality plans.

Impact AQ-2 Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?

Less Than Significant Impact with Mitigation. The BAAQMD's thresholds of significance represent the allowable emissions a project can generate without generating a cumulatively considerable contribution to regional air quality impacts. Therefore, a project that would not exceed the BAAQMD thresholds of significance on a project level also would not be considered to result in a cumulatively considerable contribution to these regional air quality impacts. The region is in non-attainment for federal and state ozone standards, state PM_{10} standards, and federal and state $PM_{2.5}$ standards. Impacts related to construction and operation of the proposed project are addressed separately below.

Construction

The project implementation would generate emissions of criteria air pollutants during construction. The estimated unmitigated emissions from construction of the project are summarized in Table 7. The detailed assumptions and calculations, as well as CalEEMod outputs are provided in Appendix B of this report.

Table 7. Unmitigated Construction Emissions Summary

Construction Year	Unmitigated Construction Emissions Summary					
	ROG	NOx	CO	PM_{10}	$PM_{2.5}$	SO_2
Pollutant Emission (pounds per day)						
2024 Peak Daily Emission	1.71	21.83	24.87	5.69	1.34	0.08
2025 Peak Daily Emission	5.01	53.11	47.43	19.37	7.00	0.30
2026 Peak Daily Emission	33.50	24.40	32.67	8.98	1.86	0.07
BAAQMD Significance Thresholds	*54*	*54*	*N/A*	*82*	*54*	*N/A*
Threshold Exceeded?	*No*	*No*	*N/A*	*No*	*No*	*N/A*
Pollutant Emission (tons per year)						
2024 Max Annual	0.02	0.24	0.27	0.01	0.01	0.001
2025 Max Annual	0.24	2.70	2.97	0.08	0.29	0.01
2026 Max Annual	0.58	0.88	1.18	0.03	0.07	0.002
BAAQMD Significance Thresholds	*10*	*10*	*N/A*	*15*	*10*	*N/A*
Threshold Exceeded?	*No*	*No*	*N/A*	*No*	*No*	*N/A*

Source: Emissions were quantified using CalEEMod version 2022.1 (CAPCOA 2022).

NA = Not applicable, no threshold

Model results (summer, winter, and annual) and assumptions are provided in Appendix B.

As Table 7 shows, estimated unmitigated construction emissions for all pollutants are below BAAQMD significance thresholds. The combined construction emissions from all components of the proposed project are below the recommended BAAQMD thresholds of significance. Therefore, project construction would have a less-than-significant impact. However, mitigation measures and BMPs have been included to further reduce localized impacts. The estimated mitigated emissions from construction of the project are summarized in Table 8.

Table 8. Mitigated Construction Emissions Summary

Construction Year	Mitigated Construction Emissions Summary					
	ROG	NOx	CO	PM_{10}	$PM_{2.5}$	SO_2
Pollutant Emission (pounds per day)						
2024 Peak Daily Emission	1.71	21.83	24.87	3.30	1.08	0.08
2025 Peak Daily Emission	5.01	53.11	47.43	10.80	4.19	0.30
2026 Peak Daily Emission	2.80	24.40	32.67	3.92	1.35	0.07
BAAQMD Significance Thresholds	*54*	*54*	*N/A*	*82*	*54*	*N/A*
Threshold Exceeded?	*No*	*No*	*N/A*	*No*	*No*	*N/A*
Pollutant Emission (tons per year)						
2024 Max Annual	0.02	0.24	0.27	0.04	0.01	0.001
2025 Max Annual	0.24	2.70	2.97	0.50	0.18	0.01
2026 Max Annual	0.58	0.88	1.18	0.14	0.05	0.002

BAAQMD Significance Thresholds	*10*	*10*	*N/A*	*15*	*10*	*N/A*
Threshold Exceeded?	*No*	*No*	*N/A*	*No*	*No*	*N/A*

Source: Emissions were quantified using CalEEMod version 2022.1 (CAPCOA 2022).

NA = Not applicable, no threshold

Model results (summer, winter, and annual) and assumptions are provided in Appendix B.

As presented above, the project would not violate any air quality significance thresholds or contribute substantially to an existing or projected air quality violation. The impact is less than significant, and no mitigation required. However, for all proposed projects, the BAAQMD recommends the implementation of BMPs, whether or not construction-related emissions exceed applicable thresholds of significance. In addition, the 2018 Report identified several other basic measures to control dust and exhaust during construction as part of Mitigation Measure AQ-1. As such, to ensure construction emission impacts are less than significant, the proposed project would apply the following mitigation measures during construction activities:

Mitigation Measure AQ-1: During any construction period ground disturbance, the applicant shall ensure that the project contractor implements measures to control dust and exhaust. MidPen will include terms in all construction contracts related to the Cypress Point project that require contractors to implement the following best management practices:

- Exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, unpaved access roads) shall be watered with non-potable water two times per day.
- All haul trucks transporting soil, sand, or other loose material offsite shall be covered.
- 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.
- All roadways, driveways, and sidewalks shall be paved as soon as possible.
- Idling times shall be minimized either by shutting equipment off when not in use or by reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure in Title 13, Section 2485 of the California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
- A publicly visible sign shall be posted with the telephone number and person to contact at the City regarding dust complaints. This person shall respond and take corrective action within 48 hours of a complaint or issue notification. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
- Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- 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.

Implementation of Mitigation Measure AQ-1 would ensure that the recommended BAAQMD best management practices are instated, which the BAAQMD considers sufficient to reduce this impact to a level of less than significant.

To reduce localized impacts from DPM and $PM_{2.5}$ to less than significant the 2018 Report included Mitigation Measure AQ-2 to lower diesel particulate matter exhaust emissions from construction equipment. Again, to ensure construction emission impacts are less than significant, the proposed project would apply the following mitigation measures during construction activities:

Mitigation Measure AQ-2: Use Construction equipment that has low diesel particulate matter exhaust emissions.

- Prior to initiating any construction activities, MidPen or their contractors shall develop a plan demonstrating that the off-road equipment used to on-site to construct the project would achieve a fleet-wide average of at least 78 percent reduction in DPM emissions compared to the emissions calculated for the project without mitigation. One feasible plan to achieve this reduction would include the following: All mobile diesel-powered off-road equipment larger than 25 hp and operating on the site for more than two days shall meet, at a minimum, U.S. EPA particulate matter emissions standards for Tier 4 engines or equivalent. Note that the construction contractor could use other measures to minimize construction period DPM emission to reduce the estimated cancer risk below the thresholds. The use of equipment that meets U.S. EPA Tier 2 standards and includes CARB-certified Level 3 Diesel Particulate Filters or alternatively-fueled equipment (i.e., non-diesel) would meet this requirement. Other measures may be the use of added exhaust devices, or a combination of measures, provided that these measures are approved by the County and demonstrated to reduce community risk impacts to less than significant.

The effectiveness of proposed mitigation measures to reduce impacts related to community risk was evaluated by comparing DPM and $PM_{2.5}$ emissions between the unmitigated and mitigated CalEEMod runs and estimating mitigated risk values based on the unmitigated ISCST3 run (see Attachment 2 of the 2018 Report for risk calculations). The updated and current CalEEMod model results completed as part of this assessment are comparable to the 2018 Report CalEEMod model results. In the 2018 Report, with mitigation, the computed maximum increased lifetime residential cancer risk from construction, assuming infant exposure, would be 7.3 in one million or less, and the maximum annual $PM_{2.5}$ concentration would be than 0.1 µg/m3. The cancer risk would be below the BAAQMD threshold of 10 in one million for cancer risk and the annual $PM_{2.5}$ concentration would be below the BAAQMD threshold of 0.3 µg/m3. After implementation of these recommended measures, the project would have a less than- significant impact with respect to community risk caused by construction activities.

Operations

Project operations would generate VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from mobile sources, including vehicle trips; area sources, including the use of consumer products, architectural coatings for repainting, and landscape maintenance equipment, water, waste, and energy sources. The estimated emissions from operation of the project are summarized in Table 9. Complete details of the emissions calculations are provided in Appendix B.

Table 9. Unmitigated Operational Emissions Summary

	Unmitigated Operational Emissions Summary					
Operation Year 2027	**ROG**	**NOx**	**CO**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**
Pollutant Emission (pounds per day)						
Mobile	1.78	1.60	20.60	2.39	0.44	0.06
Area	2.05	0.039	4.03	0.001	0.002	0.0002
Energy	0	0	0	0	0	0
Total	**3.83**	**1.64**	**24.62**	**2.39**	**0.44**	**0.06**
BAAQMD Significance Thresholds	*54*	*54*	*N/A*	*82*	*54*	*N/A*
Threshold Exceeded?	*No*	*No*	*N/A*	*No*	*No*	*N/A*
Pollutant Emission (tons per year)						
Mobile	0.28	0.29	3.08	0.39	0.07	0.01
Area	0.34	0.003	0.36	0.0001	0.0002	0.00002
Energy	0	0	0	0	0	0
Total	**0.62**	**0.30**	**3.44**	**0.39**	**0.07**	**0.01**
BAAQMD Significance Thresholds	*10*	*10*	*N/A*	*15*	*10*	*N/A*
Threshold Exceeded?	*No*	*No*	*N/A*	*No*	*No*	*N/A*

Source: Emissions were quantified using CalEEMod version 2022.1 (CAPCOA 2022).

NA = Not applicable, no threshold

Model results (summer, winter, and annual) and assumptions are provided in Appendix B.

As Table 9 shows, estimated unmitigated operational emissions for all pollutants are below BAAQMD significance thresholds. Also, project operations would meet the BAAQMD CO hotspot analysis screening criteria regarding traffic volumes at any affected intersection. Therefore, the proposed project would not need a CO hotspot analysis. Therefore, based on the above criteria, the proposed project would have a less-than-significant impact related to CO hotspots.

The combined construction emissions and combined operational emissions from all components of the proposed project are below the recommended BAAQMD thresholds of significance. Therefore, the project would not be anticipated to exceed any significance threshold and would have a less than significant contribution to cumulative impacts with mitigation.

Impact AQ-3 Would the project expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact with Mitigation. While criteria pollutants (such as particulate matter (PM_{10} and $PM_{2.5}$) are a concern at the regional level, community risk impacts from TACs and annual $PM_{2.5}$ exposure to nearby sensitive receptors are also a localized concern. While the discussion under Impact AQ-3 above addressed PM at the regional level, this impact addresses PM at the localized level. Impacts related to increased community risk can occur either by introducing new sensitive receptors, such as residences, in proximity to existing sources of TACs or by introducing a new source of TACs with the potential to adversely affect existing sensitive receptors in the project vicinity.

The BAAQMD CEQA Air Quality Guidelines recommends using a 1,000-foot screening radius around a project site for purposes of identifying community health risk from siting a new sensitive receptor or a

new source of TACs. Operation of the project is not expected to cause any localized emissions that could expose sensitive receptors to unhealthy air pollutant levels, because no stationary sources of TACs, such as generators, are proposed as part of the project. However, the proposed project would introduce new sensitive receptors to the area in the form of future residences, which could be exposed to existing sources of TACs. Project-related construction activity would temporarily generate dust and equipment exhaust that could affect nearby sensitive receptors that include residences.

This analysis therefore evaluates the following community risk impacts:

- Exposure of project residents to existing mobile sources of TACs;
- Exposure of project residents to existing stationary sources of TACs;
- Exposure of nearby existing residences to project construction-related TACs.

BAAQMD provides a Highway Screening Analysis tool that uses Google Earth to identify estimated risk and hazard impacts from highways throughout the Bay Area. Cancer risk, chronic and acute hazard index (HI), and annual $PM_{2.5}$ values at various distances are estimated for different highway segments (as described in detail in Attachment 1 of the 2018 Report). The tool uses the average annual daily traffic (AADT) count, fleet mix and other modeling parameters specific to that segment of the highway. Impacts from traffic on SR-1 (Link 41, at 6 feet of elevation), which is 150 feet or greater west of the project site, were identified using this tool. The estimated cancer risk was adjusted using a factor of 1.3744 to account for new OEHHA guidance (see Attachment 1 of the 2018 Report). This factor was provided by BAAQMD for use with their CEQA screening tools. In 2018, the cancer risk at the project site was found to be 5.9 in a million, which is below the significance threshold of 10 in one million. The $PM_{2.5}$ concentration was found to be 0.06 $\mu g/m^3$, which is below the significance threshold of 0.3 $\mu g/m^3$, and the HI is 0.01, which is below the significance threshold of 1.0. This would be a less-than-significant impact and no mitigation is required.

The locations of any permitted stationary sources of air pollution near the project site were identified using BAAQMD's Stationary Source Risk & Hazard Analysis Tool, a mapping tool that uses Google Earth. This tool identified the location of one stationary source and its estimated risk and hazard screening values. The 2012 estimated risk values were adjusted using the factor of 1.3744 described above under Mobile Sources. The risk values were then adjusted with the appropriate distance multiplier values provided by BAAQMD.

- Plant 14546, which is an emergency back-up generator operated by Sewer Authority Mid- Coast, located at 16th Street and Cabrillo Highway, is approximately 450 feet north-west of the project site. At BAAQMD's direction, risk and $PM_{2.5}$ concentrations from the facility were adjusted based on BAAQMD's Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines. According to the BAAQMD screening data (and adjusted for the 450- foot distance and 2015 OEHHA methodology), this facility would result in an adjusted lifetime cancer risk of 2.9 in one million, $PM_{2.5}$ concentration of <0.01 $\mu g/m^3$, and <0.01 HI, which would all be below BAAQMD thresholds of significance. This would be a less-than-significant impact and no mitigation is required.

Community risk impacts on project residents from combined sources are reported in Table 3 of the 2018 Report. As shown in Table 3 of the 2018 Report, risk from combined operational TAC sources at the project site would be below the BAAQMD cumulative thresholds of 100 in one million and 0.8 $\mu g/m^3$, respectively. Hazard index (HI) would also be cumulatively less than significant. This would be a less-than significant impact and no mitigation is required.

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 employed to reduce these emissions. Mitigation Measure AQ-1 would implement BAAQMD-required best management practices.

Construction equipment and associated heavy-duty truck traffic also generates diesel exhaust, which is a known TAC. Construction exhaust emissions may pose community risks for sensitive receptors such as nearby residents. The primary community risk impact issues associated with construction emissions are cancer risk and exposure to $PM_{2.5}$. Diesel exhaust poses both a potential health and nuisance impact to nearby receptors. A community risk assessment of the project construction activities was conducted to evaluate potential health effects on sensitive receptors at these nearby residences from construction emissions of DPM and $PM_{2.5}$. The closest sensitive receptors to the project site are located adjacent to the north, east and south sides of the project site (see Figure 1 of the 2018 Report). Emissions and dispersion modeling was conducted to predict the off-site DPM concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

In 2018, CalEEMod calculated construction emissions were input to the U.S. EPA ISCST3 dispersion model with project and receptor coordinates and meteorological data. DPM and $PM_{2.5}$ concentrations at modeled receptor locations were then used to estimate community risk impacts (cancer risk, annual $PM_{2.5}$ concentration and hazard index) from project construction using the detailed methodology contained in Attachment 1 of the 2018 Report (Appendix A).

The 2018 CalEEMod model estimated total annual PM_{10} exhaust emissions (assumed to be DPM) from off-road construction equipment and from on-road vehicles (haul truck travel during demolition, worker travel, and vendor deliveries during construction). An average trip length of 0.5 mile was used to represent vehicle travel while at or near the construction site. It was assumed that these emissions from on-road vehicles traveling at or near the site would occur at the construction site. In 2018, total emissions of PM_{10} exhaust from all stages of project construction were estimated to be 0.217 tons (434 pounds). Total emissions of fugitive $PM_{2.5}$ dust emissions from all stages of project construction were estimated to be 0.105 tons (210 pounds). This analysis updated the CalEEMod model utilizing the most recent version CalEEMod and project assumptions. The total emissions of PM_{10} exhaust from all stages of project construction and total miles traveled were estimated to be 0.140 tons (280 pounds). When including total emissions of PM_{10} exhaust from all stages of project construction and emissions emitted within 0.5 miles of the project, PM_{10} exhaust emissions were estimated to be 0.137 tons (274 pounds). The total fugitive $PM_{2.5}$ dust emissions from all stages of project construction and total miles traveled were estimated to be 0.114 tons (228 pounds). When including total fugitive $PM_{2.5}$ dust emissions from all stages of project construction and emissions emitted within 0.5 miles of the project, $PM_{2.5}$ emissions were estimated to be 0.080 tons (160 pounds). The current CalEEMod-estimated emissions are similar to the 2018 Report CalEEMod-estimated emissions utilized in EPA ISCST3 dispersion model. Therefore the 2018 Report annual DPM and $PM_{2.5}$ concentrations at neighboring residences from construction activities during the expected 2018 – 2019 construction period calculated using the U.S. EPA ISCST3 dispersion model are utilized to determine significance in this analysis. All ISCST3 modeling assumptions and details are in Attachment 1 of the 2018 Report.

The maximum concentrations occurred at a residence adjacent to the northern boundary of the project site at the 1.5-meter receptor height. Using the maximum annual modeled DPM concentrations, the maximum increased cancer risk at the location of the maximally exposed individual (MEI) was calculated using

BAAQMD-recommended methods. The cancer risk calculations are based on applying the BAAQMD recommended age sensitivity factors to the TAC concentrations. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. BAAQMD-recommended exposure parameters were used for the cancer risk calculations, as described in Attachment 1 of the 2018 Report. To be conservative, infant and adult exposures were assumed to occur at all residences through the entire construction period. Results of this assessment indicate that the maximum increased residential cancer risks would be 45.9 in one million for an infant exposure and 0.8 in one million for an adult exposure. The maximum residential excess cancer risk would be above the significance threshold of 10.0 in one million, so this impact would be significant. Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce this impact to less than significant.

The maximum-modeled annual $PM_{2.5}$ concentration, which is based on combined exhaust and fugitive dust emissions, was 0.41 $\mu g/m^3$. This maximum annual $PM_{2.5}$ concentration would be above the BAAQMD significance threshold of greater than 0.3 $\mu g/m^3$. The location of the receptor with the maximum $PM_{2.5}$ concentration is at the same as where the maximum TAC impact would occur. Implementation of Mitigation Measures AQ-1 and Mitigation Measure AQ-2 would reduce this impact to less than significant.

The maximum modeled annual residential DPM concentration (i.e., from construction exhaust) was 0.16 $\mu g/m^3$. The maximum computed HI based on this DPM concentration was 0.03, which is lower than the BAAQMD significance criterion of a HI greater than 1.0. This would be a less than- significant impact and no mitigation is required.

The cumulative impacts of TAC emissions from three sources (construction of the project, the nearby stationary source, and traffic on SR-1) on the construction MEI are summarized in Table 4 of the 2018 Report. As shown in Table 4, the sum of impacts from combined sources at the construction MEI would be below the BAAQMD threshold, and therefore would be less than significant.

The project would have a significant impact with respect to community risk caused by project construction activities, since estimated cancer risk and $PM_{2.5}$ concentrations are above the single source thresholds of 10.0 per million for cancer risk and a concentration of greater than 0.3 $\mu g/m^3$ for annual $PM_{2.5}$. Implementation of Mitigation Measures AQ-1 and Mitigation Measure AQ-2 would reduce this impact to less than significant. Attachment 2 of the 2018 Report (Appendix A) includes the emission calculations and source information used in the modeling and the cancer risk calculations. Appendix B provides the updated CalEEMod assumptions and emissions.

Appendix C contains two CalEEMod model runs demonstrating the project's ability to meet the Mitigation Measure AQ-2, which requires that prior to initiating any construction activities, MidPen or their contractors shall develop a plan demonstrating that the off-road equipment used on-site to construct the project would achieve a fleet-wide average of at least 78 percent reduction in DPM emissions compared to the emissions calculated for the project without mitigation (434 pounds of DPM emissions). There are several options outlined in the mitigation measure including: all mobile diesel-powered off-road equipment larger than 25 hp and operating on the site for more than two days shall meet, at a minimum, U.S. EPA particulate matter emissions standards for Tier 4 engines or equivalent; the use of equipment that meets U.S. EPA Tier 2 standards and includes CARB-certified Level 3 Diesel Particulate Filters; or alternatively-fueled equipment (i.e., non-diesel). The first CalEEMod model in Appendix C utilizes Tier 4 interim engines for all mobile diesel-powered off-road equipment larger than 25 hp and operating on the site for more than two days and reduced DPM by 79.8%. The second CalEEMod model in Appendix C utilizes Tier 2 standards and includes CARB-certified Level 3 Diesel Particulate Filters for all mobile diesel-powered off-road equipment larger than 25 hp and operating on the site for more than two days and

reduced DPM by 79.0%. Therefore, implementation of Mitigation Measures AQ-1 and Mitigation Measure AQ-2 would reduce this impact to less than significant.

Impact AQ-4 Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant Impact. The project would not be a source of any odors during operations. During construction, a limited number of diesel engines would be operated on the project site for limited durations. Diesel exhaust and volatile organic compounds (VOCs) from these diesel engines would be emitted during construction of the proposed project, which are objectionable to some; however, the duration of construction activities is expected to last approximately 18 months, emissions would disperse rapidly from the project site, and diesel exhaust odors would be consistent with existing vehicle odors in the area. Considering this information, construction and operation of the proposed project would not create other emissions or odors adversely affecting a substantial number of people; impacts would be less than significant.

Impact GHG-1 Would the project generate GHG emissions, either directly or indirectly, that may have an adverse effect on the environment?

Less Than Significant Impact. The proposed project is located in the San Francisco Bay Area Air Basin, which is regulated by the BAAQMD. Projects generate GHG emissions during construction and operation (e.g., mobile emissions, emissions from generation of electricity for operations), and projects must be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b). On April 20, 2022, the BAAQMD adopted changes to its thresholds for evaluating the significance of climate impacts from land use projects and plans under CEQA. In place of numerical thresholds, the focus will be on the design of a project as well as building operations and transportation. At a minimum, building projects cannot include natural gas appliances or natural gas plumbing, and cannot result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and State CEQA Guidelines Section 15126.2(b). The project will not utilize natural gas and will not result in any wasteful, inefficient, or unnecessary energy usage. The project operations must also achieve a reduction in project-generated VMT below the regional average consistent with the current version of the California Climate Change Scoping Plan or meet a locally adopted VMT target, and VMT thresholds for unincorporated areas of San Mateo County are determined on a case-by-case basis. The project would incorporate VMT reductions and the below market rate housing provides greater opportunity for lower income families to live closer to job centers and achieve a jobs/housing match near transit. It is also an important strategy to address the limited availability of affordable housing that might force residents to live far away from jobs or school, requiring longer commutes. Therefore, construction- and operation-related GHG emissions would be less than significant.

Impact GHG-2 Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

Less Than Significant Impact. The San Mateo County Community Climate Action Plan (CCAP) was approved and adopted as an element of the San Mateo County General Plan in 2022. The CCAP outlines actionable items that, if successfully implemented, would achieve a 45% reduction of greenhouse gas (GHG) emissions over 1990 levels by 2030 and carbon neutrality by 2040. The project is an affordable housing project with several implementation action items related to energy, transportation, and waste. The project includes installation of rooftop solar panels, 5 electric vehicle charging spaces, water-efficient appliances, including high efficiency washers with a water factor of 5 or less, toilets that use less than 1.6

gallons per flush in all residential units, and metering or self-closing faucets in all non-residential lavatories. The project's irrigation system would include an automatic weather-based controller, manual shut-off valves, matched precipitation rate sprinkler heads, a proper setback from non-permeable surfaces, and separate valves for different hydrozones. It would be designed to prevent runoff, low head drainage, and overspray. There is also no natural gas as part of the project. Therefore, the project would not conflict with the policies, regulations, or guidelines in the General Plan, CCAP, Bay Area Clean Air Plan, or any other applicable plans and/or regulations adopted for the purposes of reducing GHG emissions. Furthermore, GHG emissions from the project, as shown Appendix B, would not generate substantial GHG emissions during construction or operation. Therefore, impacts would be less than significant.

Construction of the project would result in GHG emissions, which are primarily associated with use of off-road construction equipment, on-road vendor trucks, and worker vehicles. The BAAQMD does not have current GHG significance thresholds, however construction emissions were calculated and amortized over a 30-year project lifetime. CalEEMod was used to calculate the annual GHG emissions based on the construction scenario described. Construction of the project is anticipated to last a total of approximately eighteen months. On-site sources of GHG emissions include off-road equipment and off-site sources including vendor trucks and worker vehicles. Table 10 presents construction emissions for the project from on-site and off-site emission sources.

Table 10. Estimated Annual Construction Greenhouse Gas Emissions

Construction Years	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
2024	80.20	0.01	0.008	82.99
2025	913.13	0.08	0.077	938.69
2026	278.74	0.02	0.012	282.96
			Total	***1,304.64***
		Amortized construction emissions		***43.5***

Source: Appendix B.

As shown in Table 10, the estimated total GHG emissions during construction would be approximately 1,305 $MTCO_2e$ over the construction period. Estimated project-generated construction emissions amortized over 30 years would be approximately 43.5 $MTCO_2e$ per year. As with project-generated construction criteria air pollutant emissions, GHG emissions generated during construction of the project would only occur when construction is active, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions.

Operation of the project would generate GHG emissions through motor vehicle trips to and from the project site, landscape maintenance equipment operation, energy use, solid waste disposal, and generation of electricity associated with water supply, treatment, and distribution and wastewater treatment. CalEEMod was used to calculate the annual GHG emissions based on the operational assumptions described in Section 6.2.

The estimated operational project-generated GHG emissions from area sources, energy usage, motor vehicles, off-road and stationary sources, solid waste generation, and water usage and wastewater generation are shown in Table 11.

Table 11. Estimated Annual Operational Greenhouse Gas Emissions

Construction Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Mobile	911.53	0.03	0.03	922.44
Area	1.79	0.0002	0.00002	1.80
Energy	32.59	0.005	0.0006	32.91
Water	2.36	0.08	0.002	5.06
Waste	4.88	0.49	0	17.07
Refrigeration	0	0	0	0.08
Total	**953.15**	**0.61**	**0.03**	**979.37**
		Amortized construction emissions		43.5
	Total operational + amortized construction GHGs			***1,022.87***

Source: Appendix B.
Note: These emissions reflect operational year 2027.

As shown in Table 11, estimated annual project-generated GHG emissions would be approximately 979 MT CO_2e per year as a result of project operations only. After summing the amortized project construction emissions, total GHGs generated by the project would be approximately 1,023 MT CO_2e per year. In summary, Impact GHG-1 would be less than significant.

7.1 Cumulative Impacts

7.1.1 Air Quality

The cumulative setting for air quality includes the Air Basin. The Air Basin is designated as a nonattainment area for state standards of ozone, PM_{10}, and $PM_{2.5}$ and federal standards of ozone and $PM_{2.5}$; an attainment and serious maintenance area for federal PM_{10} standards; and unclassified or attainment for all other pollutants. Cumulative growth in population and vehicle use could inhibit efforts to improve regional air quality and attain the ambient air quality standards. The BAAQMD CEQA Air Quality Guidelines do not include separate significance thresholds for cumulative construction and operational emissions. However, with respect to regional air pollution, the development of the project would improve the jobs/housing balance and jobs/housing fit by providing preference for those who live or work on the San Mateo Coast, redispersing existing county residences and reducing distances traveled between work and home. Therefore, the project would not affect the 2017 Clean Air Plan population forecasts. As described in threshold discussion, above, the project would also be consistent with the appropriate 2017 Clean Air Plan control measures, which are provided to reduce air quality emissions for the entire Bay Area region. Additionally, the previous threshold discussion, above, addresses cumulative impacts and demonstrates that the project would not exceed the applicable BAAQMD thresholds for construction or operations. The BAAQMD CEQA Air Quality Guidelines note that the nature of air emissions is largely a cumulative impact. As a result, no single project is sufficient in size by itself to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. Consistency with the 2017 Clean Air Plan control measures would ensure that the project would not cumulatively contribute to air quality impacts in the Basin; therefore, impacts would be less than significant.

7.1.2 Greenhouse Gas Emissions

The analysis of a project's GHG emissions is inherently a cumulative impacts analysis because climate change is a global problem and the emissions from any single project alone would be negligible. Accordingly, the analysis above considers the potential for the project to contribute to the cumulative impact of a global climate change. Table 10 shows the estimated annual project-generated GHG emissions as a result of project construction. Given that the project would generate only construction GHG emissions that would not conflict with applicable reduction plans and policies and given that GHG emission impacts are cumulative in nature, the project's incremental contribution to cumulatively significant GHG emissions would be less than significant.

7.2 Mitigation Measures

As discussed, all construction projects within BAAQMD must comply with the best management practices regarding fugitive dust and equipment exhaust emissions. Mitigation Measure AQ-1 and AQ-2 have been outlined and will be included in the project.

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APPENDIX A

2018 Illingworth and Rodkin, Inc

Cypress Point Affordable Housing Project Air Quality and Greenhouse Gas Emissions Assessment

CYPRESS POINT AFFORDABLE HOUSING PROJECT AIR QUALITY & GREENHOUSE GAS EMISSIONS ASSESSMENT

Moss Beach, California

June 29, 2018

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I&R Project# 17-158

Introduction

The purpose of this report is to address air quality, toxic air contaminant (TAC), and greenhouse gas (GHG) emission impacts associated with the proposed residential project located northeast of the intersection of Carlos street and Sierra Street in Moss Beach. The project proposes to develop 71 affordable housing units, consisting of 18 two-story buildings holding 3 to 4 units each and a one-story community building. Air quality and GHG impacts could occur due to temporary construction emissions and as a result of direct and indirect emissions from new uses. Also, the localized community risk impacts from diesel emissions of project construction equipment and nearby TACs (such as emergency backup generators and roadway traffic) are addressed. This analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).

Setting

The project is located in San Mateo County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards for criteria air pollutants (defined below) have been established at the federal level under the Clean Air Act, and at the state level under the California Clean Air Act. In addition, BAAQMD has established significance thresholds for TACs, discussed below.

Criteria Air Pollutants

The Clean Air Act and California Clean Air Act authorize the Environmental Protection Agency (EPA) and California Air Resources Board (CARB) respectively to establish standards for a set of six pollution constituents that contribute to chronic and acute health impacts. These criteria pollutants include: ground-level ozone, oxides of nitrogen (NO_X), particulate matter (PM), carbon monoxide, sulfur dioxide, and lead. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$), which are described below.

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NOx). 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 in 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

TACs are a broad class of compounds known to cause sickness or death (usually 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. 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).

Diesel exhaust is the predominant TAC in air in urban areas and is estimated to contribute more than eighty-five percent of a 2006 inventory of Bay Area cancer risk from TACs.[1] According to 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.

CARB has adopted and implemented a number of regulations to reduce emissions of DPM from stationary and mobile sources. Several of these regulatory programs affect medium- and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008, CARB approved a new regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles, including those used at construction sites.[2] The regulation requires affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle.

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. Land uses that may contain a high concentration of these sensitive population groups include residential neighborhoods, hospitals, daycare facilities, elder care facilities, and schools.

Sensitive receptors (residences) are located adjacent to the north, east and south of the project site, with additional residences located southwest of the site, as shown in Figure 1. The

[1] BAAQMD, 2014. *Air Quality and Health in Bay Area Communities*. April.
[2] Available online: http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm. Accessed: June 9, 2015.

maximally exposed individual (MEI) is the receptor exposed to the maximum excess cancer risk and annual $PM_{2.5}$ concentration.

County of San Mateo Zoning Ordinance and Local Coastal Program

There are no air quality policies contained in the County's Local Coastal Program Policies[3] or Zoning Ordinance that are applicable to the proposed project.

California Coastal Act

California Coastal Act Section 30253(c) requires that new development in the Coastal Zone shall "be consistent with requirements imposed by an air pollution control district or the State Air Resources Board as to each particular development." In this case, the air pollution control district is BAAQMD.

Greenhouse Gases

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 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 warming 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. California's climate

[3] County of San Mateo, 2013. *Local Coastal Program Policies*.

and several other natural resources and processes within California have and will continue to be adversely affected by the global warming trend, including: increased precipitation; sea level rise; increased coastal flooding; saltwater intrusion; degradation of wetlands; and adverse impacts on plant and animal species. The effects of global climate change that could adversely affect human health include: increases in extreme heat events and heat-related stress; increases in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

Methodology

The emissions of criteria air pollutants resulting from project construction and operations (long-term habitation), and emissions of GHG from project operations are addressed qualitatively in this analysis, using screening criteria provided by BAAQMD based on project type and size. While they are not significance thresholds, BAAQMD has developed these screening criteria to provide lead agencies with a method to develop a conservative indication of whether a project could result in potentially significant air quality impacts. If the screening criteria are met, a lead agency does not need to perform a quantified assessment of criteria air pollutant emissions. The screening criteria used are discussed under Impact 2 in *Impacts and Project Measures* below.

Community risk impacts resulting from construction of the proposed project are evaluated by computing estimated construction DPM and fugitive dust emissions using the California Emissions Estimator Model (CalEEMod 2016.3.2). Those emissions are then input to the EPA ISCST3 dispersion model to determine concentrations at nearby sensitive receptors. Finally, State of California Office of Environmental Health Hazard Assessment (OEHHA) and CARB health risk modeling methodology, as recommended by BAAQMD, are used to predict community risk values at the receptors, which are evaluated against the BAAQMD-recommended significance thresholds contained in Table 1. In addition, though not required by the California Environmental Quality Act (CEQA)[4], the potential impact of non-project pollutant sources (i.e., roadway and stationary sources) on project residents is addressed using BAAQMD screening tools.

Significance Thresholds

The BAAQMD is the regional agency tasked with managing air quality in the region. At the State level, the CARB (a part of the California Environmental Protection Agency [EPA]) oversees regional air district activities and regulates air quality at the State level. The BAAQMD published California Environmental Quality Act (CEQA) Air Quality Guidelines that are used in this assessment to evaluate the air quality impacts of projects.[5]

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[4] In December 2015, the Supreme Court determined that an analysis of the impacts of the environment on a project – known as "CEQA-in-reverse" – is only required under two limited circumstances: (1) when a statute provides an express legislative directive to consider such impacts; and (2) when a proposed project risks exacerbating environmental hazards or conditions that already exist (Cal. Supreme Court Case No. S213478). Though not necessarily a CEQA issue, the effect of existing TAC sources on future project receptors (residences) is analyzed to comply with the Clean Air Plan key goal of reducing population TAC exposure and protecting public health in the Bay Area.

[5] BAAQMD, 2017. *BAAQMD CEQA Air Quality Guidelines*. May.

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. BAAQMD's adoption of significance thresholds, as contained in the 2011 CEQA Air Quality Guidelines, was challenged in court and ultimately the California Supreme Court upheld the thresholds. In May 2017, BAAQMD published a new version of its CEQA Guidelines, which includes revisions that address the California Supreme Court's decision. The BAAQMD May 2017 CEQA Guidelines are used in this analysis (Table 1). In addition, Table 2 contains the BAAQMD screening sizes for low-rise apartments. The screening criteria are not thresholds of significance, but may be used by a lead agency as a conservative indication of whether a proposed project can be considered small enough that analysis of air quality or GHG emissions are not required.

Table 1. 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 1,000-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			
GHG Annual Emissions	Compliance with a Qualified GHG Reduction Strategy OR 1,100 metric tons or 4.6 metric tons per capita		

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, and GHG = greenhouse gases.

Table 2. BAAQMD Screening Sizes for Low-Rise Apartments

Land Use	Operational Criteria Pollutant Screening Size	Operational GHG Screening Size	Construction Screening Size
Low-Rise Apartment	451 dwelling units	78 dwelling units	240 dwelling units

Impacts and Mitigation Measures

Impact 1: Conflict with or obstruct implementation of the applicable air quality plan? ***Less than significant.***

The most recent clean air plan covering the project site is the *2017 Clean Air Plan* adopted by BAAQMD in April 2017.[6] The proposed project would not conflict with the latest Clean Air planning efforts since 1) the project would have emissions below the BAAQMD thresholds (see Impact 2). The project is too small to exceed any of the significance thresholds and, thus, it is not required to incorporate the project-specific transportation control measures listed in the latest Clean Air Plan. This would be a less-than-significant impact and no mitigation is required.

Impact 2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable State or federal ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? ***Less than significant with mitigation incorporated.***

The Bay Area is considered a non-attainment area for ground-level ozone 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 ozone and PM_{10}, the BAAQMD has established thresholds of significance for these air pollutants and their precursors (see Table 1). These thresholds are for ozone precursor pollutants (ROG and NOx), PM_{10}, and $PM_{2.5}$ and apply to both construction period and operational period impacts.

In the 2017 update to the CEQA Air Quality Guidelines,[7] BAAQMD identifies screening criteria for the sizes of land use projects that could result in significant air pollutant emissions. For construction impacts, the screening project size for low-rise apartments is identified as 240 dwelling units. For operational impacts, the screening size for apartments is identified at 451 dwelling units. Since the project proposes to develop up to 71 dwelling units, project emissions would be below the BAAQMD significance thresholds. No stationary sources of air pollution (e.g., back-up generators) have been identified with this project. Therefore, project construction and operations emissions would be less than significant.

[6] BAAQMD, 2017. *Spare the Air Cool the Climate A Blueprint for Clean Air and Climate Protection in the Bay Area: Final 2017 Clean Air Plan*. April 19.

[7] BAAQMD, 2017. *CEQA Air Quality Guidelines*. May.

However, 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. With implementation of *Mitigation Measure AQ-1, which would implement BAAQMD-recommended best management practices, this impact is considered less than significant*. To reduce this impact to a less-than-significant level, implement Mitigation Measure AQ-1

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

During any construction period ground disturbance, the applicant shall ensure that the project contractor implements measures to control dust and exhaust. MidPen will include terms in all construction contracts related to the Cypress Point project that require contractors to implement the following best management practices:

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

Implementation of Mitigation Measure AQ-1 would ensure that the recommended BAAQMD best management practices are instated, which the BAAQMD considers sufficient to reduce this impact to a level of less than significant.

Impact 3: Violate any air quality standard or contribute substantially to an existing or projected air quality violation? ***Less than significant with mitigation incorporated.***

Particulate Matter and Ozone. As discussed under Impact 2, the project would have emissions less than the BAAQMD screening size for evaluating impacts related to ozone and particulate matter. As discussed above, 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. This impact is considered significant because appropriate control measures are not part of the project. With implementation of *Mitigation Measure AQ-1, described above, which would implement BAAQMD-recommended best management practices, this impact is considered less than significant*.

Carbon Monoxide. Carbon monoxide emissions from traffic generated by the project would be the pollutant of greatest concern at the local level. Congested intersections with a large volume of traffic have the greatest potential to cause high-localized concentrations of carbon monoxide. Air pollutant monitoring data indicate that carbon monoxide levels have been at healthy levels (i.e., below State and federal standards) in the Bay Area since the early 1990s. As a result, the region has been designated as attainment for the standard. The highest measured level over any 8-hour averaging period during the last 3 years in the Bay Area is less than 3.0 parts per million (ppm), compared to the ambient air quality standard of 9.0 ppm. Intersections affected by the project would have traffic volumes less than 3,000 vehicles per hour, which is much less than the BAAQMD screening criteria and, thus, would not cause a violation of an ambient air quality standard or have a considerable contribution to cumulative violations of these standards.[8]

[8] For a land-use project type, the BAAQMD CEQA Air Quality Guidelines state that a proposed project would result in a less than significant impact to localized carbon monoxide concentrations if the project would not increase traffic at affected intersections with more than 44,000 vehicles per hour.

Impact 4: Expose sensitive receptors to substantial pollutant concentrations as defined by BAAQMD? ***Less than significant with mitigation incorporated.***

While criteria pollutants (such as particulate matter (PM_{10} and $PM_{2.5}$) are a concern at the regional level, community risk impacts from TACs and annual $PM_{2.5}$ exposure to nearby sensitive receptors are also a localized concern. While the discussion under Impacts 1-3 above addressed PM at the regional level, this impact addresses PM at the localized level. Impacts related to increased community risk can occur either by introducing new sensitive receptors, such as residences, in proximity to existing sources of TACs or by introducing a new source of TACs with the potential to adversely affect existing sensitive receptors in the project vicinity.

The BAAQMD CEQA Air Quality Guidelines recommends using a 1,000-foot screening radius around a project site for purposes of identifying community health risk from siting a new sensitive receptor or a new source of TACs.

Operation of the project is not expected to cause any localized emissions that could expose sensitive receptors to unhealthy air pollutant levels, because no stationary sources of TACs, such as generators, are proposed as part of the project. However, the proposed project would introduce new sensitive receptors to the area in the form of future residences, which could be exposed to existing sources of TACs. Project-related construction activity would temporarily generate dust and equipment exhaust that could affect nearby sensitive receptors that include residences.

This analysis therefore evaluates the following community risk impacts:

- Exposure of project residents to existing mobile sources of TACs (Impact 4a);
- Exposure of project residents to existing stationary sources of TACs (Impact 4b);
- Exposure of nearby existing residences to project construction-related TACs (Impact 4c).

BAAQMD thresholds that address both the impact of single and cumulative TAC sources upon projects that include new sensitive receptors (see Table 1) are used in this analysis. *Attachment 1* includes the detailed community risk modeling methodology.

The exposure of residents to substantial air pollutant sources is analyzed below, beginning with an analysis of impacts on project residents from existing mobile and stationary sources, followed by an analysis of the impacts of project construction on existing sensitive receptors, and finally an analysis of the cumulative exposure of the maximally exposed individual.

Impact 4a: Impacts on Project Residents from Existing Sources

Mobile Sources

BAAQMD provides a Highway Screening Analysis tool that uses Google Earth to identify estimated risk and hazard impacts from highways throughout the Bay Area. Cancer risk, chronic and acute hazard index (HI), and annual $PM_{2.5}$ values at various distances are estimated for different highway segments (as described in detail in *Attachment 1*). The tool uses the average annual daily traffic (AADT) count, fleet mix and other modeling parameters specific to that segment of the highway. Impacts from traffic on SR-1 (Link 41, at 6 feet of elevation), which is

150 feet or greater north of the project site, were identified using this tool. The estimated cancer risk was adjusted using a factor of 1.3744 to account for new OEHHA guidance (see *Attachment 1*). This factor was provided by BAAQMD for use with their CEQA screening tools.[9] The cancer risk at the project site was found to be 5.9 in a million, which is below the significance threshold of 10 in one million. The $PM_{2.5}$ concentration was found to be 0.06 µg/m^3, which is below the significance threshold of 0.3 µg/m^3, and the HI is 0.01, which is below the significance threshold of 1.0. This would be a less-than-significant impact and no mitigation is required.

Stationary Sources

The locations of any permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Stationary Source Risk & Hazard Analysis Tool*, a mapping tool that uses Google Earth. This tool identified the location of one stationary source and its estimated risk and hazard screening values. The 2012 estimated risk values were adjusted using the factor of 1.3744 described above under *Mobile Sources*. The risk values were then adjusted with the appropriate distance multiplier values provided by BAAQMD. The values reported below reflect the above adjustments:

- Plant 14546, which is an emergency back-up generator operated by Sewer Authority Mid-Coastside, located at 16th Street and Cabrillo Highway, is approximately 450 feet west of the project site. At BAAQMD's direction, risk and PM2.5 concentrations from the facility were adjusted based on BAAQMD's Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines. According to the BAAQMD screening data (and adjusted for the 450-foot distance and 2015 OEHHA methodology), this facility would result in an adjusted lifetime cancer risk of 2.9 in one million, PM2.5 concentration of <0.01 µg/m3, and <0.01 HI, which would all be below BAAQMD thresholds of significance (Table 1). This would be a less-than-significant impact and no mitigation is required.

Combined Operational TAC Sources

Community risk impacts on project residents from combined sources are reported in Table 3. As shown in Table 3, risk from combined operational TAC sources at the project site would be below the BAAQMD cumulative thresholds of 100 in one million and 0.8 µg/m^3, respectively. Hazard index (HI) would also be cumulatively less than significant. This would be a less-than-significant impact and no mitigation is required.

Table 3. Impacts from Combined TAC Sources at Project Site

Source	Maximum Cancer Risk (per million)	Hazard Index	$PM_{2.5}$ concentration (µg/m^3)
SR-1/Cabrillo Highway	5.9	0.01	0.06
Plant 14546, Sewer Authority Mid-Coastside 16th Street and Cabrillo Highway	2.9	<0.01	<0.01
Combined Total	8.8	<0.01	<0.07
BAAQMD Threshold – Combined Sources	***100***	***10.0***	***0.8***

[9] Correspondence with Alison Kirk, BAAQMD, November 23, 2015.

Impact 4b: Impacts on Existing Sensitive Receptors from Project Construction Activity

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 employed to reduce these emissions. *Mitigation Measure AQ-1 would implement BAAQMD-required best management practices*.

Construction equipment and associated heavy-duty truck traffic also generates diesel exhaust, which is a known TAC[10]. Construction exhaust emissions may pose community risks for sensitive receptors such as nearby residents. The primary community risk impact issues associated with construction emissions are cancer risk and exposure to $PM_{2.5}$. Diesel exhaust poses both a potential health and nuisance impact to nearby receptors. A community risk assessment of the project construction activities was conducted to evaluate potential health effects on sensitive receptors at these nearby residences from construction emissions of DPM and $PM_{2.5}$. The closest sensitive receptors to the project site are located adjacent to the north, east and south sides of the project site (see Figure 1). Emissions and dispersion modeling was conducted to predict the off-site DPM concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

Methodology

Construction period emissions were modeled using the California Emissions Estimator Model, Version 2016.3.2 (CalEEMod). A build-out construction schedule including equipment usage assumptions was developed based on CalEEMod defaults for a project of this type and size. The proposed project land uses were input into CalEEMod, which included 71 dwelling units entered as "Condo/Townhouse," and 161 spaces entered as "Parking Lot"[11] on 5.8 acres of the 10.875-acre site. It was assumed that cut and fill at the site would be balanced, so that there would not be any substantial amount of soil hauling either on or off-site. Construction emissions were then input to the U.S. EPA ISCST3 dispersion model with project and receptor coordinates and meteorological data. DPM and $PM_{2.5}$ concentrations at modeled receptor locations were then used to estimate community risk impacts (cancer risk, annual $PM_{2.5}$ concentration and hazard index) from project construction using the detailed methodology contained in *Attachment 1*.

The CalEEMod model estimated total annual PM_{10} exhaust emissions (assumed to be DPM) from off-road construction equipment and from on-road vehicles (haul truck travel during demolition, worker travel, and vendor deliveries during construction). An average trip length of 0.5 mile was used to represent vehicle travel while at or near the construction site. It was assumed that these emissions from on-road vehicles traveling at or near the site would occur at

[10] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

[11] The proposed project was subsequently revised to reduce the number of parking places, so this analysis represents an overstatement of the emissions of the proposed project.

the construction site. Total emissions of PM_{10} exhaust from all stages of project construction were estimated to be 0.217 tons (434 pounds). Total emissions of fugitive $PM_{2.5}$ dust emissions from all stages of project construction were estimated to be 210 pounds.

Next, annual DPM and $PM_{2.5}$ concentrations at neighboring residences from construction activities during the expected 2018 – 2019 construction period were calculated using the U.S. EPA ISCST3 dispersion model. The ISCST3 modeling used two separate area pollution sources[12] to represent different areas of on-site construction activities. Emission rates for two area sources were used to represent the on-site construction emissions, one for exhaust emissions and one for fugitive dust emissions. To represent the construction equipment exhaust emissions, an emission release height of 6 meters (19.7 feet) was used for the area source. The elevated source height reflects the height of the equipment exhaust pipes plus an additional distance for the height that the hot exhaust plume will rise above the exhaust pipes. For modeling fugitive $PM_{2.5}$ emissions, a near-ground level release height of 2 meters (6.6 feet) was used for the area source. Emissions from the construction equipment and on-road vehicle travel were distributed amongst the modeled area sources. Construction emissions were modeled as occurring daily between 7 a.m. to 4 p.m., when the majority of construction activity would occur. The modeling used a 5-year meteorological data set (2001-2005) from a meteorological monitoring station in Fort Funston, San Francisco to determine wind patterns. These data were prepared for use with the ISCST3 model by BAAQMD and are the most recent and available data from the Air District.

DPM and $PM_{2.5}$ concentrations were then calculated at nearby sensitive receptor locations. Receptor heights of 1.5 meters (4.9 feet) and 4.5 meters (14.8 feet) were used to represent the breathing heights for residences.

Cancer Risk

Figure 1 shows the locations where the maximum-modeled DPM and $PM_{2.5}$ concentrations occurred. The maximum concentrations occurred at a residence adjacent to the northern boundary of the project site at the 1.5-meter receptor height. Using the maximum annual modeled DPM concentrations, the maximum increased cancer risk at the location of the maximally exposed individual (MEI) was calculated using BAAQMD-recommended methods. The cancer risk calculations are based on applying the BAAQMD recommended age sensitivity factors to the TAC concentrations. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. BAAQMD-recommended exposure parameters were used for the cancer risk calculations, as described in *Attachment 1*. To be conservative, infant and adult exposures were assumed to occur at all residences through the entire construction period.

Results of this assessment indicate that the maximum increased residential cancer risks would be 45.9 in one million for an infant exposure and 0.8 in one million for an adult exposure. The maximum residential excess cancer risk would be above the significance threshold of 10.0 in one

[12] Area sources are used to represent conditions where emissions are spread out over a wide geographical area, as opposed to point sources (such as boilers) which are emitted from a single exhaust stack, and mobile sources (such as vehicles) which emit pollutants as they travel along roadways.

million, so this impact would be significant. *Implementation of Mitigation Measures AQ-1 (described above) and AQ-2 (described below) would reduce this impact to less than significant.*

Annual $PM_{2.5}$ Concentration

The maximum-modeled annual $PM_{2.5}$ concentration, which is based on combined exhaust and fugitive dust emissions, was 0.41 $\mu g/m^3$. This maximum annual $PM_{2.5}$ concentration would be above the BAAQMD significance threshold of greater than 0.3 $\mu g/m^3$. The location of the receptor with the maximum $PM_{2.5}$ concentration is at the same as where the maximum TAC impact would occur, and is shown in Figure 1. *Implementation of Mitigation Measures AQ-1 (described above) and Mitigation Measure AQ-2 (described below) would reduce this impact to less than significant.*

Non-Cancer Hazards

The maximum modeled annual residential DPM concentration (i.e., from construction exhaust) was 0.16 $\mu g/m^3$. The maximum computed HI based on this DPM concentration was 0.03, which is lower than the BAAQMD significance criterion of a HI greater than 1.0. This would be a less-than-significant impact and no mitigation is required.

Cumulative Impact on Construction MEI

The cumulative impacts of TAC emissions from three sources (construction of the project, the nearby stationary source, and traffic on SR-1) on the construction MEI are summarized in Table 4. As shown in Table 4, the sum of impacts from combined sources at the construction MEI would be below the BAAQMD threshold, and therefore would be less than significant.

Table 4. Impacts from Combined Sources at Construction MEI

Source	Maximum Cancer Risk (per million)	$PM_{2.5}$ concentration ($\mu g/m^3$)	Hazard Index
Project Construction	45.9	0.41	0.03
SR-1/Cabrillo Highway	<5.9	<0.01	<0.06
Plant 14546, Sewer Authority Mid-Coastside 16th Street and Cabrillo Highway	<2.9	<0.01	<0.01
Combined Total	<54.7	<0.43	<0.10
BAAQMD Threshold – Combined Sources	*100*	*0.8*	*10.0*

Overall Community Risk Conclusion

The project would have a *significant* impact with respect to community risk caused by project construction activities, since estimated cancer risk and $PM_{2.5}$ concentrations are above the single-source thresholds of 10.0 per million for cancer risk and a concentration of greater than 0.3 $\mu g/m^3$ for annual $PM_{2.5}$. *Implementation of Mitigation Measures AQ-1 (described above) and Mitigation Measure AQ-2 (described below) would reduce this impact to less than significant. Attachment 2* includes the emission calculations and source information used in the modeling and the cancer risk calculations.

Mitigation Measure AQ-2: **Use Construction equipment that has low diesel particulate matter exhaust emissions.**

Prior to initiating any construction activities, MidPen or their contractors shall develop a plan demonstrating that the off-road equipment used to on-site to construct the project would achieve a fleet-wide average of at least 78 percent reduction in DPM emissions compared to the emissions calculated for the project without mitigation (434 pounds of DPM emissions). One feasible plan to achieve this reduction would include the following:

> All mobile diesel-powered off-road equipment larger than 25 hp and operating on the site for more than two days shall meet, at a minimum, U.S. EPA particulate matter emissions standards for Tier 4 engines or equivalent. Note that the construction contractor could use other measures to minimize construction period DPM emission to reduce the estimated cancer risk below the thresholds. The use of equipment that meets U.S. EPA Tier 2 standards and includes CARB-certified Level 3 Diesel Particulate Filters[13] or alternatively-fueled equipment (i.e., non-diesel) would meet this requirement. Other measures may be the use of added exhaust devices, or a combination of measures, provided that these measures are approved by the County and demonstrated to reduce community risk impacts to less than significant.

Effectiveness of Mitigation

The effectiveness of proposed mitigation measures to reduce impacts related to community risk was evaluated by comparing DPM and $PM_{2.5}$ emissions between the unmitigated and mitigated CalEEMod runs and estimating mitigated risk values based on the unmitigated ISCST3 run (see *Attachment 2* for the CalEEMod runs and risk calculations). With mitigation, the computed maximum increased lifetime residential cancer risk from construction, assuming infant exposure, would be 7.3 in one million or less, and the maximum annual $PM_{2.5}$ concentration would be than 0.1 $\mu g/m^3$. The cancer risk would be below the BAAQMD threshold of 10 in one million for cancer risk and the annual $PM_{2.5}$ concentration would be below the BAAQMD threshold of 0.3 $\mu g/m^3$. *After implementation of these recommended measures, the project would have a less-than-significant impact with respect to community risk caused by construction activities.*

[13] See http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm

Figure 1. Project Construction Site, Locations of Off-Site Sensitive Receptors and Maximum TAC Impact



Impact 5: Create objectionable odors affecting a substantial number of people? ***Less than significant.***

Construction of the project would generate localized emissions of diesel exhaust from construction equipment operation and truck activity. These emissions may be noticeable from time to time by adjacent receptors. However, they would be localized and are not likely to adversely affect people off site by resulting in confirmed odor complaints. Operation of the project would not include any sources of significant odors, such as sewage treatment, landfills, petroleum refining, autobody and coating operations, or livestock operations, that would be likely to cause complaints from surrounding uses. This would be a *less-than-significant impact.*

Impact 6: Generate pollutants (hydrocarbon, thermal odor, dust or smoke particulates, radiation, etc.) that will violate existing standards of air quality on-site or in the surrounding area.? ***Less than significant with mitigation incorporated.***

As described under Impacts 2 and 3, the project would be a source of air pollutant emissions that include hydrocarbons (i.e., ROG). This impact is considered less than significant if appropriate best management control measures are incorporated during construction. As described under Impact 5, the project would not be a long-term source of odors. There would be temporary, localized, odors generated during construction. The project would not be a source of heat, radiation or smoke.

Impact 7: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? ***Less than significant.***

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 generated by the project, energy and water usage by project residents, and the disposal of solid waste generated by project residents. Both short-term and long-term GHG emissions from the project were estimated.

Construction Emissions

GHG emissions were computed using the CalEEMod model and project-specific information. Construction of the project is estimated to emit 676 MT of CO_2e over the total construction duration. Neither San Mateo County 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. As part of the project's environmental commitments, MidPen will make the best efforts to meet the following as part of construction of the Cypress Point project:

- Use at least 10 percent local building materials;
- Recycle or reuse at least 50 percent of construction waste or demolition materials.

Operational Emissions

For operational GHG emissions, the BAAQMD screening level is 78 dwelling units for low-rise apartments. Since, the project proposes 71 dwelling units, it is concluded that the operational GHG emissions would not exceed the BAAQMD significance thresholds. Therefore, this impact would be less than significant and no mitigation is required.

Impact 8: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? ***Less-than-significant.***

Plan Bay Area 2040

As required by Senate Bill 375, all metropolitan regions in California must complete a Sustainable Communities Strategy (SCS) as part of a Regional Transportation Plan. In the Bay Area, the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) are jointly responsible for developing and adopting a SCS that integrates transportation, land use and housing to meet greenhouse gas reduction targets set by the California Air Resources Board (CARB). Plan Bay Area 2040 is the latest update of the integrated long-range transportation and land use plan prepared by MTC and ABAG in compliance with SB 375. (MTC and ABAG. 2018)

The region adopted its previous plan — Plan Bay Area — in July 2013. As the Bay Area's first regional transportation plan to include a Sustainable Communities Strategy, the original Plan Bay Area charted a course for reducing per-capita greenhouse gas emissions through the promotion of more compact, mixed-use residential and commercial neighborhoods near transit. Plan Bay Area supported Priority Development Areas (PDAs) selected and approved by city and county governments. Development of PDAs is supported with planning grants, technical assistance, and prioritization for regional and state transportation and affordable housing funds. (MTC and ABAG. 2018)

Plan Bay Area 2040 is a limited and focused update that builds upon the growth pattern and strategies developed in the original Plan Bay Area, but with updated planning assumptions that incorporate key economic, demographic and financial trends from the last four years. It also provides both a roadmap for accommodating projected household and employment growth in the nine-county Bay Area by 2040, and a transportation investment strategy for the region. Plan Bay Area 2040 details how the Bay Area can make progress toward the region's long-range transportation and land use goals. (MTC and ABAG. 2018)

Compatibility of Proposed Project with Plan Bay Area 2040

While the Plan Bay Area 2040 addresses transportation and housing issues at a very large scale (the nine-county Bay Area), and the focus of the plan within San Mateo County is on the more densely developed San Francisco Bay side of the County, there are some aspects of the Plan Bay Area against which the proposed project can be evaluated. Specifically, Plan Bay Area 2040 includes several goals, objectives, and actions pertinent to the proposed project.

Plan Bay Area 2040, under Setting Goals and Targets to Address Challenges**,** states one of its goals as: "Plan Bay Area 2040 must include sufficient housing for all of the region's projected population growth, regardless of income." (MTC and ABAG. 2018)[14]

The Plan Bay Area 2040, under Action Plan, includes the following objective regarding housing: "Lower the share of income spent on housing and transportation costs, lessen displacement risk, and increase the availability of housing affordable to low- and moderate-income households." (MTC and ABAG. 2018)

The Plan Bay Area 2040 Action Plan, under Housing Production, Preservation and Protection section states: "Regional agencies will partner with state and local government, business leaders, and nongovernmental organizations (NGOs) to identify and implement game-changing housing solutions that will facilitate improved housing performance by: producing more housing, particularly housing affordable to very low-, low- and moderate-income households; preserving existing housing that is affordable to very low-, low- and moderate-income households; and lessening displacement risks faced by existing residents."

The proposed project is consistent with and would contribute to fulfilling the Plan Bay Area 2040 goal of providing housing for the Bay Area's population, regardless of income by providing affordable housing units within San Mateo County. Similarly, it is consistent with the Plan Bay Area 2040 objective of increasing the availability of housing for low- and moderate-income households, as that is the goal of the proposed project. Finally, it would be consistent with the Plan Bay Area 2040 action related to teaming with nongovernmental organizations to provide affordable housing, as MidPen is working with San Mateo County to provide affordable housing in the MidCoast region.

Thus, the proposed project is consistent with the Plan Bay Area 2040, and would contribute, although to a modest degree, to the fulfillment of the plan's goals, objectives, and actions. Therefore, this impact is less than significant, and no mitigation is required.

Impact 9: Other impacts related to Climate Change. ***Less-than-significant.***

The proposed project would not result in the loss of forestland, or convert forestland to non-forest uses (see discussion under "Agriculture and Forestry Resources" in the Preliminary Environmental Evaluation Report). The project site is located more than 500 feet from a cliff and does not involve the development of leach fields, so it would not expose new structures to accelerated coastal cliff or bluff erosion due to rising sea levels. The project site sits at an elevation of from 77 to 189 feet above mean sea level, so it is not threatened by sea level rise. Finally, the project is not within the 100-year floodplain, and would not result in the construction of any structures within the floodplain (see discussion under "Hydrology and Water Quality" in the Preliminary Environmental Evaluation Report). Therefore, this impact is less than significant, and no mitigation is required.

[14] Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). 2018. Plan Bay Area 2040 webpage. Accessed at: http://2040.planbayarea.org/; by Craig Stevens on May 25, 2018. Includes "What is Plan Bay Area 2040" and "Action Plan" web pages.

Attachment 1: 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.[1] 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.[2] This HRA used the recent 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.[3] 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 are 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 of exposure, and the exposure duration. 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). As recommended by the BAAQMD, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of 30 years for sources with long-term emissions (e.g., roadways).

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

[1] 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.
[2] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
[3] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. January 2016.

(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 that would 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)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

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

Parameter	*Exposure Type* →	Infant		Child		Adult
	Age Range →	3rd Trimester	0<2	2 < 9	2 < 16	16 - 30
DPM Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day)*		361	1,090	631	572	261
Inhalation Absorption Factor		1	1	1	1	1
Averaging Time (years)		70	70	70	70	70
Exposure Duration (years)		0.25	2	14	14	14
Exposure Frequency (days/year)		350	350	350	350	350
Age Sensitivity Factor		10	10	3	3	1
Fraction of Time at Home		0.85-1.0	0.85-1.0	0.72-1.0	0.72-1.0	0.73

* 95th percentile breathing rates for 3rd trimester and infants and 80th percentile for children and adults

Non-Cancer Hazards

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 Modeling Output and Risk Calculations

Cypress Point Affordable Housing, Moss Beach - San Mateo County, Annual

Cypress Point Affordable Housing, Moss Beach

San Mateo County, Annual

Construction TAC Emissions

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	142.00	Space	0.00	65,971.00	0
Condo/Townhouse	71.00	Dwelling Unit	5.80	76,401.00	203

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - From worksheet provided 6/13/2018. Assigned acreage to residential

Construction Phase - default

Trips and VMT - 0.5mi trip lengths to calculate risk from on- and near-site vehicle travel

Grading - assume balanced site

Construction Off-road Equipment Mitigation - Tier 4 engines. BAAQMD BMPs

Off-road Equipment -

Demolition -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblGrading	MaterialImported	0.00	7,000.00
tblLandUse	LandUseSquareFeet	56,800.00	65,971.00
tblLandUse	LandUseSquareFeet	71,000.00	76,401.00
tblLandUse	LotAcreage	1.28	0.00
tblLandUse	LotAcreage	4.44	5.80
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.2326	2.2375	1.4686	2.4000e-003	0.1607	0.1246	0.2853	0.0846	0.1164	0.2010	0.0000	215.6143	215.6143	0.0548	0.0000	216.9854
2019	0.7276	1.6003	1.3264	2.1100e-003	5.0100e-003	0.0924	0.0974	1.3700e-003	0.0867	0.0881	0.0000	185.7431	185.7431	0.0444	0.0000	186.8541
Maximum	**0.7276**	**2.2375**	**1.4686**	**2.4000e-003**	**0.1607**	**0.1246**	**0.2853**	**0.0846**	**0.1164**	**0.2010**	**0.0000**	**215.6143**	**215.6143**	**0.0548**	**0.0000**	**216.9854**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.1120	2.0621	1.5510	2.4000e-003	0.0396	0.0179	0.0575	0.0200	0.0178	0.0378	0.0000	215.6141	215.6141	0.0548	0.0000	216.9851
2019	0.6583	1.8032	1.4180	2.1100e-003	5.0100e-003	0.0166	0.0216	1.3700e-003	0.0166	0.0180	0.0000	185.7429	185.7429	0.0444	0.0000	186.8539
Maximum	**0.6583**	**2.0621**	**1.5510**	**2.4000e-003**	**0.0396**	**0.0179**	**0.0575**	**0.0200**	**0.0178**	**0.0378**	**0.0000**	**215.6141**	**215.6141**	**0.0548**	**0.0000**	**216.9851**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**19.78**	**-0.72**	**-6.22**	**0.00**	**73.07**	**84.11**	**79.32**	**75.17**	**83.04**	**80.70**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2018	8-31-2018	1.2838	1.0356
2	9-1-2018	11-30-2018	0.8939	0.8579
3	12-1-2018	2-28-2019	0.8270	0.8444
4	3-1-2019	5-31-2019	0.8153	0.8616
5	6-1-2019	8-31-2019	0.9794	1.0365
		Highest	1.2838	1.0365

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2018	6/28/2018	5	20	
2	Site Preparation	Site Preparation	6/29/2018	7/12/2018	5	10	
3	Grading	Grading	7/13/2018	8/9/2018	5	20	
4	Building Construction	Building Construction	8/10/2018	6/27/2019	5	230	
5	Paving	Paving	6/28/2019	7/25/2019	5	20	
6	Architectural Coating	Architectural Coating	7/26/2019	8/22/2019	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 154,712; Residential Outdoor: 51,571; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29

Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	875.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	79.00	18.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0372	0.3832	0.2230	3.9000e-004		0.0194	0.0194		0.0181	0.0181	0.0000	35.1241	35.1241	9.6800e-003	0.0000	35.3660
Total	**0.0372**	**0.3832**	**0.2230**	**3.9000e-004**		**0.0194**	**0.0194**		**0.0181**	**0.0181**	**0.0000**	**35.1241**	**35.1241**	**9.6800e-003**	**0.0000**	**35.3660**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	8.0000e-005	1.0200e-003	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1253	0.1253	1.0000e-005	0.0000	0.1254
Total	**1.6000e-004**	**8.0000e-005**	**1.0200e-003**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1253**	**0.1253**	**1.0000e-005**	**0.0000**	**0.1254**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0154	0.3163	0.2454	3.9000e-004		3.7400e-003	3.7400e-003		3.7400e-003	3.7400e-003	0.0000	35.1240	35.1240	9.6800e-003	0.0000	35.3660
Total	**0.0154**	**0.3163**	**0.2454**	**3.9000e-004**		**3.7400e-003**	**3.7400e-003**		**3.7400e-003**	**3.7400e-003**	**0.0000**	**35.1240**	**35.1240**	**9.6800e-003**	**0.0000**	**35.3660**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	8.0000e-005	1.0200e-003	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1253	0.1253	1.0000e-005	0.0000	0.1254
Total	**1.6000e-004**	**8.0000e-005**	**1.0200e-003**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1253**	**0.1253**	**1.0000e-005**	**0.0000**	**0.1254**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0228	0.2410	0.1124	1.9000e-004		0.0129	0.0129		0.0119	0.0119	0.0000	17.3800	17.3800	5.4100e-003	0.0000	17.5152
Total	**0.0228**	**0.2410**	**0.1124**	**1.9000e-004**	**0.0903**	**0.0129**	**0.1032**	**0.0497**	**0.0119**	**0.0615**	**0.0000**	**17.3800**	**17.3800**	**5.4100e-003**	**0.0000**	**17.5152**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	5.0000e-005	6.1000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0752	0.0752	0.0000	0.0000	0.0753
Total	**1.0000e-004**	**5.0000e-005**	**6.1000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0752**	**0.0752**	**0.0000**	**0.0000**	**0.0753**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust					0.0203	0.0000	0.0203	0.0112	0.0000	0.0112	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0500e-003	0.1686	0.1148	1.9000e-004		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	17.3799	17.3799	5.4100e-003	0.0000	17.5152
Total	**6.0500e-003**	**0.1686**	**0.1148**	**1.9000e-004**	**0.0203**	**7.1000e-004**	**0.0210**	**0.0112**	**7.1000e-004**	**0.0119**	**0.0000**	**17.3799**	**17.3799**	**5.4100e-003**	**0.0000**	**17.5152**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	5.0000e-005	6.1000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0752	0.0752	0.0000	0.0000	0.0753
Total	**1.0000e-004**	**5.0000e-005**	**6.1000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0752**	**0.0752**	**0.0000**	**0.0000**	**0.0753**

3.4 Grading - 2018

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust					0.0659	0.0000	0.0659	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0277	0.3067	0.1658	3.0000e-004		0.0155	0.0155		0.0143	0.0143	0.0000	27.1069	27.1069	8.4400e-003	0.0000	27.3178
Total	**0.0277**	**0.3067**	**0.1658**	**3.0000e-004**	**0.0659**	**0.0155**	**0.0814**	**0.0337**	**0.0143**	**0.0480**	**0.0000**	**27.1069**	**27.1069**	**8.4400e-003**	**0.0000**	**27.3178**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	1.2000e-003	0.0467	0.0146	5.0000e-005	3.7000e-004	8.0000e-005	4.6000e-004	1.0000e-004	8.0000e-005	1.8000e-004	0.0000	4.7028	4.7028	6.5000e-004	0.0000	4.7191
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	8.0000e-005	1.0200e-003	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1253	0.1253	1.0000e-005	0.0000	0.1254
Total	**1.3600e-003**	**0.0468**	**0.0156**	**5.0000e-005**	**4.8000e-004**	**8.0000e-005**	**5.7000e-004**	**1.3000e-004**	**8.0000e-005**	**2.1000e-004**	**0.0000**	**4.8280**	**4.8280**	**6.6000e-004**	**0.0000**	**4.8446**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0148	0.0000	0.0148	7.5900e-003	0.0000	7.5900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0101	0.2628	0.1899	3.0000e-004		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	27.1068	27.1068	8.4400e-003	0.0000	27.3178
Total	**0.0101**	**0.2628**	**0.1899**	**3.0000e-004**	**0.0148**	**1.1600e-003**	**0.0160**	**7.5900e-003**	**1.1600e-003**	**8.7500e-003**	**0.0000**	**27.1068**	**27.1068**	**8.4400e-003**	**0.0000**	**27.3178**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-003	0.0467	0.0146	5.0000e-005	3.7000e-004	8.0000e-005	4.6000e-004	1.0000e-004	8.0000e-005	1.8000e-004	0.0000	4.7028	4.7028	6.5000e-004	0.0000	4.7191
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	8.0000e-005	1.0200e-003	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1253	0.1253	1.0000e-005	0.0000	0.1254
Total	**1.3600e-003**	**0.0468**	**0.0156**	**5.0000e-005**	**4.8000e-004**	**8.0000e-005**	**5.7000e-004**	**1.3000e-004**	**8.0000e-005**	**2.1000e-004**	**0.0000**	**4.8280**	**4.8280**	**6.6000e-004**	**0.0000**	**4.8446**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1367	1.1929	0.8966	1.3700e-003		0.0765	0.0765		0.0719	0.0719	0.0000	121.2613	121.2613	0.0297	0.0000	122.0040
Total	**0.1367**	**1.1929**	**0.8966**	**1.3700e-003**		**0.0765**	**0.0765**		**0.0719**	**0.0719**	**0.0000**	**121.2613**	**121.2613**	**0.0297**	**0.0000**	**122.0040**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1700e-003	0.0646	0.0261	6.0000e-005	8.4000e-004	1.9000e-004	1.0300e-003	2.5000e-004	1.8000e-004	4.3000e-004	0.0000	6.3488	6.3488	7.9000e-004	0.0000	6.3685
Worker	4.3900e-003	2.1500e-003	0.0275	4.0000e-005	2.9700e-003	4.0000e-005	3.0100e-003	8.0000e-004	4.0000e-005	8.3000e-004	0.0000	3.3648	3.3648	1.5000e-004	0.0000	3.3686
Total	**6.5600e-003**	**0.0667**	**0.0536**	**1.0000e-004**	**3.8100e-003**	**2.3000e-004**	**4.0400e-003**	**1.0500e-003**	**2.2000e-004**	**1.2600e-003**	**0.0000**	**9.7136**	**9.7136**	**9.4000e-004**	**0.0000**	**9.7371**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0723	1.2008	0.9300	1.3700e-003		0.0119	0.0119		0.0119	0.0119	0.0000	121.2612	121.2612	0.0297	0.0000	122.0039
Total	**0.0723**	**1.2008**	**0.9300**	**1.3700e-003**		**0.0119**	**0.0119**		**0.0119**	**0.0119**	**0.0000**	**121.2612**	**121.2612**	**0.0297**	**0.0000**	**122.0039**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1700e-003	0.0646	0.0261	6.0000e-005	8.4000e-004	1.9000e-004	1.0300e-003	2.5000e-004	1.8000e-004	4.3000e-004	0.0000	6.3488	6.3488	7.9000e-004	0.0000	6.3685
Worker	4.3900e-003	2.1500e-003	0.0275	4.0000e-005	2.9700e-003	4.0000e-005	3.0100e-003	8.0000e-004	4.0000e-005	8.3000e-004	0.0000	3.3648	3.3648	1.5000e-004	0.0000	3.3686
Total	**6.5600e-003**	**0.0667**	**0.0536**	**1.0000e-004**	**3.8100e-003**	**2.3000e-004**	**4.0400e-003**	**1.0500e-003**	**2.2000e-004**	**1.2600e-003**	**0.0000**	**9.7136**	**9.7136**	**9.4000e-004**	**0.0000**	**9.7371**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1511	1.3490	1.0985	1.7200e-003		0.0826	0.0826		0.0776	0.0776	0.0000	150.4667	150.4667	0.0367	0.0000	151.3831
Total	**0.1511**	**1.3490**	**1.0985**	**1.7200e-003**		**0.0826**	**0.0826**		**0.0776**	**0.0776**	**0.0000**	**150.4667**	**150.4667**	**0.0367**	**0.0000**	**151.3831**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4300e-003	0.0780	0.0305	8.0000e-005	1.0500e-003	2.1000e-004	1.2600e-003	3.1000e-004	2.0000e-004	5.1000e-004	0.0000	7.9031	7.9031	9.2000e-004	0.0000	7.9260
Worker	4.9200e-003	2.3400e-003	0.0305	5.0000e-005	3.7300e-003	5.0000e-005	3.7800e-003	1.0000e-003	5.0000e-005	1.0500e-003	0.0000	4.0939	4.0939	1.6000e-004	0.0000	4.0980
Total	**7.3500e-003**	**0.0803**	**0.0610**	**1.3000e-004**	**4.7800e-003**	**2.6000e-004**	**5.0400e-003**	**1.3100e-003**	**2.5000e-004**	**1.5600e-003**	**0.0000**	**11.9970**	**11.9970**	**1.0800e-003**	**0.0000**	**12.0240**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0871	1.5033	1.1638	1.7200e-003		0.0141	0.0141		0.0141	0.0141	0.0000	150.4665	150.4665	0.0367	0.0000	151.3829
Total	**0.0871**	**1.5033**	**1.1638**	**1.7200e-003**		**0.0141**	**0.0141**		**0.0141**	**0.0141**	**0.0000**	**150.4665**	**150.4665**	**0.0367**	**0.0000**	**151.3829**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4300e-003	0.0780	0.0305	8.0000e-005	1.0500e-003	2.1000e-004	1.2600e-003	3.1000e-004	2.0000e-004	5.1000e-004	0.0000	7.9031	7.9031	9.2000e-004	0.0000	7.9260
Worker	4.9200e-003	2.3400e-003	0.0305	5.0000e-005	3.7300e-003	5.0000e-005	3.7800e-003	1.0000e-003	5.0000e-005	1.0500e-003	0.0000	4.0939	4.0939	1.6000e-004	0.0000	4.0980
Total	**7.3500e-003**	**0.0803**	**0.0610**	**1.3000e-004**	**4.7800e-003**	**2.6000e-004**	**5.0400e-003**	**1.3100e-003**	**2.5000e-004**	**1.5600e-003**	**0.0000**	**11.9970**	**11.9970**	**1.0800e-003**	**0.0000**	**12.0240**

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0145	0.1524	0.1467	2.3000e-004		8.2500e-003	8.2500e-003		7.5900e-003	7.5900e-003	0.0000	20.4752	20.4752	6.4800e-003	0.0000	20.6371
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0145**	**0.1524**	**0.1467**	**2.3000e-004**		**8.2500e-003**	**8.2500e-003**		**7.5900e-003**	**7.5900e-003**	**0.0000**	**20.4752**	**20.4752**	**6.4800e-003**	**0.0000**	**20.6371**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	7.0000e-005	9.1000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1215	0.1215	0.0000	0.0000	0.1216
Total	**1.5000e-004**	**7.0000e-005**	**9.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1215**	**0.1215**	**0.0000**	**0.0000**	**0.1216**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.3100e-003	0.2012	0.1730	2.3000e-004		1.0000e-003	1.0000e-003		1.0000e-003	1.0000e-003	0.0000	20.4752	20.4752	6.4800e-003	0.0000	20.6371
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.3100e-003**	**0.2012**	**0.1730**	**2.3000e-004**		**1.0000e-003**	**1.0000e-003**		**1.0000e-003**	**1.0000e-003**	**0.0000**	**20.4752**	**20.4752**	**6.4800e-003**	**0.0000**	**20.6371**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	7.0000e-005	9.1000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1215	0.1215	0.0000	0.0000	0.1216
Total	**1.5000e-004**	**7.0000e-005**	**9.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1215**	**0.1215**	**0.0000**	**0.0000**	**0.1216**

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5516					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6600e-003	0.0184	0.0184	3.0000e-005		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	2.5533	2.5533	2.2000e-004	0.0000	2.5587
Total	**0.5542**	**0.0184**	**0.0184**	**3.0000e-005**		**1.2900e-003**	**1.2900e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**2.5533**	**2.5533**	**2.2000e-004**	**0.0000**	**2.5587**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	7.0000e-005	9.7000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1296	0.1296	1.0000e-005	0.0000	0.1297
Total	**1.6000e-004**	**7.0000e-005**	**9.7000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1296**	**0.1296**	**1.0000e-005**	**0.0000**	**0.1297**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5516					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6600e-003	0.0184	0.0184	3.0000e-005		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	2.5533	2.5533	2.2000e-004	0.0000	2.5586
Total	**0.5542**	**0.0184**	**0.0184**	**3.0000e-005**		**1.2900e-003**	**1.2900e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**2.5533**	**2.5533**	**2.2000e-004**	**0.0000**	**2.5586**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	7.0000e-005	9.7000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1296	0.1296	1.0000e-005	0.0000	0.1297
Total	**1.6000e-004**	**7.0000e-005**	**9.7000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1296**	**0.1296**	**1.0000e-005**	**0.0000**	**0.1297**

County Review Draft

Project Name: Cypress Point Affordable Housing

Project Size

71 Dwelling Units | 5.8 total project acres disturbed

72941 s.f. residential | s.f. retail

s.f. office/commercial | 3460 s.f. other, community room

13076 s.f. other, specify:

s.f. parking garage | spaces

65,971 s.f. parking lot | 142 spaces

Construction Hours am to pm

Complete ALL Portions in Yellow

Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	Comments
	Demolition	**Start Date:**	**6/1/2018**	**Total phase:**	**20**		**Overall Import/Export Volumes**
		End Date:					
1	Concrete/Industrial Saws	81	0.73	8	20	8	**Demolition Volume**
3	Excavators	162	0.38	8	20	8	Square footage of buildings to be demolished
2	Rubber-Tired Dozers	255	0.4	8	20	8	(*or* total tons to be hauled)
	Tractors/Loaders/Backhoes	97	0.37			0	**?** square feet *or*
							? Hauling volume (tons)
	Site Preperation	**Start Date:**		**Total phase:**	**10**		Any pavement demolished and hauled? **? tons**
		End Date:					**Soil Hauling Volume**
	Graders	174	0.41			0	
3	Rubber Tired Dozers	255	0.4	8	10	8	Export volume = **?** cubic yards?
4	Tractors/Loaders/Backhoes	97	0.37	8	10	8	Import volume = **?** cubic yards?
	Grading / Excavation	**Start Date:**		**Total phase:**	**30**		
		End Date:					**Soil Hauling Volume**
2	Scrapers	**361**	**0.48**	8	30	8	
2	Excavators	162	0.38	8	30	8	Export volume = cubic yards?
1	Graders	174	0.41	8	30	8	Import volume = 7,000 cubic yards?
	Rubber Tired Dozers	255	0.4			0	
2	Tractors/Loaders/Backhoes	97	0.37	8	30	8	
	Other Equipment?						
	Building - Exterior	**Start Date:**		**Total phase:**	**300**		**Cement Trucks? ? Total Round-Trips**
		End Date:					
1	Cranes	226	0.29	7	300	7	Electric? (Y/N) ___ Otherwise assumed diesel
3	Forklifts	89	0.2	8	300	8	Liquid Propane (LPG)? (Y/N) ___ Otherwise Assumed diesel
1	Generator Sets	84	0.74	8	300	8	Or temporary line power? (Y/N) ___
3	Tractors/Loaders/Backhoes	97	0.37	7	300	7	otherwise, assume diesel generator
1	Welders	46	0.45	8	300	8	
	Other Equipment?					0	
	Building - Interior/Architectural Coating	**Start Date:**		**Total phase:**	**20**		
		End Date:					
1	Air Compressors	78	0.48	6	20	6	
	Aerial Lift	62	0.31			0	
	Other Equipment?						
	Paving	**Start Date:**		**Total phase:**	**20**		
		Start Date:					
	Cement and Mortar Mixers	9	0.56			0	
2	Pavers	125	0.42	8	20	8	**Asphalt? ___ cubic yards or ____ round trips?**
2	Paving Equipment	130	0.36	8	20	8	
2	Rollers	80	0.38	8	20	8	
	Tractors/Loaders/Backhoes	97	0.37			0	
	Other Equipment?						

Equipment listed in this sheet is to provide an example of inputs

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horepower or load factor, as appropriate

Typical Equipment Type & Load Factors

OFFROAD Equipment Type	HP	Load Factor
Aerial Lifts	62	0.31
Air Compressors	78	0.48
Bore/Drill Rigs	205	0.5
Cement and Mortar Mixers	9	0.56
Concrete/Industrial Saws	81	0.73
Cranes	226	0.29
Crawler Tractors	208	0.43
Crushing/Proc. Equipment	85	0.78
Dumpers/Tenders	16	0.38
Excavators	162	0.38
Forklifts	89	0.2
Generator Sets	84	0.74
Graders	174	0.41
Off-Highway Tractors	122	0.44
Off-Highway Trucks	400	0.38
Other Construction Equipment	171	0.42
Other General Industrial Equipment	150	0.34
Other Material Handling Equipment	167	0.4
Pavers	125	0.42
Paving Equipment	130	0.36
Plate Compactors	8	0.43
Scrapers	361	0.48
Signal Boards	6	0.82
Skid Steer Loaders	64	0.37
Surfacing Equipment	253	0.3
Sweepers/Scrubbers	64	0.46
Tractors/Loaders/Backhoes	97	0.37
Trenchers	80	0.5
Welders	46	0.45

Cypress Point, Moss Beach, California

DPM Emissions and Modeling Emission Rates

Emissions Model Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2018	Construction	0.1246	DPM	249.2	0.07586	9.56E-03	46,302	**2.06E-07**
2019	Construction	0.0924	DPM	184.8	0.05626	7.09E-03	46,302	**1.53E-07**
Total		***0.2170***		***434.0***	***0.1321***	***0.0166***		
		Operation Hours						
		hr/day =	9	(7am - 4pm)				
		days/yr =	365					
		hours/year =	3285					
	Old:		Adj.					
	2018	0.1409	0.884315117					
	2019	0.144	0.641666667					

Cypress Point, Moss Beach, California

PM2.5 Fugitive Dust Emissions for Modeling

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	(lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2018	Construction	FUG	0.0846	169.2	0.05151	6.49E-03	46,302	**1.40E-07**
2019	Construction	FUG	0.0014	2.8	0.00085	1.07E-04	46,302	**2.32E-09**
Total			***0.086***	***172.0***	***0.0524***	***0.0066***		
		Operation Hours						
		hr/day =	9	(7am - 4pm)				
		days/yr =	365					
		hours/year =	3285					
		Old:		Adj.				
		2018	0.1041	0.81268				
		2019	0.0011	1.272727				

County Review Draft

Cypress Point, Moss Beach, California
Maximum DPM Cancer Risk Calculations From Construction
Impacts at Off-Site Receptors-1.5 meter

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 - 9**	**2 - 16**	**16 - 30**
Parameter					
ASF =	10	10	3	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	631	572	261
A =	1	1	1	1	1
EF =	350	350	350	350	350
AT =	70	70	70	70	70
FAH =	1.00	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				Infant/Child	Adult - Exposure Information			Adult		
	Exposure		DPM Conc (ug/m3)		Age	Cancer	Modeled DPM Conc (ug/m3)		Age	Cancer		
Exposure	Duration				Sensitivity	Risk			Sensitivity	Risk	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	PM2.5	PM2.5
0	0.25	-0.25 - 0*	-	-	10	-	-	-	-	-		
1	1	0 - 1	2018	0.1601	10	26.29	2018	0.1601	1	0.46	0.2498	0.410
2	1	1 - 2	2019	0.1191	10	19.57	2019	0.1191	1	0.34	0.0042	0.123
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00		
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						**45.86**				**0.80**		

* Third trimester of pregnancy

Cypress Point, Moss Beach, California

Maximum Impacts at Construction MEI Location

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million): Child	Cancer Risk (per million): Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2018	0.1601	0.2498	26.3	0.5	0.032	0.41
2019	0.1191	0.0042	19.6	0.3	0.024	0.12
Maximum	0.1601	0.2498	45.9	0.8	0.032	0.41

Old	0.181	0.30735
	0.18566	0.00329
	Adj.	Adj.
	0.8843	0.8127
	0.6417	1.2727

County Review Draft

Bay Area Air Quality Management District
Risk & Hazard Stationary Source Inquiry Form

This form is required when users request stationary source data from BAAQMD. This form is to be used with the BAAQMD's Google Earth stationary source screening tables.
For guidance on conducting a risk & hazard screening, including for roadways & freeways, refer to the District's Risk & Hazard Analysis flow chart.

Table A: Requestor Contact Information	
Contact Name:	Josh Carman
Affiliation:	Illingworth & Rodkin
Phone:	(707) 794-0400
Email:	jcarman@illingworthrodkin.com
Date of Request	11/13/2017
Project Name:	Cypress Point
Address:	Sierra St and Carlos St
City:	Moss Beach
County:	San Mateo
Type (residential, commercial, mixed use, industrial, etc.):	Residential
Project size (# of units, or building square feet):	71
Comments:	

For Air District assistance, the following steps must be completed:
Complete all the contact and project information requested in Table A. Incomplete forms will not be processed. Please include a project site map.
Download and install the free program Google Earth, http://www.google.com/earth/download/ge/, and then download the county specific Google Earth stationary source application files from the District's website, http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx.
The small points on the map represent stationary sources permitted by the District (Map A on right). These permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc. Click on a point to view the source's Information Table, including the name, location, and preliminary estimated cancer risk, hazard index, and PM2.5 concentration.
Find the project site in Google Earth by inputting the site's address in the Google Earth search box.
Using the Google Earth ruler function, measure the distance in feet between the project's fenceline and the stationary source's fenceline for all the sources that are within 1,000 feet of the project's fenceline. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google Earth address search box to confirm that the source is within 1,000 feet of the project. Please report any mapping errors to the District (District contact information in Step 9).
If the stationary source is within 1,000 feet of the project's fenceline and the stationary source's information table does not list the cancer risk, hazard index, and PM2.5 concentration, and instead says to "Contact District Staff", list the stationary source information in Table B Section 1 below.
Note that a small percentage of the stationary sources have Health Risk Screening Assessment (HRSA) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant Name (Map B on right). If HRSA values are presented, these values have already been modeled and cannot be adjusted further.
Email this completed form to District staff (Step 9). District staff will provide the most recent risk, hazard, and PM2.5 data that are available for the source(s). If this information or data are not available, source emissions data will be provided. Staff will respond to inquiries within three weeks.
Note that a public records request received for the same stationary source information will cancel the processing of your SSIF request.
Submit forms, maps, and questions to Alison Kirk at 415-749-5169, or akirk@baaqmd.gov .

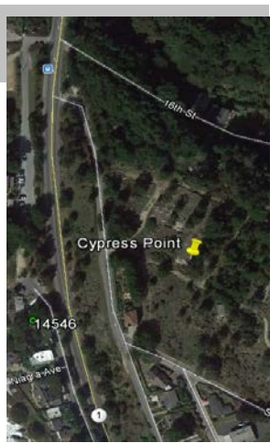


Table B: Stationary Sources within 1,000 feet of Receptor that say "Contact District Staff"

Table B Section 1: Requestor fills out these columns based on Google Earth data				Table B Section 2: BAAQMD returns form with additional information in these columns as needed								
Distance from Receptor (feet)	**Receptor**	**Plant # or Gas Dispensary #**	**Facility Name**	**Street Address**	**2012 Screening Level Cancer Risk (1)**	**2012 Screening Level Hazard Index (1)**	**2012 Screening Level PM2.5 (1)**	**Adjusted Risk**	**Adjusted HI**	**Adjusted PM**	**Distance to Threshold Cancer Risk**	**Multiplier**
?		14546	Sewer Authority Mid-Coastside	16th St & Cabrillo Hwy	14.17	0.005	0.025					
			Adjusted to 450 feet		2.9	0.000	0.000					

Footnotes:
1. These Cancer Risk, Hazard Index, and PM2.5 columns represent the rows in the Google Earth Plant Information Table that say "Contact District Staff" (Map A above). BAAQMD will return this form to you with this screening level information entered in these columns.
2. Each plant may have multiple permits and sources.
3. Fuel codes: 98 = diesel, 189 = Natural Gas.
4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.
5. If a Health Risk Screening Assessment (HRSA) was completed for the source, the application number will be listed here.
6. The date that the HRSA was completed.
7. Engineer who completed the HRSA. For District purposes only.
8. All HRSA completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.
9. The HRSA "Chronic Health" number represents the Hazard Index.
10. Further information about common sources:
    a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.
    b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard index of 0.003 or less. To be conservative, requestor should assume the cancer risk is 1 in a million and the hazard index is 0.003 for these sources.
    c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010.
    Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.
    d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period, but instead should reflect the number of years perc use will continue after the project's residents or other sensitive receptors (such as students, patients, etc) take occupancy.
    e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Mulitplier worksheet.
    f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
    g. This spray booth is considered to be insignificant.

Date last updated:
3/12/12

County Review Draft

BAY AREA AIR QUALITY MANAGEMENT DISTRICT Printed: NOV 14, 2017
DETAIL POLLUTANTS - ABATED
MOST RECENT P/O APPROVED (2016)

Sewer Authority Mid-Coastside (P# 14546)

S#	SOURCE NAME / MATERIAL	SOURCE CODE / THROUGHPUT	DATE	POLLUTANT	CODE	LBS/DAY
1	Diesel Engine, Cummins model NT-855G, emergency standby	C2250098				
				Benzene	41	7.53E-04
				Formaldehyde	124	6.23E-05
				Organics (other, including	990	3.64E-02
				Arsenic (all)	1030	6.56E-07
				Beryllium (all) pollutant	1040	3.85E-07
				Cadmium	1070	1.64E-06
				Chromium (hexavalent)	1095	3.39E-08
				Lead (all) pollutant	1140	1.39E-06
				Manganese	1160	2.18E-06
				Nickel pollutant	1180	2.65E-05
				Mercury (all) pollutant	1190	4.64E-07
				Diesel Engine Exhaust Part	1350	3.79E-02
				PAH's (non-speciated)	1840	3.46E-06
				Nitrous Oxide (N2O)	2030	2.02E-04
				Nitrogen Oxides (part not	2990	5.30E-01
				Sulfur Dioxide (SO2)	3990	2.46E-04
				Carbon Monoxide (CO) pollu	4990	1.15E-01
				Carbon Dioxide, non-biogen	6960	2.52E+01
				Methane (CH4)	6970	1.01E-03



Link 41 (6ft elevation)

	PM2.5	Risk	Chron.HI	Acute.HI
10 ft W	0.091	6.712	0.008	0.036
25 ft W	0.070	5.216	0.006	0.027
50 ft W	0.054	3.996	0.005	0.020
75 ft W	0.045	3.333	0.004	0.015
100 ft W	0.039	2.910	0.003	0.012
200 ft W	0.028	2.114	0.002	0.010
300 ft W	0.023	1.762	0.002	0.010
400 ft W	0.021	1.559	0.002	0.010
500 ft W	0.019	1.421	0.001	0.011
750 ft W	0.016	1.210	0.001	0.012
1000 ft W	0.014	1.074	0.001	0.008
10 ft E	0.172	12.194	0.016	0.021
25 ft E	0.133	9.431	0.012	0.017
50 ft E	0.101	7.149	0.009	0.012
75 ft E	0.083	5.898	0.008	0.010
100 ft E	0.071	5.099	0.006	0.008
200 ft E	0.049	3.540	0.004	0.006
300 ft E	0.040	2.853	0.003	0.006
400 ft E	0.034	2.465	0.003	0.005
500 ft E	0.031	2.204	0.003	0.005
750 ft E	0.025	1.775	0.002	0.003
1000 ft E	0.020	1.478	0.002	0.003

Cypress Point Affordable Housing, Moss Beach

San Mateo County, Annual

GHG Emissions

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	142.00	Space	0.00	65,971.00	0
Condo/Townhouse	71.00	Dwelling Unit	5.80	76,401.00	203

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage from 6/13/2018 worksheet

Construction Phase - default

Trips and VMT - 0.5mi trip lengths to calculate risk from on- and near-site vehicle travel

Grading - from 6/13/2018 worksheet

Construction Off-road Equipment Mitigation - Tier 2 engines w/ DPF Level 3. BAAQMD BMPs

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15

tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblLandUse	LandUseSquareFeet	56,800.00	65,971.00
tblLandUse	LandUseSquareFeet	71,000.00	76,401.00
tblLandUse	LotAcreage	1.28	0.00
tblLandUse	LotAcreage	4.44	5.80
tblTripsAndVMT	HaulingTripNumber	0.00	692.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.2474	2.3867	1.5976	3.1300e-003	0.2024	0.1260	0.3284	0.0959	0.1177	0.2136	0.0000	286.3061	286.3061	0.0597	0.0000	287.7988
2019	0.7413	1.6781	1.4352	2.6900e-003	0.0498	0.0934	0.1431	0.0134	0.0877	0.1011	0.0000	240.6412	240.6412	0.0469	0.0000	241.8124
Maximum	**0.7413**	**2.3867**	**1.5976**	**3.1300e-003**	**0.2024**	**0.1260**	**0.3284**	**0.0959**	**0.1177**	**0.2136**	**0.0000**	**286.3061**	**286.3061**	**0.0597**	**0.0000**	**287.7988**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.1069	2.2222	1.6629	3.1300e-003	0.0816	0.0119	0.0935	0.0313	0.0118	0.0431	0.0000	286.3058	286.3058	0.0597	0.0000	287.7985
2019	0.6526	1.8904	1.5068	2.6900e-003	0.0498	0.0111	0.0609	0.0134	0.0110	0.0245	0.0000	240.6410	240.6410	0.0469	0.0000	241.8122
Maximum	**0.6526**	**2.2222**	**1.6629**	**3.1300e-003**	**0.0816**	**0.0119**	**0.0935**	**0.0313**	**0.0118**	**0.0431**	**0.0000**	**286.3058**	**286.3058**	**0.0597**	**0.0000**	**287.7985**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**23.18**	**-1.18**	**-4.51**	**0.00**	**47.90**	**89.53**	**67.27**	**59.07**	**88.89**	**78.54**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**6-1-2018**	**8-31-2018**	1.3768	1.1336
2	**9-1-2018**	**11-30-2018**	0.9448	0.8982
3	**12-1-2018**	**2-28-2019**	0.8758	0.8851
4	**3-1-2019**	**5-31-2019**	0.8609	0.9002
5	**6-1-2019**	**8-31-2019**	0.9934	1.0520
		Highest	1.3768	1.1336

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5379	9.9000e-003	0.7558	4.8000e-004		0.0352	0.0352		0.0352	0.0352	3.2369	2.1932	5.4301	6.0500e-003	2.1000e-004	5.6446
Energy	8.7000e-003	0.0743	0.0316	4.7000e-004		6.0100e-003	6.0100e-003		6.0100e-003	6.0100e-003	0.0000	196.0829	196.0829	6.6200e-003	2.6100e-003	197.0254

Mobile	0.1054	0.3353	1.1872	3.8500e-003	0.3435	4.2200e-003	0.3478	0.0923	3.9600e-003	0.0963	0.0000	351.8708	351.8708	0.0132	0.0000	352.2002
Waste						0.0000	0.0000		0.0000	0.0000	6.6297	0.0000	6.6297	0.3918	0.0000	16.4248
Water						0.0000	0.0000		0.0000	0.0000	1.4676	10.2512	11.7188	0.1512	3.6600e-003	16.5880
Total	**0.6520**	**0.4196**	**1.9747**	**4.8000e-003**	**0.3435**	**0.0454**	**0.3889**	**0.0923**	**0.0451**	**0.1374**	**11.3342**	**560.3981**	**571.7322**	**0.5689**	**6.4800e-003**	**587.8829**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5379	9.9000e-003	0.7558	4.8000e-004		0.0352	0.0352		0.0352	0.0352	3.2369	2.1932	5.4301	6.0500e-003	2.1000e-004	5.6446
Energy	8.7000e-003	0.0743	0.0316	4.7000e-004		6.0100e-003	6.0100e-003		6.0100e-003	6.0100e-003	0.0000	196.0829	196.0829	6.6200e-003	2.6100e-003	197.0254
Mobile	0.1054	0.3353	1.1872	3.8500e-003	0.3435	4.2200e-003	0.3478	0.0923	3.9600e-003	0.0963	0.0000	351.8708	351.8708	0.0132	0.0000	352.2002
Waste						0.0000	0.0000		0.0000	0.0000	6.6297	0.0000	6.6297	0.3918	0.0000	16.4248
Water						0.0000	0.0000		0.0000	0.0000	1.4676	10.2512	11.7188	0.1512	3.6600e-003	16.5880
Total	**0.6520**	**0.4196**	**1.9747**	**4.8000e-003**	**0.3435**	**0.0454**	**0.3889**	**0.0923**	**0.0451**	**0.1374**	**11.3342**	**560.3981**	**571.7322**	**0.5689**	**6.4800e-003**	**587.8829**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2018	6/28/2018	5	20	

2	Site Preparation	Site Preparation	6/29/2018	7/12/2018	5	10	
3	Grading	Grading	7/13/2018	8/9/2018	5	20	
4	Building Construction	Building Construction	8/10/2018	6/27/2019	5	230	
5	Paving	Paving	6/28/2019	7/25/2019	5	20	
6	Architectural Coating	Architectural Coating	7/26/2019	8/22/2019	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 154,712; Residential Outdoor: 51,571; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	692.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	79.00	18.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0372	0.3832	0.2230	3.9000e-004		0.0194	0.0194		0.0181	0.0181	0.0000	35.1241	35.1241	9.6800e-003	0.0000	35.3660
Total	**0.0372**	**0.3832**	**0.2230**	**3.9000e-004**		**0.0194**	**0.0194**		**0.0181**	**0.0181**	**0.0000**	**35.1241**	**35.1241**	**9.6800e-003**	**0.0000**	**35.3660**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.6000e-004	3.6000e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0482	1.0482	2.0000e-005	0.0000	1.0488
Total	**4.9000e-004**	**3.6000e-004**	**3.6000e-003**	**1.0000e-005**	**1.1800e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0482**	**1.0482**	**2.0000e-005**	**0.0000**	**1.0488**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0126	0.3266	0.2467	3.9000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	35.1240	35.1240	9.6800e-003	0.0000	35.3660
Total	**0.0126**	**0.3266**	**0.2467**	**3.9000e-004**		**1.3700e-003**	**1.3700e-003**		**1.3700e-003**	**1.3700e-003**	**0.0000**	**35.1240**	**35.1240**	**9.6800e-003**	**0.0000**	**35.3660**

Mitigated Construction Off-Site

County Review Draft

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.6000e-004	3.6000e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0482	1.0482	2.0000e-005	0.0000	1.0488
Total	**4.9000e-004**	**3.6000e-004**	**3.6000e-003**	**1.0000e-005**	**1.1800e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0482**	**1.0482**	**2.0000e-005**	**0.0000**	**1.0488**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0228	0.2410	0.1124	1.9000e-004		0.0129	0.0129		0.0119	0.0119	0.0000	17.3800	17.3800	5.4100e-003	0.0000	17.5152
Total	**0.0228**	**0.2410**	**0.1124**	**1.9000e-004**	**0.0903**	**0.0129**	**0.1032**	**0.0497**	**0.0119**	**0.0615**	**0.0000**	**17.3800**	**17.3800**	**5.4100e-003**	**0.0000**	**17.5152**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-004	2.1000e-004	2.1600e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6289	0.6289	1.0000e-005	0.0000	0.6293
Total	**2.9000e-004**	**2.1000e-004**	**2.1600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6289**	**0.6289**	**1.0000e-005**	**0.0000**	**0.6293**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0203	0.0000	0.0203	0.0112	0.0000	0.0112	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0500e-003	0.1686	0.1148	1.9000e-004		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	17.3799	17.3799	5.4100e-003	0.0000	17.5152
Total	**6.0500e-003**	**0.1686**	**0.1148**	**1.9000e-004**	**0.0203**	**7.1000e-004**	**0.0210**	**0.0112**	**7.1000e-004**	**0.0119**	**0.0000**	**17.3799**	**17.3799**	**5.4100e-003**	**0.0000**	**17.5152**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-004	2.1000e-004	2.1600e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6289	0.6289	1.0000e-005	0.0000	0.6293
Total	**2.9000e-004**	**2.1000e-004**	**2.1600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6289**	**0.6289**	**1.0000e-005**	**0.0000**	**0.6293**

County Review Draft

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0277	0.3067	0.1658	3.0000e-004		0.0155	0.0155		0.0143	0.0143	0.0000	27.1069	27.1069	8.4400e-003	0.0000	27.3178
Total	**0.0277**	**0.3067**	**0.1658**	**3.0000e-004**	**0.0655**	**0.0155**	**0.0810**	**0.0337**	**0.0143**	**0.0479**	**0.0000**	**27.1069**	**27.1069**	**8.4400e-003**	**0.0000**	**27.3178**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.6800e-003	0.1277	0.0462	2.9000e-004	5.7900e-003	5.3000e-004	6.3100e-003	1.5900e-003	5.0000e-004	2.0900e-003	0.0000	29.7401	29.7401	3.5400e-003	0.0000	29.8285
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.6000e-004	3.6000e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0482	1.0482	2.0000e-005	0.0000	1.0488
Total	**4.1700e-003**	**0.1281**	**0.0498**	**3.0000e-004**	**6.9700e-003**	**5.4000e-004**	**7.5000e-003**	**1.9000e-003**	**5.1000e-004**	**2.4100e-003**	**0.0000**	**30.7883**	**30.7883**	**3.5600e-003**	**0.0000**	**30.8773**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Fugitive Dust					0.0147	0.0000	0.0147	7.5800e-003	0.0000	7.5800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0101	0.2628	0.1899	3.0000e-004		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	27.1068	27.1068	8.4400e-003	0.0000	27.3178
Total	**0.0101**	**0.2628**	**0.1899**	**3.0000e-004**	**0.0147**	**1.1600e-003**	**0.0159**	**7.5800e-003**	**1.1600e-003**	**8.7400e-003**	**0.0000**	**27.1068**	**27.1068**	**8.4400e-003**	**0.0000**	**27.3178**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.6800e-003	0.1277	0.0462	2.9000e-004	5.7900e-003	5.3000e-004	6.3100e-003	1.5900e-003	5.0000e-004	2.0900e-003	0.0000	29.7401	29.7401	3.5400e-003	0.0000	29.8285
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.6000e-004	3.6000e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0482	1.0482	2.0000e-005	0.0000	1.0488
Total	**4.1700e-003**	**0.1281**	**0.0498**	**3.0000e-004**	**6.9700e-003**	**5.4000e-004**	**7.5000e-003**	**1.9000e-003**	**5.1000e-004**	**2.4100e-003**	**0.0000**	**30.7883**	**30.7883**	**3.5600e-003**	**0.0000**	**30.8773**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1367	1.1929	0.8966	1.3700e-003		0.0765	0.0765		0.0719	0.0719	0.0000	121.2613	121.2613	0.0297	0.0000	122.0040
Total	**0.1367**	**1.1929**	**0.8966**	**1.3700e-003**		**0.0765**	**0.0765**		**0.0719**	**0.0719**	**0.0000**	**121.2613**	**121.2613**	**0.0297**	**0.0000**	**122.0040**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.8900e-003	0.1247	0.0476	2.5000e-004	5.9800e-003	9.6000e-004	6.9400e-003	1.7300e-003	9.2000e-004	2.6500e-003	0.0000	24.8144	24.8144	2.2100e-003	0.0000	24.8696
Worker	0.0132	9.5600e-003	0.0967	3.1000e-004	0.0317	2.0000e-004	0.0319	8.4400e-003	1.9000e-004	8.6300e-003	0.0000	28.1541	28.1541	6.6000e-004	0.0000	28.1707
Total	**0.0180**	**0.1343**	**0.1443**	**5.6000e-004**	**0.0377**	**1.1600e-003**	**0.0389**	**0.0102**	**1.1100e-003**	**0.0113**	**0.0000**	**52.9685**	**52.9685**	**2.8700e-003**	**0.0000**	**53.0403**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0551	1.2013	0.9116	1.3700e-003		6.9100e-003	6.9100e-003		6.9100e-003	6.9100e-003	0.0000	121.2612	121.2612	0.0297	0.0000	122.0039
Total	**0.0551**	**1.2013**	**0.9116**	**1.3700e-003**		**6.9100e-003**	**6.9100e-003**		**6.9100e-003**	**6.9100e-003**	**0.0000**	**121.2612**	**121.2612**	**0.0297**	**0.0000**	**122.0039**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.8900e-003	0.1247	0.0476	2.5000e-004	5.9800e-003	9.6000e-004	6.9400e-003	1.7300e-003	9.2000e-004	2.6500e-003	0.0000	24.8144	24.8144	2.2100e-003	0.0000	24.8696
Worker	0.0132	9.5600e-003	0.0967	3.1000e-004	0.0317	2.0000e-004	0.0319	8.4400e-003	1.9000e-004	8.6300e-003	0.0000	28.1541	28.1541	6.6000e-004	0.0000	28.1707
Total	**0.0180**	**0.1343**	**0.1443**	**5.6000e-004**	**0.0377**	**1.1600e-003**	**0.0389**	**0.0102**	**1.1100e-003**	**0.0113**	**0.0000**	**52.9685**	**52.9685**	**2.8700e-003**	**0.0000**	**53.0403**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1511	1.3490	1.0985	1.7200e-003		0.0826	0.0826		0.0776	0.0776	0.0000	150.4667	150.4667	0.0367	0.0000	151.3831
Total	**0.1511**	**1.3490**	**1.0985**	**1.7200e-003**		**0.0826**	**0.0826**		**0.0776**	**0.0776**	**0.0000**	**150.4667**	**150.4667**	**0.0367**	**0.0000**	**151.3831**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.4700e-003	0.1471	0.0565	3.1000e-004	7.5100e-003	1.0200e-003	8.5200e-003	2.1700e-003	9.7000e-004	3.1400e-003	0.0000	30.8166	30.8166	2.7200e-003	0.0000	30.8846
Worker	0.0150	0.0105	0.1085	3.8000e-004	0.0398	2.6000e-004	0.0401	0.0106	2.4000e-004	0.0108	0.0000	34.2308	34.2308	7.3000e-004	0.0000	34.2491
Total	**0.0204**	**0.1576**	**0.1650**	**6.9000e-004**	**0.0473**	**1.2800e-003**	**0.0486**	**0.0128**	**1.2100e-003**	**0.0140**	**0.0000**	**65.0473**	**65.0473**	**3.4500e-003**	**0.0000**	**65.1337**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0692	1.5075	1.1439	1.7200e-003		8.6700e-003	8.6700e-003		8.6700e-003	8.6700e-003	0.0000	150.4665	150.4665	0.0367	0.0000	151.3829
Total	**0.0692**	**1.5075**	**1.1439**	**1.7200e-003**		**8.6700e-003**	**8.6700e-003**		**8.6700e-003**	**8.6700e-003**	**0.0000**	**150.4665**	**150.4665**	**0.0367**	**0.0000**	**151.3829**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.4700e-003	0.1471	0.0565	3.1000e-004	7.5100e-003	1.0200e-003	8.5200e-003	2.1700e-003	9.7000e-004	3.1400e-003	0.0000	30.8166	30.8166	2.7200e-003	0.0000	30.8846
Worker	0.0150	0.0105	0.1085	3.8000e-004	0.0398	2.6000e-004	0.0401	0.0106	2.4000e-004	0.0108	0.0000	34.2308	34.2308	7.3000e-004	0.0000	34.2491
Total	**0.0204**	**0.1576**	**0.1650**	**6.9000e-004**	**0.0473**	**1.2800e-003**	**0.0486**	**0.0128**	**1.2100e-003**	**0.0140**	**0.0000**	**65.0473**	**65.0473**	**3.4500e-003**	**0.0000**	**65.1337**

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0145	0.1524	0.1467	2.3000e-004		8.2500e-003	8.2500e-003		7.5900e-003	7.5900e-003	0.0000	20.4752	20.4752	6.4800e-003	0.0000	20.6371
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0145**	**0.1524**	**0.1467**	**2.3000e-004**		**8.2500e-003**	**8.2500e-003**		**7.5900e-003**	**7.5900e-003**	**0.0000**	**20.4752**	**20.4752**	**6.4800e-003**	**0.0000**	**20.6371**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	3.1000e-004	3.2200e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0156	1.0156	2.0000e-005	0.0000	1.0161
Total	**4.4000e-004**	**3.1000e-004**	**3.2200e-003**	**1.0000e-005**	**1.1800e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0156**	**1.0156**	**2.0000e-005**	**0.0000**	**1.0161**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.3100e-003	0.2012	0.1730	2.3000e-004		1.0000e-003	1.0000e-003		1.0000e-003	1.0000e-003	0.0000	20.4752	20.4752	6.4800e-003	0.0000	20.6371
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.3100e-003**	**0.2012**	**0.1730**	**2.3000e-004**		**1.0000e-003**	**1.0000e-003**		**1.0000e-003**	**1.0000e-003**	**0.0000**	**20.4752**	**20.4752**	**6.4800e-003**	**0.0000**	**20.6371**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	3.1000e-004	3.2200e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0156	1.0156	2.0000e-005	0.0000	1.0161
Total	**4.4000e-004**	**3.1000e-004**	**3.2200e-003**	**1.0000e-005**	**1.1800e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0156**	**1.0156**	**2.0000e-005**	**0.0000**	**1.0161**

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5516					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	2.6600e-003	0.0184	0.0184	3.0000e-005		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	2.5533	2.5533	2.2000e-004	0.0000	2.5587
Total	**0.5542**	**0.0184**	**0.0184**	**3.0000e-005**		**1.2900e-003**	**1.2900e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**2.5533**	**2.5533**	**2.2000e-004**	**0.0000**	**2.5587**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7000e-004	3.3000e-004	3.4300e-003	1.0000e-005	1.2600e-003	1.0000e-005	1.2700e-003	3.4000e-004	1.0000e-005	3.4000e-004	0.0000	1.0833	1.0833	2.0000e-005	0.0000	1.0838
Total	**4.7000e-004**	**3.3000e-004**	**3.4300e-003**	**1.0000e-005**	**1.2600e-003**	**1.0000e-005**	**1.2700e-003**	**3.4000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.0833**	**1.0833**	**2.0000e-005**	**0.0000**	**1.0838**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5516					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1400e-003	0.0235	0.0183	3.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	2.5533	2.5533	2.2000e-004	0.0000	2.5586
Total	**0.5527**	**0.0235**	**0.0183**	**3.0000e-005**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**	**0.0000**	**2.5533**	**2.5533**	**2.2000e-004**	**0.0000**	**2.5586**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7000e-004	3.3000e-004	3.4300e-003	1.0000e-005	1.2600e-003	1.0000e-005	1.2700e-003	3.4000e-004	1.0000e-005	3.4000e-004	0.0000	1.0833	1.0833	2.0000e-005	0.0000	1.0838
Total	**4.7000e-004**	**3.3000e-004**	**3.4300e-003**	**1.0000e-005**	**1.2600e-003**	**1.0000e-005**	**1.2700e-003**	**3.4000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.0833**	**1.0833**	**2.0000e-005**	**0.0000**	**1.0838**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1054	0.3353	1.1872	3.8500e-003	0.3435	4.2200e-003	0.3478	0.0923	3.9600e-003	0.0963	0.0000	351.8708	351.8708	0.0132	0.0000	352.2002
Unmitigated	0.1054	0.3353	1.1872	3.8500e-003	0.3435	4.2200e-003	0.3478	0.0923	3.9600e-003	0.0963	0.0000	351.8708	351.8708	0.0132	0.0000	352.2002

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT

Condo/Townhouse	412.51	402.57	343.64	926,733	926,733
Parking Lot	0.00	0.00	0.00		
Total	412.51	402.57	343.64	926,733	926,733

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.490452	0.049742	0.253638	0.136789	0.017926	0.006526	0.021436	0.006323	0.003943	0.003278	0.008771	0.000435	0.000741
Parking Lot	0.490452	0.049742	0.253638	0.136789	0.017926	0.006526	0.021436	0.006323	0.003943	0.003278	0.008771	0.000435	0.000741

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	110.0037	110.0037	4.9700e-003	1.0300e-003	110.4347
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	110.0037	110.0037	4.9700e-003	1.0300e-003	110.4347
NaturalGas Mitigated	8.7000e-003	0.0743	0.0316	4.7000e-004		6.0100e-003	6.0100e-003		6.0100e-003	6.0100e-003	0.0000	86.0792	86.0792	1.6500e-003	1.5800e-003	86.5907
NaturalGas Unmitigated	8.7000e-003	0.0743	0.0316	4.7000e-004		6.0100e-003	6.0100e-003		6.0100e-003	6.0100e-003	0.0000	86.0792	86.0792	1.6500e-003	1.5800e-003	86.5907

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	1.61306e+006	8.7000e-003	0.0743	0.0316	4.7000e-004		6.0100e-003	6.0100e-003		6.0100e-003	6.0100e-003	0.0000	86.0792	86.0792	1.6500e-003	1.5800e-003	86.5907
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**8.7000e-003**	**0.0743**	**0.0316**	**4.7000e-004**		**6.0100e-003**	**6.0100e-003**		**6.0100e-003**	**6.0100e-003**	**0.0000**	**86.0792**	**86.0792**	**1.6500e-003**	**1.5800e-003**	**86.5907**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	1.61306e+006	8.7000e-003	0.0743	0.0316	4.7000e-004		6.0100e-003	6.0100e-003		6.0100e-003	6.0100e-003	0.0000	86.0792	86.0792	1.6500e-003	1.5800e-003	86.5907
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**8.7000e-003**	**0.0743**	**0.0316**	**4.7000e-004**		**6.0100e-003**	**6.0100e-003**		**6.0100e-003**	**6.0100e-003**	**0.0000**	**86.0792**	**86.0792**	**1.6500e-003**	**1.5800e-003**	**86.5907**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

Land Use	kWh/yr	MT/yr			
Condo/Townhouse	355045	103.2866	4.6700e-003	9.7000e-004	103.6913
Parking Lot	23089.8	6.7171	3.0000e-004	6.0000e-005	6.7434
Total		**110.0037**	**4.9700e-003**	**1.0300e-003**	**110.4347**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	355045	103.2866	4.6700e-003	9.7000e-004	103.6913
Parking Lot	23089.8	6.7171	3.0000e-004	6.0000e-005	6.7434
Total		**110.0037**	**4.9700e-003**	**1.0300e-003**	**110.4347**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.5379	9.9000e-003	0.7558	4.8000e-004		0.0352	0.0352		0.0352	0.0352	3.2369	2.1932	5.4301	6.0500e-003	2.1000e-004	5.6446

Unmitigated	0.5379	9.9000e-003	0.7558	4.8000e-004		0.0352	0.0352		0.0352	0.0352	3.2369	2.1932	5.4301	6.0500e-003	2.1000e-004	5.6446

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0552					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3027					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1638	3.7700e-003	0.2256	4.5000e-004		0.0323	0.0323		0.0323	0.0323	3.2369	1.3295	4.5664	5.2000e-003	2.1000e-004	4.7597
Landscaping	0.0162	6.1300e-003	0.5303	3.0000e-005		2.9100e-003	2.9100e-003		2.9100e-003	2.9100e-003	0.0000	0.8637	0.8637	8.5000e-004	0.0000	0.8848
Total	**0.5379**	**9.9000e-003**	**0.7558**	**4.8000e-004**		**0.0352**	**0.0352**		**0.0352**	**0.0352**	**3.2369**	**2.1932**	**5.4301**	**6.0500e-003**	**2.1000e-004**	**5.6446**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0552					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3027					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1638	3.7700e-003	0.2256	4.5000e-004		0.0323	0.0323		0.0323	0.0323	3.2369	1.3295	4.5664	5.2000e-003	2.1000e-004	4.7597
Landscaping	0.0162	6.1300e-003	0.5303	3.0000e-005		2.9100e-003	2.9100e-003		2.9100e-003	2.9100e-003	0.0000	0.8637	0.8637	8.5000e-004	0.0000	0.8848

Total	**0.5379**	**9.9000e-003**	**0.7558**	**4.8000e-004**		**0.0352**	**0.0352**		**0.0352**	**0.0352**	**3.2369**	**2.1932**	**5.4301**	**6.0500e-003**	**2.1000e-004**	**5.6446**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	11.7188	0.1512	3.6600e-003	16.5880
Unmitigated	11.7188	0.1512	3.6600e-003	16.5880

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	4.62594 / 2.91635	11.7188	0.1512	3.6600e-003	16.5880
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**11.7188**	**0.1512**	**3.6600e-003**	**16.5880**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	4.62594 / 2.91635	11.7188	0.1512	3.6600e-003	16.5880
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**11.7188**	**0.1512**	**3.6600e-003**	**16.5880**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.6297	0.3918	0.0000	16.4248
Unmitigated	6.6297	0.3918	0.0000	16.4248

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e

Land Use	tons	MT/yr			
Condo/Townhouse	32.66	6.6297	0.3918	0.0000	16.4248
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**6.6297**	**0.3918**	**0.0000**	**16.4248**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	32.66	6.6297	0.3918	0.0000	16.4248
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**6.6297**	**0.3918**	**0.0000**	**16.4248**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B

2023 CalEEMod Results

Air Pollutant & GHG Emission Calculations

Cypress Point Affordable House Project Detailed Report

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5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Cypress Point Affordable House Project
Construction Start Date	12/1/2024
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	4.60
Precipitation (days)	41.0
Location	37.53401472727023, -122.51597955266524
County	San Mateo
City	Unincorporated
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1226
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.13

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Condo/Townhouse	71.0	Dwelling Unit	5.00	66,738	0.65	0.00	213	—
Parking Lot	142	Space	1.28	0.00	0.13	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-B	Water Active Demolition Sites
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Transportation	T-4	Integrate A ordable and Below Market Rate Housing
Energy	E-12-B	Install Electric Space Heater in Place of Natural Gas Heaters in Residences

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.45	33.5	46.2	47.8	0.13	1.75	17.6	19.4	1.61	4.78	6.39	—	14,156	14,156	0.90	0.62	10.4	14,374
Mit.	6.45	33.5	46.2	47.8	0.13	1.75	6.93	8.68	1.61	2.04	3.65	—	14,156	14,156	0.90	0.62	10.4	14,374
% Reduced	—	—	—	—	—	—	61%	55%	—	57%	43%	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.45	5.01	53.1	47.4	0.30	1.75	17.6	19.4	1.61	6.15	7.00	—	26,680	26,680	3.69	3.84	1.26	27,918
Mit.	6.45	5.01	53.1	47.4	0.30	1.75	9.90	10.8	1.61	3.34	4.19	—	26,680	26,680	3.69	3.84	1.26	27,918
% Reduced	—	—	—	—	—	—	44%	44%	—	46%	40%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.99	3.18	14.8	16.3	0.05	0.46	5.31	5.77	0.43	1.15	1.58	—	5,515	5,515	0.50	0.47	3.03	5,670
Mit.	1.99	3.18	14.8	16.3	0.05	0.46	2.28	2.74	0.43	0.58	1.00	—	5,515	5,515	0.50	0.47	3.03	5,670
% Reduced	—	—	—	—	—	—	57%	52%	—	50%	37%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.36	0.58	2.70	2.97	0.01	0.08	0.97	1.05	0.08	0.21	0.29	—	913	913	0.08	0.08	0.50	939
Mit.	0.36	0.58	2.70	2.97	0.01	0.08	0.42	0.50	0.08	0.11	0.18	—	913	913	0.08	0.08	0.50	939
% Reduced	—	—	—	—	—	—	57%	52%	—	50%	37%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	6.45	5.01	46.2	47.8	0.13	1.75	17.6	19.4	1.61	4.78	6.39	—	14,156	14,156	0.90	0.62	10.4	14,374
2026	1.96	33.5	12.5	17.3	0.03	0.51	4.46	4.97	0.47	0.52	0.99	—	4,104	4,104	0.18	0.08	2.10	4,136
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2024	2.80	1.71	21.8	24.9	0.08	0.57	5.12	5.69	0.53	0.81	1.34	—	7,983	7,983	0.87	0.84	0.29	8,257
2025	6.45	5.01	53.1	47.4	0.30	1.75	17.6	19.4	1.61	6.15	7.00	—	26,680	26,680	3.69	3.84	1.26	27,918
2026	3.56	2.80	24.4	32.7	0.07	0.88	8.10	8.98	0.82	1.04	1.86	—	8,605	8,605	0.53	0.41	0.19	8,739
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.17	0.10	1.32	1.50	< 0.005	0.03	0.31	0.34	0.03	0.05	0.08	—	484	484	0.05	0.05	0.29	501
2025	1.99	1.34	14.8	16.3	0.05	0.46	5.31	5.77	0.43	1.15	1.58	—	5,515	5,515	0.50	0.47	3.03	5,670
2026	0.71	3.18	4.82	6.46	0.01	0.18	1.65	1.82	0.16	0.21	0.37	—	1,684	1,684	0.10	0.08	0.58	1,709
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.03	0.02	0.24	0.27	< 0.005	0.01	0.06	0.06	0.01	0.01	0.01	—	80.2	80.2	0.01	0.01	0.05	83.0
2025	0.36	0.24	2.70	2.97	0.01	0.08	0.97	1.05	0.08	0.21	0.29	—	913	913	0.08	0.08	0.50	939
2026	0.13	0.58	0.88	1.18	< 0.005	0.03	0.30	0.33	0.03	0.04	0.07	—	279	279	0.02	0.01	0.10	283

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	6.45	5.01	46.2	47.8	0.13	1.75	6.93	8.68	1.61	2.04	3.65	—	14,156	14,156	0.90	0.62	10.4	14,374
2026	1.96	33.5	12.5	17.3	0.03	0.51	1.42	1.93	0.47	0.22	0.69	—	4,104	4,104	0.18	0.08	2.10	4,136
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.80	1.71	21.8	24.9	0.08	0.57	2.74	3.30	0.53	0.55	1.08	—	7,983	7,983	0.87	0.84	0.29	8,257
2025	6.45	5.01	53.1	47.4	0.30	1.75	9.90	10.8	1.61	3.34	4.19	—	26,680	26,680	3.69	3.84	1.26	27,918
2026	3.56	2.80	24.4	32.7	0.07	0.88	3.04	3.92	0.82	0.53	1.35	—	8,605	8,605	0.53	0.41	0.19	8,739
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2024	0.17	0.10	1.32	1.50	< 0.005	0.03	0.16	0.20	0.03	0.03	0.06	—	484	484	0.05	0.05	0.29	501
2025	1.99	1.34	14.8	16.3	0.05	0.46	2.28	2.74	0.43	0.58	1.00	—	5,515	5,515	0.50	0.47	3.03	5,670
2026	0.71	3.18	4.82	6.46	0.01	0.18	0.60	0.77	0.16	0.10	0.27	—	1,684	1,684	0.10	0.08	0.58	1,709
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.03	0.02	0.24	0.27	< 0.005	0.01	0.03	0.04	0.01	0.01	0.01	—	80.2	80.2	0.01	0.01	0.05	83.0
2025	0.36	0.24	2.70	2.97	0.01	0.08	0.42	0.50	0.08	0.11	0.18	—	913	913	0.08	0.08	0.50	939
2026	0.13	0.58	0.88	1.18	< 0.005	0.03	0.11	0.14	0.03	0.02	0.05	—	279	279	0.02	0.01	0.10	283

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.36	3.83	1.64	24.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,860	6,894	3.71	0.21	20.1	7,070
Mit.	2.36	3.83	1.64	24.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,858	6,892	3.71	0.21	20.1	7,068
% Reduced	—	—	< 0.5%	—	—	—	—	—	—	—	—	—	< 0.5%	< 0.5%	—	—	—	< 0.5%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.96	3.44	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,562	6,596	3.72	0.23	0.99	6,759
Mit.	1.96	3.44	1.88	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,560	6,594	3.72	0.23	0.99	6,757
% Reduced	—	—	< 0.5%	—	—	—	—	—	—	—	—	—	< 0.5%	< 0.5%	—	—	—	< 0.5%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.92	3.41	1.61	18.8	0.05	0.03	2.11	2.14	0.03	0.37	0.40	34.4	5,723	5,757	3.66	0.20	8.07	5,915
Mit.	1.92	3.41	1.61	18.8	0.05	0.03	2.11	2.14	0.03	0.37	0.40	34.4	5,721	5,755	3.66	0.20	8.07	5,914

% Reduced	—	—	< 0.5%	—	—	—	—	—	—	—	—	—	< 0.5%	< 0.5%	—	—	—	< 0.5%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.35	0.62	0.29	3.44	0.01	0.01	0.38	0.39	0.01	0.07	0.07	5.70	947	953	0.61	0.03	1.34	979
Mit.	0.35	0.62	0.29	3.44	0.01	0.01	0.38	0.39	0.01	0.07	0.07	5.70	947	953	0.61	0.03	1.34	979
% Reduced	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%	1%	—	< 0.5%	1%	—	< 0.5%	—	< 0.5%	< 0.5%	< 0.5%	> -0.5%	—	< 0.5%

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.98	1.78	1.60	20.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,421	6,421	0.19	0.19	19.6	6,502
Area	0.38	2.05	0.04	4.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	233	233	0.04	< 0.005	—	235
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	197	197	0.03	< 0.005	—	199
Water	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Waste	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	2.36	3.83	1.64	24.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,860	6,894	3.71	0.21	20.1	7,070
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.96	1.75	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,133	6,133	0.20	0.21	0.51	6,201
Area	0.00	1.69	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	197	197	0.03	< 0.005	—	199
Water	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Waste	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	1.96	3.44	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,562	6,596	3.72	0.23	0.99	6,759
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.73	1.54	1.59	16.9	0.05	0.03	2.11	2.14	0.03	0.37	0.40	—	5,506	5,506	0.18	0.18	7.59	5,572
Area	0.19	1.87	0.02	1.99	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	10.8	10.8	< 0.005	< 0.005	—	10.9
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	197	197	0.03	< 0.005	—	199
Water	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Waste	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	1.92	3.41	1.61	18.8	0.05	0.03	2.11	2.14	0.03	0.37	0.40	34.4	5,723	5,757	3.66	0.20	8.07	5,915
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.32	0.28	0.29	3.08	0.01	0.01	0.38	0.39	0.01	0.07	0.07	—	912	912	0.03	0.03	1.26	922
Area	0.03	0.34	< 0.005	0.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.79	1.79	< 0.005	< 0.005	—	1.80
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	32.6	32.6	0.01	< 0.005	—	32.9
Water	—	—	—	—	—	—	—	—	—	—	—	0.82	1.54	2.36	0.08	< 0.005	—	5.06
Waste	—	—	—	—	—	—	—	—	—	—	—	4.88	0.00	4.88	0.49	0.00	—	17.1
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	0.35	0.62	0.29	3.44	0.01	0.01	0.38	0.39	0.01	0.07	0.07	5.70	947	953	0.61	0.03	1.34	979

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.98	1.78	1.60	20.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,421	6,421	0.19	0.19	19.6	6,502
Area	0.38	2.05	0.04	4.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	233	233	0.04	< 0.005	—	235

Energy	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	195	195	0.03	< 0.005	—	197
Water	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Waste	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	2.36	3.83	1.64	24.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,858	6,892	3.71	0.21	20.1	7,068
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.96	1.75	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,133	6,133	0.20	0.21	0.51	6,201
Area	0.00	1.69	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Energy	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	195	195	0.03	< 0.005	—	197
Water	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Waste	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	1.96	3.44	1.88	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,560	6,594	3.72	0.23	0.99	6,757
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.73	1.54	1.59	16.9	0.05	0.03	2.11	2.14	0.03	0.37	0.40	—	5,506	5,506	0.18	0.18	7.59	5,572
Area	0.19	1.87	0.02	1.99	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	10.8	10.8	< 0.005	< 0.005	—	10.9
Energy	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	195	195	0.03	< 0.005	—	197
Water	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Waste	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	1.92	3.41	1.61	18.8	0.05	0.03	2.11	2.14	0.03	0.37	0.40	34.4	5,721	5,755	3.66	0.20	8.07	5,914
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.32	0.28	0.29	3.08	0.01	0.01	0.38	0.39	0.01	0.07	0.07	—	912	912	0.03	0.03	1.26	922
Area	0.03	0.34	< 0.005	0.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.79	1.79	< 0.005	< 0.005	—	1.80
Energy	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	32.3	32.3	0.01	< 0.005	—	32.6
Water	—	—	—	—	—	—	—	—	—	—	—	0.82	1.54	2.36	0.08	< 0.005	—	5.06

Waste	—	—	—	—	—	—	—	—	—	—	—	4.88	0.00	4.88	0.49	0.00	—	17.1
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	0.35	0.62	0.29	3.44	0.01	0.01	0.38	0.39	0.01	0.07	0.07	5.70	947	953	0.61	0.03	1.34	979

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.78	1.49	13.4	18.4	0.03	0.51	—	0.51	0.47	—	0.47	—	2,649	2,649	0.11	0.02	—	2,659
Demolition	—	—	—	—	—	—	0.99	0.99	—	0.15	0.15	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.61	2.61	< 0.005	0.26	0.26	—	8.82	8.82	< 0.005	< 0.005	< 0.005	9.26
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.81	1.11	< 0.005	0.03	—	0.03	0.03	—	0.03	—	161	161	0.01	< 0.005	—	161
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.56
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.02	0.02	0.15	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.6	26.6	< 0.005	< 0.005	—	26.7
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.10	0.12	1.34	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	348	348	0.01	0.01	0.04	352
Vendor	0.02	0.01	0.25	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	154	154	0.02	0.02	0.01	161
Hauling	0.88	0.11	8.03	5.00	0.05	0.05	1.11	1.17	0.05	0.30	0.36	—	4,823	4,823	0.74	0.78	0.25	5,076
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	21.2	21.2	< 0.005	< 0.005	0.04	21.5
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.32	9.32	< 0.005	< 0.005	0.01	9.76
Hauling	0.05	0.01	0.48	0.30	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	293	293	0.04	0.05	0.25	308
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.51	3.51	< 0.005	< 0.005	0.01	3.56
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.54	1.54	< 0.005	< 0.005	< 0.005	1.62
Hauling	0.01	< 0.005	0.09	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	48.5	48.5	0.01	0.01	0.04	51.0

3.2. Demolition (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.78	1.49	13.4	18.4	0.03	0.51	—	0.51	0.47	—	0.47	—	2,649	2,649	0.11	0.02	—	2,659
Demolition	—	—	—	—	—	—	0.64	0.64	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.59	0.59	< 0.005	0.06	0.06	—	8.82	8.82	< 0.005	< 0.005	< 0.005	9.26
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.81	1.11	< 0.005	0.03	—	0.03	0.03	—	0.03	—	161	161	0.01	< 0.005	—	161
Demolition	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	< 0.005	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.56
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.6	26.6	< 0.005	< 0.005	—	26.7
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.12	0.10	0.12	1.34	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	348	348	0.01	0.01	0.04	352
Vendor	0.02	0.01	0.25	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	154	154	0.02	0.02	0.01	161
Hauling	0.88	0.11	8.03	5.00	0.05	0.05	1.11	1.17	0.05	0.30	0.36	—	4,823	4,823	0.74	0.78	0.25	5,076
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	21.2	21.2	< 0.005	< 0.005	0.04	21.5
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.32	9.32	< 0.005	< 0.005	0.01	9.76
Hauling	0.05	0.01	0.48	0.30	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	293	293	0.04	0.05	0.25	308
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.51	3.51	< 0.005	< 0.005	0.01	3.56
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.54	1.54	< 0.005	< 0.005	< 0.005	1.62
Hauling	0.01	< 0.005	0.09	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	48.5	48.5	0.01	0.01	0.04	51.0

3.3. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.67	1.40	12.8	18.3	0.03	0.43	—	0.43	0.39	—	0.39	—	2,649	2,649	0.11	0.02	—	2,658
Demolition	—	—	—	—	—	—	0.99	0.99	—	0.15	0.15	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.61	2.61	< 0.005	0.26	0.26	—	8.68	8.68	< 0.005	< 0.005	< 0.005	9.10

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.42	0.61	< 0.005	0.01	—	0.01	0.01	—	0.01	—	88.1	88.1	< 0.005	< 0.005	—	88.4
Demolition	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.30
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.6	14.6	< 0.005	< 0.005	—	14.6
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.10	1.23	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	340	340	0.01	0.01	0.03	345
Vendor	0.02	0.01	0.23	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.01	158
Hauling	0.85	0.11	7.62	4.92	0.05	0.05	1.11	1.17	0.05	0.30	0.36	—	4,717	4,717	0.71	0.76	0.24	4,961
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.4	11.4	< 0.005	< 0.005	0.02	11.5
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.02	5.02	< 0.005	< 0.005	0.01	5.25
Hauling	0.03	< 0.005	0.25	0.16	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	157	157	0.02	0.03	0.13	165
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.88	1.88	< 0.005	< 0.005	< 0.005	1.91

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.83	0.83	< 0.005	< 0.005	< 0.005	0.87
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.0	26.0	< 0.005	< 0.005	0.02	27.3

3.4. Demolition (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.67	1.40	12.8	18.3	0.03	0.43	—	0.43	0.39	—	0.39	—	2,649	2,649	0.11	0.02	—	2,658
Demolition	—	—	—	—	—	—	0.64	0.64	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.59	0.59	< 0.005	0.06	0.06	—	8.68	8.68	< 0.005	< 0.005	< 0.005	9.10
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.42	0.61	< 0.005	0.01	—	0.01	0.01	—	0.01	—	88.1	88.1	< 0.005	< 0.005	—	88.4
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.30
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.6	14.6	< 0.005	< 0.005	—	14.6
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.10	1.23	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	340	340	0.01	0.01	0.03	345
Vendor	0.02	0.01	0.23	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.01	158
Hauling	0.85	0.11	7.62	4.92	0.05	0.05	1.11	1.17	0.05	0.30	0.36	—	4,717	4,717	0.71	0.76	0.24	4,961
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.4	11.4	< 0.005	< 0.005	0.02	11.5
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.02	5.02	< 0.005	< 0.005	0.01	5.25
Hauling	0.03	< 0.005	0.25	0.16	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	157	157	0.02	0.03	0.13	165
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.88	1.88	< 0.005	< 0.005	< 0.005	1.91
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.83	0.83	< 0.005	< 0.005	< 0.005	0.87
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.0	26.0	< 0.005	< 0.005	0.02	27.3

3.5. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.81	1.52	14.7	15.1	0.02	0.63	—	0.63	0.58	—	0.58	—	2,594	2,594	0.11	0.02	—	2,603
Dust From Material Movement	—	—	—	—	—	—	8.58	8.58	—	4.27	4.27	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.61	2.61	< 0.005	0.26	0.26	—	8.68	8.68	< 0.005	< 0.005	< 0.005	9.10
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.80	0.83	< 0.005	0.03	—	0.03	0.03	—	0.03	—	142	142	0.01	< 0.005	—	143
Dust From Material Movement	—	—	—	—	—	—	0.47	0.47	—	0.23	0.23	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.14	0.14	< 0.005	0.01	0.01	—	0.48	0.48	< 0.005	< 0.005	< 0.005	0.50
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Dust From Material Movement	—	—	—	—	—	—	0.09	0.09	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.08	0.08	< 0.005	< 0.005	< 0.005	0.08
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.10	1.23	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	340	340	0.01	0.01	0.03	345
Vendor	0.02	0.01	0.23	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.01	158
Hauling	4.25	0.55	38.1	24.6	0.27	0.27	5.56	5.83	0.27	1.52	1.79	—	23,587	23,587	3.56	3.78	1.21	24,804
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	18.7	18.7	< 0.005	< 0.005	0.03	19.0
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.27	8.27	< 0.005	< 0.005	0.01	8.65
Hauling	0.23	0.03	2.06	1.35	0.01	0.01	0.30	0.31	0.01	0.08	0.10	—	1,293	1,293	0.19	0.21	1.11	1,360
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.10	3.10	< 0.005	< 0.005	< 0.005	3.14
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.37	1.37	< 0.005	< 0.005	< 0.005	1.43
Hauling	0.04	0.01	0.38	0.25	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	214	214	0.03	0.03	0.18	225

3.6. Site Preparation (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.81	1.52	14.7	15.1	0.02	0.63	—	0.63	0.58	—	0.58	—	2,594	2,594	0.11	0.02	—	2,603

Dust From Material Movement	—	—	—	—	—	—	3.35	3.35	—	1.66	1.66	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.59	0.59	< 0.005	0.06	0.06	—	8.68	8.68	< 0.005	< 0.005	< 0.005	9.10
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.80	0.83	< 0.005	0.03	—	0.03	0.03	—	0.03	—	142	142	0.01	< 0.005	—	143
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.48	0.48	< 0.005	< 0.005	< 0.005	0.50
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.08	0.08	< 0.005	< 0.005	< 0.005	0.08
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.10	1.23	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	340	340	0.01	0.01	0.03	345
Vendor	0.02	0.01	0.23	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.01	158
Hauling	4.25	0.55	38.1	24.6	0.27	0.27	5.56	5.83	0.27	1.52	1.79	—	23,587	23,587	3.56	3.78	1.21	24,804

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	18.7	18.7	< 0.005	< 0.005	0.03	19.0
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.27	8.27	< 0.005	< 0.005	0.01	8.65
Hauling	0.23	0.03	2.06	1.35	0.01	0.01	0.30	0.31	0.01	0.08	0.10	—	1,293	1,293	0.19	0.21	1.11	1,360
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.10	3.10	< 0.005	< 0.005	< 0.005	3.14
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.37	1.37	< 0.005	< 0.005	< 0.005	1.43
Hauling	0.04	0.01	0.38	0.25	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	214	214	0.03	0.03	0.18	225

3.7. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.18	3.51	30.4	27.3	0.07	1.28	—	1.28	1.18	—	1.18	—	7,334	7,334	0.30	0.06	—	7,359
Dust From Material Movement	—	—	—	—	—	—	9.23	9.23	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.61	2.61	< 0.005	0.26	0.26	—	8.69	8.69	< 0.005	< 0.005	0.02	9.12
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.18	3.51	30.4	27.3	0.07	1.28	—	1.28	1.18	—	1.18	—	7,334	7,334	0.30	0.06	—	7,359

Dust From Material Movement	—	—	—	—	—	—	9.23	9.23	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.61	2.61	< 0.005	0.26	0.26	—	8.68	8.68	< 0.005	< 0.005	< 0.005	9.10
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	0.34	2.91	2.62	0.01	0.12	—	0.12	0.11	—	0.11	—	703	703	0.03	0.01	—	706
Dust From Material Movement	—	—	—	—	—	—	0.88	0.88	—	0.35	0.35	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.25	0.25	< 0.005	0.03	0.03	—	0.83	0.83	< 0.005	< 0.005	< 0.005	0.87
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.53	0.48	< 0.005	0.02	—	0.02	0.02	—	0.02	—	116	116	< 0.005	< 0.005	—	117
Dust From Material Movement	—	—	—	—	—	—	0.16	0.16	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.08	1.34	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	360	360	0.01	< 0.005	1.19	362
Vendor	0.02	0.01	0.22	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.37	158
Hauling	0.26	0.03	2.18	1.48	0.02	0.02	0.33	0.35	0.02	0.09	0.11	—	1,415	1,415	0.21	0.23	2.80	1,491
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.11	0.10	0.10	1.23	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	340	340	0.01	0.01	0.03	345
Vendor	0.02	0.01	0.23	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.01	158
Hauling	0.26	0.03	2.29	1.48	0.02	0.02	0.33	0.35	0.02	0.09	0.11	—	1,415	1,415	0.21	0.23	0.07	1,488
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	32.7	32.7	< 0.005	< 0.005	0.05	33.2
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.5	14.5	< 0.005	< 0.005	0.02	15.1
Hauling	0.02	< 0.005	0.22	0.14	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	136	136	0.02	0.02	0.12	143
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.42	5.42	< 0.005	< 0.005	0.01	5.50
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.40	2.40	< 0.005	< 0.005	< 0.005	2.51
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	22.5	22.5	< 0.005	< 0.005	0.02	23.6

3.8. Grading (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.18	3.51	30.4	27.3	0.07	1.28	—	1.28	1.18	—	1.18	—	7,334	7,334	0.30	0.06	—	7,359
Dust From Material Movement	—	—	—	—	—	—	3.60	3.60	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.59	0.59	< 0.005	0.06	0.06	—	8.69	8.69	< 0.005	< 0.005	0.02	9.12
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	4.18	3.51	30.4	27.3	0.07	1.28	—	1.28	1.18	—	1.18	—	7,334	7,334	0.30	0.06	—	7,359
Dust From Material Movement	—	—	—	—	—	—	3.60	3.60	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.59	0.59	< 0.005	0.06	0.06	—	8.68	8.68	< 0.005	< 0.005	< 0.005	9.10
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	0.34	2.91	2.62	0.01	0.12	—	0.12	0.11	—	0.11	—	703	703	0.03	0.01	—	706
Dust From Material Movement	—	—	—	—	—	—	0.35	0.35	—	0.14	0.14	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	0.83	0.83	< 0.005	< 0.005	< 0.005	0.87
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.53	0.48	< 0.005	0.02	—	0.02	0.02	—	0.02	—	116	116	< 0.005	< 0.005	—	117
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.08	1.34	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	360	360	0.01	< 0.005	1.19	362
Vendor	0.02	0.01	0.22	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.37	158
Hauling	0.26	0.03	2.18	1.48	0.02	0.02	0.33	0.35	0.02	0.09	0.11	—	1,415	1,415	0.21	0.23	2.80	1,491

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.10	1.23	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	340	340	0.01	0.01	0.03	345
Vendor	0.02	0.01	0.23	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.01	158
Hauling	0.26	0.03	2.29	1.48	0.02	0.02	0.33	0.35	0.02	0.09	0.11	—	1,415	1,415	0.21	0.23	0.07	1,488
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	32.7	32.7	< 0.005	< 0.005	0.05	33.2
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.5	14.5	< 0.005	< 0.005	0.02	15.1
Hauling	0.02	< 0.005	0.22	0.14	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	136	136	0.02	0.02	0.12	143
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.42	5.42	< 0.005	< 0.005	0.01	5.50
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.40	2.40	< 0.005	< 0.005	< 0.005	2.51
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	22.5	22.5	< 0.005	< 0.005	0.02	23.6

3.9. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	3.92	3.92	< 0.005	0.39	0.39	—	13.0	13.0	< 0.005	< 0.005	0.03	13.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	3.92	3.92	< 0.005	0.39	0.39	—	13.0	13.0	< 0.005	< 0.005	< 0.005	13.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.81	0.67	6.25	7.81	0.01	0.26	—	0.26	0.24	—	0.24	—	1,436	1,436	0.06	0.01	—	1,441
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.35	2.35	< 0.005	0.23	0.23	—	7.80	7.80	< 0.005	< 0.005	0.01	8.18
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	1.14	1.43	< 0.005	0.05	—	0.05	0.04	—	0.04	—	238	238	0.01	< 0.005	—	239
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.43	0.43	< 0.005	0.04	0.04	—	1.29	1.29	< 0.005	< 0.005	< 0.005	1.35
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.19	0.15	2.62	0.00	0.00	0.71	0.71	0.00	0.17	0.17	—	703	703	0.01	0.01	2.33	707
Vendor	0.03	0.01	0.30	0.18	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	201	201	0.02	0.03	0.50	211
Hauling	0.28	0.04	2.42	1.64	0.02	0.02	0.37	0.39	0.02	0.10	0.12	—	1,573	1,573	0.24	0.25	3.11	1,657
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.19	0.20	2.40	0.00	0.00	0.71	0.71	0.00	0.17	0.17	—	664	664	0.01	0.03	0.06	672
Vendor	0.03	0.01	0.31	0.19	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	201	201	0.02	0.03	0.01	210
Hauling	0.28	0.04	2.54	1.64	0.02	0.02	0.37	0.39	0.02	0.10	0.12	—	1,572	1,572	0.24	0.25	0.08	1,654
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.11	0.11	1.40	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	399	399	0.01	0.02	0.60	404
Vendor	0.02	< 0.005	0.18	0.11	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	120	120	0.01	0.02	0.13	126

Hauling	0.17	0.02	1.50	0.99	0.01	0.01	0.22	0.23	0.01	0.06	0.07	—	942	942	0.14	0.15	0.81	991
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.25	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	66.0	66.0	< 0.005	< 0.005	0.10	67.0
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.9	19.9	< 0.005	< 0.005	0.02	20.9
Hauling	0.03	< 0.005	0.27	0.18	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	156	156	0.02	0.03	0.13	164

3.10. Building Construction (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.88	0.88	< 0.005	0.09	0.09	—	13.0	13.0	< 0.005	< 0.005	0.03	13.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.88	0.88	< 0.005	0.09	0.09	—	13.0	13.0	< 0.005	< 0.005	< 0.005	13.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.81	0.67	6.25	7.81	0.01	0.26	—	0.26	0.24	—	0.24	—	1,436	1,436	0.06	0.01	—	1,441
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.53	0.53	< 0.005	0.05	0.05	—	7.80	7.80	< 0.005	< 0.005	0.01	8.18
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.15	0.12	1.14	1.43	< 0.005	0.05	—	0.05	0.04	—	0.04	—	238	238	0.01	< 0.005	—	239
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	1.29	1.29	< 0.005	< 0.005	< 0.005	1.35
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.19	0.15	2.62	0.00	0.00	0.71	0.71	0.00	0.17	0.17	—	703	703	0.01	0.01	2.33	707
Vendor	0.03	0.01	0.30	0.18	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	201	201	0.02	0.03	0.50	211
Hauling	0.28	0.04	2.42	1.64	0.02	0.02	0.37	0.39	0.02	0.10	0.12	—	1,573	1,573	0.24	0.25	3.11	1,657
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.19	0.20	2.40	0.00	0.00	0.71	0.71	0.00	0.17	0.17	—	664	664	0.01	0.03	0.06	672
Vendor	0.03	0.01	0.31	0.19	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	201	201	0.02	0.03	0.01	210
Hauling	0.28	0.04	2.54	1.64	0.02	0.02	0.37	0.39	0.02	0.10	0.12	—	1,572	1,572	0.24	0.25	0.08	1,654
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.11	0.11	1.40	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	399	399	0.01	0.02	0.60	404
Vendor	0.02	< 0.005	0.18	0.11	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	120	120	0.01	0.02	0.13	126
Hauling	0.17	0.02	1.50	0.99	0.01	0.01	0.22	0.23	0.01	0.06	0.07	—	942	942	0.14	0.15	0.81	991
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.25	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	66.0	66.0	< 0.005	< 0.005	0.10	67.0
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.9	19.9	< 0.005	< 0.005	0.02	20.9
Hauling	0.03	< 0.005	0.27	0.18	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	156	156	0.02	0.03	0.13	164

3.11. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	3.92	3.92	< 0.005	0.39	0.39	—	12.8	12.8	< 0.005	< 0.005	< 0.005	13.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.18	1.70	2.23	< 0.005	0.07	—	0.07	0.06	—	0.06	—	413	413	0.02	< 0.005	—	414
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.68	0.68	< 0.005	0.07	0.07	—	2.21	2.21	< 0.005	< 0.005	< 0.005	2.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.31	0.41	< 0.005	0.01	—	0.01	0.01	—	0.01	—	68.3	68.3	< 0.005	< 0.005	—	68.6
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	0.37	0.37	< 0.005	< 0.005	< 0.005	0.38
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.18	2.22	0.00	0.00	0.71	0.71	0.00	0.17	0.17	—	650	650	0.01	0.03	0.05	659
Vendor	0.03	0.01	0.29	0.18	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	197	197	0.02	0.03	0.01	206
Hauling	0.26	0.04	2.42	1.63	0.01	0.02	0.37	0.39	0.02	0.10	0.12	—	1,537	1,537	0.23	0.24	0.08	1,616

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.37	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	112	112	< 0.005	< 0.005	0.15	114
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	34.0	34.0	< 0.005	< 0.005	0.03	35.6
Hauling	0.05	0.01	0.41	0.28	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	265	265	0.04	0.04	0.22	278
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	18.6	18.6	< 0.005	< 0.005	0.03	18.9
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.63	5.63	< 0.005	< 0.005	0.01	5.89
Hauling	0.01	< 0.005	0.07	0.05	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	43.8	43.8	0.01	0.01	0.04	46.1

3.12. Building Construction (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.88	0.88	< 0.005	0.09	0.09	—	12.8	12.8	< 0.005	< 0.005	< 0.005	13.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.18	1.70	2.23	< 0.005	0.07	—	0.07	0.06	—	0.06	—	413	413	0.02	< 0.005	—	414
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.15	0.15	< 0.005	0.02	0.02	—	2.21	2.21	< 0.005	< 0.005	< 0.005	2.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.04	0.03	0.31	0.41	< 0.005	0.01	—	0.01	0.01	—	0.01	—	68.3	68.3	< 0.005	< 0.005	—	68.6
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.37	0.37	< 0.005	< 0.005	< 0.005	0.38
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.18	2.22	0.00	0.00	0.71	0.71	0.00	0.17	0.17	—	650	650	0.01	0.03	0.05	659
Vendor	0.03	0.01	0.29	0.18	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	197	197	0.02	0.03	0.01	206
Hauling	0.26	0.04	2.42	1.63	0.01	0.02	0.37	0.39	0.02	0.10	0.12	—	1,537	1,537	0.23	0.24	0.08	1,616
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.37	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	112	112	< 0.005	< 0.005	0.15	114
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	34.0	34.0	< 0.005	< 0.005	0.03	35.6
Hauling	0.05	0.01	0.41	0.28	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	265	265	0.04	0.04	0.22	278
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	18.6	18.6	< 0.005	< 0.005	0.03	18.9
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.63	5.63	< 0.005	< 0.005	0.01	5.89
Hauling	0.01	< 0.005	0.07	0.05	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	43.8	43.8	0.01	0.01	0.04	46.1

3.13. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	11.0	14.2	0.03	0.48	—	0.48	0.44	—	0.44	—	3,166	3,166	0.13	0.03	—	3,176
Paving	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.61	2.61	< 0.005	0.26	0.26	—	8.54	8.54	< 0.005	< 0.005	0.02	8.97
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	11.0	14.2	0.03	0.48	—	0.48	0.44	—	0.44	—	3,166	3,166	0.13	0.03	—	3,176
Paving	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.61	2.61	< 0.005	0.26	0.26	—	8.54	8.54	< 0.005	< 0.005	< 0.005	8.95
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.36	0.30	2.42	3.11	0.01	0.11	—	0.11	0.10	—	0.10	—	694	694	0.03	0.01	—	696
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.57	0.57	< 0.005	0.06	0.06	—	1.87	1.87	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.05	0.44	0.57	< 0.005	0.02	—	0.02	0.02	—	0.02	—	115	115	< 0.005	< 0.005	—	115
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.33
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.10	0.09	0.08	1.24	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	353	353	0.01	< 0.005	1.05	355
Vendor	0.02	0.01	0.21	0.13	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	148	148	0.01	0.02	0.35	155
Hauling	0.03	< 0.005	0.23	0.16	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	154	154	0.02	0.02	0.30	162
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.09	1.14	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	334	334	0.01	0.01	0.03	338
Vendor	0.02	0.01	0.22	0.13	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	148	148	0.01	0.02	0.01	155
Hauling	0.03	< 0.005	0.24	0.16	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	154	154	0.02	0.02	0.01	162
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.24	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	73.3	73.3	< 0.005	< 0.005	0.10	74.4
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.4	32.4	< 0.005	< 0.005	0.03	34.0
Hauling	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33.7	33.7	< 0.005	0.01	0.03	35.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.1	12.1	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.37	5.37	< 0.005	< 0.005	0.01	5.62
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.58	5.58	< 0.005	< 0.005	< 0.005	5.87

3.14. Paving (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	11.0	14.2	0.03	0.48	—	0.48	0.44	—	0.44	—	3,166	3,166	0.13	0.03	—	3,176
Paving	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.59	0.59	< 0.005	0.06	0.06	—	8.54	8.54	< 0.005	< 0.005	0.02	8.97
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	11.0	14.2	0.03	0.48	—	0.48	0.44	—	0.44	—	3,166	3,166	0.13	0.03	—	3,176
Paving	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.59	0.59	< 0.005	0.06	0.06	—	8.54	8.54	< 0.005	< 0.005	< 0.005	8.95
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.36	0.30	2.42	3.11	0.01	0.11	—	0.11	0.10	—	0.10	—	694	694	0.03	0.01	—	696
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.13	0.13	< 0.005	0.01	0.01	—	1.87	1.87	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.05	0.44	0.57	< 0.005	0.02	—	0.02	0.02	—	0.02	—	115	115	< 0.005	< 0.005	—	115
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.33
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.08	1.24	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	353	353	0.01	< 0.005	1.05	355
Vendor	0.02	0.01	0.21	0.13	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	148	148	0.01	0.02	0.35	155
Hauling	0.03	< 0.005	0.23	0.16	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	154	154	0.02	0.02	0.30	162
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.10	0.09	0.09	1.14	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	334	334	0.01	0.01	0.03	338
Vendor	0.02	0.01	0.22	0.13	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	148	148	0.01	0.02	0.01	155
Hauling	0.03	< 0.005	0.24	0.16	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	154	154	0.02	0.02	0.01	162
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.24	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	73.3	73.3	< 0.005	< 0.005	0.10	74.4
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.4	32.4	< 0.005	< 0.005	0.03	34.0
Hauling	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33.7	33.7	< 0.005	0.01	0.03	35.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.1	12.1	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.37	5.37	< 0.005	< 0.005	0.01	5.62
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.58	5.58	< 0.005	< 0.005	< 0.005	5.87

3.15. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	31.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.31	1.31	< 0.005	0.13	0.13	—	4.27	4.27	< 0.005	< 0.005	0.01	4.49
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.0	11.0	< 0.005	< 0.005	—	11.0
Architectural Coatings	—	2.62	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	0.35	0.35	< 0.005	< 0.005	< 0.005	0.37
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.82	1.82	< 0.005	< 0.005	—	1.82
Architectural Coatings	—	0.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.31	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	88.3	88.3	< 0.005	< 0.005	0.26	88.7
Vendor	0.01	< 0.005	0.07	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	49.4	49.4	< 0.005	0.01	0.12	51.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.88	6.88	< 0.005	< 0.005	0.01	6.97
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.06	4.06	< 0.005	< 0.005	< 0.005	4.24
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.14	1.14	< 0.005	< 0.005	< 0.005	1.15
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.67	0.67	< 0.005	< 0.005	< 0.005	0.70
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.16. Architectural Coating (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	31.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.29	0.29	< 0.005	0.03	0.03	—	4.27	4.27	< 0.005	< 0.005	0.01	4.49
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.0	11.0	< 0.005	< 0.005	—	11.0
Architectural Coatings	—	2.62	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.35	0.35	< 0.005	< 0.005	< 0.005	0.37
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.82	1.82	< 0.005	< 0.005	—	1.82
Architectural Coatings	—	0.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.31	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	88.3	88.3	< 0.005	< 0.005	0.26	88.7
Vendor	0.01	< 0.005	0.07	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	49.4	49.4	< 0.005	0.01	0.12	51.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.88	6.88	< 0.005	< 0.005	0.01	6.97
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.06	4.06	< 0.005	< 0.005	< 0.005	4.24
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.14	1.14	< 0.005	< 0.005	< 0.005	1.15
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.67	0.67	< 0.005	< 0.005	< 0.005	0.70
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	1.98	1.78	1.60	20.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,421	6,421	0.19	0.19	19.6	6,502
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.98	1.78	1.60	20.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,421	6,421	0.19	0.19	19.6	6,502
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	1.96	1.75	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,133	6,133	0.20	0.21	0.51	6,201
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.96	1.75	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,133	6,133	0.20	0.21	0.51	6,201
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.32	0.28	0.29	3.08	0.01	0.01	0.38	0.39	0.01	0.07	0.07	—	912	912	0.03	0.03	1.26	922
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.32	0.28	0.29	3.08	0.01	0.01	0.38	0.39	0.01	0.07	0.07	—	912	912	0.03	0.03	1.26	922

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	1.98	1.78	1.60	20.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,421	6,421	0.19	0.19	19.6	6,502
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.98	1.78	1.60	20.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,421	6,421	0.19	0.19	19.6	6,502
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	1.96	1.75	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,133	6,133	0.20	0.21	0.51	6,201
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.96	1.75	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,133	6,133	0.20	0.21	0.51	6,201
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.32	0.28	0.29	3.08	0.01	0.01	0.38	0.39	0.01	0.07	0.07	—	912	912	0.03	0.03	1.26	922
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.32	0.28	0.29	3.08	0.01	0.01	0.38	0.39	0.01	0.07	0.07	—	912	912	0.03	0.03	1.26	922

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	170	170	0.03	< 0.005	—	171
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	27.3	27.3	< 0.005	< 0.005	—	27.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	197	197	0.03	< 0.005	—	199
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	170	170	0.03	< 0.005	—	171
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	27.3	27.3	< 0.005	< 0.005	—	27.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	197	197	0.03	< 0.005	—	199
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	28.1	28.1	< 0.005	< 0.005	—	28.4
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	4.51	4.51	< 0.005	< 0.005	—	4.56
Total	—	—	—	—	—	—	—	—	—	—	—	—	32.6	32.6	0.01	< 0.005	—	32.9

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	170	170	0.03	< 0.005	—	172
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	27.3	27.3	< 0.005	< 0.005	—	27.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	197	197	0.03	< 0.005	—	199
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	170	170	0.03	< 0.005	—	172
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	27.3	27.3	< 0.005	< 0.005	—	27.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	197	197	0.03	< 0.005	—	199
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	28.2	28.2	< 0.005	< 0.005	—	28.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	4.51	4.51	< 0.005	< 0.005	—	4.56
Total	—	—	—	—	—	—	—	—	—	—	—	—	32.7	32.7	0.01	< 0.005	—	33.0

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Condo/T	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-2.47	-2.47	> -0.005	> -0.005	—	-2.48
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Total	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-2.47	-2.47	> -0.005	> -0.005	—	-2.48
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-2.47	-2.47	> -0.005	> -0.005	—	-2.48
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-2.47	-2.47	> -0.005	> -0.005	—	-2.48
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-0.41	-0.41	> -0.005	> -0.005	—	-0.41
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-0.41	-0.41	> -0.005	> -0.005	—	-0.41

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Consumer Products	—	1.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landsca Equipment	0.38	0.36	0.04	4.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.8	10.8	< 0.005	< 0.005	—	10.8
Total	0.38	2.05	0.04	4.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	233	233	0.04	< 0.005	—	235
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Consum er Products	—	1.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	1.69	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.91	0.91	< 0.005	< 0.005	—	0.92
Consum er Products	—	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landsca pe Equipme nt	0.03	0.03	< 0.005	0.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.88	0.88	< 0.005	< 0.005	—	0.88
Total	0.03	0.34	< 0.005	0.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.79	1.79	< 0.005	< 0.005	—	1.80

4.3.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Consumer Products	—	1.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.38	0.36	0.04	4.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.8	10.8	< 0.005	< 0.005	—	10.8
Total	0.38	2.05	0.04	4.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	233	233	0.04	< 0.005	—	235
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Consumer Products	—	1.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	1.69	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.91	0.91	< 0.005	< 0.005	—	0.92
Consumer Products	—	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape	0.03	0.03	< 0.005	0.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.88	0.88	< 0.005	< 0.005	—	0.88
Total	0.03	0.34	< 0.005	0.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.79	1.79	< 0.005	< 0.005	—	1.80

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.82	1.54	2.36	0.08	< 0.005	—	5.06

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	0.82	1.54	2.36	0.08	< 0.005	—	5.06

4.4.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.82	1.54	2.36	0.08	< 0.005	—	5.06
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	0.82	1.54	2.36	0.08	< 0.005	—	5.06

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.88	0.00	4.88	0.49	0.00	—	17.1
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	4.88	0.00	4.88	0.49	0.00	—	17.1

4.5.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.88	0.00	4.88	0.49	0.00	—	17.1
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	4.88	0.00	4.88	0.49	0.00	—	17.1

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Condo/Townhous	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	12/1/2024	1/17/2025	5.00	35.0	—
Site Preparation	Site Preparation	1/18/2025	2/15/2025	5.00	20.0	—
Grading	Grading	2/16/2025	4/05/2025	5.00	35.0	—
Building Construction 1	Building Construction	3/1/2025	3/29/2026	5.00	280	—
Paving	Paving	3/2/2026	6/20/2026	5.00	80.0	—
Architectural Coating	Architectural Coating	5/10/2026	6/20/2026	5.00	30.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

Demolition	Concrete/Industrial Saws	Diesel	Average	2.00	8.00	33.0	0.73
Demolition	Excavators	Diesel	Average	5.00	8.00	36.0	0.38
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	5.00	8.00	84.0	0.37
Site Preparation	Rubber Tired Dozers	Diesel	Average	2.00	5.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Grading	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Dumpers/Tenders	Diesel	Average	1.00	8.00	16.0	0.38
Grading	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Grading	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Building Construction 1	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction 1	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction 1	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction 1	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction 1	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	3.00	8.00	81.0	0.42
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving	Graders	Diesel	Average	1.00	1.00	148	0.41
Paving	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Paving	Scrapers	Diesel	Average	1.00	1.00	423	0.48
Paving	Plate Compactors	Diesel	Average	1.00	1.00	8.00	0.43

Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	2.00	8.00	33.0	0.73
Demolition	Excavators	Diesel	Average	5.00	8.00	36.0	0.38
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	5.00	8.00	84.0	0.37
Site Preparation	Rubber Tired Dozers	Diesel	Average	2.00	5.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Grading	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Dumpers/Tenders	Diesel	Average	1.00	8.00	16.0	0.38
Grading	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Grading	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Building Construction 1	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction 1	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction 1	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction 1	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction 1	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	3.00	8.00	81.0	0.42
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38

Paving	Graders	Diesel	Average	1.00	1.00	148	0.41
Paving	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Paving	Scrapers	Diesel	Average	1.00	1.00	423	0.48
Paving	Plate Compactors	Diesel	Average	1.00	1.00	8.00	0.43
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	40.0	12.8	LDA,LDT1,LDT2
Demolition	Vendor	6.00	7.30	HHDT,MHDT
Demolition	Hauling	60.0	20.0	HHDT
Demolition	Onsite truck	2.00	1.00	HHDT,MHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	40.0	12.8	LDA,LDT1,LDT2
Site Preparation	Vendor	6.00	7.30	HHDT,MHDT
Site Preparation	Hauling	300	20.0	HHDT
Site Preparation	Onsite truck	2.00	1.00	HHDT,MHDT
Grading	—	—	—	—
Grading	Worker	40.0	12.8	LDA,LDT1,LDT2
Grading	Vendor	6.00	7.30	HHDT,MHDT
Grading	Hauling	18.0	20.0	HHDT
Grading	Onsite truck	2.00	1.00	HHDT,MHDT
Building Construction 1	—	—	—	—
Building Construction 1	Worker	78.0	12.8	LDA,LDT1,LDT2

Building Construction 1	Vendor	8.00	7.30	HHDT,MHDT
Building Construction 1	Hauling	20.0	20.0	HHDT
Building Construction 1	Onsite truck	3.00	1.00	HHDT,MHDT
Paving	—	—	—	—
Paving	Worker	40.0	12.8	LDA,LDT1,LDT2
Paving	Vendor	6.00	7.30	HHDT,MHDT
Paving	Hauling	2.00	20.0	HHDT
Paving	Onsite truck	2.00	1.00	HHDT,MHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	10.0	12.8	LDA,LDT1,LDT2
Architectural Coating	Vendor	2.00	7.30	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	1.00	1.00	HHDT,MHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	40.0	12.8	LDA,LDT1,LDT2
Demolition	Vendor	6.00	7.30	HHDT,MHDT
Demolition	Hauling	60.0	20.0	HHDT
Demolition	Onsite truck	2.00	1.00	HHDT,MHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	40.0	12.8	LDA,LDT1,LDT2
Site Preparation	Vendor	6.00	7.30	HHDT,MHDT
Site Preparation	Hauling	300	20.0	HHDT
Site Preparation	Onsite truck	2.00	1.00	HHDT,MHDT
Grading	—	—	—	—

Grading	Worker	40.0	12.8	LDA,LDT1,LDT2
Grading	Vendor	6.00	7.30	HHDT,MHDT
Grading	Hauling	18.0	20.0	HHDT
Grading	Onsite truck	2.00	1.00	HHDT,MHDT
Building Construction 1	—	—	—	—
Building Construction 1	Worker	78.0	12.8	LDA,LDT1,LDT2
Building Construction 1	Vendor	8.00	7.30	HHDT,MHDT
Building Construction 1	Hauling	20.0	20.0	HHDT
Building Construction 1	Onsite truck	3.00	1.00	HHDT,MHDT
Paving	—	—	—	—
Paving	Worker	40.0	12.8	LDA,LDT1,LDT2
Paving	Vendor	6.00	7.30	HHDT,MHDT
Paving	Hauling	2.00	20.0	HHDT
Paving	Onsite truck	2.00	1.00	HHDT,MHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	10.0	12.8	LDA,LDT1,LDT2
Architectural Coating	Vendor	2.00	7.30	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	1.00	1.00	HHDT,MHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

Architectural Coating	135,144	45,048	0.00	0.00	3,340

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	1,500	—
Site Preparation	66,738	0.00	15.0	0.00	—
Grading	7,500	0.00	20.0	0.00	—
Paving	0.00	0.00	0.00	0.00	1.28

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Condo/Townhouse	—	0%
Parking Lot	1.28	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Condo/Townhouse	520	578	446	188,883	7,753	8,622	6,652	2,817,745
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Condo/Townhouse	520	578	446	188,883	7,753	8,622	6,652	2,817,745
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	36
No Fireplaces	35
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0

Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	36
No Fireplaces	35
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
135144.44999999998	45,048	0.00	0.00	3,340

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Condo/Townhouse	303,489	204	0.0330	0.0040	0.00
Parking Lot	48,767	204	0.0330	0.0040	0.00

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Condo/Townhouse	304,499	204	0.0330	0.0040	-7,716
Parking Lot	48,767	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Condo/Townhouse	2,574,914	6.59
Parking Lot	0.00	1.08

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)

Condo/Townhouse	2,574,914	6.59
Parking Lot	0.00	1.08

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Condo/Townhouse	54.7	—
Parking Lot	0.00	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Condo/Townhouse	54.7	—
Parking Lot	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	8.54	annual days of extreme heat
Extreme Precipitation	6.90	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	14.3	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A

Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract

Exposure Indicators	—
AQ-Ozone	7.52
AQ-PM	14.5
AQ-DPM	30.0
Drinking Water	48.2
Lead Risk Housing	23.7
Pesticides	82.8
Toxic Releases	28.0
Traffic	21.1
Effect Indicators	—
CleanUp Sites	46.1
Groundwater	30.9
Haz Waste Facilities/Generators	0.00
Impaired Water Bodies	23.9
Solid Waste	0.00
Sensitive Population	—
Asthma	38.6
Cardio-vascular	20.9
Low Birth Weights	60.1
Socioeconomic Factor Indicators	—
Education	14.8
Housing	42.3
Linguistic	0.00
Poverty	6.73
Unemployment	1.15

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	91.03041191
Employed	89.79853715
Median HI	83.63916335
Education	—
Bachelor's or higher	78.91697677
High school enrollment	100
Preschool enrollment	88.41267804
Transportation	—
Auto Access	43.87270627
Active commuting	72.95008341
Social	—
2-parent households	52.82946234
Voting	91.50519697
Neighborhood	—
Alcohol availability	59.74592583
Park access	35.26241499
Retail density	11.88245862
Supermarket access	2.399589375
Tree canopy	93.41716925
Housing	—
Homeownership	81.12408572
Housing habitability	44.70678814
Low-inc homeowner severe housing cost burden	43.85987425
Low-inc renter severe housing cost burden	88.29718979
Uncrowded housing	33.18362633

Health Outcomes	—
Insured adults	88.86179905
Arthritis	0.0
Asthma ER Admissions	65.7
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	54.6
Cognitively Disabled	26.7
Physically Disabled	29.8
Heart Attack ER Admissions	91.6
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	68.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	7.9
SLR Inundation Area	31.3

Children	71.1
Elderly	28.7
English Speaking	74.8
Foreign-born	17.8
Outdoor Workers	33.7
Climate Change Adaptive Capacity	—
Impervious Surface Cover	86.3
Traffic Density	2.3
Traffic Access	23.0
Other Indices	—
Hardship	23.7
Other Decision Support	—
2016 Voting	92.6

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	11.0
Healthy Places Index Score for Project Location (b)	90.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Updated acreages 4/2023
Construction: Trips and VMT	Added onsite travel with mixed vehicles
Construction: Construction Phases	Approximately 18 month construction duration
Construction: Dust From Material Movement	Site Prep Building materials would be transported to the site Grading import approximately 7,500 cubic yards of fill
Operations: Energy Use	No natural gas
Operations: Hearths	No natural gas
Construction: Off-Road Equipment	Modified with Midpen inputs
Construction: Demolition	20,840 CY of site concrete to demo accounted for in haul trips

APPENDIX C

2023 CalEEMod Mitigated Results

Air Pollutant & GHG Emission Calculations

Cypress Point Affordable House Project Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Cypress Point Affordable House Project
Construction Start Date	12/1/2024
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	4.60
Precipitation (days)	41.0
Location	37.53401472727023, -122.51597955266524
County	San Mateo
City	Unincorporated
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1226
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.13

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Condo/Townhouse	71.0	Dwelling Unit	5.00	66,738	0.65	0.00	213	—
Parking Lot	142	Space	1.28	0.00	0.13	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-6	Use Diesel Particulate Filters
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-B	Water Active Demolition Sites
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Transportation	T-4	Integrate A ordable and Below Market Rate Housing
Energy	E-12-B	Install Electric Space Heater in Place of Natural Gas Heaters in Residences

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.45	33.5	46.2	47.8	0.13	1.75	17.6	19.4	1.61	4.78	6.39	—	14,156	14,156	0.90	0.62	10.4	14,374
Mit.	6.45	33.5	46.2	47.8	0.13	0.35	7.11	7.45	0.32	2.06	2.38	—	14,156	14,156	0.90	0.62	10.4	14,374
% Reduced	—	—	—	—	—	80%	60%	62%	80%	57%	63%	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.45	5.01	53.1	47.4	0.30	1.75	17.6	19.4	1.61	6.15	7.00	—	26,680	26,680	3.69	3.84	1.26	27,918
Mit.	6.45	5.01	53.1	47.4	0.30	0.37	9.97	10.3	0.36	3.35	3.71	—	26,680	26,680	3.69	3.84	1.26	27,918
% Reduced	—	—	—	—	—	79%	43%	47%	78%	46%	47%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.99	3.18	14.8	16.3	0.05	0.46	5.31	5.77	0.43	1.15	1.58	—	5,515	5,515	0.50	0.47	3.03	5,670
Mit.	1.99	3.18	14.8	16.3	0.05	0.11	2.36	2.47	0.11	0.58	0.69	—	5,515	5,515	0.50	0.47	3.03	5,670
% Reduced	—	—	—	—	—	75%	56%	57%	75%	49%	56%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.36	0.58	2.70	2.97	0.01	0.08	0.97	1.05	0.08	0.21	0.29	—	913	913	0.08	0.08	0.50	939
Mit.	0.36	0.58	2.70	2.97	0.01	0.02	0.43	0.45	0.02	0.11	0.13	—	913	913	0.08	0.08	0.50	939
% Reduced	—	—	—	—	—	75%	56%	57%	75%	49%	56%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	6.45	5.01	46.2	47.8	0.13	1.75	17.6	19.4	1.61	4.78	6.39	—	14,156	14,156	0.90	0.62	10.4	14,374
2026	1.96	33.5	12.5	17.3	0.03	0.51	4.46	4.97	0.47	0.52	0.99	—	4,104	4,104	0.18	0.08	2.10	4,136
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2024	2.80	1.71	21.8	24.9	0.08	0.57	5.12	5.69	0.53	0.81	1.34	—	7,983	7,983	0.87	0.84	0.29	8,257
2025	6.45	5.01	53.1	47.4	0.30	1.75	17.6	19.4	1.61	6.15	7.00	—	26,680	26,680	3.69	3.84	1.26	27,918
2026	3.56	2.80	24.4	32.7	0.07	0.88	8.10	8.98	0.82	1.04	1.86	—	8,605	8,605	0.53	0.41	0.19	8,739
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.17	0.10	1.32	1.50	< 0.005	0.03	0.31	0.34	0.03	0.05	0.08	—	484	484	0.05	0.05	0.29	501
2025	1.99	1.34	14.8	16.3	0.05	0.46	5.31	5.77	0.43	1.15	1.58	—	5,515	5,515	0.50	0.47	3.03	5,670
2026	0.71	3.18	4.82	6.46	0.01	0.18	1.65	1.82	0.16	0.21	0.37	—	1,684	1,684	0.10	0.08	0.58	1,709
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.03	0.02	0.24	0.27	< 0.005	0.01	0.06	0.06	0.01	0.01	0.01	—	80.2	80.2	0.01	0.01	0.05	83.0
2025	0.36	0.24	2.70	2.97	0.01	0.08	0.97	1.05	0.08	0.21	0.29	—	913	913	0.08	0.08	0.50	939
2026	0.13	0.58	0.88	1.18	< 0.005	0.03	0.30	0.33	0.03	0.04	0.07	—	279	279	0.02	0.01	0.10	283

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	6.45	5.01	46.2	47.8	0.13	0.35	7.11	7.45	0.32	2.06	2.38	—	14,156	14,156	0.90	0.62	10.4	14,374
2026	1.96	33.5	12.5	17.3	0.03	0.08	1.53	1.61	0.08	0.23	0.30	—	4,104	4,104	0.18	0.08	2.10	4,136
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.80	1.71	21.8	24.9	0.08	0.13	2.81	2.94	0.13	0.56	0.69	—	7,983	7,983	0.87	0.84	0.29	8,257
2025	6.45	5.01	53.1	47.4	0.30	0.37	9.97	10.3	0.36	3.35	3.71	—	26,680	26,680	3.69	3.84	1.26	27,918
2026	3.56	2.80	24.4	32.7	0.07	0.18	3.21	3.39	0.17	0.55	0.72	—	8,605	8,605	0.53	0.41	0.19	8,739
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2024	0.17	0.10	1.32	1.50	< 0.005	0.01	0.17	0.18	0.01	0.03	0.04	—	484	484	0.05	0.05	0.29	501
2025	1.99	1.34	14.8	16.3	0.05	0.11	2.36	2.47	0.11	0.58	0.69	—	5,515	5,515	0.50	0.47	3.03	5,670
2026	0.71	3.18	4.82	6.46	0.01	0.04	0.63	0.67	0.03	0.11	0.14	—	1,684	1,684	0.10	0.08	0.58	1,709
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.03	0.02	0.24	0.27	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	80.2	80.2	0.01	0.01	0.05	83.0
2025	0.36	0.24	2.70	2.97	0.01	0.02	0.43	0.45	0.02	0.11	0.13	—	913	913	0.08	0.08	0.50	939
2026	0.13	0.58	0.88	1.18	< 0.005	0.01	0.12	0.12	0.01	0.02	0.03	—	279	279	0.02	0.01	0.10	283

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.36	3.83	1.64	24.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,860	6,894	3.71	0.21	20.1	7,070
Mit.	2.36	3.83	1.64	24.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,858	6,892	3.71	0.21	20.1	7,068
% Reduced	—	—	< 0.5%	—	—	—	—	—	—	—	—	—	< 0.5%	< 0.5%	—	—	—	< 0.5%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.96	3.44	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,562	6,596	3.72	0.23	0.99	6,759
Mit.	1.96	3.44	1.88	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,560	6,594	3.72	0.23	0.99	6,757
% Reduced	—	—	< 0.5%	—	—	—	—	—	—	—	—	—	< 0.5%	< 0.5%	—	—	—	< 0.5%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.92	3.41	1.61	18.8	0.05	0.03	2.11	2.14	0.03	0.37	0.40	34.4	5,723	5,757	3.66	0.20	8.07	5,915
Mit.	1.92	3.41	1.61	18.8	0.05	0.03	2.11	2.14	0.03	0.37	0.40	34.4	5,721	5,755	3.66	0.20	8.07	5,914

% Reduced	—	—	< 0.5%	—	—	—	—	—	—	—	—	—	< 0.5%	< 0.5%	—	—	—	< 0.5%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.35	0.62	0.29	3.44	0.01	0.01	0.38	0.39	0.01	0.07	0.07	5.70	947	953	0.61	0.03	1.34	979
Mit.	0.35	0.62	0.29	3.44	0.01	0.01	0.38	0.39	0.01	0.07	0.07	5.70	947	953	0.61	0.03	1.34	979
% Reduced	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%	1%	—	< 0.5%	1%	—	< 0.5%	—	< 0.5%	< 0.5%	< 0.5%	> -0.5%	—	< 0.5%

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.98	1.78	1.60	20.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,421	6,421	0.19	0.19	19.6	6,502
Area	0.38	2.05	0.04	4.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	233	233	0.04	< 0.005	—	235
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	197	197	0.03	< 0.005	—	199
Water	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Waste	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	2.36	3.83	1.64	24.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,860	6,894	3.71	0.21	20.1	7,070
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.96	1.75	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,133	6,133	0.20	0.21	0.51	6,201
Area	0.00	1.69	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	197	197	0.03	< 0.005	—	199
Water	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Waste	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	1.96	3.44	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,562	6,596	3.72	0.23	0.99	6,759
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.73	1.54	1.59	16.9	0.05	0.03	2.11	2.14	0.03	0.37	0.40	—	5,506	5,506	0.18	0.18	7.59	5,572
Area	0.19	1.87	0.02	1.99	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	10.8	10.8	< 0.005	< 0.005	—	10.9
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	197	197	0.03	< 0.005	—	199
Water	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Waste	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	1.92	3.41	1.61	18.8	0.05	0.03	2.11	2.14	0.03	0.37	0.40	34.4	5,723	5,757	3.66	0.20	8.07	5,915
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.32	0.28	0.29	3.08	0.01	0.01	0.38	0.39	0.01	0.07	0.07	—	912	912	0.03	0.03	1.26	922
Area	0.03	0.34	< 0.005	0.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.79	1.79	< 0.005	< 0.005	—	1.80
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	32.6	32.6	0.01	< 0.005	—	32.9
Water	—	—	—	—	—	—	—	—	—	—	—	0.82	1.54	2.36	0.08	< 0.005	—	5.06
Waste	—	—	—	—	—	—	—	—	—	—	—	4.88	0.00	4.88	0.49	0.00	—	17.1
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	0.35	0.62	0.29	3.44	0.01	0.01	0.38	0.39	0.01	0.07	0.07	5.70	947	953	0.61	0.03	1.34	979

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.98	1.78	1.60	20.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,421	6,421	0.19	0.19	19.6	6,502
Area	0.38	2.05	0.04	4.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	233	233	0.04	< 0.005	—	235

Energy	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	195	195	0.03	< 0.005	—	197
Water	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Waste	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	2.36	3.83	1.64	24.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,858	6,892	3.71	0.21	20.1	7,068
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.96	1.75	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,133	6,133	0.20	0.21	0.51	6,201
Area	0.00	1.69	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Energy	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	195	195	0.03	< 0.005	—	197
Water	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Waste	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	1.96	3.44	1.88	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,560	6,594	3.72	0.23	0.99	6,757
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.73	1.54	1.59	16.9	0.05	0.03	2.11	2.14	0.03	0.37	0.40	—	5,506	5,506	0.18	0.18	7.59	5,572
Area	0.19	1.87	0.02	1.99	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	10.8	10.8	< 0.005	< 0.005	—	10.9
Energy	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	195	195	0.03	< 0.005	—	197
Water	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Waste	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	1.92	3.41	1.61	18.8	0.05	0.03	2.11	2.14	0.03	0.37	0.40	34.4	5,721	5,755	3.66	0.20	8.07	5,914
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.32	0.28	0.29	3.08	0.01	0.01	0.38	0.39	0.01	0.07	0.07	—	912	912	0.03	0.03	1.26	922
Area	0.03	0.34	< 0.005	0.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.79	1.79	< 0.005	< 0.005	—	1.80
Energy	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	32.3	32.3	0.01	< 0.005	—	32.6
Water	—	—	—	—	—	—	—	—	—	—	—	0.82	1.54	2.36	0.08	< 0.005	—	5.06

Waste	—	—	—	—	—	—	—	—	—	—	—	4.88	0.00	4.88	0.49	0.00	—	17.1
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	0.35	0.62	0.29	3.44	0.01	0.01	0.38	0.39	0.01	0.07	0.07	5.70	947	953	0.61	0.03	1.34	979

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.78	1.49	13.4	18.4	0.03	0.51	—	0.51	0.47	—	0.47	—	2,649	2,649	0.11	0.02	—	2,659
Demolition	—	—	—	—	—	—	0.99	0.99	—	0.15	0.15	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.61	2.61	< 0.005	0.26	0.26	—	8.82	8.82	< 0.005	< 0.005	< 0.005	9.26
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.81	1.11	< 0.005	0.03	—	0.03	0.03	—	0.03	—	161	161	0.01	< 0.005	—	161
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.56
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.02	0.02	0.15	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.6	26.6	< 0.005	< 0.005	—	26.7
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.10	0.12	1.34	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	348	348	0.01	0.01	0.04	352
Vendor	0.02	0.01	0.25	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	154	154	0.02	0.02	0.01	161
Hauling	0.88	0.11	8.03	5.00	0.05	0.05	1.11	1.17	0.05	0.30	0.36	—	4,823	4,823	0.74	0.78	0.25	5,076
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	21.2	21.2	< 0.005	< 0.005	0.04	21.5
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.32	9.32	< 0.005	< 0.005	0.01	9.76
Hauling	0.05	0.01	0.48	0.30	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	293	293	0.04	0.05	0.25	308
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.51	3.51	< 0.005	< 0.005	0.01	3.56
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.54	1.54	< 0.005	< 0.005	< 0.005	1.62
Hauling	0.01	< 0.005	0.09	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	48.5	48.5	0.01	0.01	0.04	51.0

3.2. Demolition (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.78	1.49	13.4	18.4	0.03	0.08	—	0.08	0.07	—	0.07	—	2,649	2,649	0.11	0.02	—	2,659
Demolition	—	—	—	—	—	—	0.64	0.64	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.66	0.66	< 0.005	0.07	0.07	—	8.82	8.82	< 0.005	< 0.005	< 0.005	9.26
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.81	1.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	161	161	0.01	< 0.005	—	161
Demolition	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	< 0.005	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.56
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.6	26.6	< 0.005	< 0.005	—	26.7
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.12	0.10	0.12	1.34	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	348	348	0.01	0.01	0.04	352
Vendor	0.02	0.01	0.25	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	154	154	0.02	0.02	0.01	161
Hauling	0.88	0.11	8.03	5.00	0.05	0.05	1.11	1.17	0.05	0.30	0.36	—	4,823	4,823	0.74	0.78	0.25	5,076
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	21.2	21.2	< 0.005	< 0.005	0.04	21.5
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.32	9.32	< 0.005	< 0.005	0.01	9.76
Hauling	0.05	0.01	0.48	0.30	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	293	293	0.04	0.05	0.25	308
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.51	3.51	< 0.005	< 0.005	0.01	3.56
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.54	1.54	< 0.005	< 0.005	< 0.005	1.62
Hauling	0.01	< 0.005	0.09	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	48.5	48.5	0.01	0.01	0.04	51.0

3.3. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.67	1.40	12.8	18.3	0.03	0.43	—	0.43	0.39	—	0.39	—	2,649	2,649	0.11	0.02	—	2,658
Demolition	—	—	—	—	—	—	0.99	0.99	—	0.15	0.15	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.61	2.61	< 0.005	0.26	0.26	—	8.68	8.68	< 0.005	< 0.005	< 0.005	9.10

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.42	0.61	< 0.005	0.01	—	0.01	0.01	—	0.01	—	88.1	88.1	< 0.005	< 0.005	—	88.4
Demolition	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.30
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.6	14.6	< 0.005	< 0.005	—	14.6
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.10	1.23	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	340	340	0.01	0.01	0.03	345
Vendor	0.02	0.01	0.23	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.01	158
Hauling	0.85	0.11	7.62	4.92	0.05	0.05	1.11	1.17	0.05	0.30	0.36	—	4,717	4,717	0.71	0.76	0.24	4,961
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.4	11.4	< 0.005	< 0.005	0.02	11.5
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.02	5.02	< 0.005	< 0.005	0.01	5.25
Hauling	0.03	< 0.005	0.25	0.16	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	157	157	0.02	0.03	0.13	165
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.88	1.88	< 0.005	< 0.005	< 0.005	1.91

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.83	0.83	< 0.005	< 0.005	< 0.005	0.87
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.0	26.0	< 0.005	< 0.005	0.02	27.3

3.4. Demolition (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.67	1.40	12.8	18.3	0.03	0.06	—	0.06	0.06	—	0.06	—	2,649	2,649	0.11	0.02	—	2,658
Demolition	—	—	—	—	—	—	0.64	0.64	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.66	0.66	< 0.005	0.07	0.07	—	8.68	8.68	< 0.005	< 0.005	< 0.005	9.10
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.42	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	88.1	88.1	< 0.005	< 0.005	—	88.4
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.30
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.6	14.6	< 0.005	< 0.005	—	14.6
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.10	1.23	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	340	340	0.01	0.01	0.03	345
Vendor	0.02	0.01	0.23	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.01	158
Hauling	0.85	0.11	7.62	4.92	0.05	0.05	1.11	1.17	0.05	0.30	0.36	—	4,717	4,717	0.71	0.76	0.24	4,961
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.4	11.4	< 0.005	< 0.005	0.02	11.5
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.02	5.02	< 0.005	< 0.005	0.01	5.25
Hauling	0.03	< 0.005	0.25	0.16	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	157	157	0.02	0.03	0.13	165
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.88	1.88	< 0.005	< 0.005	< 0.005	1.91
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.83	0.83	< 0.005	< 0.005	< 0.005	0.87
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.0	26.0	< 0.005	< 0.005	0.02	27.3

3.5. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.81	1.52	14.7	15.1	0.02	0.63	—	0.63	0.58	—	0.58	—	2,594	2,594	0.11	0.02	—	2,603
Dust From Material Movement	—	—	—	—	—	—	8.58	8.58	—	4.27	4.27	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.61	2.61	< 0.005	0.26	0.26	—	8.68	8.68	< 0.005	< 0.005	< 0.005	9.10
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.80	0.83	< 0.005	0.03	—	0.03	0.03	—	0.03	—	142	142	0.01	< 0.005	—	143
Dust From Material Movement	—	—	—	—	—	—	0.47	0.47	—	0.23	0.23	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.14	0.14	< 0.005	0.01	0.01	—	0.48	0.48	< 0.005	< 0.005	< 0.005	0.50
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Dust From Material Movement	—	—	—	—	—	—	0.09	0.09	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.08	0.08	< 0.005	< 0.005	< 0.005	0.08
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.10	1.23	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	340	340	0.01	0.01	0.03	345
Vendor	0.02	0.01	0.23	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.01	158
Hauling	4.25	0.55	38.1	24.6	0.27	0.27	5.56	5.83	0.27	1.52	1.79	—	23,587	23,587	3.56	3.78	1.21	24,804
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	18.7	18.7	< 0.005	< 0.005	0.03	19.0
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.27	8.27	< 0.005	< 0.005	0.01	8.65
Hauling	0.23	0.03	2.06	1.35	0.01	0.01	0.30	0.31	0.01	0.08	0.10	—	1,293	1,293	0.19	0.21	1.11	1,360
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.10	3.10	< 0.005	< 0.005	< 0.005	3.14
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.37	1.37	< 0.005	< 0.005	< 0.005	1.43
Hauling	0.04	0.01	0.38	0.25	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	214	214	0.03	0.03	0.18	225

3.6. Site Preparation (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.81	1.52	14.7	15.1	0.02	0.09	—	0.09	0.09	—	0.09	—	2,594	2,594	0.11	0.02	—	2,603

Dust From Material Movement	—	—	—	—	—	—	3.35	3.35	—	1.66	1.66	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.66	0.66	< 0.005	0.07	0.07	—	8.68	8.68	< 0.005	< 0.005	< 0.005	9.10
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.80	0.83	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	142	142	0.01	< 0.005	—	143
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	< 0.005	—	0.48	0.48	< 0.005	< 0.005	< 0.005	0.50
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.08	0.08	< 0.005	< 0.005	< 0.005	0.08
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.10	1.23	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	340	340	0.01	0.01	0.03	345
Vendor	0.02	0.01	0.23	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.01	158
Hauling	4.25	0.55	38.1	24.6	0.27	0.27	5.56	5.83	0.27	1.52	1.79	—	23,587	23,587	3.56	3.78	1.21	24,804

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	18.7	18.7	< 0.005	< 0.005	0.03	19.0
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.27	8.27	< 0.005	< 0.005	0.01	8.65
Hauling	0.23	0.03	2.06	1.35	0.01	0.01	0.30	0.31	0.01	0.08	0.10	—	1,293	1,293	0.19	0.21	1.11	1,360
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.10	3.10	< 0.005	< 0.005	< 0.005	3.14
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.37	1.37	< 0.005	< 0.005	< 0.005	1.43
Hauling	0.04	0.01	0.38	0.25	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	214	214	0.03	0.03	0.18	225

3.7. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.18	3.51	30.4	27.3	0.07	1.28	—	1.28	1.18	—	1.18	—	7,334	7,334	0.30	0.06	—	7,359
Dust From Material Movement	—	—	—	—	—	—	9.23	9.23	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.61	2.61	< 0.005	0.26	0.26	—	8.69	8.69	< 0.005	< 0.005	0.02	9.12
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.18	3.51	30.4	27.3	0.07	1.28	—	1.28	1.18	—	1.18	—	7,334	7,334	0.30	0.06	—	7,359

Dust From Material Movement	—	—	—	—	—	—	9.23	9.23	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.61	2.61	< 0.005	0.26	0.26	—	8.68	8.68	< 0.005	< 0.005	< 0.005	9.10
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	0.34	2.91	2.62	0.01	0.12	—	0.12	0.11	—	0.11	—	703	703	0.03	0.01	—	706
Dust From Material Movement	—	—	—	—	—	—	0.88	0.88	—	0.35	0.35	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.25	0.25	< 0.005	0.03	0.03	—	0.83	0.83	< 0.005	< 0.005	< 0.005	0.87
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.53	0.48	< 0.005	0.02	—	0.02	0.02	—	0.02	—	116	116	< 0.005	< 0.005	—	117
Dust From Material Movement	—	—	—	—	—	—	0.16	0.16	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.08	1.34	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	360	360	0.01	< 0.005	1.19	362
Vendor	0.02	0.01	0.22	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.37	158
Hauling	0.26	0.03	2.18	1.48	0.02	0.02	0.33	0.35	0.02	0.09	0.11	—	1,415	1,415	0.21	0.23	2.80	1,491
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.11	0.10	0.10	1.23	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	340	340	0.01	0.01	0.03	345
Vendor	0.02	0.01	0.23	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.01	158
Hauling	0.26	0.03	2.29	1.48	0.02	0.02	0.33	0.35	0.02	0.09	0.11	—	1,415	1,415	0.21	0.23	0.07	1,488
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	32.7	32.7	< 0.005	< 0.005	0.05	33.2
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.5	14.5	< 0.005	< 0.005	0.02	15.1
Hauling	0.02	< 0.005	0.22	0.14	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	136	136	0.02	0.02	0.12	143
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.42	5.42	< 0.005	< 0.005	0.01	5.50
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.40	2.40	< 0.005	< 0.005	< 0.005	2.51
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	22.5	22.5	< 0.005	< 0.005	0.02	23.6

3.8. Grading (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.18	3.51	30.4	27.3	0.07	0.22	—	0.22	0.20	—	0.20	—	7,334	7,334	0.30	0.06	—	7,359
Dust From Material Movement	—	—	—	—	—	—	3.60	3.60	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.66	0.66	< 0.005	0.07	0.07	—	8.69	8.69	< 0.005	< 0.005	0.02	9.12
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	4.18	3.51	30.4	27.3	0.07	0.22	—	0.22	0.20	—	0.20	—	7,334	7,334	0.30	0.06	—	7,359
Dust From Material Movement	—	—	—	—	—	—	3.60	3.60	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.66	0.66	< 0.005	0.07	0.07	—	8.68	8.68	< 0.005	< 0.005	< 0.005	9.10
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	0.34	2.91	2.62	0.01	0.02	—	0.02	0.02	—	0.02	—	703	703	0.03	0.01	—	706
Dust From Material Movement	—	—	—	—	—	—	0.35	0.35	—	0.14	0.14	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	0.83	0.83	< 0.005	< 0.005	< 0.005	0.87
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.53	0.48	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	116	116	< 0.005	< 0.005	—	117
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.08	1.34	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	360	360	0.01	< 0.005	1.19	362
Vendor	0.02	0.01	0.22	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.37	158
Hauling	0.26	0.03	2.18	1.48	0.02	0.02	0.33	0.35	0.02	0.09	0.11	—	1,415	1,415	0.21	0.23	2.80	1,491

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.10	1.23	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	340	340	0.01	0.01	0.03	345
Vendor	0.02	0.01	0.23	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.01	158
Hauling	0.26	0.03	2.29	1.48	0.02	0.02	0.33	0.35	0.02	0.09	0.11	—	1,415	1,415	0.21	0.23	0.07	1,488
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	32.7	32.7	< 0.005	< 0.005	0.05	33.2
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.5	14.5	< 0.005	< 0.005	0.02	15.1
Hauling	0.02	< 0.005	0.22	0.14	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	136	136	0.02	0.02	0.12	143
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.42	5.42	< 0.005	< 0.005	0.01	5.50
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.40	2.40	< 0.005	< 0.005	< 0.005	2.51
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	22.5	22.5	< 0.005	< 0.005	0.02	23.6

3.9. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	3.92	3.92	< 0.005	0.39	0.39	—	13.0	13.0	< 0.005	< 0.005	0.03	13.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	3.92	3.92	< 0.005	0.39	0.39	—	13.0	13.0	< 0.005	< 0.005	< 0.005	13.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.81	0.67	6.25	7.81	0.01	0.26	—	0.26	0.24	—	0.24	—	1,436	1,436	0.06	0.01	—	1,441
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.35	2.35	< 0.005	0.23	0.23	—	7.80	7.80	< 0.005	< 0.005	0.01	8.18
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	1.14	1.43	< 0.005	0.05	—	0.05	0.04	—	0.04	—	238	238	0.01	< 0.005	—	239
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.43	0.43	< 0.005	0.04	0.04	—	1.29	1.29	< 0.005	< 0.005	< 0.005	1.35
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.19	0.15	2.62	0.00	0.00	0.71	0.71	0.00	0.17	0.17	—	703	703	0.01	0.01	2.33	707
Vendor	0.03	0.01	0.30	0.18	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	201	201	0.02	0.03	0.50	211
Hauling	0.28	0.04	2.42	1.64	0.02	0.02	0.37	0.39	0.02	0.10	0.12	—	1,573	1,573	0.24	0.25	3.11	1,657
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.19	0.20	2.40	0.00	0.00	0.71	0.71	0.00	0.17	0.17	—	664	664	0.01	0.03	0.06	672
Vendor	0.03	0.01	0.31	0.19	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	201	201	0.02	0.03	0.01	210
Hauling	0.28	0.04	2.54	1.64	0.02	0.02	0.37	0.39	0.02	0.10	0.12	—	1,572	1,572	0.24	0.25	0.08	1,654
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.11	0.11	1.40	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	399	399	0.01	0.02	0.60	404
Vendor	0.02	< 0.005	0.18	0.11	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	120	120	0.01	0.02	0.13	126

Hauling	0.17	0.02	1.50	0.99	0.01	0.01	0.22	0.23	0.01	0.06	0.07	—	942	942	0.14	0.15	0.81	991
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.25	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	66.0	66.0	< 0.005	< 0.005	0.10	67.0
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.9	19.9	< 0.005	< 0.005	0.02	20.9
Hauling	0.03	< 0.005	0.27	0.18	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	156	156	0.02	0.03	0.13	164

3.10. Building Construction (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.09	—	0.09	0.08	—	0.08	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.99	0.99	< 0.005	0.10	0.10	—	13.0	13.0	< 0.005	< 0.005	0.03	13.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.09	—	0.09	0.08	—	0.08	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.99	0.99	< 0.005	0.10	0.10	—	13.0	13.0	< 0.005	< 0.005	< 0.005	13.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.81	0.67	6.25	7.81	0.01	0.06	—	0.06	0.05	—	0.05	—	1,436	1,436	0.06	0.01	—	1,441
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.59	0.59	< 0.005	0.06	0.06	—	7.80	7.80	< 0.005	< 0.005	0.01	8.18
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.15	0.12	1.14	1.43	< 0.005	0.01	—	0.01	0.01	—	0.01	—	238	238	0.01	< 0.005	—	239
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	1.29	1.29	< 0.005	< 0.005	< 0.005	1.35
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.19	0.15	2.62	0.00	0.00	0.71	0.71	0.00	0.17	0.17	—	703	703	0.01	0.01	2.33	707
Vendor	0.03	0.01	0.30	0.18	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	201	201	0.02	0.03	0.50	211
Hauling	0.28	0.04	2.42	1.64	0.02	0.02	0.37	0.39	0.02	0.10	0.12	—	1,573	1,573	0.24	0.25	3.11	1,657
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.19	0.20	2.40	0.00	0.00	0.71	0.71	0.00	0.17	0.17	—	664	664	0.01	0.03	0.06	672
Vendor	0.03	0.01	0.31	0.19	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	201	201	0.02	0.03	0.01	210
Hauling	0.28	0.04	2.54	1.64	0.02	0.02	0.37	0.39	0.02	0.10	0.12	—	1,572	1,572	0.24	0.25	0.08	1,654
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.11	0.11	1.40	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	399	399	0.01	0.02	0.60	404
Vendor	0.02	< 0.005	0.18	0.11	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	120	120	0.01	0.02	0.13	126
Hauling	0.17	0.02	1.50	0.99	0.01	0.01	0.22	0.23	0.01	0.06	0.07	—	942	942	0.14	0.15	0.81	991
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.25	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	66.0	66.0	< 0.005	< 0.005	0.10	67.0
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.9	19.9	< 0.005	< 0.005	0.02	20.9
Hauling	0.03	< 0.005	0.27	0.18	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	156	156	0.02	0.03	0.13	164

3.11. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	3.92	3.92	< 0.005	0.39	0.39	—	12.8	12.8	< 0.005	< 0.005	< 0.005	13.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.18	1.70	2.23	< 0.005	0.07	—	0.07	0.06	—	0.06	—	413	413	0.02	< 0.005	—	414
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.68	0.68	< 0.005	0.07	0.07	—	2.21	2.21	< 0.005	< 0.005	< 0.005	2.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.31	0.41	< 0.005	0.01	—	0.01	0.01	—	0.01	—	68.3	68.3	< 0.005	< 0.005	—	68.6
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	0.37	0.37	< 0.005	< 0.005	< 0.005	0.38
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.18	2.22	0.00	0.00	0.71	0.71	0.00	0.17	0.17	—	650	650	0.01	0.03	0.05	659
Vendor	0.03	0.01	0.29	0.18	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	197	197	0.02	0.03	0.01	206
Hauling	0.26	0.04	2.42	1.63	0.01	0.02	0.37	0.39	0.02	0.10	0.12	—	1,537	1,537	0.23	0.24	0.08	1,616

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.37	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	112	112	< 0.005	< 0.005	0.15	114
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	34.0	34.0	< 0.005	< 0.005	0.03	35.6
Hauling	0.05	0.01	0.41	0.28	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	265	265	0.04	0.04	0.22	278
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	18.6	18.6	< 0.005	< 0.005	0.03	18.9
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.63	5.63	< 0.005	< 0.005	0.01	5.89
Hauling	0.01	< 0.005	0.07	0.05	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	43.8	43.8	0.01	0.01	0.04	46.1

3.12. Building Construction (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.08	—	0.08	0.08	—	0.08	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.99	0.99	< 0.005	0.10	0.10	—	12.8	12.8	< 0.005	< 0.005	< 0.005	13.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.18	1.70	2.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	413	413	0.02	< 0.005	—	414
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.17	0.17	< 0.005	0.02	0.02	—	2.21	2.21	< 0.005	< 0.005	< 0.005	2.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.04	0.03	0.31	0.41	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	68.3	68.3	< 0.005	< 0.005	—	68.6
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.37	0.37	< 0.005	< 0.005	< 0.005	0.38
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.18	2.22	0.00	0.00	0.71	0.71	0.00	0.17	0.17	—	650	650	0.01	0.03	0.05	659
Vendor	0.03	0.01	0.29	0.18	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	197	197	0.02	0.03	0.01	206
Hauling	0.26	0.04	2.42	1.63	0.01	0.02	0.37	0.39	0.02	0.10	0.12	—	1,537	1,537	0.23	0.24	0.08	1,616
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.37	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	112	112	< 0.005	< 0.005	0.15	114
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	34.0	34.0	< 0.005	< 0.005	0.03	35.6
Hauling	0.05	0.01	0.41	0.28	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	265	265	0.04	0.04	0.22	278
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	18.6	18.6	< 0.005	< 0.005	0.03	18.9
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.63	5.63	< 0.005	< 0.005	0.01	5.89
Hauling	0.01	< 0.005	0.07	0.05	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	43.8	43.8	0.01	0.01	0.04	46.1

3.13. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	11.0	14.2	0.03	0.48	—	0.48	0.44	—	0.44	—	3,166	3,166	0.13	0.03	—	3,176
Paving	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.61	2.61	< 0.005	0.26	0.26	—	8.54	8.54	< 0.005	< 0.005	0.02	8.97
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	11.0	14.2	0.03	0.48	—	0.48	0.44	—	0.44	—	3,166	3,166	0.13	0.03	—	3,176
Paving	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.61	2.61	< 0.005	0.26	0.26	—	8.54	8.54	< 0.005	< 0.005	< 0.005	8.95
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.36	0.30	2.42	3.11	0.01	0.11	—	0.11	0.10	—	0.10	—	694	694	0.03	0.01	—	696
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.57	0.57	< 0.005	0.06	0.06	—	1.87	1.87	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.05	0.44	0.57	< 0.005	0.02	—	0.02	0.02	—	0.02	—	115	115	< 0.005	< 0.005	—	115
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.33
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.10	0.09	0.08	1.24	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	353	353	0.01	< 0.005	1.05	355
Vendor	0.02	0.01	0.21	0.13	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	148	148	0.01	0.02	0.35	155
Hauling	0.03	< 0.005	0.23	0.16	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	154	154	0.02	0.02	0.30	162
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.09	1.14	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	334	334	0.01	0.01	0.03	338
Vendor	0.02	0.01	0.22	0.13	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	148	148	0.01	0.02	0.01	155
Hauling	0.03	< 0.005	0.24	0.16	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	154	154	0.02	0.02	0.01	162
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.24	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	73.3	73.3	< 0.005	< 0.005	0.10	74.4
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.4	32.4	< 0.005	< 0.005	0.03	34.0
Hauling	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33.7	33.7	< 0.005	0.01	0.03	35.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.1	12.1	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.37	5.37	< 0.005	< 0.005	0.01	5.62
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.58	5.58	< 0.005	< 0.005	< 0.005	5.87

3.14. Paving (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	11.0	14.2	0.03	0.07	—	0.07	0.07	—	0.07	—	3,166	3,166	0.13	0.03	—	3,176
Paving	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.66	0.66	< 0.005	0.07	0.07	—	8.54	8.54	< 0.005	< 0.005	0.02	8.97
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	11.0	14.2	0.03	0.07	—	0.07	0.07	—	0.07	—	3,166	3,166	0.13	0.03	—	3,176
Paving	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.66	0.66	< 0.005	0.07	0.07	—	8.54	8.54	< 0.005	< 0.005	< 0.005	8.95
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.36	0.30	2.42	3.11	0.01	0.02	—	0.02	0.01	—	0.01	—	694	694	0.03	0.01	—	696
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.14	0.14	< 0.005	0.01	0.01	—	1.87	1.87	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.05	0.44	0.57	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	115	115	< 0.005	< 0.005	—	115
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.33
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.08	1.24	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	353	353	0.01	< 0.005	1.05	355
Vendor	0.02	0.01	0.21	0.13	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	148	148	0.01	0.02	0.35	155
Hauling	0.03	< 0.005	0.23	0.16	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	154	154	0.02	0.02	0.30	162
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.10	0.09	0.09	1.14	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	334	334	0.01	0.01	0.03	338
Vendor	0.02	0.01	0.22	0.13	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	148	148	0.01	0.02	0.01	155
Hauling	0.03	< 0.005	0.24	0.16	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	154	154	0.02	0.02	0.01	162
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.24	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	73.3	73.3	< 0.005	< 0.005	0.10	74.4
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.4	32.4	< 0.005	< 0.005	0.03	34.0
Hauling	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33.7	33.7	< 0.005	0.01	0.03	35.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.1	12.1	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.37	5.37	< 0.005	< 0.005	0.01	5.62
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.58	5.58	< 0.005	< 0.005	< 0.005	5.87

3.15. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	31.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.31	1.31	< 0.005	0.13	0.13	—	4.27	4.27	< 0.005	< 0.005	0.01	4.49
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.0	11.0	< 0.005	< 0.005	—	11.0
Architectural Coatings	—	2.62	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	0.35	0.35	< 0.005	< 0.005	< 0.005	0.37
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.82	1.82	< 0.005	< 0.005	—	1.82
Architectural Coatings	—	0.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.31	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	88.3	88.3	< 0.005	< 0.005	0.26	88.7
Vendor	0.01	< 0.005	0.07	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	49.4	49.4	< 0.005	0.01	0.12	51.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.88	6.88	< 0.005	< 0.005	0.01	6.97
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.06	4.06	< 0.005	< 0.005	< 0.005	4.24
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.14	1.14	< 0.005	< 0.005	< 0.005	1.15
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.67	0.67	< 0.005	< 0.005	< 0.005	0.70
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.16. Architectural Coating (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	31.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.33	0.33	< 0.005	0.03	0.03	—	4.27	4.27	< 0.005	< 0.005	0.01	4.49
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.0	11.0	< 0.005	< 0.005	—	11.0
Architectural Coatings	—	2.62	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.35	0.35	< 0.005	< 0.005	< 0.005	0.37
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.82	1.82	< 0.005	< 0.005	—	1.82
Architectural Coatings	—	0.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.31	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	88.3	88.3	< 0.005	< 0.005	0.26	88.7
Vendor	0.01	< 0.005	0.07	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	49.4	49.4	< 0.005	0.01	0.12	51.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.88	6.88	< 0.005	< 0.005	0.01	6.97
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.06	4.06	< 0.005	< 0.005	< 0.005	4.24
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.14	1.14	< 0.005	< 0.005	< 0.005	1.15
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.67	0.67	< 0.005	< 0.005	< 0.005	0.70
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	1.98	1.78	1.60	20.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,421	6,421	0.19	0.19	19.6	6,502
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.98	1.78	1.60	20.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,421	6,421	0.19	0.19	19.6	6,502
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	1.96	1.75	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,133	6,133	0.20	0.21	0.51	6,201
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.96	1.75	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,133	6,133	0.20	0.21	0.51	6,201
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.32	0.28	0.29	3.08	0.01	0.01	0.38	0.39	0.01	0.07	0.07	—	912	912	0.03	0.03	1.26	922
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.32	0.28	0.29	3.08	0.01	0.01	0.38	0.39	0.01	0.07	0.07	—	912	912	0.03	0.03	1.26	922

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	1.98	1.78	1.60	20.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,421	6,421	0.19	0.19	19.6	6,502
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.98	1.78	1.60	20.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,421	6,421	0.19	0.19	19.6	6,502
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	1.96	1.75	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,133	6,133	0.20	0.21	0.51	6,201
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.96	1.75	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,133	6,133	0.20	0.21	0.51	6,201
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.32	0.28	0.29	3.08	0.01	0.01	0.38	0.39	0.01	0.07	0.07	—	912	912	0.03	0.03	1.26	922
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.32	0.28	0.29	3.08	0.01	0.01	0.38	0.39	0.01	0.07	0.07	—	912	912	0.03	0.03	1.26	922

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	170	170	0.03	< 0.005	—	171
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	27.3	27.3	< 0.005	< 0.005	—	27.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	197	197	0.03	< 0.005	—	199
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	170	170	0.03	< 0.005	—	171
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	27.3	27.3	< 0.005	< 0.005	—	27.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	197	197	0.03	< 0.005	—	199
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	28.1	28.1	< 0.005	< 0.005	—	28.4
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	4.51	4.51	< 0.005	< 0.005	—	4.56
Total	—	—	—	—	—	—	—	—	—	—	—	—	32.6	32.6	0.01	< 0.005	—	32.9

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	170	170	0.03	< 0.005	—	172
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	27.3	27.3	< 0.005	< 0.005	—	27.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	197	197	0.03	< 0.005	—	199
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	170	170	0.03	< 0.005	—	172
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	27.3	27.3	< 0.005	< 0.005	—	27.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	197	197	0.03	< 0.005	—	199
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	28.2	28.2	< 0.005	< 0.005	—	28.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	4.51	4.51	< 0.005	< 0.005	—	4.56
Total	—	—	—	—	—	—	—	—	—	—	—	—	32.7	32.7	0.01	< 0.005	—	33.0

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Condo/T	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-2.47	-2.47	> -0.005	> -0.005	—	-2.48
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Total	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-2.47	-2.47	> -0.005	> -0.005	—	-2.48
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-2.47	-2.47	> -0.005	> -0.005	—	-2.48
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-2.47	-2.47	> -0.005	> -0.005	—	-2.48
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-0.41	-0.41	> -0.005	> -0.005	—	-0.41
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-0.41	-0.41	> -0.005	> -0.005	—	-0.41

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Consumer Products	—	1.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landsca Equipment	0.38	0.36	0.04	4.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.8	10.8	< 0.005	< 0.005	—	10.8
Total	0.38	2.05	0.04	4.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	233	233	0.04	< 0.005	—	235
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Consum er Products	—	1.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	1.69	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.91	0.91	< 0.005	< 0.005	—	0.92
Consum er Products	—	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landsca pe Equipme nt	0.03	0.03	< 0.005	0.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.88	0.88	< 0.005	< 0.005	—	0.88
Total	0.03	0.34	< 0.005	0.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.79	1.79	< 0.005	< 0.005	—	1.80

4.3.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Consumer Products	—	1.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.38	0.36	0.04	4.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.8	10.8	< 0.005	< 0.005	—	10.8
Total	0.38	2.05	0.04	4.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	233	233	0.04	< 0.005	—	235
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Consumer Products	—	1.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	1.69	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.91	0.91	< 0.005	< 0.005	—	0.92
Consumer Products	—	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape	0.03	0.03	< 0.005	0.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.88	0.88	< 0.005	< 0.005	—	0.88
Total	0.03	0.34	< 0.005	0.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.79	1.79	< 0.005	< 0.005	—	1.80

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.82	1.54	2.36	0.08	< 0.005	—	5.06

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	0.82	1.54	2.36	0.08	< 0.005	—	5.06

4.4.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.82	1.54	2.36	0.08	< 0.005	—	5.06
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	0.82	1.54	2.36	0.08	< 0.005	—	5.06

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.88	0.00	4.88	0.49	0.00	—	17.1
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	4.88	0.00	4.88	0.49	0.00	—	17.1

4.5.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.88	0.00	4.88	0.49	0.00	—	17.1
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	4.88	0.00	4.88	0.49	0.00	—	17.1

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Condo/Townhous	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	12/1/2024	1/17/2025	5.00	35.0	—
Site Preparation	Site Preparation	1/18/2025	2/15/2025	5.00	20.0	—
Grading	Grading	2/16/2025	4/05/2025	5.00	35.0	—
Building Construction 1	Building Construction	3/1/2025	3/29/2026	5.00	280	—
Paving	Paving	3/2/2026	6/20/2026	5.00	80.0	—
Architectural Coating	Architectural Coating	5/10/2026	6/20/2026	5.00	30.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

Demolition	Concrete/Industrial Saws	Diesel	Average	2.00	8.00	33.0	0.73
Demolition	Excavators	Diesel	Average	5.00	8.00	36.0	0.38
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	5.00	8.00	84.0	0.37
Site Preparation	Rubber Tired Dozers	Diesel	Average	2.00	5.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Grading	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Dumpers/Tenders	Diesel	Average	1.00	8.00	16.0	0.38
Grading	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Grading	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Building Construction 1	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction 1	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction 1	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction 1	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction 1	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	3.00	8.00	81.0	0.42
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving	Graders	Diesel	Average	1.00	1.00	148	0.41
Paving	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Paving	Scrapers	Diesel	Average	1.00	1.00	423	0.48
Paving	Plate Compactors	Diesel	Average	1.00	1.00	8.00	0.43

Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	2.00	8.00	33.0	0.73
Demolition	Excavators	Diesel	Average	5.00	8.00	36.0	0.38
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	5.00	8.00	84.0	0.37
Site Preparation	Rubber Tired Dozers	Diesel	Average	2.00	5.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Grading	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Dumpers/Tenders	Diesel	Average	1.00	8.00	16.0	0.38
Grading	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Grading	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Building Construction 1	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction 1	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction 1	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction 1	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction 1	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	3.00	8.00	81.0	0.42
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38

Paving	Graders	Diesel	Average	1.00	1.00	148	0.41
Paving	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Paving	Scrapers	Diesel	Average	1.00	1.00	423	0.48
Paving	Plate Compactors	Diesel	Average	1.00	1.00	8.00	0.43
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	40.0	12.8	LDA,LDT1,LDT2
Demolition	Vendor	6.00	7.30	HHDT,MHDT
Demolition	Hauling	60.0	20.0	HHDT
Demolition	Onsite truck	2.00	1.00	HHDT,MHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	40.0	12.8	LDA,LDT1,LDT2
Site Preparation	Vendor	6.00	7.30	HHDT,MHDT
Site Preparation	Hauling	300	20.0	HHDT
Site Preparation	Onsite truck	2.00	1.00	HHDT,MHDT
Grading	—	—	—	—
Grading	Worker	40.0	12.8	LDA,LDT1,LDT2
Grading	Vendor	6.00	7.30	HHDT,MHDT
Grading	Hauling	18.0	20.0	HHDT
Grading	Onsite truck	2.00	1.00	HHDT,MHDT
Building Construction 1	—	—	—	—
Building Construction 1	Worker	78.0	12.8	LDA,LDT1,LDT2

Building Construction 1	Vendor	8.00	7.30	HHDT,MHDT
Building Construction 1	Hauling	20.0	20.0	HHDT
Building Construction 1	Onsite truck	3.00	1.00	HHDT,MHDT
Paving	—	—	—	—
Paving	Worker	40.0	12.8	LDA,LDT1,LDT2
Paving	Vendor	6.00	7.30	HHDT,MHDT
Paving	Hauling	2.00	20.0	HHDT
Paving	Onsite truck	2.00	1.00	HHDT,MHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	10.0	12.8	LDA,LDT1,LDT2
Architectural Coating	Vendor	2.00	7.30	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	1.00	1.00	HHDT,MHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	40.0	12.8	LDA,LDT1,LDT2
Demolition	Vendor	6.00	7.30	HHDT,MHDT
Demolition	Hauling	60.0	20.0	HHDT
Demolition	Onsite truck	2.00	1.00	HHDT,MHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	40.0	12.8	LDA,LDT1,LDT2
Site Preparation	Vendor	6.00	7.30	HHDT,MHDT
Site Preparation	Hauling	300	20.0	HHDT
Site Preparation	Onsite truck	2.00	1.00	HHDT,MHDT
Grading	—	—	—	—

Grading	Worker	40.0	12.8	LDA,LDT1,LDT2
Grading	Vendor	6.00	7.30	HHDT,MHDT
Grading	Hauling	18.0	20.0	HHDT
Grading	Onsite truck	2.00	1.00	HHDT,MHDT
Building Construction 1	—	—	—	—
Building Construction 1	Worker	78.0	12.8	LDA,LDT1,LDT2
Building Construction 1	Vendor	8.00	7.30	HHDT,MHDT
Building Construction 1	Hauling	20.0	20.0	HHDT
Building Construction 1	Onsite truck	3.00	1.00	HHDT,MHDT
Paving	—	—	—	—
Paving	Worker	40.0	12.8	LDA,LDT1,LDT2
Paving	Vendor	6.00	7.30	HHDT,MHDT
Paving	Hauling	2.00	20.0	HHDT
Paving	Onsite truck	2.00	1.00	HHDT,MHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	10.0	12.8	LDA,LDT1,LDT2
Architectural Coating	Vendor	2.00	7.30	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	1.00	1.00	HHDT,MHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

Architectural Coating	135,144	45,048	0.00	0.00	3,340

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	1,500	—
Site Preparation	66,738	0.00	15.0	0.00	—
Grading	7,500	0.00	20.0	0.00	—
Paving	0.00	0.00	0.00	0.00	1.28

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Condo/Townhouse	—	0%
Parking Lot	1.28	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Condo/Townhouse	520	578	446	188,883	7,753	8,622	6,652	2,817,745
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Condo/Townhouse	520	578	446	188,883	7,753	8,622	6,652	2,817,745
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	36
No Fireplaces	35
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0

Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	36
No Fireplaces	35
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
135144.44999999998	45,048	0.00	0.00	3,340

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Condo/Townhouse	303,489	204	0.0330	0.0040	0.00
Parking Lot	48,767	204	0.0330	0.0040	0.00

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Condo/Townhouse	304,499	204	0.0330	0.0040	-7,716
Parking Lot	48,767	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Condo/Townhouse	2,574,914	6.59
Parking Lot	0.00	1.08

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)

Condo/Townhouse	2,574,914	6.59
Parking Lot	0.00	1.08

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Condo/Townhouse	54.7	—
Parking Lot	0.00	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Condo/Townhouse	54.7	—
Parking Lot	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	8.54	annual days of extreme heat
Extreme Precipitation	6.90	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	14.3	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A

Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract

Exposure Indicators	—
AQ-Ozone	7.52
AQ-PM	14.5
AQ-DPM	30.0
Drinking Water	48.2
Lead Risk Housing	23.7
Pesticides	82.8
Toxic Releases	28.0
Traffic	21.1
Effect Indicators	—
CleanUp Sites	46.1
Groundwater	30.9
Haz Waste Facilities/Generators	0.00
Impaired Water Bodies	23.9
Solid Waste	0.00
Sensitive Population	—
Asthma	38.6
Cardio-vascular	20.9
Low Birth Weights	60.1
Socioeconomic Factor Indicators	—
Education	14.8
Housing	42.3
Linguistic	0.00
Poverty	6.73
Unemployment	1.15

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	91.03041191
Employed	89.79853715
Median HI	83.63916335
Education	—
Bachelor's or higher	78.91697677
High school enrollment	100
Preschool enrollment	88.41267804
Transportation	—
Auto Access	43.87270627
Active commuting	72.95008341
Social	—
2-parent households	52.82946234
Voting	91.50519697
Neighborhood	—
Alcohol availability	59.74592583
Park access	35.26241499
Retail density	11.88245862
Supermarket access	2.399589375
Tree canopy	93.41716925
Housing	—
Homeownership	81.12408572
Housing habitability	44.70678814
Low-inc homeowner severe housing cost burden	43.85987425
Low-inc renter severe housing cost burden	88.29718979
Uncrowded housing	33.18362633

Health Outcomes	—
Insured adults	88.86179905
Arthritis	0.0
Asthma ER Admissions	65.7
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	54.6
Cognitively Disabled	26.7
Physically Disabled	29.8
Heart Attack ER Admissions	91.6
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	68.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	7.9
SLR Inundation Area	31.3

Children	71.1
Elderly	28.7
English Speaking	74.8
Foreign-born	17.8
Outdoor Workers	33.7
Climate Change Adaptive Capacity	—
Impervious Surface Cover	86.3
Traffic Density	2.3
Traffic Access	23.0
Other Indices	—
Hardship	23.7
Other Decision Support	—
2016 Voting	92.6

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	11.0
Healthy Places Index Score for Project Location (b)	90.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Updated acreages 4/2023
Construction: Trips and VMT	Added onsite travel with mixed vehicles
Construction: Construction Phases	Approximately 18 month construction duration
Construction: Dust From Material Movement	Site Prep Building materials would be transported to the site Grading import approximately 7,500 cubic yards of fill
Operations: Energy Use	No natural gas
Operations: Hearths	No natural gas
Construction: Off-Road Equipment	Modified with Midpen inputs
Construction: Demolition	20,840 CY of site concrete to demo accounted for in haul trips

Cypress Point Affordable House Project Detailed Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Cypress Point Affordable House Project
Construction Start Date	12/1/2024
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	4.60
Precipitation (days)	41.0
Location	37.53401472727023, -122.51597955266524
County	San Mateo
City	Unincorporated
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1226
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.13

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Condo/Townhouse	71.0	Dwelling Unit	5.00	66,738	0.65	0.00	213	—
Parking Lot	142	Space	1.28	0.00	0.13	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-B	Water Active Demolition Sites
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Transportation	T-4	Integrate A ordable and Below Market Rate Housing
Energy	E-12-B	Install Electric Space Heater in Place of Natural Gas Heaters in Residences

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.45	33.5	46.2	47.8	0.13	1.75	17.6	19.4	1.61	4.78	6.39	—	14,156	14,156	0.90	0.62	10.4	14,374
Mit.	2.33	32.5	35.1	59.8	0.13	0.36	7.11	7.46	0.34	2.06	2.40	—	14,156	14,156	0.90	0.62	10.4	14,374
% Reduced	64%	3%	24%	-25%	—	80%	60%	61%	79%	57%	62%	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.45	5.01	53.1	47.4	0.30	1.75	17.6	19.4	1.61	6.15	7.00	—	26,680	26,680	3.69	3.84	1.26	27,918
Mit.	4.71	1.73	46.2	59.5	0.30	0.36	9.97	10.3	0.35	3.35	3.67	—	26,680	26,680	3.69	3.84	1.26	27,918
% Reduced	27%	66%	13%	-25%	—	80%	43%	47%	79%	46%	48%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.99	3.18	14.8	16.3	0.05	0.46	5.31	5.77	0.43	1.15	1.58	—	5,515	5,515	0.50	0.47	3.03	5,670
Mit.	1.01	2.85	13.0	18.3	0.05	0.13	2.36	2.49	0.13	0.58	0.71	—	5,515	5,515	0.50	0.47	3.03	5,670
% Reduced	49%	10%	12%	-12%	—	71%	56%	57%	70%	49%	55%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.36	0.58	2.70	2.97	0.01	0.08	0.97	1.05	0.08	0.21	0.29	—	913	913	0.08	0.08	0.50	939
Mit.	0.18	0.52	2.37	3.34	0.01	0.02	0.43	0.45	0.02	0.11	0.13	—	913	913	0.08	0.08	0.50	939
% Reduced	49%	10%	12%	-12%	—	71%	56%	57%	70%	49%	55%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	6.45	5.01	46.2	47.8	0.13	1.75	17.6	19.4	1.61	4.78	6.39	—	14,156	14,156	0.90	0.62	10.4	14,374
2026	1.96	33.5	12.5	17.3	0.03	0.51	4.46	4.97	0.47	0.52	0.99	—	4,104	4,104	0.18	0.08	2.10	4,136
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2024	2.80	1.71	21.8	24.9	0.08	0.57	5.12	5.69	0.53	0.81	1.34	—	7,983	7,983	0.87	0.84	0.29	8,257
2025	6.45	5.01	53.1	47.4	0.30	1.75	17.6	19.4	1.61	6.15	7.00	—	26,680	26,680	3.69	3.84	1.26	27,918
2026	3.56	2.80	24.4	32.7	0.07	0.88	8.10	8.98	0.82	1.04	1.86	—	8,605	8,605	0.53	0.41	0.19	8,739
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.17	0.10	1.32	1.50	< 0.005	0.03	0.31	0.34	0.03	0.05	0.08	—	484	484	0.05	0.05	0.29	501
2025	1.99	1.34	14.8	16.3	0.05	0.46	5.31	5.77	0.43	1.15	1.58	—	5,515	5,515	0.50	0.47	3.03	5,670
2026	0.71	3.18	4.82	6.46	0.01	0.18	1.65	1.82	0.16	0.21	0.37	—	1,684	1,684	0.10	0.08	0.58	1,709
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.03	0.02	0.24	0.27	< 0.005	0.01	0.06	0.06	0.01	0.01	0.01	—	80.2	80.2	0.01	0.01	0.05	83.0
2025	0.36	0.24	2.70	2.97	0.01	0.08	0.97	1.05	0.08	0.21	0.29	—	913	913	0.08	0.08	0.50	939
2026	0.13	0.58	0.88	1.18	< 0.005	0.03	0.30	0.33	0.03	0.04	0.07	—	279	279	0.02	0.01	0.10	283

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.33	1.73	35.1	59.8	0.13	0.36	7.11	7.46	0.34	2.06	2.40	—	14,156	14,156	0.90	0.62	10.4	14,374
2026	0.63	32.5	13.1	21.8	0.03	0.15	1.53	1.68	0.15	0.23	0.38	—	4,104	4,104	0.18	0.08	2.10	4,136
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.43	0.63	23.7	25.1	0.08	0.35	2.81	3.16	0.33	0.56	0.89	—	7,983	7,983	0.87	0.84	0.29	8,257
2025	4.71	1.73	46.2	59.5	0.30	0.36	9.97	10.3	0.35	3.35	3.67	—	26,680	26,680	3.69	3.84	1.26	27,918
2026	1.51	1.20	24.4	39.2	0.07	0.26	3.21	3.47	0.25	0.55	0.80	—	8,605	8,605	0.53	0.41	0.19	8,739
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2024	0.09	0.04	1.43	1.52	< 0.005	0.02	0.17	0.19	0.02	0.03	0.05	—	484	484	0.05	0.05	0.29	501
2025	1.01	0.56	13.0	18.3	0.05	0.13	2.36	2.49	0.13	0.58	0.71	—	5,515	5,515	0.50	0.47	3.03	5,670
2026	0.29	2.85	4.86	7.80	0.01	0.05	0.63	0.69	0.05	0.11	0.16	—	1,684	1,684	0.10	0.08	0.58	1,709
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.02	0.01	0.26	0.28	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	80.2	80.2	0.01	0.01	0.05	83.0
2025	0.18	0.10	2.37	3.34	0.01	0.02	0.43	0.45	0.02	0.11	0.13	—	913	913	0.08	0.08	0.50	939
2026	0.05	0.52	0.89	1.42	< 0.005	0.01	0.12	0.13	0.01	0.02	0.03	—	279	279	0.02	0.01	0.10	283

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.36	3.83	1.64	24.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,860	6,894	3.71	0.21	20.1	7,070
Mit.	2.36	3.83	1.64	24.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,858	6,892	3.71	0.21	20.1	7,068
% Reduced	—	—	< 0.5%	—	—	—	—	—	—	—	—	—	< 0.5%	< 0.5%	—	—	—	< 0.5%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.96	3.44	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,562	6,596	3.72	0.23	0.99	6,759
Mit.	1.96	3.44	1.88	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,560	6,594	3.72	0.23	0.99	6,757
% Reduced	—	—	< 0.5%	—	—	—	—	—	—	—	—	—	< 0.5%	< 0.5%	—	—	—	< 0.5%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.92	3.41	1.61	18.8	0.05	0.03	2.11	2.14	0.03	0.37	0.40	34.4	5,723	5,757	3.66	0.20	8.07	5,915
Mit.	1.92	3.41	1.61	18.8	0.05	0.03	2.11	2.14	0.03	0.37	0.40	34.4	5,721	5,755	3.66	0.20	8.07	5,914

% Reduced	—	—	< 0.5%	—	—	—	—	—	—	—	—	—	< 0.5%	< 0.5%	—	—	—	< 0.5%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.35	0.62	0.29	3.44	0.01	0.01	0.38	0.39	0.01	0.07	0.07	5.70	947	953	0.61	0.03	1.34	979
Mit.	0.35	0.62	0.29	3.44	0.01	0.01	0.38	0.39	0.01	0.07	0.07	5.70	947	953	0.61	0.03	1.34	979
% Reduced	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%	1%	—	< 0.5%	1%	—	< 0.5%	—	< 0.5%	< 0.5%	< 0.5%	> -0.5%	—	< 0.5%

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.98	1.78	1.60	20.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,421	6,421	0.19	0.19	19.6	6,502
Area	0.38	2.05	0.04	4.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	233	233	0.04	< 0.005	—	235
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	197	197	0.03	< 0.005	—	199
Water	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Waste	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	2.36	3.83	1.64	24.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,860	6,894	3.71	0.21	20.1	7,070
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.96	1.75	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,133	6,133	0.20	0.21	0.51	6,201
Area	0.00	1.69	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	197	197	0.03	< 0.005	—	199
Water	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Waste	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	1.96	3.44	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,562	6,596	3.72	0.23	0.99	6,759
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.73	1.54	1.59	16.9	0.05	0.03	2.11	2.14	0.03	0.37	0.40	—	5,506	5,506	0.18	0.18	7.59	5,572
Area	0.19	1.87	0.02	1.99	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	10.8	10.8	< 0.005	< 0.005	—	10.9
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	197	197	0.03	< 0.005	—	199
Water	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Waste	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	1.92	3.41	1.61	18.8	0.05	0.03	2.11	2.14	0.03	0.37	0.40	34.4	5,723	5,757	3.66	0.20	8.07	5,915
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.32	0.28	0.29	3.08	0.01	0.01	0.38	0.39	0.01	0.07	0.07	—	912	912	0.03	0.03	1.26	922
Area	0.03	0.34	< 0.005	0.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.79	1.79	< 0.005	< 0.005	—	1.80
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	32.6	32.6	0.01	< 0.005	—	32.9
Water	—	—	—	—	—	—	—	—	—	—	—	0.82	1.54	2.36	0.08	< 0.005	—	5.06
Waste	—	—	—	—	—	—	—	—	—	—	—	4.88	0.00	4.88	0.49	0.00	—	17.1
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	0.35	0.62	0.29	3.44	0.01	0.01	0.38	0.39	0.01	0.07	0.07	5.70	947	953	0.61	0.03	1.34	979

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.98	1.78	1.60	20.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,421	6,421	0.19	0.19	19.6	6,502
Area	0.38	2.05	0.04	4.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	233	233	0.04	< 0.005	—	235

Energy	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	195	195	0.03	< 0.005	—	197
Water	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Waste	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	2.36	3.83	1.64	24.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,858	6,892	3.71	0.21	20.1	7,068
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.96	1.75	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,133	6,133	0.20	0.21	0.51	6,201
Area	0.00	1.69	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Energy	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	195	195	0.03	< 0.005	—	197
Water	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Waste	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	1.96	3.44	1.88	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	34.4	6,560	6,594	3.72	0.23	0.99	6,757
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.73	1.54	1.59	16.9	0.05	0.03	2.11	2.14	0.03	0.37	0.40	—	5,506	5,506	0.18	0.18	7.59	5,572
Area	0.19	1.87	0.02	1.99	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	10.8	10.8	< 0.005	< 0.005	—	10.9
Energy	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	195	195	0.03	< 0.005	—	197
Water	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Waste	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	1.92	3.41	1.61	18.8	0.05	0.03	2.11	2.14	0.03	0.37	0.40	34.4	5,721	5,755	3.66	0.20	8.07	5,914
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.32	0.28	0.29	3.08	0.01	0.01	0.38	0.39	0.01	0.07	0.07	—	912	912	0.03	0.03	1.26	922
Area	0.03	0.34	< 0.005	0.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.79	1.79	< 0.005	< 0.005	—	1.80
Energy	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	32.3	32.3	0.01	< 0.005	—	32.6
Water	—	—	—	—	—	—	—	—	—	—	—	0.82	1.54	2.36	0.08	< 0.005	—	5.06

Waste	—	—	—	—	—	—	—	—	—	—	—	4.88	0.00	4.88	0.49	0.00	—	17.1
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	0.35	0.62	0.29	3.44	0.01	0.01	0.38	0.39	0.01	0.07	0.07	5.70	947	953	0.61	0.03	1.34	979

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.78	1.49	13.4	18.4	0.03	0.51	—	0.51	0.47	—	0.47	—	2,649	2,649	0.11	0.02	—	2,659
Demolition	—	—	—	—	—	—	0.99	0.99	—	0.15	0.15	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.61	2.61	< 0.005	0.26	0.26	—	8.82	8.82	< 0.005	< 0.005	< 0.005	9.26
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.81	1.11	< 0.005	0.03	—	0.03	0.03	—	0.03	—	161	161	0.01	< 0.005	—	161
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.56
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.02	0.02	0.15	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.6	26.6	< 0.005	< 0.005	—	26.7
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.10	0.12	1.34	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	348	348	0.01	0.01	0.04	352
Vendor	0.02	0.01	0.25	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	154	154	0.02	0.02	0.01	161
Hauling	0.88	0.11	8.03	5.00	0.05	0.05	1.11	1.17	0.05	0.30	0.36	—	4,823	4,823	0.74	0.78	0.25	5,076
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	21.2	21.2	< 0.005	< 0.005	0.04	21.5
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.32	9.32	< 0.005	< 0.005	0.01	9.76
Hauling	0.05	0.01	0.48	0.30	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	293	293	0.04	0.05	0.25	308
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.51	3.51	< 0.005	< 0.005	0.01	3.56
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.54	1.54	< 0.005	< 0.005	< 0.005	1.62
Hauling	0.01	< 0.005	0.09	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	48.5	48.5	0.01	0.01	0.04	51.0

3.2. Demolition (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	0.40	15.2	18.6	0.03	0.29	—	0.29	0.27	—	0.27	—	2,649	2,649	0.11	0.02	—	2,659
Demolition	—	—	—	—	—	—	0.64	0.64	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.66	0.66	< 0.005	0.07	0.07	—	8.82	8.82	< 0.005	< 0.005	< 0.005	9.26
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.93	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	161	161	0.01	< 0.005	—	161
Demolition	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	< 0.005	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.56
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.17	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.6	26.6	< 0.005	< 0.005	—	26.7
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.12	0.10	0.12	1.34	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	348	348	0.01	0.01	0.04	352
Vendor	0.02	0.01	0.25	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	154	154	0.02	0.02	0.01	161
Hauling	0.88	0.11	8.03	5.00	0.05	0.05	1.11	1.17	0.05	0.30	0.36	—	4,823	4,823	0.74	0.78	0.25	5,076
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	21.2	21.2	< 0.005	< 0.005	0.04	21.5
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.32	9.32	< 0.005	< 0.005	0.01	9.76
Hauling	0.05	0.01	0.48	0.30	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	293	293	0.04	0.05	0.25	308
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.51	3.51	< 0.005	< 0.005	0.01	3.56
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.54	1.54	< 0.005	< 0.005	< 0.005	1.62
Hauling	0.01	< 0.005	0.09	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	48.5	48.5	0.01	0.01	0.04	51.0

3.3. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.67	1.40	12.8	18.3	0.03	0.43	—	0.43	0.39	—	0.39	—	2,649	2,649	0.11	0.02	—	2,658
Demolition	—	—	—	—	—	—	0.99	0.99	—	0.15	0.15	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.61	2.61	< 0.005	0.26	0.26	—	8.68	8.68	< 0.005	< 0.005	< 0.005	9.10

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.42	0.61	< 0.005	0.01	—	0.01	0.01	—	0.01	—	88.1	88.1	< 0.005	< 0.005	—	88.4
Demolition	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.30
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.6	14.6	< 0.005	< 0.005	—	14.6
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.10	1.23	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	340	340	0.01	0.01	0.03	345
Vendor	0.02	0.01	0.23	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.01	158
Hauling	0.85	0.11	7.62	4.92	0.05	0.05	1.11	1.17	0.05	0.30	0.36	—	4,717	4,717	0.71	0.76	0.24	4,961
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.4	11.4	< 0.005	< 0.005	0.02	11.5
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.02	5.02	< 0.005	< 0.005	0.01	5.25
Hauling	0.03	< 0.005	0.25	0.16	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	157	157	0.02	0.03	0.13	165
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.88	1.88	< 0.005	< 0.005	< 0.005	1.91

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.83	0.83	< 0.005	< 0.005	< 0.005	0.87
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.0	26.0	< 0.005	< 0.005	0.02	27.3

3.4. Demolition (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	0.40	15.2	18.6	0.03	0.29	—	0.29	0.27	—	0.27	—	2,649	2,649	0.11	0.02	—	2,658
Demolition	—	—	—	—	—	—	0.64	0.64	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.66	0.66	< 0.005	0.07	0.07	—	8.68	8.68	< 0.005	< 0.005	< 0.005	9.10
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.51	0.62	< 0.005	0.01	—	0.01	0.01	—	0.01	—	88.1	88.1	< 0.005	< 0.005	—	88.4
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.30
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.09	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.6	14.6	< 0.005	< 0.005	—	14.6
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.10	1.23	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	340	340	0.01	0.01	0.03	345
Vendor	0.02	0.01	0.23	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.01	158
Hauling	0.85	0.11	7.62	4.92	0.05	0.05	1.11	1.17	0.05	0.30	0.36	—	4,717	4,717	0.71	0.76	0.24	4,961
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.4	11.4	< 0.005	< 0.005	0.02	11.5
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.02	5.02	< 0.005	< 0.005	0.01	5.25
Hauling	0.03	< 0.005	0.25	0.16	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	157	157	0.02	0.03	0.13	165
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.88	1.88	< 0.005	< 0.005	< 0.005	1.91
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.83	0.83	< 0.005	< 0.005	< 0.005	0.87
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.0	26.0	< 0.005	< 0.005	0.02	27.3

3.5. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.81	1.52	14.7	15.1	0.02	0.63	—	0.63	0.58	—	0.58	—	2,594	2,594	0.11	0.02	—	2,603
Dust From Material Movement	—	—	—	—	—	—	8.58	8.58	—	4.27	4.27	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.61	2.61	< 0.005	0.26	0.26	—	8.68	8.68	< 0.005	< 0.005	< 0.005	9.10
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.80	0.83	< 0.005	0.03	—	0.03	0.03	—	0.03	—	142	142	0.01	< 0.005	—	143
Dust From Material Movement	—	—	—	—	—	—	0.47	0.47	—	0.23	0.23	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.14	0.14	< 0.005	0.01	0.01	—	0.48	0.48	< 0.005	< 0.005	< 0.005	0.50
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Dust From Material Movement	—	—	—	—	—	—	0.09	0.09	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.08	0.08	< 0.005	< 0.005	< 0.005	0.08
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.10	1.23	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	340	340	0.01	0.01	0.03	345
Vendor	0.02	0.01	0.23	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.01	158
Hauling	4.25	0.55	38.1	24.6	0.27	0.27	5.56	5.83	0.27	1.52	1.79	—	23,587	23,587	3.56	3.78	1.21	24,804
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	18.7	18.7	< 0.005	< 0.005	0.03	19.0
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.27	8.27	< 0.005	< 0.005	0.01	8.65
Hauling	0.23	0.03	2.06	1.35	0.01	0.01	0.30	0.31	0.01	0.08	0.10	—	1,293	1,293	0.19	0.21	1.11	1,360
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.10	3.10	< 0.005	< 0.005	< 0.005	3.14
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.37	1.37	< 0.005	< 0.005	< 0.005	1.43
Hauling	0.04	0.01	0.38	0.25	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	214	214	0.03	0.03	0.18	225

3.6. Site Preparation (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	0.33	7.71	14.5	0.02	0.05	—	0.05	0.05	—	0.05	—	2,594	2,594	0.11	0.02	—	2,603

Dust From Material Movement	—	—	—	—	—	—	3.35	3.35	—	1.66	1.66	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.66	0.66	< 0.005	0.07	0.07	—	8.68	8.68	< 0.005	< 0.005	< 0.005	9.10
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.42	0.79	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	142	142	0.01	< 0.005	—	143
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	< 0.005	—	0.48	0.48	< 0.005	< 0.005	< 0.005	0.50
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.08	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.08	0.08	< 0.005	< 0.005	< 0.005	0.08
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.10	1.23	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	340	340	0.01	0.01	0.03	345
Vendor	0.02	0.01	0.23	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.01	158
Hauling	4.25	0.55	38.1	24.6	0.27	0.27	5.56	5.83	0.27	1.52	1.79	—	23,587	23,587	3.56	3.78	1.21	24,804

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	18.7	18.7	< 0.005	< 0.005	0.03	19.0
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.27	8.27	< 0.005	< 0.005	0.01	8.65
Hauling	0.23	0.03	2.06	1.35	0.01	0.01	0.30	0.31	0.01	0.08	0.10	—	1,293	1,293	0.19	0.21	1.11	1,360
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.10	3.10	< 0.005	< 0.005	< 0.005	3.14
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.37	1.37	< 0.005	< 0.005	< 0.005	1.43
Hauling	0.04	0.01	0.38	0.25	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	214	214	0.03	0.03	0.18	225

3.7. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.18	3.51	30.4	27.3	0.07	1.28	—	1.28	1.18	—	1.18	—	7,334	7,334	0.30	0.06	—	7,359
Dust From Material Movement	—	—	—	—	—	—	9.23	9.23	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.61	2.61	< 0.005	0.26	0.26	—	8.69	8.69	< 0.005	< 0.005	0.02	9.12
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.18	3.51	30.4	27.3	0.07	1.28	—	1.28	1.18	—	1.18	—	7,334	7,334	0.30	0.06	—	7,359

Dust From Material Movement	—	—	—	—	—	—	9.23	9.23	—	3.66	3.66	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.61	2.61	< 0.005	0.26	0.26	—	8.68	8.68	< 0.005	< 0.005	< 0.005	9.10
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	0.34	2.91	2.62	0.01	0.12	—	0.12	0.11	—	0.11	—	703	703	0.03	0.01	—	706
Dust From Material Movement	—	—	—	—	—	—	0.88	0.88	—	0.35	0.35	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.25	0.25	< 0.005	0.03	0.03	—	0.83	0.83	< 0.005	< 0.005	< 0.005	0.87
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.53	0.48	< 0.005	0.02	—	0.02	0.02	—	0.02	—	116	116	< 0.005	< 0.005	—	117
Dust From Material Movement	—	—	—	—	—	—	0.16	0.16	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.08	1.34	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	360	360	0.01	< 0.005	1.19	362
Vendor	0.02	0.01	0.22	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.37	158
Hauling	0.26	0.03	2.18	1.48	0.02	0.02	0.33	0.35	0.02	0.09	0.11	—	1,415	1,415	0.21	0.23	2.80	1,491
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.11	0.10	0.10	1.23	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	340	340	0.01	0.01	0.03	345
Vendor	0.02	0.01	0.23	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.01	158
Hauling	0.26	0.03	2.29	1.48	0.02	0.02	0.33	0.35	0.02	0.09	0.11	—	1,415	1,415	0.21	0.23	0.07	1,488
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	32.7	32.7	< 0.005	< 0.005	0.05	33.2
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.5	14.5	< 0.005	< 0.005	0.02	15.1
Hauling	0.02	< 0.005	0.22	0.14	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	136	136	0.02	0.02	0.12	143
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.42	5.42	< 0.005	< 0.005	0.01	5.50
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.40	2.40	< 0.005	< 0.005	< 0.005	2.51
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	22.5	22.5	< 0.005	< 0.005	0.02	23.6

3.8. Grading (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.96	0.94	20.2	37.5	0.07	0.20	—	0.20	0.19	—	0.19	—	7,334	7,334	0.30	0.06	—	7,359
Dust From Material Movement	—	—	—	—	—	—	3.60	3.60	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.66	0.66	< 0.005	0.07	0.07	—	8.69	8.69	< 0.005	< 0.005	0.02	9.12
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.96	0.94	20.2	37.5	0.07	0.20	—	0.20	0.19	—	0.19	—	7,334	7,334	0.30	0.06	—	7,359
Dust From Material Movement	—	—	—	—	—	—	3.60	3.60	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.66	0.66	< 0.005	0.07	0.07	—	8.68	8.68	< 0.005	< 0.005	< 0.005	9.10
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.09	1.94	3.60	0.01	0.02	—	0.02	0.02	—	0.02	—	703	703	0.03	0.01	—	706
Dust From Material Movement	—	—	—	—	—	—	0.35	0.35	—	0.14	0.14	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	0.83	0.83	< 0.005	< 0.005	< 0.005	0.87
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.35	0.66	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	116	116	< 0.005	< 0.005	—	117
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.08	1.34	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	360	360	0.01	< 0.005	1.19	362
Vendor	0.02	0.01	0.22	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.37	158
Hauling	0.26	0.03	2.18	1.48	0.02	0.02	0.33	0.35	0.02	0.09	0.11	—	1,415	1,415	0.21	0.23	2.80	1,491

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.10	1.23	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	340	340	0.01	0.01	0.03	345
Vendor	0.02	0.01	0.23	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	0.02	0.02	0.01	158
Hauling	0.26	0.03	2.29	1.48	0.02	0.02	0.33	0.35	0.02	0.09	0.11	—	1,415	1,415	0.21	0.23	0.07	1,488
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	32.7	32.7	< 0.005	< 0.005	0.05	33.2
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.5	14.5	< 0.005	< 0.005	0.02	15.1
Hauling	0.02	< 0.005	0.22	0.14	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	136	136	0.02	0.02	0.12	143
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.42	5.42	< 0.005	< 0.005	0.01	5.50
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.40	2.40	< 0.005	< 0.005	< 0.005	2.51
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	22.5	22.5	< 0.005	< 0.005	0.02	23.6

3.9. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	3.92	3.92	< 0.005	0.39	0.39	—	13.0	13.0	< 0.005	< 0.005	0.03	13.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	3.92	3.92	< 0.005	0.39	0.39	—	13.0	13.0	< 0.005	< 0.005	< 0.005	13.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.81	0.67	6.25	7.81	0.01	0.26	—	0.26	0.24	—	0.24	—	1,436	1,436	0.06	0.01	—	1,441
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.35	2.35	< 0.005	0.23	0.23	—	7.80	7.80	< 0.005	< 0.005	0.01	8.18
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	1.14	1.43	< 0.005	0.05	—	0.05	0.04	—	0.04	—	238	238	0.01	< 0.005	—	239
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.43	0.43	< 0.005	0.04	0.04	—	1.29	1.29	< 0.005	< 0.005	< 0.005	1.35
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.19	0.15	2.62	0.00	0.00	0.71	0.71	0.00	0.17	0.17	—	703	703	0.01	0.01	2.33	707
Vendor	0.03	0.01	0.30	0.18	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	201	201	0.02	0.03	0.50	211
Hauling	0.28	0.04	2.42	1.64	0.02	0.02	0.37	0.39	0.02	0.10	0.12	—	1,573	1,573	0.24	0.25	3.11	1,657
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.19	0.20	2.40	0.00	0.00	0.71	0.71	0.00	0.17	0.17	—	664	664	0.01	0.03	0.06	672
Vendor	0.03	0.01	0.31	0.19	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	201	201	0.02	0.03	0.01	210
Hauling	0.28	0.04	2.54	1.64	0.02	0.02	0.37	0.39	0.02	0.10	0.12	—	1,572	1,572	0.24	0.25	0.08	1,654
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.11	0.11	1.40	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	399	399	0.01	0.02	0.60	404
Vendor	0.02	< 0.005	0.18	0.11	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	120	120	0.01	0.02	0.13	126

Hauling	0.17	0.02	1.50	0.99	0.01	0.01	0.22	0.23	0.01	0.06	0.07	—	942	942	0.14	0.15	0.81	991
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.25	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	66.0	66.0	< 0.005	< 0.005	0.10	67.0
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.9	19.9	< 0.005	< 0.005	0.02	20.9
Hauling	0.03	< 0.005	0.27	0.18	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	156	156	0.02	0.03	0.13	164

3.10. Building Construction (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	0.42	9.53	14.8	0.02	0.12	—	0.12	0.11	—	0.11	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.99	0.99	< 0.005	0.10	0.10	—	13.0	13.0	< 0.005	< 0.005	0.03	13.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	0.42	9.53	14.8	0.02	0.12	—	0.12	0.11	—	0.11	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.99	0.99	< 0.005	0.10	0.10	—	13.0	13.0	< 0.005	< 0.005	< 0.005	13.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.26	0.25	5.71	8.88	0.01	0.07	—	0.07	0.07	—	0.07	—	1,436	1,436	0.06	0.01	—	1,441
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.59	0.59	< 0.005	0.06	0.06	—	7.80	7.80	< 0.005	< 0.005	0.01	8.18
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.05	0.05	1.04	1.62	< 0.005	0.01	—	0.01	0.01	—	0.01	—	238	238	0.01	< 0.005	—	239
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	1.29	1.29	< 0.005	< 0.005	< 0.005	1.35
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.19	0.15	2.62	0.00	0.00	0.71	0.71	0.00	0.17	0.17	—	703	703	0.01	0.01	2.33	707
Vendor	0.03	0.01	0.30	0.18	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	201	201	0.02	0.03	0.50	211
Hauling	0.28	0.04	2.42	1.64	0.02	0.02	0.37	0.39	0.02	0.10	0.12	—	1,573	1,573	0.24	0.25	3.11	1,657
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.19	0.20	2.40	0.00	0.00	0.71	0.71	0.00	0.17	0.17	—	664	664	0.01	0.03	0.06	672
Vendor	0.03	0.01	0.31	0.19	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	201	201	0.02	0.03	0.01	210
Hauling	0.28	0.04	2.54	1.64	0.02	0.02	0.37	0.39	0.02	0.10	0.12	—	1,572	1,572	0.24	0.25	0.08	1,654
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.11	0.11	1.40	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	399	399	0.01	0.02	0.60	404
Vendor	0.02	< 0.005	0.18	0.11	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	120	120	0.01	0.02	0.13	126
Hauling	0.17	0.02	1.50	0.99	0.01	0.01	0.22	0.23	0.01	0.06	0.07	—	942	942	0.14	0.15	0.81	991
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.25	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	66.0	66.0	< 0.005	< 0.005	0.10	67.0
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.9	19.9	< 0.005	< 0.005	0.02	20.9
Hauling	0.03	< 0.005	0.27	0.18	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	156	156	0.02	0.03	0.13	164

3.11. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	3.92	3.92	< 0.005	0.39	0.39	—	12.8	12.8	< 0.005	< 0.005	< 0.005	13.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.18	1.70	2.23	< 0.005	0.07	—	0.07	0.06	—	0.06	—	413	413	0.02	< 0.005	—	414
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.68	0.68	< 0.005	0.07	0.07	—	2.21	2.21	< 0.005	< 0.005	< 0.005	2.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.31	0.41	< 0.005	0.01	—	0.01	0.01	—	0.01	—	68.3	68.3	< 0.005	< 0.005	—	68.6
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	0.37	0.37	< 0.005	< 0.005	< 0.005	0.38
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.18	2.22	0.00	0.00	0.71	0.71	0.00	0.17	0.17	—	650	650	0.01	0.03	0.05	659
Vendor	0.03	0.01	0.29	0.18	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	197	197	0.02	0.03	0.01	206
Hauling	0.26	0.04	2.42	1.63	0.01	0.02	0.37	0.39	0.02	0.10	0.12	—	1,537	1,537	0.23	0.24	0.08	1,616

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.37	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	112	112	< 0.005	< 0.005	0.15	114
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	34.0	34.0	< 0.005	< 0.005	0.03	35.6
Hauling	0.05	0.01	0.41	0.28	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	265	265	0.04	0.04	0.22	278
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	18.6	18.6	< 0.005	< 0.005	0.03	18.9
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.63	5.63	< 0.005	< 0.005	0.01	5.89
Hauling	0.01	< 0.005	0.07	0.05	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	43.8	43.8	0.01	0.01	0.04	46.1

3.12. Building Construction (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	0.41	9.53	14.8	0.02	0.12	—	0.12	0.11	—	0.11	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.99	0.99	< 0.005	0.10	0.10	—	12.8	12.8	< 0.005	< 0.005	< 0.005	13.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.07	1.64	2.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	413	413	0.02	< 0.005	—	414
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.17	0.17	< 0.005	0.02	0.02	—	2.21	2.21	< 0.005	< 0.005	< 0.005	2.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.30	0.47	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	68.3	68.3	< 0.005	< 0.005	—	68.6
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.37	0.37	< 0.005	< 0.005	< 0.005	0.38
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.18	2.22	0.00	0.00	0.71	0.71	0.00	0.17	0.17	—	650	650	0.01	0.03	0.05	659
Vendor	0.03	0.01	0.29	0.18	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	197	197	0.02	0.03	0.01	206
Hauling	0.26	0.04	2.42	1.63	0.01	0.02	0.37	0.39	0.02	0.10	0.12	—	1,537	1,537	0.23	0.24	0.08	1,616
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.37	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	112	112	< 0.005	< 0.005	0.15	114
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	34.0	34.0	< 0.005	< 0.005	0.03	35.6
Hauling	0.05	0.01	0.41	0.28	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	265	265	0.04	0.04	0.22	278
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	18.6	18.6	< 0.005	< 0.005	0.03	18.9
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.63	5.63	< 0.005	< 0.005	0.01	5.89
Hauling	0.01	< 0.005	0.07	0.05	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	43.8	43.8	0.01	0.01	0.04	46.1

3.13. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	11.0	14.2	0.03	0.48	—	0.48	0.44	—	0.44	—	3,166	3,166	0.13	0.03	—	3,176
Paving	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.61	2.61	< 0.005	0.26	0.26	—	8.54	8.54	< 0.005	< 0.005	0.02	8.97
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.37	11.0	14.2	0.03	0.48	—	0.48	0.44	—	0.44	—	3,166	3,166	0.13	0.03	—	3,176
Paving	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	2.61	2.61	< 0.005	0.26	0.26	—	8.54	8.54	< 0.005	< 0.005	< 0.005	8.95
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.36	0.30	2.42	3.11	0.01	0.11	—	0.11	0.10	—	0.10	—	694	694	0.03	0.01	—	696
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.57	0.57	< 0.005	0.06	0.06	—	1.87	1.87	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.05	0.44	0.57	< 0.005	0.02	—	0.02	0.02	—	0.02	—	115	115	< 0.005	< 0.005	—	115
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.33
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.10	0.09	0.08	1.24	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	353	353	0.01	< 0.005	1.05	355
Vendor	0.02	0.01	0.21	0.13	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	148	148	0.01	0.02	0.35	155
Hauling	0.03	< 0.005	0.23	0.16	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	154	154	0.02	0.02	0.30	162
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.09	1.14	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	334	334	0.01	0.01	0.03	338
Vendor	0.02	0.01	0.22	0.13	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	148	148	0.01	0.02	0.01	155
Hauling	0.03	< 0.005	0.24	0.16	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	154	154	0.02	0.02	0.01	162
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.24	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	73.3	73.3	< 0.005	< 0.005	0.10	74.4
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.4	32.4	< 0.005	< 0.005	0.03	34.0
Hauling	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33.7	33.7	< 0.005	0.01	0.03	35.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.1	12.1	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.37	5.37	< 0.005	< 0.005	0.01	5.62
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.58	5.58	< 0.005	< 0.005	< 0.005	5.87

3.14. Paving (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.43	0.42	11.4	18.9	0.03	0.12	—	0.12	0.11	—	0.11	—	3,166	3,166	0.13	0.03	—	3,176
Paving	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.66	0.66	< 0.005	0.07	0.07	—	8.54	8.54	< 0.005	< 0.005	0.02	8.97
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.43	0.42	11.4	18.9	0.03	0.12	—	0.12	0.11	—	0.11	—	3,166	3,166	0.13	0.03	—	3,176
Paving	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.66	0.66	< 0.005	0.07	0.07	—	8.54	8.54	< 0.005	< 0.005	< 0.005	8.95
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.09	2.50	4.14	0.01	0.03	—	0.03	0.02	—	0.02	—	694	694	0.03	0.01	—	696
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.14	0.14	< 0.005	0.01	0.01	—	1.87	1.87	< 0.005	< 0.005	< 0.005	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.46	0.76	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	115	115	< 0.005	< 0.005	—	115
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.33
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.08	1.24	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	353	353	0.01	< 0.005	1.05	355
Vendor	0.02	0.01	0.21	0.13	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	148	148	0.01	0.02	0.35	155
Hauling	0.03	< 0.005	0.23	0.16	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	154	154	0.02	0.02	0.30	162
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.10	0.09	0.09	1.14	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	334	334	0.01	0.01	0.03	338
Vendor	0.02	0.01	0.22	0.13	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	148	148	0.01	0.02	0.01	155
Hauling	0.03	< 0.005	0.24	0.16	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	154	154	0.02	0.02	0.01	162
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.24	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	73.3	73.3	< 0.005	< 0.005	0.10	74.4
Vendor	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.4	32.4	< 0.005	< 0.005	0.03	34.0
Hauling	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33.7	33.7	< 0.005	0.01	0.03	35.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.1	12.1	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.37	5.37	< 0.005	< 0.005	0.01	5.62
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.58	5.58	< 0.005	< 0.005	< 0.005	5.87

3.15. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	31.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.31	1.31	< 0.005	0.13	0.13	—	4.27	4.27	< 0.005	< 0.005	0.01	4.49
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.0	11.0	< 0.005	< 0.005	—	11.0
Architectural Coatings	—	2.62	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	0.35	0.35	< 0.005	< 0.005	< 0.005	0.37
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.82	1.82	< 0.005	< 0.005	—	1.82
Architectural Coatings	—	0.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.31	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	88.3	88.3	< 0.005	< 0.005	0.26	88.7
Vendor	0.01	< 0.005	0.07	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	49.4	49.4	< 0.005	0.01	0.12	51.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.88	6.88	< 0.005	< 0.005	0.01	6.97
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.06	4.06	< 0.005	< 0.005	< 0.005	4.24
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.14	1.14	< 0.005	< 0.005	< 0.005	1.15
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.67	0.67	< 0.005	< 0.005	< 0.005	0.70
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.16. Architectural Coating (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	1.07	0.96	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	31.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.33	0.33	< 0.005	0.03	0.03	—	4.27	4.27	< 0.005	< 0.005	0.01	4.49
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.09	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.0	11.0	< 0.005	< 0.005	—	11.0
Architectural Coatings	—	2.62	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.35	0.35	< 0.005	< 0.005	< 0.005	0.37
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.82	1.82	< 0.005	< 0.005	—	1.82
Architectural Coatings	—	0.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.31	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	88.3	88.3	< 0.005	< 0.005	0.26	88.7
Vendor	0.01	< 0.005	0.07	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	49.4	49.4	< 0.005	0.01	0.12	51.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.88	6.88	< 0.005	< 0.005	0.01	6.97
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.06	4.06	< 0.005	< 0.005	< 0.005	4.24
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.14	1.14	< 0.005	< 0.005	< 0.005	1.15
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.67	0.67	< 0.005	< 0.005	< 0.005	0.70
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	1.98	1.78	1.60	20.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,421	6,421	0.19	0.19	19.6	6,502
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.98	1.78	1.60	20.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,421	6,421	0.19	0.19	19.6	6,502
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	1.96	1.75	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,133	6,133	0.20	0.21	0.51	6,201
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.96	1.75	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,133	6,133	0.20	0.21	0.51	6,201
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.32	0.28	0.29	3.08	0.01	0.01	0.38	0.39	0.01	0.07	0.07	—	912	912	0.03	0.03	1.26	922
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.32	0.28	0.29	3.08	0.01	0.01	0.38	0.39	0.01	0.07	0.07	—	912	912	0.03	0.03	1.26	922

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	1.98	1.78	1.60	20.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,421	6,421	0.19	0.19	19.6	6,502
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.98	1.78	1.60	20.6	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,421	6,421	0.19	0.19	19.6	6,502
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	1.96	1.75	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,133	6,133	0.20	0.21	0.51	6,201
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.96	1.75	1.89	19.3	0.06	0.03	2.35	2.39	0.03	0.41	0.44	—	6,133	6,133	0.20	0.21	0.51	6,201
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.32	0.28	0.29	3.08	0.01	0.01	0.38	0.39	0.01	0.07	0.07	—	912	912	0.03	0.03	1.26	922
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.32	0.28	0.29	3.08	0.01	0.01	0.38	0.39	0.01	0.07	0.07	—	912	912	0.03	0.03	1.26	922

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	170	170	0.03	< 0.005	—	171
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	27.3	27.3	< 0.005	< 0.005	—	27.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	197	197	0.03	< 0.005	—	199
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	170	170	0.03	< 0.005	—	171
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	27.3	27.3	< 0.005	< 0.005	—	27.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	197	197	0.03	< 0.005	—	199
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	28.1	28.1	< 0.005	< 0.005	—	28.4
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	4.51	4.51	< 0.005	< 0.005	—	4.56
Total	—	—	—	—	—	—	—	—	—	—	—	—	32.6	32.6	0.01	< 0.005	—	32.9

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	170	170	0.03	< 0.005	—	172
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	27.3	27.3	< 0.005	< 0.005	—	27.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	197	197	0.03	< 0.005	—	199
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	170	170	0.03	< 0.005	—	172
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	27.3	27.3	< 0.005	< 0.005	—	27.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	197	197	0.03	< 0.005	—	199
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	28.2	28.2	< 0.005	< 0.005	—	28.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	4.51	4.51	< 0.005	< 0.005	—	4.56
Total	—	—	—	—	—	—	—	—	—	—	—	—	32.7	32.7	0.01	< 0.005	—	33.0

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Condo/T	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-2.47	-2.47	> -0.005	> -0.005	—	-2.48
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Total	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-2.47	-2.47	> -0.005	> -0.005	—	-2.48
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-2.47	-2.47	> -0.005	> -0.005	—	-2.48
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-2.47	-2.47	> -0.005	> -0.005	—	-2.48
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-0.41	-0.41	> -0.005	> -0.005	—	-0.41
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-0.41	-0.41	> -0.005	> -0.005	—	-0.41

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Consumer Products	—	1.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landsca Equipment	0.38	0.36	0.04	4.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.8	10.8	< 0.005	< 0.005	—	10.8
Total	0.38	2.05	0.04	4.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	233	233	0.04	< 0.005	—	235
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Consum er Products	—	1.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	1.69	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.91	0.91	< 0.005	< 0.005	—	0.92
Consum er Products	—	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landsca pe Equipme nt	0.03	0.03	< 0.005	0.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.88	0.88	< 0.005	< 0.005	—	0.88
Total	0.03	0.34	< 0.005	0.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.79	1.79	< 0.005	< 0.005	—	1.80

4.3.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Consumer Products	—	1.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.38	0.36	0.04	4.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.8	10.8	< 0.005	< 0.005	—	10.8
Total	0.38	2.05	0.04	4.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	233	233	0.04	< 0.005	—	235
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Consumer Products	—	1.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	1.69	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	222	222	0.04	< 0.005	—	224
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.91	0.91	< 0.005	< 0.005	—	0.92
Consumer Products	—	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape	0.03	0.03	< 0.005	0.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.88	0.88	< 0.005	< 0.005	—	0.88
Total	0.03	0.34	< 0.005	0.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.79	1.79	< 0.005	< 0.005	—	1.80

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.82	1.54	2.36	0.08	< 0.005	—	5.06

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	0.82	1.54	2.36	0.08	< 0.005	—	5.06

4.4.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	4.93	9.32	14.3	0.51	0.01	—	30.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	0.82	1.54	2.36	0.08	< 0.005	—	5.06
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	0.82	1.54	2.36	0.08	< 0.005	—	5.06

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.88	0.00	4.88	0.49	0.00	—	17.1
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	4.88	0.00	4.88	0.49	0.00	—	17.1

4.5.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	29.5	0.00	29.5	2.95	0.00	—	103
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	4.88	0.00	4.88	0.49	0.00	—	17.1
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	4.88	0.00	4.88	0.49	0.00	—	17.1

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Condo/Townhous	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	12/1/2024	1/17/2025	5.00	35.0	—
Site Preparation	Site Preparation	1/18/2025	2/15/2025	5.00	20.0	—
Grading	Grading	2/16/2025	4/05/2025	5.00	35.0	—
Building Construction 1	Building Construction	3/1/2025	3/29/2026	5.00	280	—
Paving	Paving	3/2/2026	6/20/2026	5.00	80.0	—
Architectural Coating	Architectural Coating	5/10/2026	6/20/2026	5.00	30.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

Demolition	Concrete/Industrial Saws	Diesel	Average	2.00	8.00	33.0	0.73
Demolition	Excavators	Diesel	Average	5.00	8.00	36.0	0.38
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	5.00	8.00	84.0	0.37
Site Preparation	Rubber Tired Dozers	Diesel	Average	2.00	5.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Grading	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Dumpers/Tenders	Diesel	Average	1.00	8.00	16.0	0.38
Grading	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Grading	Sweepers/Scrubbers	Diesel	Average	1.00	8.00	36.0	0.46
Building Construction 1	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction 1	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction 1	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction 1	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction 1	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	3.00	8.00	81.0	0.42
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving	Graders	Diesel	Average	1.00	1.00	148	0.41
Paving	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Paving	Scrapers	Diesel	Average	1.00	1.00	423	0.48
Paving	Plate Compactors	Diesel	Average	1.00	1.00	8.00	0.43

Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Tier 4 Interim	2.00	8.00	33.0	0.73
Demolition	Excavators	Diesel	Tier 4 Interim	5.00	8.00	36.0	0.38
Demolition	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	5.00	8.00	84.0	0.37
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Interim	2.00	5.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	8.00	84.0	0.37
Grading	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Grading	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Tier 4 Interim	2.00	8.00	423	0.48
Grading	Dumpers/Tenders	Diesel	Average	1.00	8.00	16.0	0.38
Grading	Off-Highway Trucks	Diesel	Tier 4 Interim	1.00	8.00	376	0.38
Grading	Sweepers/Scrubbers	Diesel	Tier 4 Interim	1.00	8.00	36.0	0.46
Building Construction 1	Cranes	Diesel	Tier 4 Interim	1.00	7.00	367	0.29
Building Construction 1	Forklifts	Diesel	Tier 4 Interim	3.00	8.00	82.0	0.20
Building Construction 1	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction 1	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	7.00	84.0	0.37
Building Construction 1	Welders	Diesel	Tier 4 Interim	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Tier 4 Interim	3.00	8.00	81.0	0.42
Paving	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	8.00	84.0	0.37
Paving	Rollers	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38

Paving	Graders	Diesel	Tier 4 Interim	1.00	1.00	148	0.41
Paving	Off-Highway Trucks	Diesel	Tier 4 Interim	1.00	8.00	376	0.38
Paving	Scrapers	Diesel	Tier 4 Interim	1.00	1.00	423	0.48
Paving	Plate Compactors	Diesel	Average	1.00	1.00	8.00	0.43
Architectural Coating	Air Compressors	Diesel	Tier 4 Interim	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	40.0	12.8	LDA,LDT1,LDT2
Demolition	Vendor	6.00	7.30	HHDT,MHDT
Demolition	Hauling	60.0	20.0	HHDT
Demolition	Onsite truck	2.00	1.00	HHDT,MHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	40.0	12.8	LDA,LDT1,LDT2
Site Preparation	Vendor	6.00	7.30	HHDT,MHDT
Site Preparation	Hauling	300	20.0	HHDT
Site Preparation	Onsite truck	2.00	1.00	HHDT,MHDT
Grading	—	—	—	—
Grading	Worker	40.0	12.8	LDA,LDT1,LDT2
Grading	Vendor	6.00	7.30	HHDT,MHDT
Grading	Hauling	18.0	20.0	HHDT
Grading	Onsite truck	2.00	1.00	HHDT,MHDT
Building Construction 1	—	—	—	—
Building Construction 1	Worker	78.0	12.8	LDA,LDT1,LDT2

Building Construction 1	Vendor	8.00	7.30	HHDT,MHDT
Building Construction 1	Hauling	20.0	20.0	HHDT
Building Construction 1	Onsite truck	3.00	1.00	HHDT,MHDT
Paving	—	—	—	—
Paving	Worker	40.0	12.8	LDA,LDT1,LDT2
Paving	Vendor	6.00	7.30	HHDT,MHDT
Paving	Hauling	2.00	20.0	HHDT
Paving	Onsite truck	2.00	1.00	HHDT,MHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	10.0	12.8	LDA,LDT1,LDT2
Architectural Coating	Vendor	2.00	7.30	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	1.00	1.00	HHDT,MHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	40.0	12.8	LDA,LDT1,LDT2
Demolition	Vendor	6.00	7.30	HHDT,MHDT
Demolition	Hauling	60.0	20.0	HHDT
Demolition	Onsite truck	2.00	1.00	HHDT,MHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	40.0	12.8	LDA,LDT1,LDT2
Site Preparation	Vendor	6.00	7.30	HHDT,MHDT
Site Preparation	Hauling	300	20.0	HHDT
Site Preparation	Onsite truck	2.00	1.00	HHDT,MHDT
Grading	—	—	—	—

Grading	Worker	40.0	12.8	LDA,LDT1,LDT2
Grading	Vendor	6.00	7.30	HHDT,MHDT
Grading	Hauling	18.0	20.0	HHDT
Grading	Onsite truck	2.00	1.00	HHDT,MHDT
Building Construction 1	—	—	—	—
Building Construction 1	Worker	78.0	12.8	LDA,LDT1,LDT2
Building Construction 1	Vendor	8.00	7.30	HHDT,MHDT
Building Construction 1	Hauling	20.0	20.0	HHDT
Building Construction 1	Onsite truck	3.00	1.00	HHDT,MHDT
Paving	—	—	—	—
Paving	Worker	40.0	12.8	LDA,LDT1,LDT2
Paving	Vendor	6.00	7.30	HHDT,MHDT
Paving	Hauling	2.00	20.0	HHDT
Paving	Onsite truck	2.00	1.00	HHDT,MHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	10.0	12.8	LDA,LDT1,LDT2
Architectural Coating	Vendor	2.00	7.30	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	1.00	1.00	HHDT,MHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

Architectural Coating	135,144	45,048	0.00	0.00	3,340

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	1,500	—
Site Preparation	66,738	0.00	15.0	0.00	—
Grading	7,500	0.00	20.0	0.00	—
Paving	0.00	0.00	0.00	0.00	1.28

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Condo/Townhouse	—	0%
Parking Lot	1.28	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Condo/Townhouse	520	578	446	188,883	7,753	8,622	6,652	2,817,745
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Condo/Townhouse	520	578	446	188,883	7,753	8,622	6,652	2,817,745
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	36
No Fireplaces	35
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0

Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	36
No Fireplaces	35
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
135144.44999999998	45,048	0.00	0.00	3,340

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Condo/Townhouse	303,489	204	0.0330	0.0040	0.00
Parking Lot	48,767	204	0.0330	0.0040	0.00

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Condo/Townhouse	304,499	204	0.0330	0.0040	-7,716
Parking Lot	48,767	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Condo/Townhouse	2,574,914	6.59
Parking Lot	0.00	1.08

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)

Condo/Townhouse	2,574,914	6.59
Parking Lot	0.00	1.08

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Condo/Townhouse	54.7	—
Parking Lot	0.00	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Condo/Townhouse	54.7	—
Parking Lot	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	8.54	annual days of extreme heat
Extreme Precipitation	6.90	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	14.3	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A

Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract

Exposure Indicators	—
AQ-Ozone	7.52
AQ-PM	14.5
AQ-DPM	30.0
Drinking Water	48.2
Lead Risk Housing	23.7
Pesticides	82.8
Toxic Releases	28.0
Traffic	21.1
Effect Indicators	—
CleanUp Sites	46.1
Groundwater	30.9
Haz Waste Facilities/Generators	0.00
Impaired Water Bodies	23.9
Solid Waste	0.00
Sensitive Population	—
Asthma	38.6
Cardio-vascular	20.9
Low Birth Weights	60.1
Socioeconomic Factor Indicators	—
Education	14.8
Housing	42.3
Linguistic	0.00
Poverty	6.73
Unemployment	1.15

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	91.03041191
Employed	89.79853715
Median HI	83.63916335
Education	—
Bachelor's or higher	78.91697677
High school enrollment	100
Preschool enrollment	88.41267804
Transportation	—
Auto Access	43.87270627
Active commuting	72.95008341
Social	—
2-parent households	52.82946234
Voting	91.50519697
Neighborhood	—
Alcohol availability	59.74592583
Park access	35.26241499
Retail density	11.88245862
Supermarket access	2.399589375
Tree canopy	93.41716925
Housing	—
Homeownership	81.12408572
Housing habitability	44.70678814
Low-inc homeowner severe housing cost burden	43.85987425
Low-inc renter severe housing cost burden	88.29718979
Uncrowded housing	33.18362633

Health Outcomes	—
Insured adults	88.86179905
Arthritis	0.0
Asthma ER Admissions	65.7
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	54.6
Cognitively Disabled	26.7
Physically Disabled	29.8
Heart Attack ER Admissions	91.6
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	68.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	7.9
SLR Inundation Area	31.3

Children	71.1
Elderly	28.7
English Speaking	74.8
Foreign-born	17.8
Outdoor Workers	33.7
Climate Change Adaptive Capacity	—
Impervious Surface Cover	86.3
Traffic Density	2.3
Traffic Access	23.0
Other Indices	—
Hardship	23.7
Other Decision Support	—
2016 Voting	92.6

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	11.0
Healthy Places Index Score for Project Location (b)	90.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Updated acreages 4/2023
Construction: Trips and VMT	Added onsite travel with mixed vehicles
Construction: Construction Phases	Approximately 18 month construction duration
Construction: Dust From Material Movement	Site Prep Building materials would be transported to the site Grading import approximately 7,500 cubic yards of fill
Operations: Energy Use	No natural gas
Operations: Hearths	No natural gas
Construction: Off-Road Equipment	Modified with Midpen inputs
Construction: Demolition	20,840 CY of site concrete to demo accounted for in haul trips

APPENDIX D

Biological Impact Report

Biological Impact Report for the Cypress Point Affordable Housing Community Project, Moss Beach, San Mateo County, California

MAY 2023

PREPARED FOR

MidPen Housing Corporation

PREPARED BY

SWCA Environmental Consultants

BIOLOGICAL IMPACT REPORT FOR THE CYPRESS POINT AFFORDABLE HOUSING COMMUNITY PROJECT, MOSS BEACH, SAN MATEO COUNTY, CALIFORNIA

Prepared for

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SWCA Project No. 73999

May 2023

EXECUTIVE SUMMARY

SWCA Environmental Consultants (SWCA) has prepared this Biological Impact Report (BIR) for the Cypress Point Affordable Housing Community Project (Project). MidPen Housing Corporation (MidPen) is proposing the construction of a 66,738-square-foot affordable housing community, which will include 71 units in 16 two-story buildings and a community building, in the community of Moss Beach, San Mateo County, California. The Project would cluster the residential units toward the northwestern corner of the site, retaining the forested open space on the northernmost portion of the site, and leaving room for landscaping and public trails to the south and east. The Project does not include changes to the two existing water tanks on the site.

The purpose of this BIR is to document the biological resources within the Project biological study area (BSA), which consists of the Project footprint (Project area) and a 200-foot buffer surrounding the Project area. SWCA conducted a literature review of existing sources of information regarding occurrences of special-status species and sensitive resources near the BSA. A field survey was conducted within the BSA to document biological resources, including special-status plant and animal species, potentially jurisdictional wetlands and other waters, and environmentally sensitive habitat areas (ESHAs) as defined by the San Mateo County Local Coastal Plan (LCP).

No special-status species were observed within the BSA during the biological field survey. Similarly, no jurisdictional wetlands, water features, or riparian corridors were observed within the Project area.

The BSA has a moderate to high potential to support one special-status plant species—Choris' popcorn flower (*Plagiobothrys chorisianus* var. *chorisianus*)—and one special-status animal species—California red-legged frog (*Rana draytonii*). There is no U.S. Fish and Wildlife Service (USFWS)-designated critical habitat or National Oceanic and Atmospheric Administration (NOAA) designated critical habitat located within the BSA. Three of the vegetation communities observed in the BSA provide suitable nesting and foraging habitat for nesting birds covered under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFGC).

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1 INTRODUCTION

1.1 Purpose of Biological Resources Evaluation

This Biological Impact Report (BIR) has been prepared by SWCA Environmental Consultants (SWCA) at the request of the MidPen Housing Corporation (MidPen) and San Mateo County in support of the Cypress Point Affordable Housing Community Project (Project). The intent of this BIR is to identify sensitive biological resources and environmentally sensitive habitat areas (ESHAs), as defined by the San Mateo County Local Coastal Plan (LCP), that may be impacted by the development of the Project. This BIR includes the results from a desktop review, literature search, and field survey of the Project area, including areas within a 200-foot buffer of the Project area, referred to hereafter as the biological study area (BSA).

1.2 Project Location and Description

The proposed Project is located on an 11.02-acre parcel adjacent to the northeast corner of Carlos and Sierra Streets in the unincorporated community of Moss Beach, San Mateo County, California (Figures 1 and 2). The latitude and longitude of the Project are 37.533542, -122.515883, respectively. The Project is located in Section 4, Township 5 South, and Range 6 West and lies within the extent of the Montara Mountain, California U.S. Geological Survey (USGS) 7.5-minute quadrangle. The parcel is designated as Assessors' Parcel Number (APN) 037-022-070.

The proposed Project is an affordable housing development sponsored by MidPen and designed to provide affordable housing in the San Mateo Midcoast region. The intention of the Project sponsors and County of San Mateo (County) is to improve the jobs/housing balance and jobs/housing fit by providing preference for those who live or work on the San Mateo Coast. The Project consists of development of a 66,738-square-foot affordable housing community, which will include 71 units in 16 two-story buildings and a community building. The Project includes six different building layouts and unit configurations, ranging in height from 23 to 28 feet, which would be clustered toward the northwestern corner of the site, retaining the forested open space on the northernmost portion of the site, and leaving room for landscaping and public trails to the south and east. The project would retain approximately 193 of the existing trees on the site and remove approximately 295 trees. Of the 295 trees proposed to be removed, approximately 190 are considered Significant or Heritage (HortScience 2022). The Project does not include changes to the two existing water tanks on the site.

2 REGULATORY SETTING

2.1 Federal

2.1.1 *Clean Water Act*

Section 404 of the Clean Water Act (CWA) prohibits the discharge of dredged or fill material into waters of the United States (WOTUS). Policies relating to the loss of aquatic habitats generally stress the need for no net loss of wetland resources. Under Section 404, actions in WOTUS may be subject to an individual permit, nationwide permit (NWP), or regional general permit, or may be exempt from regulatory requirements.

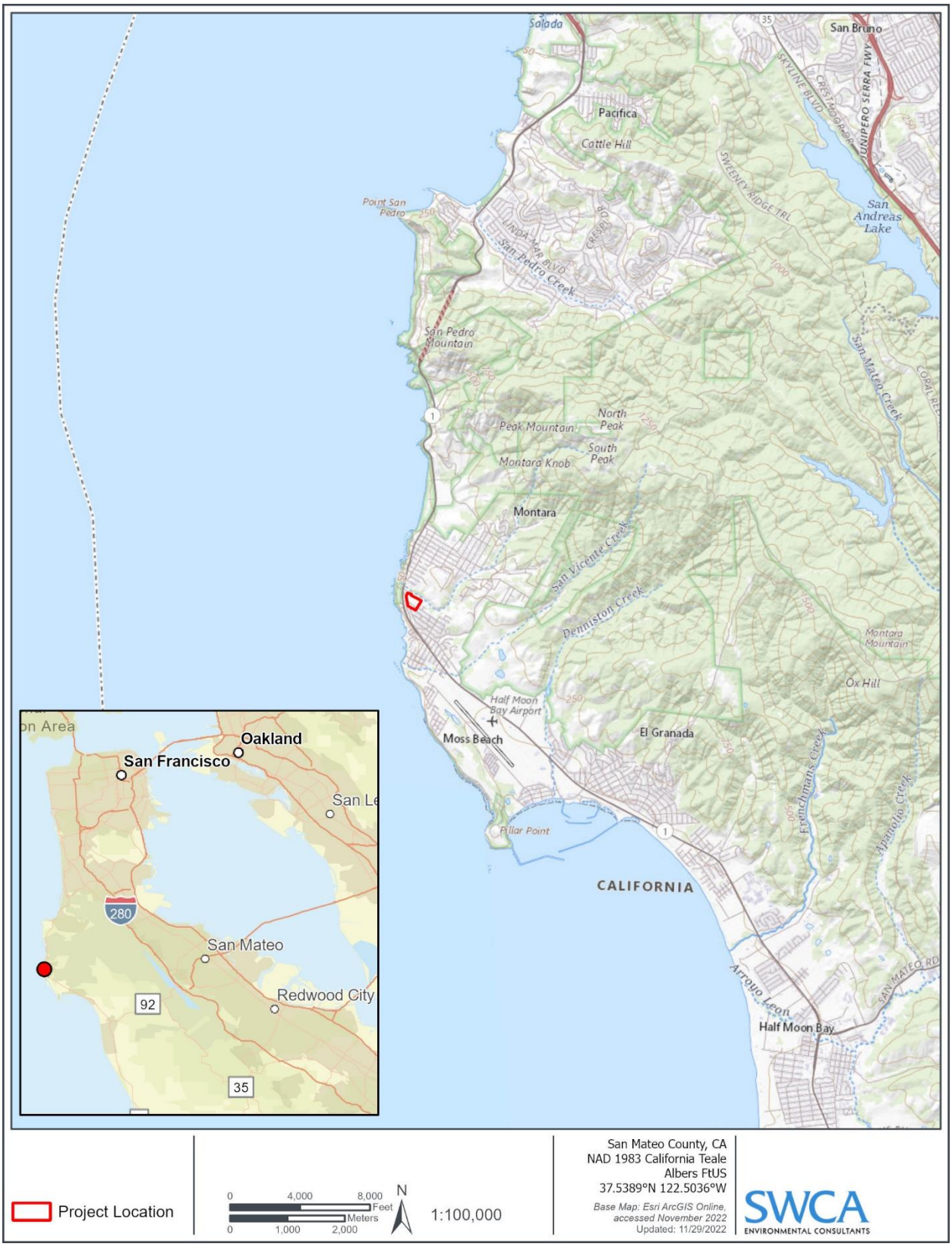


Figure 1. Project location map.



Figure 2. Project vicinity map.

The protection of federal jurisdictional WOTUS has been historically contentious and subject to numerous legal decisions. Most recently, on December 30, 2022, the U.S. Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (USEPA) announced a final rule (USACE and USEPA 2020) that will update the definition of WOTUS from 1986. A summary of that definition of WOTUS is as follows:

1. Traditional navigable waters, the territorial seas, and interstate waters;
2. Impoundments of waters of the United States;
3. Tributaries to traditional navigable waters, the territorial seas, interstate waters, or impoundments of waters of the United States, if the tributaries meet either the relatively permanent standard or the significant nexus standard;
4. Wetlands (a) adjacent to traditional navigable waters, the territorial seas, and interstate waters; (b) adjacent to and with a continuous surface connection to relatively permanent impoundments of waters of the United States; (c) adjacent to tributaries that meet the relatively permanent standard; and (d) adjacent to and with a significant nexus to impoundments of waters of the United States or jurisdictional tributaries; and
5. Intrastate lakes and ponds, streams, or wetlands not listed above that meet either the relatively permanent standard or the significant nexus standard.

Wetlands are defined as those areas "that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 Code of Federal Regulations [CFR] 328.3(b)). Because of the ongoing controversy and legal challenges surrounding WOTUS, there may be additional changes to federal regulations during Project planning that would be captured during design and permitting.

2.1.2 *Endangered Species Act*

The Federal Endangered Species Act (FESA) of 1973 is administered by the U.S. Fish and Wildlife Service (USFWS) and prevents the unlawful "take" of listed fish, animal, and plant species. Section 9(a)(1)(B) specifically states take of species listed as threatened or endangered is unlawful. Take is defined as any action that would harass, harm, pursue, hunt, wound, shoot, kill, trap, capture, or collect any threatened or endangered species. Section 10 of the FESA allows the USFWS to issue incidental take permits if take of a listed species may occur during otherwise lawful activities. Section 10(a)(1)(B) requires a Habitat Conservation Plan for an incidental take permit on non-federal lands.

2.1.3 *Migratory Bird Treaty Act*

The Migratory Bird Treaty Act (MBTA) of 1918 (16 United States Code [USC] 703–711) prohibits taking, killing, possessing, transporting, and importing of migratory birds, parts of migratory birds, and their eggs and nests, except when specifically authorized by the U.S. Department of the Interior. As used in the MBTA, the term "take" is defined as meaning, "to pursue, hunt, capture, collect, kill or attempt to pursue, hunt, shoot, capture, collect or kill, unless the context otherwise requires." An April 11, 2018, memorandum from the USFWS, which enforces the MBTA, provided guidance to "clarify what constitutes prohibited take" (USFWS 2018). The USFWS memorandum stated that the "take of birds, eggs or nests" was prohibited only when the purpose of the activity was to conduct take but was not prohibited when the purpose of the activity was not to conduct take. On January 7, 2021, the USFWS published the Final Rule formalizing this interpretation of the MBTA (USFWS 2021). Therefore, the MBTA is currently limited to purposeful actions, such as directly and knowingly removing a nest to

construct a project, hunting, and poaching and not to actions resulting in incidental take. This rule should be monitored closely as it may change again in the near future under the current administration.

2.2 State

2.2.1 *California Endangered Species Act*

The California Endangered Species Act (CESA) of 1970 generally parallels the main provisions of the FESA, but unlike its federal counterpart, the CESA applies the take prohibitions to species proposed for listing (called "candidates" by the state). Section 2080 of the California Fish and Game Code (CFGC) prohibits the take, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. Take is defined in CFGC Section 86 as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The CESA allows for take incidental to otherwise lawful activities under CFGC Section 2081. Project proponents wishing to obtain incidental take permits are able to do so through a permitting process outlined in California Code of Regulations (CCR) Section 783.

2.2.2 *California Fish and Game Code*

2.2.2.1 FULLY PROTECTED SPECIES

The State of California first began to designate species as "Fully Protected" before the creation of the FESA and CESA. Lists of Fully Protected Species were initially developed to provide protection to those animals that were rare or faced possible extinction, and included fish, mammals, amphibians, reptiles, and birds. Most Fully Protected Species have since been listed as threatened or endangered under the FESA and/or CESA. The Fully Protected Species Statute (CFGC Section 4700) provides that Fully Protected Species may not be taken or possessed at any time. Furthermore, the California Department of Fish and Wildlife (CDFW) may authorize take of Fully Protected Species only in very limited circumstances, such as for necessary scientific research.

2.2.2.2 PROTECTION FOR BIRDS

According to CFGC Section 3503, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird (with limited exceptions). Section 3503.5 specifically protects birds in the orders Falconiformes and Strigiformes (birds of prey). Section 3513 essentially overlaps with the MBTA, prohibiting the take or possession of any migratory non-game bird. Disturbances that cause nest abandonment and/or loss of reproductive effort are considered "take" by the CDFW.

2.2.2.3 PROTECTION FOR PLANTS

The Native Plant Protection Act (NPPA) of 1977 (CFGC Sections 1900–1913) includes provisions that prohibit the take of endangered or rare native plants. The CDFW administers the NPPA and generally regards as rare many plant species with a California Rare Plant Rank (CRPR) of 1A, 1B, 2A, and 2B in the California Native Plant Society (CNPS) Rare Plant Inventory (CNPS 2022a). In addition, sometimes CRPR 3 and 4 plants are considered if the population has local significance in the area and is impacted by the Project. Section 191(b) of the CFGC includes a specific provision to allow for the incidental removal of endangered or rare plant species, if not otherwise salvaged by CDFW, within a right-of-way to allow a public utility to fulfill its obligation to provide service to the public.

2.2.2.4 LAKE AND STREAMBED ALTERATION AGREEMENT

Section 1602 of the CFGC requires that a Lake and Streambed Alteration Agreement application be submitted to the CDFW for "An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake." Evaluation of CDFW jurisdiction followed guidance in the CFGC and *A Review of Stream Processes and Forms in Dryland Watersheds* (CDFW 2010). In general, under CFGC Section 1602, CDFW jurisdiction extends to the maximum extent or expression of a stream on the landscape (CDFW 2010).

2.2.3 *California Species of Special Concern*

Species of Special Concern (SSC) is a category conferred by the CDFW to fish and animal species that meet the state definition of threatened or endangered, but have not been formally listed (e.g., federally or state-listed species), or are considered at risk of qualifying for threatened or endangered status in the future based on known threats. SSC is an administrative classification only, but these species should be considered "special-status" for the purposes of the California Environmental Quality Act (CEQA) analysis (see Section 3.1.1, *Special-Status Plant Species*, and Section 3.1.2, *Special-Status Animal Species*).

2.2.4 *Porter-Cologne Water Quality Control Act*

The Regional Water Quality Control Board (RWQCB) regulates activities pursuant to CWA Section 401(a)(1). Section 401 specifies that certification from the state is required for any applicant requesting a federal license or permit to conduct any activity, including, but not limited to, the construction or operation of facilities that may result in any discharge into navigable waters. Through the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), the RWQCB asserts jurisdiction over "waters of the state" (WOTS), which are generally identical in extent to WOTUS, but may also include waterbodies not currently under federal jurisdiction, such as isolated, intrastate waters. The Porter-Cologne Act defines WOTS as "surface water or ground water, including saline waters, within the boundaries of the state."

2.3 Local

2.3.1 *California Coastal Act and County of San Mateo Local Coastal Program*

The California Coastal Act (CCA) of 1976 governs the decisions made by the California Coastal Commission (CCC) regarding issues such as shoreline public access and recreation, terrestrial and marine habitat protection, water quality, commercial fisheries, and development within the California coastal zone. Development within the coastal zone requires either a Coastal Development Permit (CDP) or CDP Exemption from the CCC or from a local government with a CCC-certified LCP. Pursuant to Public Resources Code (PRC) Section 30106, development in this context means:

> . . . on land, in or under water, the placement or erection of any solid material or structure; discharge or disposal of any dredged material or of any gaseous, liquid, solid, or thermal waste; grading, removing, dredging, mining, or extraction of any materials; change in the density or intensity of use of land, including, but not limited to, subdivision pursuant to the Subdivision Map Act (commencing with Section 66410 of the Government Code), and any other division of land, including lot splits, except where the

> land division is brought about in connection with the purchase of such land by a public agency for public recreational use; change in the intensity of use of water, or of access thereto; construction, reconstruction, demolition, or alteration of the size of any structure, including any facility of any private, public, or municipal utility; and the removal or harvesting of major vegetation other than for agricultural purposes, kelp harvesting, and timber operations which are in accordance with a timber harvesting plan submitted pursuant to the provisions of the Z'berg-Nejedly Forest Practice Act of 1973 (commencing with Section 4511).

Whereas, "structure" includes, but is not limited to, any building, road, pipe, flume, conduit, siphon, aqueduct, telephone line, and electrical power transmission and distribution line.

The CCC also regulates activities in wetlands. Unlike the federal government, the CDFW and CCC have adopted the Cowardin et al. (1979) definition of wetlands:

> Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface of the land or is covered by shallow water. For purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes (at least 50 percent of the aerial vegetative cover); (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year.

The Project is located within the coastal zone in San Mateo County. The San Mateo County LCP was approved by the County Board of Supervisors and CCC in 1980. In April 1981, the County assumed responsibility for implementing the State Coastal Act in the unincorporated areas of San Mateo County, including issuance of CDPs. For a permit to be issued, the development must comply with the policies of the LCP and those ordinances adopted to implement the LCP. The LCP defines wetlands as:

> . . . an area where the water table is at, near, or above the land surface long enough to bring about the formation of hydric soils or to support the growth of plants which normally are found to grow in water or wet ground. Such wetlands can include mudflats (barren of vegetation), marshes, and swamps. Such wetlands can be either fresh or saltwater, along streams (riparian), in tidally influenced areas (near the ocean and usually below extreme high water of spring tides), marginal to lakes, ponds, and man-made impoundments. Wetlands do not include areas which in normal rainfall years are permanently submerged (streams, lakes, ponds and impoundments), nor marine or estuarine areas below extreme low water of spring tides, nor vernally wet areas where the soils are not hydric.
>
> In San Mateo County, wetlands typically contain the following plants: cordgrass, pickleweed, jaumea, frankenia, marsh mint, tule, bullrush, narrow-leaf cattail, broadleaf cattail, pacific silverweed, salt rush, and bog rush. To qualify, a wetland must contain at least a 50% cover of some combination of these plants, unless it is a mudflat.

The County provides the following definition for Sensitive Habitats:

> . . . any area in which plant or animal life or their habitats are either rare or especially valuable and any area which meets one of the following criteria: (1) habitats containing or supporting "rare and endangered" species as defined by the State Fish and Game Commission, (2) all perennial and intermittent streams and their tributaries, (3) coastal tide lands and marshes, (4) coastal and offshore areas containing breeding or nesting sites

> and coastal areas used by migratory and resident water-associated birds for resting areas and feeding, (5) areas used for scientific study and research concerning fish and wildlife, (6) lakes and ponds and adjacent shore habitat, (7) existing game and wildlife refuges and reserves, and (8) sand dunes.
>
> Sensitive habitat areas include, but are not limited to, riparian corridors, wetlands, marine habitats, sand dunes, sea cliffs, and habitats supporting rare, endangered, and unique species.

Policies of the San Mateo County LCP take precedence over San Mateo County General Plan policies for property located in the Coastal Zone. Actions taken by counties or municipalities within the coastal zone may be appealed to the CCC only under defined circumstances (specified in PRC Section 30603). The CCC also retains permit authority in certain limited areas, such as tidelands and submerged lands (CCA Section 30519(b)). Development must also comply with other provisions of the County Code and Ordinances, such as zoning, building, and health regulations.

2.3.2 *Significant Tree Ordinance of San Mateo County*

The Significant Tree Ordinance (2016) governs the cutting of significant trees and tree communities and requires the replacement of significant trees communities on public and private property within the unincorporated area of the County. Cutting or removal of a Significant Tree requires a permit from the County. The County defines significant trees as "any live woody plant rising above the ground with a single stem or trunk of a circumference of thirty-eight (38") or more measured at four- and one-half feet (4 ½') vertically above the ground or immediately below the lowest branch, whichever is lower, and having the inherent capacity of naturally producing one main axis continuing to grow more vigorously than the later axes."

2.3.3 *Regulations for the Protections of Heritage Trees*

These Heritage Trees Ordinance (2016) requires submittal of an Existing Tree Plan, including (1) an Arborist's report of all significant or heritage trees to be removed, and (2) a Tree Protection Plan for all trees to be preserved.[1,2] Permits must be acquired for all regulated trees to be removed. The Planning Commission will act upon any tree removal in a scenic corridor. Significant trees to be removed must be replaced with 3 or more trees, as determined by the Community Development Director.

3 METHODOLOGY

3.1 Literature and Records Review

SWCA performed an extensive literature review, including a review of the previously-prepared August 2020 DeNovo *Biological Resources Report*, and the 2022 HortScience | Bartlett Consulting *Arborist Report* to gain familiarity with the Project and identify potential sensitive biological features, including ESHAs, target flora and fauna species, and wetlands or other waters that have the potential to occur in the BSA (Figure 3). The review consisted of a records search of current versions of the USFWS online Information for Planning and Consultation (IPaC) species list system (USFWS 2023b) (Appendix A),

[1] San Mateo County. 2016. *Significant Tree Ordinance of San Mateo County.* Available at: https://www.smcgov.org/planning/tree-regulations. Accessed May 5, 2023.

[2] San Mateo County. 2016. *Regulation of Removal and Trimming of Heritage Trees on Public and Private Property.* Available at: https://www.smcgov.org/planning/tree-regulations. Accessed May 5, 2023.

CDFW California Natural Diversity Database (CNDDB 2023) (Appendix B), and CNPS Online Inventory of Rare and Endangered Plants (CNPS 2023b) within the Montara Mountain, San Mateo, and Half Moon Bay, California USGS 7.5-minute quadrangles (USGS 2023a). The CNDDB and CNPS searches were further refined to a 2-mile search surrounding the Project area (see Appendix B). The USFWS Critical Habitat Mapper (USFWS 2023a) was queried to identify critical habitat for terrestrial and aquatic species near the BSA (Appendix C). All of the special-status species and sensitive habitats found in the literature review were compiled into a table for use during the field survey, as described in Section 3.2, *Field Survey* (Appendix D).

The National Wetlands Inventory (NWI) Database (USFWS 2023c) and USGS National Hydrography Dataset (NHD) (USGS 2023b) (Appendix E), U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) Soil Survey for San Mateo County (NRCS 2023) (see Appendix E), and aerial imagery were also reviewed to provide additional information for soils and potential wetland features known to occur in the BSA.

3.1.1 *Special-Status Plant Species*

For the purposes of this BIR, special-status plant species are defined as the following:

- Plants listed or proposed for listing as threatened or endangered under the FESA (50 CFR 17.12 for listed plants and various notices in the *Federal Register* for proposed species).
- Plants that are candidates for possible future listing as threatened or endangered under the FESA.
- Plants considered by the CNPS to be “rare, threatened, or endangered” in California (CRPR 1A, 1B, 2A, and 2B in CNPS [2023b]).
- Plants listed or proposed for listing by the State of California as threatened or endangered under the CESA (14 CCR Section 670.5).
- Plants listed under the NPPA (CFGC Section 1900 et seq.).
- Plants considered sensitive by other federal agencies (e.g., U.S. Forest Service, U.S. Bureau of Land Management), state and local agencies, or jurisdictions.

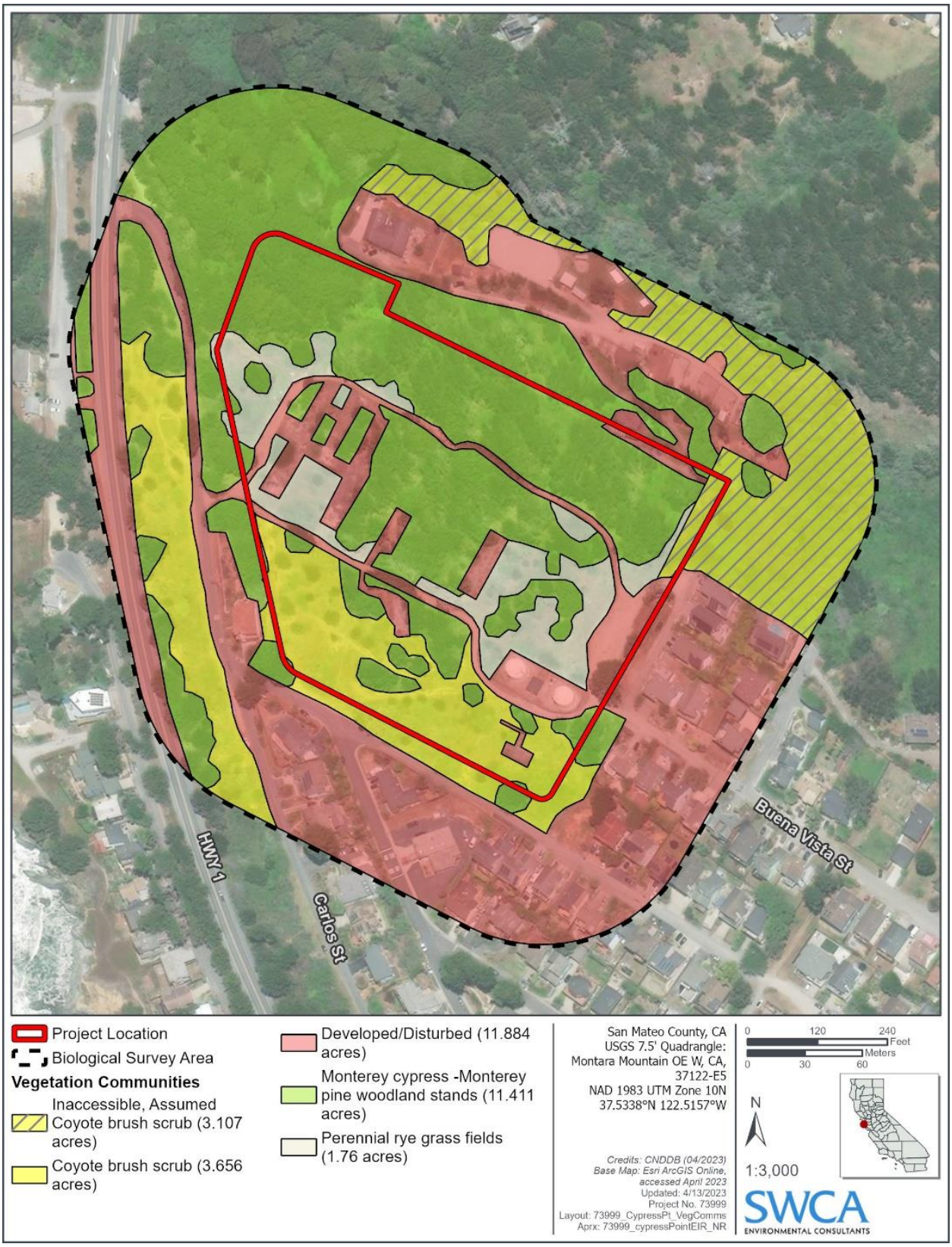


Figure 3. Biological resources map: vegetation communities.

3.1.2 *Special-Status Animal Species*

For the purposes of this BIR, special-status animal species are defined as the following:

- Animals listed or proposed for listing as threatened or endangered under the FESA (50 CFR 17.11 for listed animals and various notices in the *Federal Register* for proposed species).
- Animals that are candidates for possible future listing as threatened or endangered under the FESA.
- Animals listed or proposed for listing by the State of California as threatened and endangered under the CESA (14 CCR 670.5).
- Animals that are SSC to the CDFW.
- Animal species that are Fully Protected in California (CFGC Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

3.2 Field Survey

On April 3, 2023, SWCA biologist Charlotte Soergel conducted a reconnaissance-level survey of the BSA. The purpose of the field survey was to evaluate the presence or absence of suitable habitat for special-status species determined to have the potential to occur in the BSA, sensitive habitats with potential to occur, potentially jurisdictional wetland features, and other ESHAs as defined by the County LCP. In addition, the surveyor identified and mapped vegetation communities using *A Manual of California Vegetation,* Second Edition (Sawyer et al. 2009). The survey included walking throughout the Project area and the surrounding 250-foot buffer (BSA) where accessible (see Figure 3).

A complete list of plant and animal species observed within the BSA during the field survey is included in Appendix F. When necessary, the biologist referred to *The Jepson Manual* (Baldwin et al. 2012) to identify plant species. Representative photographs depicting existing conditions are included in Appendix G.

4 RESULTS

4.1 Soils, Topography, and Elevation

The topography within the BSA is generally flat and gently slopes westward toward the Pacific Ocean. Elevations within the BSA range from approximately 85 to 195 feet above mean sea level. According to the NRCS Web Soil Survey (NRCS 2023), soils in the BSA consist of one soil type: Typic Argiustolls, loamy-Urban land association, 5 to 15 percent slopes (see Appendix E). Typic Arguistolls soils are moderately well-drained soils comprised of coastal alluvium derived from weathered sedimentary rock. This soil type is moderately well drained and typically occurs along fluviomarine terraces (NRCS 2023).

4.2 Vegetation Communities

The BSA consists of developed uses, including neighboring residences and roadways, water tanks and an associated maintenance structure operated by Montara Water and Sanitary District (MWSD), concrete remnants of military facilities that are scattered throughout the Project area, and dirt access roads that travel around the perimeter of the Project area, and undeveloped land dominated by a mix of native and non-native vegetation. Four vegetation communities were mapped in the BSA and were classified using

the naming conventions of *A Manual of California Vegetation*, Second Edition (Sawyer et al. 2009). Vegetation communities present in the BSA include Monterey cypress – Monterey pine woodland stands (*Hesperocyparis macrocarpa – Pinus radiata* Forest and Woodland Semi-Natural Alliance), coyote brush scrub (*Baccharis pilularis* Shrubland Alliance), perennial rye grass fields, and developed/disturbed areas.

Photographs (see Appendix G) and mapping (see Figure 3) depict the characteristics and locations of vegetation communities within the BSA.

4.2.1 *Monterey Cypress – Monterey Pine Woodland Stands*

Monterey cypress – Monterey pine woodland stands (*Hesperocyparis macrocarpa – Pinus radiata* Forest and Woodland Semi-Natural Alliance) are characterized by a predominance of Monterey cypress (*Hesperocyparis macrocarpa*), Canary Island pine (*Pinus canariensis*), Aleppo pine (*Pinus halepensis*), Italian stone pine (*Pinus pinea*), and Monterey pine (*Pinus radiata*) in the tree canopy along with coast wattle (*Acacia cyclops*) and eucalyptus (*Eucalyptus* spp.) species. This vegetation community is naturalized on the coast and is often planted as trees, groves, and windbreaks (Sawyer et al. 2009).

This vegetation community occurs throughout the BSA with dense cover occurring through the central and along the northern and eastern survey perimeters. This community has the potential to support nesting and foraging birds protected under the MBTA and may provide marginal overwintering habitat for monarch butterfly.

4.2.2 *Coyote Brush Scrub*

Coyote brush scrub is characterized by coyote brush as dominant or co-dominant in the shrub canopy along with coastal sage brush (*Artemisia californica*), blueblossom (*Ceanothus thyrsiflorus*), beaked hazelnut (*Corylus cornuta*), sticky monkeyflower (*Diplacus aurantiacus*), California buckwheat (*Eriogonum fasciculatum*), lizard tail (*Eriophyllum staechadifolium*), California coffeeberry (*Frangula californica*), coast silk tassel (*Garrya elliptica*), salal (*Gaultheria shallon*), oceanspray (*Holodiscus discolor*), deerweed (*Acmispon glaber*), coastal bush lupine (*Lupinus arboreus*), California wax myrtle, California blackberry (*Rubus ursinus*), white sage (*Salvia apiana*), purple sage (*Salvia leucophylla*), and poison oak (*Toxicodendron diversilobum*). Emergent trees may be present at low cover, including Bishop pine (*Pinus muricata*), Douglas fir (*Pseudotsuga menziesii*), coast live oak (*Quercus agrifolia*), or California bay (*Umbellularia californica*). This vegetation community occurs on river mouths, stream sides, terraces, stabilized dunes of coastal bars, spits along the coastline, coastal bluffs, open slopes, and ridges with variable soils ranging from sandy to relatively heavy clay (Sawyer et al. 2009).

This vegetation community occurs throughout the BSA, primarily in the areas where there are gaps in the tree canopy. In the BSA, coyote brush is dominant with cotoneaster (*Cotoneaster coriaceus*), poison oak, California blackberry, ocean spray, red elderberry (*Sambucus racemosa*), and pampas grass (*Cortaderia selloana*) along the western extent of the BSA and southwestern extent of the Project area. Coyote brush scrub in the BSA has the potential to serve as upland dispersal habitat for California red-legged frog and may support special-status plant species, including Choris' popcorn-flower. This community has the potential to support nesting and foraging birds protected under the MBTA.

4.2.3 *Perennial Rye Grass Fields*

Perennial rye grass fields are characterized by a dominance or co-dominance of perennial rye grass in the herbaceous layer along with redtop (*Agrostis stolonifera*), wild oats (*Avena fatua*), black mustard (*Brassica nigra*), ripgut brome (B*romus diandrus*), soft chess (*Bromus hordeaceus*), bull thistle (*Cirsium vulgare*), reed fescue (*Festuca arundinacea)*, common velvetgrass (*Holcus lanatus*), seaside barley

(*Hordeum marinum*), hawkbit (*Leontodon saxatilis*), bird's foot trefoil (*Lotus corniculatus*), Harding grass (*Phalaris aquatica*), Kentucky blue grass (*Poa pratensis*), curly dock (*Rumex crispus*), and various clover species (*Trifolium* spp.).

This vegetation community occurs primarily along the northwest and southern perimeters of the Project area and is dominated by perennial rye grass, wild oats, ripgut brome, four seeded vetch (*Vicia tetrasperma*), and soft chess. Other species observed in this community include Bermuda buttercup (*Oxalis pes-capre*), wild radish (*Raphanus sativus*), rattle snake grass (*Briza maxima*), limited cover of prairie June grass (*Koeleria macrantha*), and common dandelion (*Taraxacum californicum*). Along the southeastern extent of the Project area, limited patches of spreading rush (*Juncus patens*), little-robin (*Geranium purpureum*), bird's foot trefoil (*Lotus corniculatus*), and common cat's ear (*Hypochaeris radicata*) are present. The perennial rye grass field community in the BSA has the potential to serve as upland dispersal habitat for California red-legged frog and may support special-status plant species, including Choris' popcorn-flower. In addition, this community has the potential to support nesting and foraging birds protected under the MBTA.

4.2.4 *Developed/Disturbed*

Developed/disturbed areas are generally characterized by residential or commercial development dominated by a mix of exotic ornamental and native plant species. Vegetation density, canopy cover, and species composition will vary based on purpose and/or design. This habitat type occurs on the eastern, southern, and western sides of the BSA and includes Lincoln, Buena Vista, and Carlos Streets. These areas are characterized by residential development and paved public roadways. Vegetation types in these areas include ornamental trees and shrubs. In addition, within the Project area, there are remnants of concrete structures from previous military uses distributed throughout the site. Two water towers and an associated maintenance hut occur in the southeastern portion of the BSA. Unpaved, dirt maintenance roads traverse the perimeter of the Project area.

Disturbed areas throughout the BSA were dominated by invasive plant species, including French broom (*Genista monspessulana*), cape ivy (*Delairea odorata*), pride of madeira (*Echium candicans*), borage (*Borago officinalis*), fairy stonecrop (*Crassula multicava*), longleaf wattle (*Acacia longifolia*), and periodic ice plant (*Carpobrotus edulis*) mats. Occasional native species occur within this community and include California bee plant (*Scrophularia californica*), California mugwort (*Artemisia douglasiana*), common yarrow (*Achillea millefolium*), and pacific sanicle (*Sanicula crassicaulis*).

4.3 Critical Habitat

There is no federally listed critical habitat within the Project area or BSA. However, there is USFWS federally designated critical habitat for California red-legged frog (a federally threatened species and CDFW SSC) approximately 1.1 mile east of the Project area in San Vicente Creek, which flows south of the Project area towards the Pacific Ocean.

Additionally, there is National Oceanic and Atmospheric Administration (NOAA) federally designated critical habitat for five marine species within 2 miles of the Project area within the Pacific Ocean: black abalone (*Haliotis cracherodii*; a federally endangered species) critical habitat is located approximately 0.1 mile west of the Project area, leatherback sea turtle (*Dermochelys coriacea*; a federally endangered species) critical habitat is located approximately 1 mile west of the Project area, green sturgeon (*Acipenser medirostris*; a federally threatened species) critical habitat is located approximately 1 mile west of the Project area, killer whale (*Orcinus orca*; a federally endangered species) critical habitat is located approximately 1 mile west of the Project area, and humpback whale (*Megaptera novaeangliae*; a federally endangered species) critical habitat is located approximately 1.5 miles west of the Project area.

No critical habitat will be affected by the Project (see Appendix C).

4.4 Special-Status Species with Potential to Occur

Based on the existing biological conditions in and adjacent to the BSA, a review of relevant literature, the known occurrences of special-status species in the area, and SWCA biologists' local knowledge of the region, 10 special-status plant species and eight special-status animal species were identified to have potential to occur within the BSA. Summary descriptions for these species are provided below, and descriptions of other plants and animal species that were evaluated for potential occurrence are provided in Appendix D.

4.4.1 *Special-Status Plant Species*

Based on CNDDB and CNPS queries, 10 special-status plant species were identified with potential to occur in the Montara Mountain, San Mateo, and Half Moon Bay, California USGS 7.5-minute quadrangles. SWCA further evaluated the species and their habitat requirements to identify which special-status plant species have the potential to occur within the BSA. This analysis compared the known habitat requirements of the 10 species with the BSA's existing conditions, elevation, and soils. The evaluation also took into consideration which species had recent occurrences within 2 miles of the BSA (see Appendix B).

No special-status plant species identified during the desktop review were observed during the field survey. The survey was conducted within the bloom windows for all plant species analyzed. One occurrence of Choris' popcorn flower (*Plagiobothrys chorisianus* var. *chorisianus*; CRPR 1B.2) was identified in 2016, located approximately 0.8 mile northeast of the BSA (CNDDB 2023); however, this species was not observed during the April 2023 field survey. Of the ten species considered for potential occurrence (see Appendix D, Table D-1), four species, coastal marsh milkvetch (*Astragalus pycnostachyus* var. *pycnostachyus*), Coast yellow leptisiphon *(Leptosiphon croceus),* San Francisco owl's-clover *(Triphysaria floribunda),* and Ornduff's meadowfoam (*Limnanthes douglasii* ssp. *ornduffii*) were determined to have no potential to occur due to lack of suitable habitat, soils, or elevation requirements.

One species, Choris' popcorn flower, was determined to have moderate potential to occur in the BSA. The following five special-status plant species have low potential to occur within the BSA due to a lack of high-quality suitable habitat and the absence of recent occurrences within the 2-mile records search:

- Blasdale's bent grass (*Agrostis blasdalei*)
- Hickman's cinquefoil (*Potentilla hickmanii*)
- Kellogg's horkelia (*Horkelia cuneata* var. *sericea*)
- Perennial goldfields (*Lasthenia californica* ssp. *macrantha*)
- Rose leptosiphon (*Leptosiphon rosaceus*)

Species that were determined to have low potential to occur or be absent from the BSA are not discussed further in this BIR. Special-status plant species habitat descriptions and rationale for potential to occur in the BSA are provided in Appendix D. Given the above information, in addition to the implementation of avoidance and minimization measures provided in Section 5, *Avoidance and Minimization Measures*, no impacts to special-status plant species are anticipated.

4.4.1.1 CHORIS' POPCORN FLOWER

Choris' popcorn flower is an annual herb in the borage family (Boraginaceae) that blooms from March to June. It typically occurs in mesic areas in coastal prairie, chaparral, northern coastal scrub, and wetland riparian areas, at elevations ranging from 20 to 525 feet (Baldwin et al. 2012; Calflora 2023; CNPS 2023a, 2023b).

There is one CNDDB record of Choris' popcorn flower within 2 miles of the of the BSA (CNDDB 2023), one of which was documented in 2016, located approximately 0.8 mile northeast of the BSA. Choris' popcorn flower has a moderate potential to occur within or adjacent to the BSA due to the suitable mesic coastal scrub habitat. No Choris' popcorn flower was observed at the time of the April 2023 site assessment, which was conducted during the blooming period for this species. Vegetation communities within the BSA that could potentially support this species are limited to coyote brush scrub and perennial rye grass fields. Portions of the Project work area are anticipated to occur in coyote brush scrub and perennial rye grass field vegetation communities; therefore, a preconstruction survey for this species, during the appropriate bloom period of March to June, is recommended. With implementation of avoidance and minimization measures, including preconstruction survey and special-status plant avoidance, provided in Section 5, *Avoidance and Minimization Measures*, no Project impacts to Choris' popcorn flower are anticipated.

4.4.2 *Special-Status Animal Species*

Based on a CNDDB query and a review of existing literature, eight special-status animal species were identified in the Montara Mountain, San Mateo, and Half Moon Bay, California USGS 7.5-minute quadrangles. None of the eight special-status animal species identified during desktop review were observed during the field survey.

SWCA evaluated the species to identify which special-status animal species have the potential to occur within the BSA. This analysis compared the known habitat requirements of those species with the BSA's existing conditions. The evaluation also took into consideration which species have been recorded in the CNDDB within 2 miles of the BSA (see Appendix B).

Of the eight species considered for potential occurrence, one—California red-legged frog (*Rana draytonii*; federally threatened, CDFW SSC)—was determined to have moderate potential to occur within the Project area and BSA. Of the remaining seven species, five were determined to have low potential to occur and two were determined to be absent from the Project area and BSA due to a lack of suitable foraging and/or breeding habitat, aestivating habitat, life history, and/or other biotic considerations.

California red-legged frog was determined to have moderate potential to occur in the BSA, and the following five special-status animal species have low potential to occur within the BSA:

- Western bumble bee (*Bombus occidentalis*): California candidate endangered (low potential)
- Monarch butterfly (*Danaus plexippus*): federal candidate species (low potential)
- Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*): CDFW SSC (low potential)
- San Francisco garter snake (*Thamnophis sirtalis tetrataenia*): federally and state endangered, CDFW Fully Protected Species (low potential)

Due to its moderate potential to occur, California red-legged frog is discussed in the following section. Species that were determined to have low potential to occur or be absent from the BSA (see Appendix D, Table D-1) are not discussed further in this BIR.

4.4.2.1 CALIFORNIA RED-LEGGED FROG

California red-legged frog, a federally threatened species and CDFW SSC, occurs in various different habitat types, depending on its life cycle stage. Breeding areas include aquatic habitats, such as lagoons, streams, and natural and humanmade ponds. The species prefers aquatic habitats with little or no flow, the presence of surface water to at least early June, surface water depths to approximately 2 feet, and the presence of emergent vegetation (e.g., cattails, bulrush). During periods of wet weather, some individuals may make overland dispersals through adjacent upland habitats of distances up to 1 mile (USFWS 2002). Upland habitats, including small mammal burrows and woody debris, can also be used as refuge during the summer if water is scarce or unavailable (Jennings and Hayes 1994). California red-legged frogs typically travel between sites and are unaffected by topography and vegetation types during migration. Dispersal habitat makes it possible for California red-legged frog to locate to new breeding and non-breeding sites and is crucial for conservation of the species.

Seven California red-legged frog occurrences have been recorded within 2 miles of the BSA between 2006 and 2019 (CNDDB 2023). The closest CNDDB occurrence (2012) was recorded approximately 0.7 mile north of the BSA (see Appendix B). While no suitable aquatic breeding habitat was observed on-site, potentially suitable upland dispersal habitat for this species is present within the BSA. Additionally, Montara Creek, which is located approximately 250 feet north of the Project area and immediately north of the BSA, may provide marginally suitable aquatic dispersal habitat during wet season periods of inundation. Although there is potentially suitable upland dispersal habitat within the BSA, this species is more likely to utilize higher-quality, suitable aquatic and non-breeding habitat within and adjacent to Montara Creek where there is also more woody debris used for refugia. In addition, the BSA does not provide a suitable overland route to other aquatic breeding sites and no small mammal burrows were observed within the BSA. California red-legged frog was not observed in the BSA during the field survey.

Based on the above information and number of known occurrences within 2 miles of the Project area and within the BSA, there is moderate potential for dispersing California red-legged frog to occur in the BSA and Project area during the wet season (October 15–May 31) and low potential for the species to occur in the BSA during the dry season (June 1–October 15). With implementation of avoidance and minimization measures, including having a biological monitor present during Project initial ground-disturbing activities and installation of wildlife exclusion fencing, provided in Section 5, *Avoidance and Minimization Measures*, Project impacts to California red-legged frog are not anticipated.

4.5 Nesting Migratory Passerine Birds and Raptors

The BSA contains suitable nesting and foraging habitat for avian species protected under the MBTA and CFGC Sections 3503 and 3513 during the typical nesting season (February 15–September 15). Suitable nesting and foraging habitats would include the non-native grassland areas, shrubs, and trees within and adjacent to the Project area. Nesting is unlikely outside of the typical nesting season, although some avian species may forage year-round near the site. Avian species protected by the MBTA and CFGC observed in the BSA during the April 2023 field survey included American crow (*Corvus brachyrhynchos*), black phoebe (*Sayornis nigricans*), Brewer's blackbird (*Euphagus cyanocephalus*), California quail (*Callipepla californica*), common raven (*Corvus corax*), house finch (*Haemorhous mexicanus*), house wren (*Troglodytes aedon*), killdeer (*Charadrius vociferus*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), savannah sparrow (*Passerculus sandwichensis*), song sparrow (*Melospiza melodia*), and turkey vulture (*Cathartes aura*).

No nesting birds were observed during the field survey, which occurred during the typical nesting season. However, the Project has the potential to impact nesting birds, including their eggs or young, covered

under the MBTA and CFGC. With implementation of avoidance and minimization measures provided in Section 5, *Avoidance and Minimization Measures*, no impacts to these avian species are anticipated.

4.6 Wildlife Habitat and Movement Corridors

Suitable migration habitat for amphibians, reptiles, birds, and mammals are present along the Pacific Ocean coastline to the west of the BSA. In addition, migrating raptors are known to occur in the area adjacent to the Project area, especially during the fall. However, there are no known migratory corridors that intersect the BSA. The BSA is bordered by urban and residential development to the east and south and Highway 1 to the west. Riparian corridors adjacent to the BSA to the north and south are more likely to be utilized by wildlife traveling through the surrounding area. The BSA contains moderately suitable upland dispersal habitat for California red-legged frog and is likely utilized by common wildlife species. However, because the BSA is contained within residential and urban development, the Project is not expected to interfere substantially with the movement of any native resident or migratory animals.

4.7 Sensitive Habitats

As mentioned previously, coyote brush scrub and perennial rye grass field communities in the BSA may provide moderately suitable upland dispersal habitat for California red-legged frog. However, these vegetation communities within the BSA are unlikely to be considered a Sensitive Habitat by the County given the surrounding development (i.e., fragmentation of habitat) that diminishes the dispersal habitat value. No other Sensitive Habitats, as defined by the San Mateo County LCP Policies 7.1 through 7.14, were observed within the Project area.

4.8 Marine and Wildlife Reserves

The BSA is not located within 200 feet of a marine or wildlife reserve. The closest marine or wildlife reserve to the Project site is the Fitzgerald Marine Reserve, which is located approximately 0.63 mile south of the BSA.

4.9 Wetlands and Waters

A formal wetland delineation was not conducted as part of this BSA. However, no potentially jurisdictional waters or wetlands were observed during the field investigation. Montara Creek is located approximately 250 feet north of the Project area and immediately north of the BSA. In addition, San Vicente Creek is located approximately 0.6 mile south of the BSA.

5 AVOIDANCE AND MINIMIZATION MEASURES

The following avoidance and minimization measures are designed to prevent the Project from having a potentially significant biological impact:

1. Prior to the start of the Project, all construction crew members, including the project stormwater inspector, will attend an environmental awareness training presented by a qualified biologist. A training brochure describing special-status species, Project avoidance and minimization measures, key contacts, and potential consequences of impacts to special-status species and potentially jurisdictional features will be distributed to the crew members during the training. During the training the qualified biologist will review with the project stormwater inspector the requirement

of weekly inspection of wildlife exclusion fencing as described in Avoidance Measure 7. Trainees will sign an environmental training attendance sheet.

2. A preconstruction survey for California red-legged frog shall be conducted within the Project area immediately prior to ground disturbance. If no individuals are detected, then construction-related activities may proceed provided project avoidance and minimization measures in this document are adhered to. If adults are present in the construction area, work shall be stopped until individuals are allowed to disperse on their own volition, or the species is relocated by a qualified biologist with permission to handle California red-legged frog.
3. A qualified biological monitor shall be present during all initial ground-disturbing activities, including grubbing and/or vegetation removal and installation of the wildlife exclusion fence.
4. Disturbance to vegetation shall be kept to the minimum necessary to complete the Project activities. To minimize impacts to vegetation, a qualified biologist shall work with the contractor to designate the work area and any staging areas and clearly delineate areas that shall be avoided with exclusion fencing (e.g., high-visibility orange construction fencing, silt fence, ERTEC fencing, or other similar material).
5. Ground-disturbing construction activities (e.g., grubbing or grading) should occur during the dry season (June 1 to October 15) to facilitate avoidance of California red-legged frog. Regardless of the season, no ground disturbing activities shall occur within 24 hours following a significant rain event (greater than 1/4 inch in a 24-hour period). Following a significant rain event and the 24-hour drying-out period, a qualified biologist would conduct a preconstruction survey for California red-legged frog prior to the restart of any Project ground disturbing activities.
6. To avoid impacts to California red-legged frog and other sensitive wildlife species, a wildlife exclusion fence (e.g., silt fence, ERTEC fencing, or other similar material) shall be installed around the perimeter of the Project, at the discretion of the qualified biologist.
7. The wildlife exclusion fence shall be inspected by a qualified biologist or project stormwater inspector, who has received environmental awareness training from a qualified biologist, on a weekly basis to ensure that the fence is functioning as intended throughout the duration of construction activities that may impact California red-legged frog (e.g., ground disturbance, materials staging/parking required on the north side of the Project Area). Removal of the wildlife exclusion fence may be conducted at the discretion of a qualified biologist if ground disturbance activities have been completed and remaining Project activities would not impact California red-legged frog (i.e., only interior site build out activities remain).
8. Regardless of the season, construction shall adhere to State Water Resources Control Board best management practices (BMPs), and no ground disturbing activities shall occur within 24 hours following a significant rain event (defined as greater than 1/4 inch in a 24-hour period).
9. Before completion of the Project, all exposed or disturbed surfaces shall be permanently protected from erosion with reseeding and landscaping.
10. If any animals are encountered during Project activities, said animals shall be allowed to leave the work area unharmed. Animals shall not be picked up or moved in any way.
11. All spoils, such as dirt, excavated material, debris, and construction-related materials, generated during Project activities shall be placed within the limits of the designated construction area. Spoils shall be covered or secured to prevent sediment from escaping. Once the spoil pile is no longer active, it shall be removed from the work area and disposed of lawfully at an appropriate facility.
12. All exposed soils in the work area resulting from Project activities shall be stabilized immediately following the completion of work to prevent erosion. Erosion and sediment control BMPs, such

as silt fences, straw hay bales, gravel or rock-lined drainages, water check bars, and broadcast straw, can be used. BMPs shall be made of certified weed-free materials. Straw wattles, if used, shall be made of biodegradable fabric (e.g., burlap) and free of monofilament netting. At no time shall silt-laden runoff be allowed to enter any drainages or other sensitive areas.

13. Prior to the start of construction, a preconstruction survey for Choris' popcorn flower shall be conducted during the appropriate blooming period. Choris' popcorn flower occurrences within 50 feet of the Project work areas shall be flagged for avoidance by the Project. If the Project cannot avoid impacts to this species, MidPen shall consult with the CDFW on appropriate measures and/or actions to protect or salvage the plant(s) prior to beginning construction.
14. During Project activities, all trash that may attract predators shall be properly contained, removed, and disposed of regularly. Following construction, trash/construction debris shall be removed from work areas.
15. Construction materials, including, but not limited to, wooden pallets, BMPs, equipment, or other materials, that are left on the ground for more than 24 hours shall be inspected before and during moving of the materials to prevent potential impacts to animals that may have used the materials as a temporary refuge. Plastic pipes, if used, shall be covered with material to prevent animals from entering the pipes.
16. The number of access routes, number and size of staging areas, and total area of the activity shall be limited to the minimum necessary to complete the Project, and their boundaries shall be clearly demarcated.
17. All fueling and maintenance of vehicles and other equipment and staging areas shall occur at least 100 feet from any drainages and other water features. Crew members shall ensure that contamination of habitat does not occur during such operations. Prior to the onset of work, the construction contractor shall prepare a plan to be approved by the County before construction begins to allow a prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and the appropriate measures to take should a spill occur.
18. If Project activities, including grass mowing and tree trimming/removal, are conducted during nesting bird season (February 15–September 15), preconstruction nest surveys shall be conducted in and near the Project area (within 250 feet for large raptors and 100 feet for all other birds) by a qualified biologist within 7 days of the start of construction. If nesting birds are identified during the preconstruction survey, then the Project shall be modified (i.e., a no-work exclusion buffer of appropriate size [to be determined by the qualified Project biologist] shall be erected around active nests) and/or delayed as necessary to avoid impacts to the identified nests, eggs, and/or young.
19. Construction activities shall avoid Heritage or significant trees, as defined by the San Mateo County Tree Ordinance, that have not previously been authorized for removal with the County. If construction activities are occurring near a Heritage or significant tree or trees, exclusion fencing will be installed to keep construction activities out of the area.

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APPENDIX A

USFWS IPaC Records Search Results

IPaC resource list

IPaC will be down for a maintenance event the week of April 10th. We apologize for any inconvenience this may cause. ×

This [illegible]cal habitat [illegible]'s (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

San Mateo County, California



Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

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Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

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2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Reptiles

NAME	STATUS
Green Sea Turtle Chelonia mydas No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6199	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened
Foothill Yellow-legged Frog Rana boylii No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5133	Proposed Threatened

Fishes

NAME	STATUS
Longfin Smelt Spirinchus thaleichthys No critical habitat has been designated for this species.	Proposed Endangered

Flowering Plants

NAME	STATUS
Hickman's Potentilla Potentilla hickmanii Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6343	Endangered

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Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

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For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Allen's Hummingbird *Selasphorus sasin* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Jan 1 to Aug 31
Belding's Savannah Sparrow *Passerculus sandwichensis beldingi* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15
Black Oystercatcher *Haematopus bachmani* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9591	Breeds Apr 15 to Oct 31
Black Skimmer *Rynchops niger* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5234	Breeds May 20 to Sep 15
Black Swift *Cypseloides niger* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8878	Breeds Jun 15 to Sep 10
Black Turnstone *Arenaria melanocephala* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere

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Bullock's Oriole Icterus bullockii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Jul 25
California Gull Larus californicus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 1 to Jul 31
California Thrasher Toxostoma redivivum This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31
Clark's Grebe Aechmophorus clarkii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 31
Common Yellowthroat Geothlypis trichas sinuosa This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Marbled Godwit Limosa fedoa This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Nuttall's Woodpecker Picoides nuttallii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Olive-sided Flycatcher Contopus cooperi This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31

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Scripps's Murrelet Synthliboramphus scrippsi This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Feb 20 to Jul 31
Short-billed Dowitcher Limnodromus griseus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Tricolored Blackbird Agelaius tricolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10
Western Grebe aechmophorus occidentalis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31
Willet Tringa semipalmata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wrentit Chamaea fasciata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10

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Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

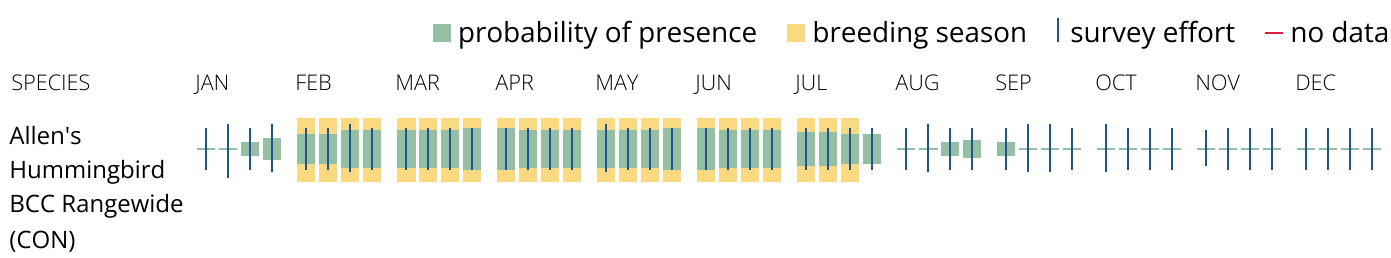
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

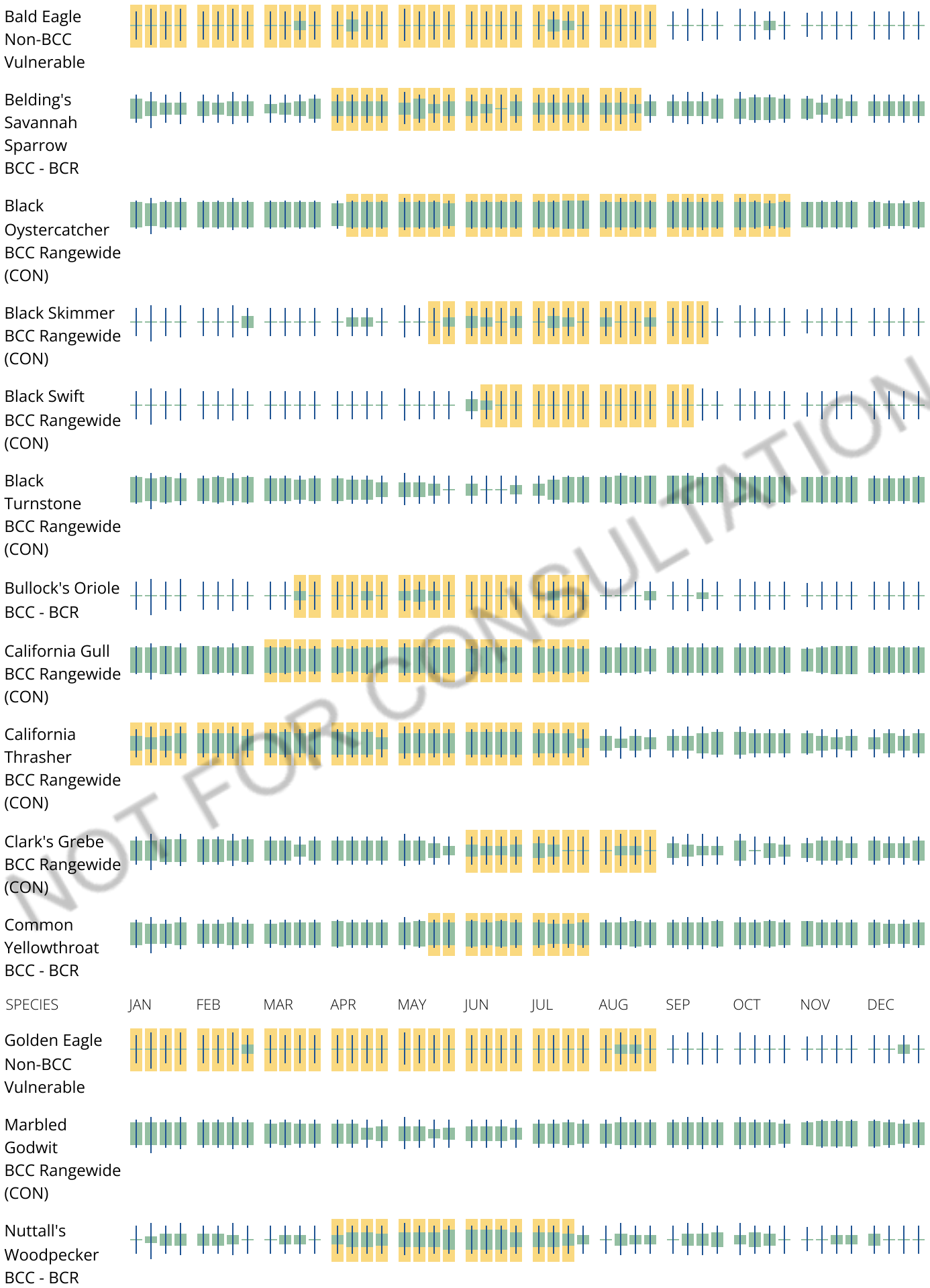
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

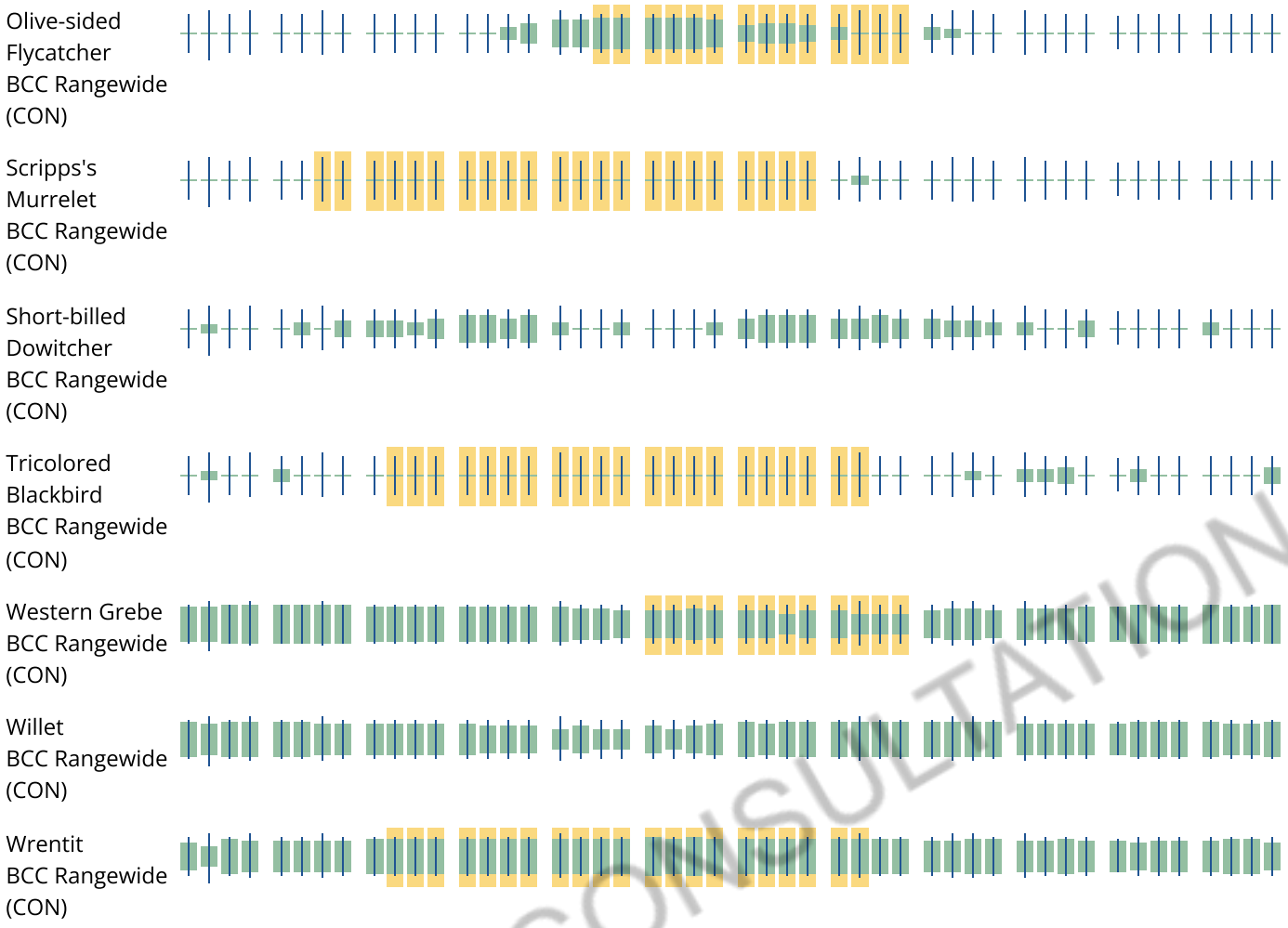
Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



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Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

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Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

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Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

This location did not intersect any wetlands mapped by NWI.

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

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Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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APPENDIX B

CNDDB Occurrence Maps and Special-Status Species List

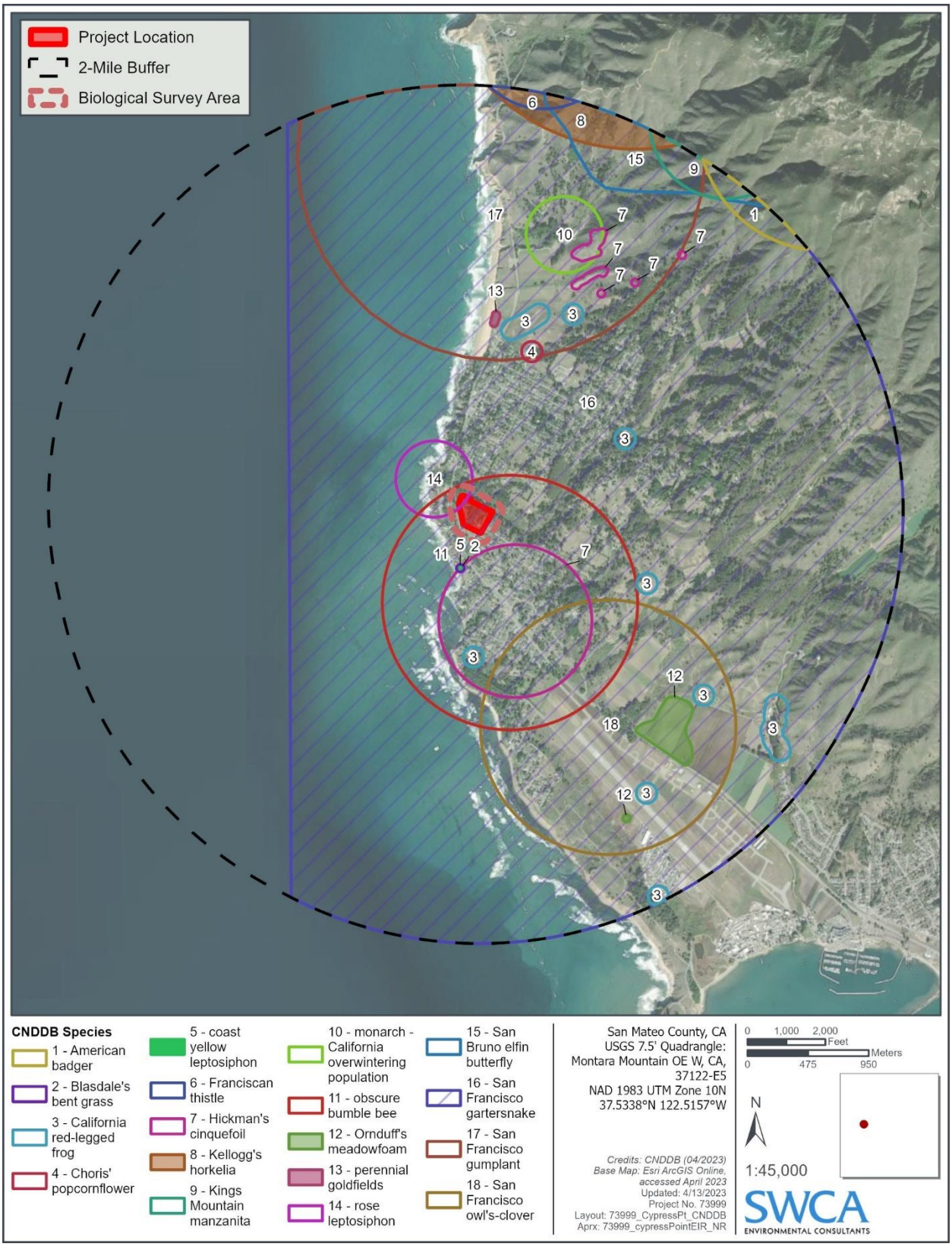


Figure B-1. Two-mile CNDDB sensitive species map.*

* Note that in order to keep locality data confidential for some species, CDFW suppresses coordinate data for San Francisco garter snake. As such, although the location data of this species is not shown in the above 2-mile radius map, it is understood that this species does occur within 2 miles of the Project area as listed in Table B-1.

Table B-1. Special-Status Species List

Scientific Name	Common Name	EONDX	ACCURACY	SITEDATE	FEDLIST	CALLIST	CRPR	CDFW STATUS
Agrostis blasdalei	Blasdale's bent grass	100588	specific area	20150503	None	None	1B.2	
Arctostaphylos regismontana	Kings Mountain manzanita	56356	2/5 mile	19930908	None	None	1B.2	
Bombus caliginosus	obscure bumble bee	97936	3/5 mile	19290704	None	None		
Callophrys mossii bayensis	San Bruno elfin butterfly	23049	non-specific area	20170603	Endangered	None		
Danaus plexippus plexippus pop. 1	monarch - California overwintering population	100116	1/5 mile	2015XXXX	Candidate	None		
Grindelia hirsutula var. *maritima*	San Francisco gumplant	16946	1 mile	19850908	None	None	3.2	
Horkelia cuneata var. *sericea*	Kellogg's horkelia	104676	1 mile	XXXXXXXX	None	None	1B.1	
Lasthenia californica ssp. *macrantha*	perennial goldfields	103074	specific area	20150503	None	None	1B.2	
Leptosiphon croceus	coast yellow leptosiphon	46039	specific area	20150514	None	Endangered	1B.1	
Leptosiphon rosaceus	rose leptosiphon	46065	1/5 mile	195004XX	None	None	1B.1	
Limnanthes douglasii ssp. *ornduffii*	Ornduff's meadowfoam	93451	non-specific area	20110216	None	None	1B.1	
Limnanthes douglasii ssp. *ornduffii*	Ornduff's meadowfoam	93452	specific area	2011XXXX	None	None	1B.1	
Plagiobothrys chorisianus var. *chorisianus*	Choris' popcornflower	110062	specific area	20150328	None	None	1B.2	
Potentilla hickmanii	Hickman's cinquefoil	19533	2/5 mile	19330506	Endangered	Endangered	1B.1	
Potentilla hickmanii	Hickman's cinquefoil	35653	specific area	20190305	Endangered	Endangered	1B.1	
Rana draytonii	California red-legged frog	11954	1/5 mile	20040607	Threatened	None		SSC
Rana draytonii	California red-legged frog	71138	specific area	200111XX	Threatened	None		SSC
Rana draytonii	California red-legged frog	103900	non-specific area	20170109	Threatened	None		SSC
Rana draytonii	California red-legged frog	115354	specific area	201901XX	Threatened	None		SSC
Rana draytonii	California red-legged frog	119724	specific area	20100305	Threatened	None		SSC
Rana draytonii	California red-legged frog	119725	specific area	20061011	Threatened	None		SSC
Rana draytonii	California red-legged frog	119728	80 meters	20190504	Threatened	None		SSC
Taxidea taxus	American badger	56791	3/5 mile	19480501	None	None		SSC
Thamnophis sirtalis tetrataenia	San Francisco gartersnake	27539	specific area	20160407	Endangered	Endangered		FP

Scientific Name	Common Name	EONDX	ACCURACY	SITEDATE	FEDLIST	CALLIST	CRPR	CDFW STATUS
Thamnophis sirtalis tetrataenia	San Francisco gartersnake	27540	non-specific area	20060927	Endangered	Endangered		FP
Thamnophis sirtalis tetrataenia	San Francisco gartersnake	27538	non-specific area	20140328	Endangered	Endangered		FP
Thamnophis sirtalis tetrataenia	San Francisco gartersnake	27537	1/5 mile	19870505	Endangered	Endangered		FP
Thamnophis sirtalis tetrataenia	San Francisco gartersnake	14767	specific area	20130703	Endangered	Endangered		FP
Thamnophis sirtalis tetrataenia	San Francisco gartersnake	27531	specific area	20111115	Endangered	Endangered		FP
Thamnophis sirtalis tetrataenia	San Francisco gartersnake	27497	specific area	20080413	Endangered	Endangered		FP
Thamnophis sirtalis tetrataenia	San Francisco gartersnake	72663	specific area	20080421	Endangered	Endangered		FP
Thamnophis sirtalis tetrataenia	San Francisco gartersnake	92544	1/10 mile	20070812	Endangered	Endangered		FP
Thamnophis sirtalis tetrataenia	San Francisco gartersnake	92595	1/10 mile	20060815	Endangered	Endangered		FP
Thamnophis sirtalis tetrataenia	San Francisco gartersnake	92603	80 meters	20110505	Endangered	Endangered		FP
Thamnophis sirtalis tetrataenia	San Francisco gartersnake	92744	80 meters	20070413	Endangered	Endangered		FP
Thamnophis sirtalis tetrataenia	San Francisco gartersnake	92745	specific area	20120720	Endangered	Endangered		FP
Thamnophis sirtalis tetrataenia	San Francisco gartersnake	92750	1/10 mile	19380805	Endangered	Endangered		FP
Thamnophis sirtalis tetrataenia	San Francisco gartersnake	93211	non-specific area	19510318	Endangered	Endangered		FP
Thamnophis sirtalis tetrataenia	San Francisco gartersnake	93247	1/5 mile	20040804	Endangered	Endangered		FP
Thamnophis sirtalis tetrataenia	San Francisco gartersnake	93262	1/5 mile	19791226	Endangered	Endangered		FP
Thamnophis sirtalis tetrataenia	San Francisco gartersnake	93271	1/5 mile	1983XXXX	Endangered	Endangered		FP
Triphysaria floribunda	San Francisco owl's-clover	103381	3/5 mile	19000317			1B.2	

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APPENDIX C

Critical Habitat Map

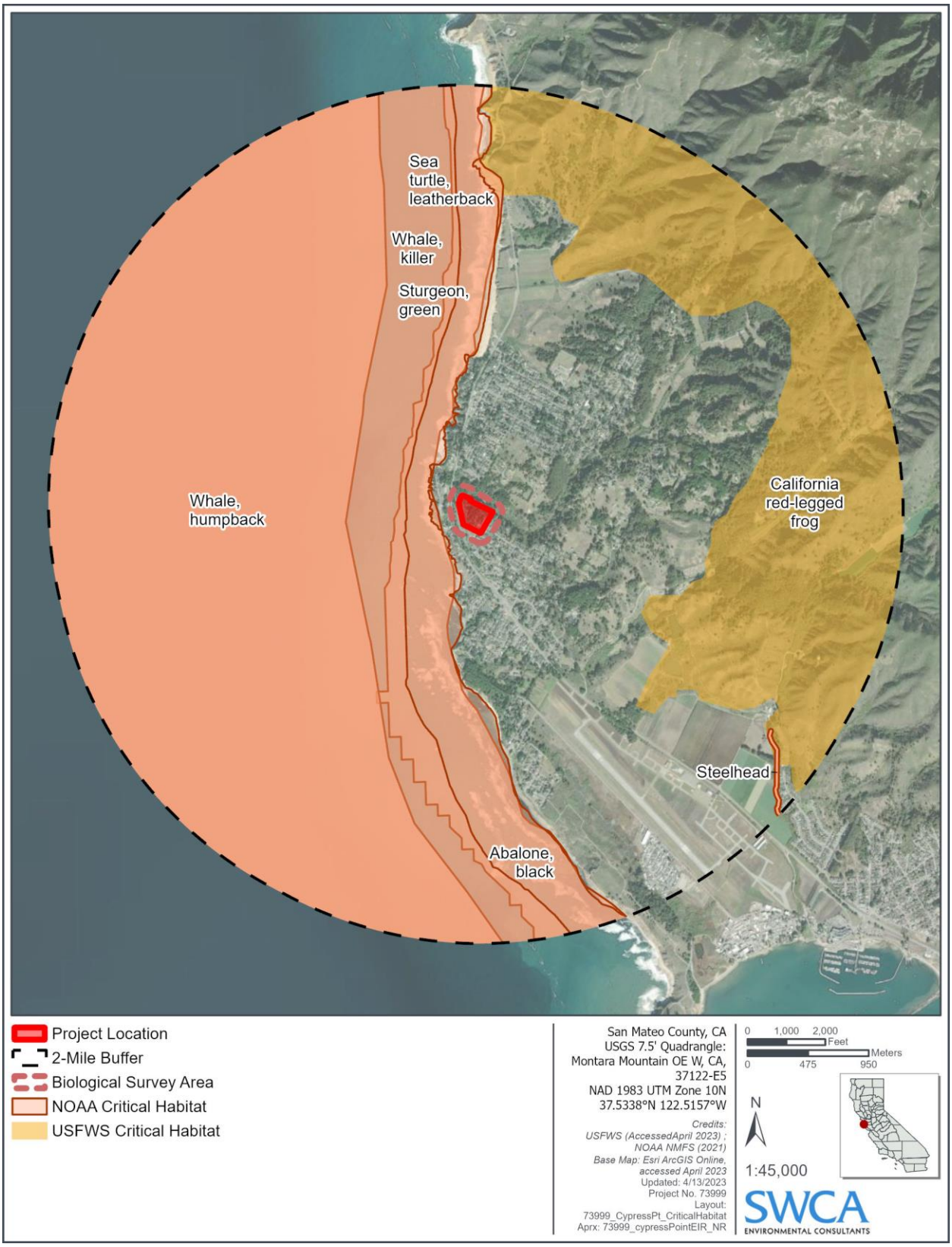


Figure C-1. Critical habitat map.

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APPENDIX D

Special-Status Species Considered for Potential Occurrence in the Biological Study Area

Table D-1. Special-Status Species Considered for Potential Occurrence in the Biological Study Area

Species Name	General Habitat Description	Legal Status Federal/State/ CNPS Status	Potential for Occurrence and Rationale
Plants			
Blasdale's bent grass (*Agrostis blasdalei*)	Perennial rhizomatous herb that occurs in coastal bluff scrub, coastal dunes, and coastal prairie habitats. Elevation: 5-150 meters. Blooming period: May–June.	--/--/1B.2	**Low:** Potentially suitable coyote brush scrub habitat that is present within the BSA is of marginal quality. This species was not observed during the field survey, which was conducted within the appropriate blooming period for this species. There is one recorded CNDDB occurrence located approximately 0.32 mile south of the BSA.
Choris' popcorn-flower (*Plagiobothrys chorisianus* var. *chorisianus*)	Annual herb that occurs in wetland and riparian areas in chaparral, coastal prairie, and coastal scrub. Elevation: 15–160 meters. Flower Season: March–June.	--/--/1B.2	**Moderate:** Potentially suitable coyote brush scrub habitat is present along the northwest portions of the BSA. This species was not observed during the field survey, which was conducted within the appropriate blooming period for this species. There is one recorded CNDDB occurrence located approximately 0.80 mile north of the BSA.
Coastal marsh milkvetch (*Astragalus pycnostachyus* var. *pycnostachyus*)	Perennial herb that occurs in coastal marshes, seeps, and adjacent sand along northern and central California coast. Elevation: 0–150 meters. Flower season: April–October.	--/--/1B.2	**None:** Suitable habitat is absent within the BSA. No CNDDB occurrences have been recorded within 2 miles of the BSA.
Coast yellow leptisiphon *(Leptosiphon croceus)*	Annual herb that occurs in coastal bluff scrub and coastal prairie habitats. Blooming period: April–May. Elevation: 10-150 meters	--/--/1B.2	**None:** Suitable habitat is absent within the BSA. This species has one known population and was not observed during the field survey, which was conducted within the appropriate blooming period for this species. There is one recorded CNDDB occurrence located approximately 0.24 mile southwest of the BSA in coastal bluff scrub habitat.
Hickman's cinquefoil (*Potentilla hickmanii)*	Occurs in vernally wet meadows, coastal bluff scrub, closed-cone coniferous forest, vernally mesic meadows and seeps, and freshwater marshes and swamps. Found along central California coast. Blooming period: April–August. Elevation: 10–149 meters.	FE/SE/1B.1	**Low:** Suitable Monterey Cypress – Monterey Pine Woodland habitat within the BSA is of marginal quality due to extensive historic development-related disturbance. The BSA lacks suitable mesic habitat with granitic soils. This species was not observed during the field survey, which was conducted within the appropriate blooming period for this species. There is one recent recorded CNDDB occurrence within 2 miles of the BSA.
Kellogg's horkelia (*Horkelia cuneata* var. *sericea*)	Perennial herb that occurs in closed-cone coniferous forest, chaparral, coastal dunes, and coastal scrub. Elevation: 10–200 meters. Flower season: April–September.	--/--/1B.1	**Low:** Potentially suitable coyote brush scrub habitat is present on the western and northeastern extent of the BSA; however, no CNDDB occurrences have been recorded within 2 miles of the BSA. The CNPS database recorded this species within the Half Moon Bay, California USGS 7.5-minute quadrangle; this occurrence is greater than 20 years old. This species was not observed during the field survey, which was not conducted during the appropriate blooming period.

Species Name	General Habitat Description	Legal Status Federal/State/ CNPS Status	Potential for Occurrence and Rationale
Perennial goldfields (*Lasthenia californica* ssp. *macrantha*)	Perennial herb that occurs in coastal bluff scrub, coastal dunes, and coastal scrub. Elevation: 6–750 meters. Flower season: January–November.	--/--/1B.2	**Low:** Potentially suitable coyote brush scrub habitat is present on the western and northeastern extent of the BSA but is of marginal quality and lacks the strong coastal influence typical of blufftops on the immediate coast. This species was not observed during the field survey, which was not conducted within the appropriate blooming period for this species. There is one recorded CNDDB occurrence approximately 0.91 mile from the BSA within coastal bluff scrub habitat adjacent to Montara State Beach.
Rose leptosiphon (*Leptosiphon rosaceus*)	Annual herb that occurs in coastal bluff scrub. Elevation: 0–100 meters. Flower season: April–July.	--/--/1B.1	**Low:** Potentially suitable coyote brush scrub habitat is present on the western and northeastern extent of the BSA. This species was not observed during the field survey, which was conducted within the appropriate blooming period for this species. There is one recorded CNDDB occurrence approximately 0.10-mile northwest of the BSA within coastal bluff scrub habitat adjacent to Point Montara Lighthouse; however, the occurrence is from the 1950s and is presumed extirpated.
San Francisco owl's-clover (*Triphysaria floribunda*)	Annual herb found in coastal prairie, coastal scrub, and coastal grasslands on serpentine soils. Blooming period: April–June. Elevation: 10–160 meters.	--/--/1B.2	**None:** No suitable habitat occurs within the BSA. This species was not observed during the field survey, which was conducted within the appropriate blooming period for this species. In addition, no serpentine soils are present within the BSA. There is one recorded CNDBB occurrence within 2 miles south of the BSA.
Ornduff's meadowfoam *(Limnanthes douglasii* ssp. *ornduffii)*	Annual herb found in agricultural fields, meadows, and seeps. Restricted to single agricultural field in San Mateo County. Blooming period: November–May. Elevation: 10–20 meters.	--/--/1B.1	**None:** No suitable habitat occurs within the BSA. This species was not observed during the field survey. There are two recorded CNDDB occurrences within 2 miles of the BSA located approximately 1.4 and 1.6 miles southeast of the BSA within agricultural and meadow habitat required for this species. This species has only been documented in these two locations.
Natural Communities of Concern			
Northern Coastal Salt Marsh	Marsh habitat supporting herbaceous, suffrutescent, salt-tolerant hydrophytes often active in summer and dormant in winter. Characteristic species include marsh jaumea (*Jaumea carnosa*), sea lavender (*Limonium californicum*), and alkali heath (*Frankenia salina*). Developed around Humboldt Bay, Tomales Bay, San Francisco Bay, Elkhorn Slough, and Morro Bay.		**None:** The Project area does not support northern coastal salt marsh.

Species Name	General Habitat Description	Legal Status Federal/State/ CNPS Status	Potential for Occurrence and Rationale
Northern Maritime Chaparral	Dense shrub habitat composed of several species of manzanita, wild lilac, and chamise. Associated with sandy substrates in coastal fog zone, usually on rolling to hilly terrain. Occurs from Santa Cruz to Sonoma Counties.		**None:** The Project area does not support northern maritime chaparral.
Animals			
Invertebrates			
Western bumble bee (*Bombus occidentalis*)	In California, populations are currently restricted to high elevation sites in Sierra Nevada, though there have been few observations on northern California coast (Xerces Society 2021). Basic habitat requirements include suitable nesting sites for colonies, nectar and pollen from floral resources available throughout duration of colony period (spring, summer, and fall), and suitable overwintering sites for queens (U.S. Forest Service 2021).	--/SC	**Low:** The BSA contains marginally suitable foraging habitat for this species and impacts to this species are not expected. There are no recorded CNDDB occurrences within 2 miles of the BSA.
Monarch butterfly (*Danaus plexippus*)	Occurs along coast from northern Mendocino to Baja California, Mexico. Winter roosts in wind-protected tree groves (eucalyptus, Monterey pine, and cypress), with nectar and water sources nearby.	FC/--	**Low:** The BSA contains marginally suitable overwintering habitat for this species within Monterey cypress – Monterey pine woodland habitat; however, the trees within the Project area were likely planted as windbreaks and do not provide dense canopy cover preferred by this species. In the northwestern portion of the BSA, the Monterey cypress are denser and may provide more suitable overwintering habitat for monarchs. However, this area is not within the Project footprint. In addition, there is only one recorded CNDDB occurrence, approximately 1.4 miles northeast of the Project area; the record is from 1984. Therefore, potential for overwintering monarchs is low.
San Bruno elfin butterfly (*Callophrys mossii bayensis*)	Small brownish butterfly that occurs in coastal mountains near San Francisco Bay, in fog belt of steep north-facing slopes that receive little direct sunlight. Primary larval host plant is stonecrop (*Sedum spathulifolium*).	FE/--	**None:** No suitable habitat for this species occurs within the BSA. There are no recorded CNDDB occurrences within 2 miles of the BSA.

Species Name	General Habitat Description	Legal Status Federal/State/ CNPS Status	Potential for Occurrence and Rationale
Amphibians			
California red-legged frog (*Rana draytonii*)	Inhabits permanent and temporary pools, streams, freshwater seeps, and marshes in lowlands and foothills occurring from sea level to 6,500 feet. Uses adjacent upland habitat for foraging and refuge. Breeds during wet season from December through March. Lays between 300 and 4,000 eggs in large cluster attached to plants near water surface. Eggs hatch after about 4 weeks and undergo metamorphosis in 4 to 7 months.	FT/SSC	**Moderate:** No suitable aquatic habitat for this species was observed on-site; however, there is potentially suitable aquatic habitat for this species in Montara Creek immediately north of the BSA if the area is inundated for a sufficiently long period of time during the wet season and within San Vicente Creek approximately 0.6 mile south of the BSA. In addition, potentially suitable upland dispersal habitat is present within coyote brush scrub habitat along the western portions of the BSA. The species was not observed in the BSA during the field survey. Seven CNDDB occurrences have been recorded within 2 miles of the BSA between 2006 and 2019.
Foothill yellow-legged frog (*Rana boylii*)	Frequents rocky streams and rivers with rocky substrate and open, sunny banks, in forests, chaparral, and woodlands. Range in California includes north and central coasts and western Sierra Nevada.	FC/SE, SSC	**None:** No suitable aquatic habitat for this species was observed on-site or within the BSA. There are no recorded CNDDB occurrences within 2 miles of the BSA.
Mammals			
American badger (*Taxidea taxus*)	Occurs in open stages of shrub, forest, and herbaceous habitats; needs uncultivated ground with friable soils.	--/--/SSC	**None:** The BSA contains marginally suitable habitat for this species within grassland habitat on-site. However, no burrows were observed during the site visit and the level of disturbance within the BSA has likely impacted soils and habitat viability for this species. There are no recorded CNDDB occurrences within 2 miles of the BSA.
Reptiles			
Green sea turtle (*Chelonia mydas*)	Occurs in marine environments and often found in shallow waters with marine grass flats, coral reefs, and algae. Typically found in tropical waters.	FT/--/--	**None:** The BSA does not provide suitable habitat for this species. No CNDDB occurrences have been recorded within the BSA.
San Francisco garter snake *(Thamnophis sirtalis tetrataenia*)	Uses wide range of habitats; prefers grassland or wetland near ponds, marshes, and sloughs; and may overwinter in upland areas away from water.	FE/SE, FP	**Low:** Marginally suitable upland dispersal habitat for this species is present within the BSA within grassland habitat throughout the BSA, yet it is unlikely for this species to occur in the BSA given the marginal quality of habitat and distance (approximately 250 feet) from the potentially suitable aquatic habitat in Montara Creek. Eighteen CNDDB occurrences have been recorded within 2 miles of the BSA since the 1930s. However, suitable high-quality foraging and aquatic habitat for this species is absent within the BSA. This species was not observed in the BSA during the field survey.

Species Name	General Habitat Description	Legal Status Federal/State/ CNPS Status	Potential for Occurrence and Rationale
Fish			
Longfin smelt (*Spirinchus thaleichthys*)	Anadromous smelt found in California's bay, estuary, and nearshore environments from San Francisco Bay north to Lake Earl, near Oregon border. San Francisco Estuary and Sacramento-San Joaquin Delta support largest longfin smelt population in California.	FC/ST, SSC	**None:** The BSA does not provide suitable habitat for this species. No CNDDB occurrence recorded within BSA.
Birds			
California least tern (*Sternula antillarum browni*)	Largely coastal species that feeds on fish and nests on sandy dunes or beaches. Once common in California; currently nesting colonies are isolated to southern California and scattered Bay Area beaches.	FE/SE/--	**None:** The BSA does not provide suitable habitat for this species. No CNDDB occurrence recorded within BSA.
Marbled murrelet (*Brachyramphus marmoratus marmoratus*)	Spends most of non-breeding season in offshore or nearshore environments near coniferous forests. Only California alcid species to nest inland. Typically nests in upper branches of redwoods or Douglas fir forests. Builds nests with lichens and mosses.	FT/SE/--	**None:** The BSA does not provide suitable habitat for this species. No CNDDB occurrence recorded within BSA.
Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*)	Frequents low, dense vegetation near water, especially marshes and wetlands. Nests usually placed on or within 8 centimeters (3 inches) of ground. May be over water, in emergent aquatic vegetation, dense shrubs, or other dense growth.	--/SSC	**Low:** The BSA does not contain suitable marsh habitat for this species or dense vegetation near water to support nesting and foraging behavior. Coastal scrub habitat located at the western and northeastern extents of the Project site may provide marginal foraging habitat for this species. No CNDDB occurrence recorded within BSA.
Western snowy plover (*Charadrius alexandrinus nivosus*)	Found in shores, peninsulas, offshore islands, bays, estuaries, and rivers along Pacific Coast. Breeding sites entail coastal beaches above high-tide line, sand spits, dune-backed beaches, and river bars.	FT, MBTA/SSC	**None:** The BSA does not contain suitable nesting or foraging habitat for this species. No CNDDB occurrence recorded within BSA.

Sources: Baldwin et al. (2012); CNDDB (2023); USFWS (2023b)

Status Codes:
-- = No status
Federal: FE = Federal Endangered; FT = Federal Threatened; FC = Federal Candidate; MBTA = Protected by Migratory Bird Treaty Act
State: SE = State Endangered; ST = State Threatened; SC = State Candidate; SR = State Rare; SSC = California Species of Special Concern; FP = Fully Protected

California Native Plant Society:
List 1B = Rare, threatened, or endangered in California and elsewhere
List 2 = Rare, threatened, or endangered in California, but more common elsewhere

CNPS Threat Code:
_.1 = Seriously endangered in California (more than 80% of occurrences threatened / high degree and immediacy of threat)
_.2 = Fairly endangered in California (20–80% occurrences threatened)
_.3 = Not very endangered I California (<20% of occurrences threatened or no current threats known)

Potential for Occurrence Ratings:

Present = The species has been observed during Project surveys.
High = The Project area is located within the geographic and elevation ranges of the species; suitable habitat that meets the life history requirements of the species is present in or near the Project area; and observations have been documented recently (i.e., within the past 20 years) within 0.25 mile of the Project.
Moderate = The Project area is located within the geographic and elevation ranges of the species; suitable habitat for the species is present in or near the Project area, but may be of low quality; and observations may have been documented within 1 mile of the Project.
Low = The Project area is not located within the geographic and/or elevation ranges for the species; suitable habitat for the species is present, but may be of marginal quality; barriers to migration/dispersal may be present; the species was not documented within 1 mile of the Project; and/or all observation records within 1 mile are more than 20 years old.
None = Suitable habitat does not exist in the Project area, or the species is restricted to or known to be present only within a specific area outside of the Project area. Nearby occurrence records, if present, are extirpated or are more than 20 years old.
Absent = Surveys for the species have been conducted during the appropriate season and the species was not observed.

APPENDIX E

NWI / NHD Records and Soils Map

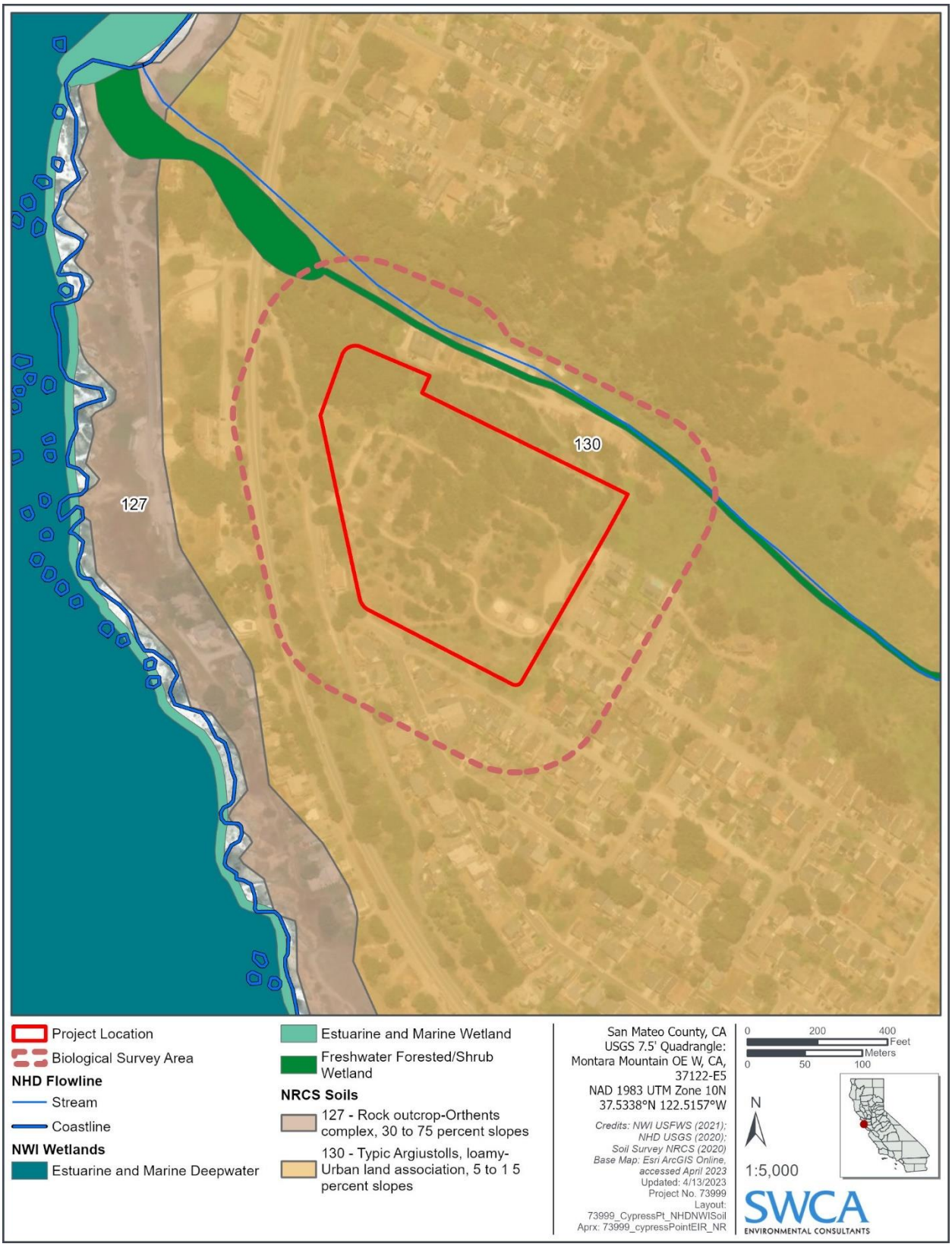


Figure E-1. NWI / NHD Records and soils map.

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APPENDIX F

Plant and Animal Species Observed During Field Survey

Table F-1. Plant Species Observed During the Field Survey

Scientific Name	Common Name	Origin	Form	Rarity Status	Cal-IPC Status[1]	Wetland Status (AW 2016)[2]
Acacia sp.	Acacia	Non-native (invasive)	Shrub	-	-	-
Achillea millefolium	Yarrow	Native	Perennial herb	-	-	-
Allium triquetrum	White flowered onion	Non-native	Perennial herb	-	-	-
Artemisia californica	California sage brush	Native	Shrub	-	-	-
Artemisia douglasiana	California mugwort	Native	Perennial herb	-	-	-
Avena barbata	Slim oat	Non-native (invasive)	Annual grass	-	Moderate	-
Baccharis pilularis	Coyote brush	Native	Shrub	-	-	-
Bellis perennis	English lawn daisy	Non-native	Perennial herb	-	-	-
Brassica rapa	Common mustard	Non-native (invasive)	Annual herb	-	Limited	FACU
Bromus diandrus	Ripgut brome	Non-native (invasive)	Annual grass	-	Moderate	-
Carduus pycnocephalus ssp. *pycnocephalus*	Italian thistle	Non-native (invasive)	Annual herb	-	Moderate	-
Carpobrotus edulis	Iceplant	Non-native (invasive)	Perennial herb	-	High	-
Ceanothus thyrsiflorus	Blueblossom	Native	Shrub	-	-	-
Cirsium vulgare	Bull thistle	Non-native (invasive)	Perennial herb	-	Moderate	FACU
Conium maculatum	Poison hemlock	Non-native (invasive)	Perennial herb	-	Moderate	FACW
Cortaderia jubata	Andean pampas grass	Non-native (invasive)	Perennial grass	-	High	FACU
Cotoneaster franchetii	Cotoneaster	Non-native (invasive)	Shrub	-	Moderate	-
Crassula ovata	Jade plant	Non-native	Shrub	-	-	-
Delairea odorata	Cape ivy	Non-native (invasive)	Perennial herb	-	High	FAC
Echium candicans	Pride of madeira	Non-native (invasive)	Shrub	-	Limited	-
Erigeron canadensis	Canada horseweed	Native	Annual herb	-	-	-
Festuca myuros	Rattail sixweeks grass	Non-native (invasive)	Annual grass	-	Moderate	-
Festuca perennis	Italian rye grass	Non-native (invasive)	Annual, perennial grass	-	Moderate	FAC
Foeniculum vulgare	Fennel	Non-native (invasive)	Perennial herb	-	High	-
Fragaria chiloensis	Beach strawberry	Native	Perennial herb	-	-	-

Scientific Name	Common Name	Origin	Form	Rarity Status	Cal-IPC Status[1]	Wetland Status (AW 2016)[2]
Genista monspessulana	French broom	Non-native (invasive)	Shrub	-	High	UPL
Geranium dissectum	Wild geranium	Non-native (invasive)	Annual herb	-	Limited	-
Geranium molle	Crane's bill geranium	Non-native	Annual, perennial herb	-	-	-
Hedera helix	English ivy	Non-native (invasive)	Vine or shrub	-	High	-
Helminthotheca echioides	Bristly ox-tongue	Non-native (invasive)	Annual, perennial herb	-	Limited	FAC
Hirschfeldia incana	Short-podded mustard	Non-native (invasive)	Perennial herb	-	Moderate	FAC
Hesperocyparis macrocarpa	Monterey cypress	Native	Tree	Rank 1B.2	-	-
Holcus lanatus	Common velvetgrass	Non-native (invasive)	Perennial grass	-	Moderate	-
Hordeum murinum	Foxtail barley	Non-native (invasive)	Annual grass	-	Moderate	FACU
Hypochaeris radicata	Hairy cats ear	Non-native	Perennial herb	-	Moderate	FACU
Iris douglasiana	Douglas iris	Native	Perennial herb	-	-	-
Juncus patens	Rush	Native	Perennial grass-like herb	-	-	FACW
Lotus corniculatus	Bird's foot trefoil	Non-native	Perennial herb	-	-	FAC
Lysimachia arvensis	Scarlet pimpernel	Non-native	Annual herb	-	-	FAC
Malva parviflora	Cheeseweed	Non-native	Annual herb	-	-	-
Medicago polymorpha	California burclover	Non-native	Annual herb	-	Limited	FACU
Oxalis pes-caprae	Bermuda buttercup	Non-native (invasive)	Perennial herb	-	Moderate	-
Pinus radiata	Monterey pine	Native	Tree	Rank 1B.1	-	-
Plantago coronopus	Cut leaf plantain	Non-native	Annual herb	-	-	FAC
Plantago lanceolata	Ribwort	Non-native	Perennial herb	-	Limited	FAC
Polystichum munitum	Western sword fern	Native	Fern	-	-	FACU
Prunus cerasifera	Cherry plum	Non-native	Tree	-	Limited	-
Pseudognaphalium luteoalbum	Jersey cudweed	Non-native	Annual herb	-	-	FAC
Raphanus sativus	Radish	Non-native (invasive)	Annual, biennial herb	-	Limited	-
Rubus ursinus	California blackberry	Native	Vine, shrub	-	-	FAC
Rumex acetosella	Sheep sorrel	Non-native (invasive)	Perennial herb	-	Moderate	FACU
Rumex crispus	Curly dock	Non-native (invasive)	Perennial herb	-	Limited	FAC

Scientific Name	Common Name	Origin	Form	Rarity Status	Cal-IPC Status[1]	Wetland Status (AW 2016)[2]
Rumex pulcher	Fiddleleaf dock	Non-native	Perennial herb	-	-	FAC
Sambucus racemosa	Red elderberry	Native	Shrub	-	-	FACU
Sanicula crassicaulis	Pacific sanicle	Native	Perennial herb	-	-	-
Senecio vulgaris	Common groundsel	Non-native	Annual herb	-	-	FACU
Scrophularia californica	California bee plant	Native	Perennial herb	-	-	FAC
Silybum marianum	Milk thistle	Non-native (invasive)	Annual, perennial herb	-	Limited	-
Sonchus asper ssp. *asper*	Sow thistle	Non-native	Annual herb	-	-	FAC
Sonchus oleraceus	Sow thistle	Non-native	Annual herb	-	-	UPL
Stipa pulchra	Purple needle grass	Native	Perennial herb	-	-	-
Symphyotrichum chilense	Pacific aster	Native	Perennial herb	-	-	FAC
Taraxia ovata	Sun cup	Native	Perennial herb	-	-	-
Toxicodendron diversilobum	Poison oak	Native	Vine, shrub	-	-	FACU
Trifolium hirtum	Rose clover	Non-native	Annual herb	-	Limited	-
Vicia sativa	Common vetch	Non-native	Annual herb, vine	-	-	-
Vinca major	Big-leaf periwinkle	Non-native (invasive)	Perennial herb	-	Moderate	FACU
Zantedeschia aethiopica	Calla lily	Non-native	Perennial herb	-	-	-

[1] California Invasive Plant Council (Cal-IPC) Ratings:
High: These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.
Moderate: These species have substantial and apparent-but generally not severe-ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.
Limited: These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

[2] Facultative Wetland (FACW) = Usually occur in wetland, but may occur in non-wetland; Facultative (FAC) = Occur in wetland and non-wetland; Facultative Upland (FACU) = Usually occur in non-wetland, but may occur in wetland; Upland (UPL) = Almost never occur in wetland.

Table F-2. Animal Species Observed During the Field Survey

Scientific Name	Common Name
Birds	
Corvus brachyrhynchos	American crow
Turdus migratorius	American Robin
Calypte anna	Anna's hummingbird
Sayornis nigricans	Black phoebe
Euphagus cyanocephalus	Brewer's blackbird
Psaltriparus minimus	Bushtit
Melozone crissalis	California towhee
Callipepla californica	California quail
Corvus corax	Common raven
Haemorhous mexicanus	House finch
Troglodytes aedon	House wren
Charadrius vociferus	Killdeer
Zenaida macroura	Mourning dove
Buteo lineatus	Red-shouldered hawk
Buteo jamaicensis	Red-tailed hawk
Melospiza melodia	Song sparrow
Cyanocitta stelleri	Steller's jay
Cathartes aura	Turkey vulture
Aphelocoma californica	Western scrub-jay

APPENDIX G

Photo Documentation



Photo G-1. View facing southeast showing coyote brush scrub and Monterey cypress – Monterey pine vegetation communities. Photo taken April 4, 2023.



Photo G-2. View facing northwest showing developed uses in the southern portion of the BSA with invasive species and perennial rye grass to the left and right of the dirt access road. Photo taken April 4, 2023.



Photo G-3. View facing northwest showing a dirt access road, adjacent concrete foundation (left), and perennial rye grass and Monterey cypress – Monterey pine vegetation communities in the northern portion of the BSA. Photo taken April 4, 2023.



Photo G-4. View facing north showing cape ivy, grassland, and Monterey cypress – Monterey pine vegetation communities along the northeastern portion of the proposed Project area. Photo taken April 4, 2023.



Photo G-5. View facing north showing the remnants of concrete foundations situated in the northern portion of the BSA. Photo taken April 4, 2023.



Photo G-6. View facing northeast showing a dirt access road and materials staging at the entrance to the site in the southern portion of the BSA. Photo taken April 4, 2023.



Photo G-7. View facing northeast showing dense California blackberry occurring with cotoneaster in the central portion of the BSA. Photo taken April 4, 2023.



Photo G-8. View facing northwest of an access road and representative vegetation communities throughout the BSA. Photo taken April 4, 2023.

APPENDIX E

Arborist Report

Arborist Report

Cypress Point
Moss Beach, CA

PREPARED FOR:
MidPen Housing
303 Vintage Park Drive, Suite 250
Foster City, CA 94404

PREPARED BY:
HortScience | Bartlett Consulting
325 Ray Street
Pleasanton, CA 94566

July 1, 2022

HORT SCIENCE
BARTLETT CONSULTING
Divisions of The F.A. Bartlett Tree Expert Company

Arborist Report

Cypress Point
Moss Beach, CA

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Exhibits

Tree Assessment

Tree Assessment Plan

Tree Disposition

Arborist Report

Cypress Point
Moss Beach, CA

Executive Summary

MidPen Housing is planning to develop Cypress Point in Moss Beach, CA. HortScience | Bartlett Consulting was asked to prepare an Arborist Report for the trees potentially impacted by the project.

Trees were assessed on April 18, 28 and May 5, 2022. Four hundred eighty-eight (488) trees were assessed, representing four species. Overall, nearly half of the trees were in poor condition (47%), and only 14% of trees were in good condition.

The site was a relatively flat area with several old building foundations, grassy and shrubby areas, and areas of dense trees typical of coastal California. The northern half of the site sloped downward to 16th Street. Tree diversity was very low with two species making up 99% of the trees. Three Italian stone pines in good condition and one myoporum in fair condition were mixed into the landscape dominated by Monterey cypress and Monterey pine.

Each tree was rated for suitability for preservation based upon its age, health, structural condition, and ability to safely coexist within a development environment. We consider trees with high suitability for preservation to be the best candidates for preservation. We do not normally recommend retention of trees with low suitability for preservation in areas where people or property will be present. Retention of trees with moderate suitability for preservation depends upon the intensity of proposed site changes.

Based on my review of the plan, I have listed whether individual trees will be removed or can be preserved in the **Tree Disposition** exhibit. Overall:

- 295 trees will be removed (190 *Significant*)
- 193 trees can be preserved (158 *Significant*)

The goal of tree preservation is not merely tree survival during development but maintenance of tree health and beauty for many years. Trees retained on sites that are either subject to extensive injury during construction or are inadequately maintained become a liability rather than an asset. The response of individual trees depends on the amount of excavation and grading, care with which demolition is undertaken, and construction methods.

A **TREE PROTECTION ZONE** shall be identified for each tree to be preserved on the Tree Protection Plan. No grading, excavation, construction or storage or dumping of materials shall occur within the **Tree Protection Zone**.

Introduction and Overview

MidPen Housing is planning to develop Cypress Point in Moss Beach, CA. HortScience | Bartlett Consulting (Divisions of The F. A. Bartlett Tree Expert Co.) was asked to prepare an **Arborist Report** for the trees potentially impacted by the project as required by Section 12 of Part Three of Division VIII of the San Mateo County Ordinance Code.

This report provides the following information:

1. An assessment of the health and structural condition of the trees within the proposed project area based on a visual inspection from the ground.
2. An evaluation of the impacts to trees based on site plans provided by the client.
3. Guidelines for tree preservation during the design, construction, and maintenance phases of development.

Tree Assessment Methods

Trees were assessed on April 18, 28 and May 5, 2022. The assessment included all trees with a trunk diameter of 6" or larger within the project boundary. The assessment procedure consisted of the following steps:

1. Identifying the tree species.
2. Tagging each tree with an identifying number and recording its location on a map.
3. Measuring the trunk diameter at a point 54 inches above grade.
4. Evaluating the health and structural condition using a scale of 1 – 5:

   5 - A healthy, vigorous tree, reasonably free of signs and symptoms of disease, with good structure and form typical of the species.
   4 - Tree with slight decline in vigor, small amount of twig dieback, minor structural defects that could be corrected.
   3 - Tree with moderate vigor, moderate twig and small branch dieback, thinning of crown, poor leaf color, moderate structural defects that might be mitigated with regular care.
   2 - Tree in decline, epicormic growth, extensive dieback of medium to large branches, significant structural defects that cannot be abated.
   1 - Tree in severe decline, dieback of scaffold branches and/or trunk; most of foliage from epicormics; extensive structural defects that cannot be abated.
5. Rating the suitability for preservation as "high", "moderate" or "low". Suitability for preservation considers the health, age and structural condition of the tree, and its potential to remain an asset to the site for years to come.

   High: Trees with good health and structural stability that have the potential for longevity at the site.
   Moderate: Trees with somewhat declining health and/or structural defects than can be abated with treatment. The tree will require more intense management and monitoring and may have shorter life span than those in 'good' category.
   Low: Trees in poor health or with significant structural defects that cannot be mitigated. Tree is expected to continue to decline, regardless of treatment. The species or individual may have characteristics that are undesirable for landscapes, and generally are unsuited for use areas.

Description of Trees

Four hundred eighty-eight (488) trees were assessed, representing four species (Table 1). Overall, nearly half of the trees were in poor condition (47%), and only 14% of trees were in good condition. Descriptions of each tree are found in the ***Tree Assessment*** and approximate locations are shown on the ***Tree Assessment Map*** (see Exhibits).

Table 1: Condition ratings and frequency of occurrence of trees Cypress Point, Moss Beach, CA

Common Name	Scientific Name	Condition				Total
		Dead (0)	Poor (1-2)	Fair (3)	Good (4-5)	
Monterey cypress	*Hesperocyparis macrocarpa*	8	68	71	34	**181**
Myoporum	*Myoporum laetum*	-	-	1	-	**1**
Italian stone pine	*Pinus pinea*	-	-	-	3	**3**
Monterey pine	*Pinus radiata*	3	161	107	32	**303**
Total		**11**	**229**	**179**	**69**	**488**

The site was a relatively flat area with several old building foundations, grassy and shrubby areas, and areas of dense trees typical of coastal California (Photo 1). The northern half of the site sloped downward to 16th Street. Tree diversity was very low with two species making up 99% of the trees. Three Italian stone pines in good condition and one myoporum in fair condition were mixed into the landscape dominated by Monterey cypress and Monterey pine.



Photo 1. The site was relatively flat with areas of dense trees and areas of shrubs, grass, and old building foundations.

Monterey pine was the most common species with 303 trees (62% of the population). As is typical throughout the San Francisco Bay Area, the pines were in poor condition (53%) with

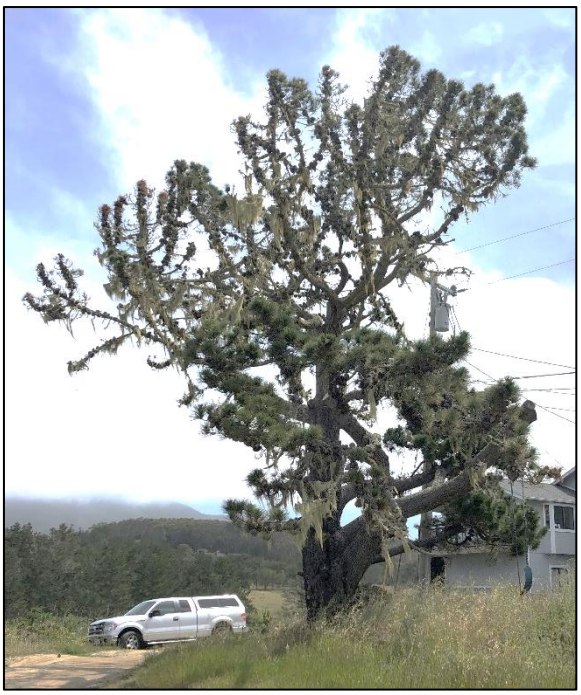


Photo 2. Monterey pine #376 was one of the largest trees assessed (45-inch trunk diameter) and one of the least healthy.

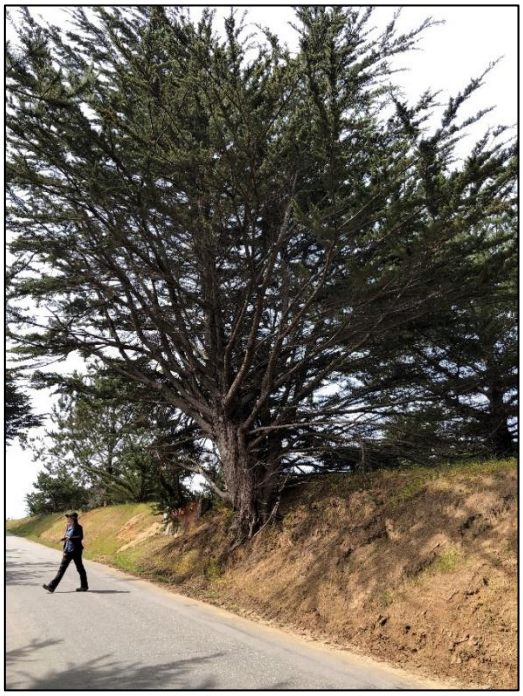


Photo 3. Monterey cypress #485 was in good condition with trunk diameters of 26, 25, 22, and 13 inches.

35% in fair condition and only 11% in good condition. The pines ranged from young trees (6-inch trunk diameter) to old (45" trunk diameter). Of the 259 single stemmed Monterey pines included in the assessment, the average trunk diameter was 15 inches. For example,

Monterey pine #376 was one of the largest pines (45" trunk diameter), and it was in poor condition with over half of the crown dead (Photo 2).

Monterey cypress was the other common species with 181 trees (37% of the population). The cypress were in fair (71 trees) to poor (68 trees) condition with 34 trees in good condition. The Monterey cypress were larger than the pines; the average trunk diameter of the single stemmed cypresses was 24 inches including tree #309 (68 inches). But this likely underestimates the size of the cypresses because many of the largest trees were multi-trunked trees. For example, tree #485 was in good condition and had four trunks (26, 25, 22, and 13 inches; Photo 3).

San Mateo County Tree Protection Requirements

Section 12 of Part Three of Division VII of the San Mateo County Ordinance Code defines *Significant Trees* as having a trunk circumference of 38 inches or greater (12 inch diameter). Based on this definition, 348 trees are considered *Significant*. *Significant Trees* along with Heritage Trees and trees growing within the Public right-of-way cannot be removed except with a permit. There do not appear to be any Heritage or Public trees, however, *Significant Trees* are identified in the ***Tree Assessment*** (see Exhibits).

Suitability for Preservation

Before evaluating the impacts that will occur during development, it is important to consider the quality of the tree resource itself, and the potential for individual trees to function well over an extended length of time. Trees that are preserved on development sites must be carefully selected to make sure that they may survive development impacts, adapt to a new environment and perform well in the landscape.

Our goal is to identify trees that have the potential for long-term health, structural stability, and longevity. For trees growing in open fields, away from areas where people and property are present, structural defects and/or poor health present a low risk of damage or injury if they fail.

We must be concerned, however, about safety in use areas. Therefore, where development encroaches into existing plantings, we must consider their structural stability as well as their potential to grow and thrive in a new environment. Where development will not occur, the normal life cycles of decline, structural failure, and death should be allowed to continue.

Evaluation of suitability for preservation considers several factors:

- **Tree health**
  Healthy, vigorous trees are better able to tolerate impacts such as root injury, demolition of existing structures, changes in soil grade and moisture, and soil compaction than non-vigorous trees are. Monterey pine #376 was mostly dead and would be unlikely to recover from significant root injury.

- **Structural integrity**
  Trees with significant amounts of wood decay and other structural defects that cannot be corrected are more likely to fail. Such trees should not be preserved in areas where damage to people or property is likely. For example, Monterey cypress #249 had multiple trunks arising from the base, some of which had failed. These poorly attached trunks will likely continue to fail, and this tree should not be preserved.

- **Species response**
  There is a wide variation in the response of individual species to construction impacts and changes in the environment. For example, Monterey pines are less tolerant of root loss thank Monterey cypress.

- **Tree age and longevity**
  Old trees, while having significant emotional and aesthetic appeal, have limited physiological capacity to adjust to an altered environment. Young trees are better able to generate new tissue and respond to change.

- **Invasiveness**
  Species which spread across a site and displace desired vegetation are not always appropriate for retention. This is particularly true when indigenous species are displaced. The California Invasive Plant Inventory Database (https://www.cal-ipc.org/plants/inventory/) lists species identified as being invasive. Myoporum is moderately invasive.

Each tree was rated for suitability for preservation based upon its age, health, structural condition, and ability to safely coexist within a development environment (See ***Tree Assessments*** in Exhibits, and Table 2). We consider trees with high suitability for preservation to be the best candidates for preservation. We do not normally recommend

retention of trees with low suitability for preservation in areas where people or property will be present. Retention of trees with moderate suitability for preservation depends upon the intensity of proposed site changes.

Table 2: Tree suitability for preservation.
Cypress Point, Moss Beach, CA

High	Trees in good health and with structural stability that have the potential for longevity at the site. Twenty-six (26) trees on the site had a high suitability for preservation.
Moderate	Trees in fair health and/or with structural defects that may be abated with treatment. Trees in this category require more intense management and monitoring and may have shorter lifespans than those in the "high" category. One hundred seven (107) trees had moderate suitability for preservation.
Low	Trees in poor health or with significant defects in structure that cannot be abated with treatment. These trees can be expected to decline regardless of management. The species or individual tree may possess either characteristics that are undesirable in landscape settings or be unsuited for use areas. Three hundred forty-four (344) trees had lower suitability for preservation.

Evaluations of Impacts and Recommendations

Appropriate tree retention develops a practical match between the location and intensity of construction activities with the quality and health of trees. The ***Tree Assessment*** was the reference point for tree condition and quality. To evaluate impacts from the project, I reviewed the *Tree Protection and Removal Plan* created by PYATOK dated June 21, 2022. This plan showed the locations of all the trees near construction and the limit of grading.

Based on my review of the plan, I have listed whether individual trees will be removed or can be preserved in the **Tree Disposition** exhibit. Overall:

- 295 trees will be removed (190 *Significant*)
- 193 trees can be preserved (158 *Significant*)

Dense development is planned in the center of the project area. Demolition, grading, construction and landscaping will likely require the removal of all trees in this area. All trees shown within the limits of grading will be removed. It is also important to assess the impacts to trees just outside of the limits of grading. Of the 61 trees within 30 feet grading, 40 will be removed. Included on this list of removals are healthy trees like Monterey cypress #366 that are too close to grading (~3 feet) to survive the root loss and trees that are relatively far from grading like Monterey pine #394 (~19 feet) but are in poor condition.

Most of the trees that can be preserved on the site (172 trees) are more than 30 feet from the planned grading. An additional 21 trees will likely have their roots impacted by grading but are far enough away and healthy enough to hopefully tolerate that level of root loss. Of the listed to be preserved, 11 dead trees and 83 trees in poor condition are included. If these

areas are going to managed as semi-natural areas, that may be appropriate. If these areas are going to be re-imagined, or heavily used, this should be re-evaluated. Successful preservation of trees to be preserved will require adherence to the **Tree Preservation Guidelines**.

Tree Preservation Guidelines

The goal of tree preservation is not merely tree survival during development but maintenance of tree health and beauty for many years. Trees retained on sites that are either subject to extensive injury during construction or are inadequately maintained become a liability rather than an asset. The response of individual trees depends on the amount of excavation and grading, care with which demolition is undertaken, and construction methods. Coordinating any construction activity inside the **TREE PROTECTION ZONE** can minimize these impacts. The following recommendations will help reduce impacts to trees from development and maintain and improve their health and vitality through the clearing, grading and construction phases.

Tree Protection Zone

1. **A TREE PROTECTION ZONE** shall be identified for each tree to be preserved on the Tree Protection Plan. The **TREE PROTECTION ZONE** will be just outside of the limit of grading within approximately 30 feet of any trees being preserved.
    a. Fence all trees to be retained to completely enclose the **TREE PROTECTION ZONE** prior to demolition, grubbing or grading. Fences shall be 6 ft. chain link with posts sunk into the ground or equivalent as approved by the County.
    b. Fences must be installed prior to beginning demolition and must remain until construction is complete.
    c. No grading, excavation, construction or storage or dumping of materials shall occur within the **TREE PROTECTION ZONE**.

Design recommendations

1. Plans affecting the trees should be reviewed by the consulting arborist with regard to tree impacts. These include, but are not limited to, site plans, improvement plans, utility and drainage plans, grading plans, landscape and irrigation plans, and demolition plans.
2. Plan for tree preservation by designing adequate space around trees to be preserved. This is the **TREE PROTECTION ZONE:** No grading, excavation, construction or storage of materials should occur within that zone. Route underground services including utilities, sub-drains, water or sewer around the **TREE PROTECTION ZONE**. For design purposes, the **TREE PROTECTION ZONE** trees shall be defined as the tree dripline.
3. **Tree Preservation Guidelines** prepared by the Consulting Arborist, which include specifications for tree protection during demolition and construction, should be included on all plans.
4. Any herbicides placed under paving materials must be safe for use around trees and labeled for that use.
5. Do not lime the subsoil within 50’ of any tree. Lime is toxic to tree roots.
6. As trees withdraw water from the soil, expansive soils may shrink within the root area. Therefore, foundations, footings and pavements on expansive soils near trees should be designed to withstand differential displacement.
7. Ensure adequate but not excessive water is supplied to trees; in most cases occasional irrigation will be required. Avoid directing runoff toward trees.

Pre-demolition and pre-construction treatments and recommendations

1. The demolition and construction superintendents shall meet with the Consulting Arborist before beginning work to review all work procedures, access routes, storage areas, and tree protection measures.
2. Fence all trees to be retained to completely enclose the **TREE PROTECTION ZONE** prior to demolition, grubbing or grading. Fences shall be 6 ft. chain link with posts sunk into the ground or equivalent as approved by the City.
3. Fences are to remain until all grading and construction is completed. Where demolition must occur close to trees, such as removing curb and pavement, install trunk protection devices such as winding silt sock wattling around trunks or stacking hay bales around tree trunks.
4. Trees to be removed shall be felled so as to fall away from **TREE PROTECTION ZONE** and avoid pulling and breaking of roots of trees to remain. If roots are entwined, the Consulting Arborist may require first severing the major woody root mass before extracting the trees, or grinding the stump below ground.
5. All tree work shall comply with the Migratory Bird Treaty Act as well as California Fish and Wildlife code 3503-3513 to not disturb nesting birds. To the extent feasible tree pruning and removal should be scheduled outside of the breeding season. Breeding bird surveys should be conducted prior to tree work. Qualified biologists should be involved in establishing work buffers for active nests.

Recommendations for tree protection during construction

1. All contractors shall conduct operations in a manner that will prevent damage to trees to be preserved.
2. If roots 2” and greater in diameter are encountered during site work and must be cut to complete the construction, the Consulting Arborist must be consulted to evaluate effects on the health and stability of the tree and recommend treatment.
3. Any brush clearing required within the **TREE PROTECTION ZONE** shall be accomplished with hand-operated equipment.
4. Spoil from trench, footing, utility or other excavation shall not be placed within the **TREE PROTECTION ZONE**, neither temporarily nor permanently.
5. All grading within the dripline of trees shall be done using the smallest equipment possible. The equipment shall operate perpendicular to the tree and operate from outside the **TREE PROTECTION ZONE**. Any modifications must be approved and monitored by the Consulting Arborist.
6. If injury should occur to any tree during construction, it should be evaluated as soon as possible by the Consulting Arborist so that appropriate treatments can be applied.
7. No excess soil, chemicals, debris, equipment or other materials shall be dumped or stored within the **TREE PROTECTION ZONE**.
8. Any additional tree pruning needed for clearance during construction must be performed by a Certified Arborist and not by construction personnel.

Maintenance of impacted trees

Preserved trees will experience a physical environment different from that pre-development. As a result, tree health and structural stability should be monitored. Occasional pruning, fertilization, mulch, pest management, replanting and irrigation may be required. In addition,

provisions for monitoring both tree health and structural stability following construction must be made a priority. Inspect trees annually and following major storms to identify conditions requiring treatment to manage risk associated with tree failure.

Our procedures included assessing trees for observable defects in structure. This is not to say that trees without significant defects will not fail. Failure of apparently defect-free trees does occur, especially during storm events. Wind forces, for example, can exceed the strength of defect-free wood causing branches and trunks to break. Wind forces coupled with rain can saturate soils, reducing their ability to hold roots, and blow over defect-free trees. Although we cannot predict all failures, identifying those trees with observable defects is a critical component of enhancing public safety.

Furthermore, trees change over time. Our inspections represent the condition of the tree at the time of inspection. As trees age, the likelihood of failure of branches or entire trees increases. Annual tree inspections are recommended to identify changes to tree health and structure. In addition, trees should be inspected after storms of unusual severity to evaluate damage and structural changes. Initiating these inspections is the responsibility of the client and/or tree owner.

If you have any questions about my observations or recommendations, please contact me.

HortScience | Bartlett Consulting



Darya Barar, Managing Consulting Urban Forester
ISA Certified Arborist No. WE-6757A
Registered Consulting Arborist #693
ISA Tree Risk Assessment Qualified

Exhibits

Tree Assessment

Tree Assessment Plan

Tree Disposition

Tree Assessment

Cypress Point
Moss Beach, CA
May 2022

HORT SCIENCE
BARTLETT CONSULTING
Division of The F.A. Bartlett Tree Expert Company

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
1	Monterey pine	19	Significant	3	Low	One sided south; slight lean south; top of bank sloping south.
2	Monterey cypress	23,13	Significant	1	Low	Codominant stems arise from base; failing at the base; topped for line clearance; 13” stem decay at base.
3	Monterey cypress	22	Significant	2	Low	Leaning west; mounding at base on opposite side of lean; one sided west; twig and branch dieback.
4	Monterey cypress	21	Significant	2	Low	Topped; leaning west; mounding at base on opposite side of lean; one sided west; twig and branch dieback.
5	Monterey cypress	25,10,6	Significant	2	Low	Multiple trunks arise from 1’; thin crown; twig and branch dieback; topped.
6	Monterey cypress	18	Significant	2	Low	Topped; leaning west; mounding at base on opposite side of lean; one sided west; twig and branch dieback.
7	Monterey cypress	18	Significant	2	Low	Leans west; twig and branch dieback; fussed stems.
8	Monterey pine	15	Significant	1	Low	Dead; history of branch failure.
9	Monterey cypress	26	Significant	3	Low	Upright form and structure; one sided northwest; twig and branch dieback.
10	Monterey cypress	16	Significant	1	Low	Upright form and structure; topped; little live foliage.
11	Monterey pine	8,6	No	1	Low	Codominant trunks arise from 2’; topped; little live foliage.
12	Monterey pine	10	No	1	Low	Topped; little live foliage.
13	Monterey pine	7	No	1	Low	Topped; little live foliage.
14	Monterey cypress	15	Significant	2	Low	Leans west; history of branch failure; at 15’ trunk turns horizontal.
15	Monterey cypress	15	Significant	2	Low	Topped; leaning west; one sided west; twig and branch dieback.
16	Monterey cypress	12,12	Significant	1	Low	Multiple trunks arise from base; partially failed at the base; leaning west; twig and branch dieback.
17	Monterey cypress	36	Significant	2	Low	Toped; one sided west; leaning west; history of branch failure; branching to the ground.

Tree Assessment

Cypress Point
Moss Beach, CA
May 2022

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
18	Monterey pine	7	No	0	-	Dead; failed.
19	Monterey pine	16	Significant	1	Low	Topped; growth only at top; history of branch failure; twig and branch dieback.
20	Monterey cypress	17	Significant	1	Low	Leans east; central leader is dead; history of branch failure; little live foliage.
21	Monterey cypress	36,27	Significant	3	Moderate	Codominant trunks arise from 2.5'; high live crown ratio; seam in main attachment; twig and branch dieback.
22	Monterey cypress	33	Significant	3	Moderate	High live crown ratio; slight lean east; twig and branch dieback.
23	Monterey cypress	24	Significant	3	Low	High live crown ratio; foliage bows north high in crown; twig and branch dieback.
24	Monterey cypress	29,8	Significant	3	Moderate	8" stem is dead; high live crown ratio; one sided west; twig and branch dieback.
25	Monterey cypress	23	Significant	2	Low	Leans west; topped; twig and branch dieback.
26	Monterey cypress	44	Significant	2	Low	Multiple trunks arise from 10&15'; topped on west side; thin crown; twig and branch dieback.
27	Monterey cypress	21	Significant	2	Low	Trunk sweeps north; high crown; twig and branch dieback.
28	Monterey cypress	14	Significant	0	-	Dead.
29	Monterey cypress	18,5,4,4,3	Significant	1	Low	High sparse crown; upper crown bows northwest; small stems dead; twig and branch dieback.
30	Monterey cypress	23	Significant	2	Low	Upright form; high crown.
31	Monterey cypress	36,26	Significant	2	Low	Multiple stems arise from 2ft; upright form; high crown; twig and branch dieback.
32	Monterey cypress	18	Significant	1	Low	Upright form; high crown; slight lean east in upper crown; one sided to east; twig and branch dieback.
33	Monterey cypress	35	Significant	2	Low	Sweep and canopy one sided to west; twig and branch dieback.
34	Monterey cypress	14	Significant	1	Low	Suppressed; high sparse crown; twig and branch dieback.

Tree Assessment

Cypress Point
Moss Beach, CA
May 2022

HORT SCIENCE
BARTLETT CONSULTING
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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
35	Monterey pine	21	Significant	2	Low	Multiple stems at 4.5 ft; at 10 ft trunk turns horizontal; canopy one sided to west; twig and branch dieback.
36	Monterey pine	14	Significant	1	Low	Topped for utility clearance; one sided to west; twig and branch dieback.
37	Monterey pine	18	Significant	1	Low	Topped for utility clearance; one sided to west; twig and branch dieback.
38	Monterey pine	21	Significant	2	Low	Multiple stems arise at 10ft; twig and branch dieback.
39	Monterey pine	25	Significant	2	Low	Topped for utility clearance; twig and branch dieback.
40	Monterey cypress	26	Significant	2	Low	Codominant at 12ft; narrow angle attachment with seam; high crown; twig and branch dieback.
41	Monterey cypress	9	No	0	-	Dead.
42	Monterey cypress	28,14	Significant	3	Low	Codominant at 1ft; one sided to west; dead lower branches.
43	Monterey cypress	48	Significant	3	Low	One sided to west; lower branches dead; history of branch failure.
44	Monterey cypress	48	Significant	3	Low	Multiple branches at 10ft; high crown; twig and branch dieback.
45	Monterey cypress	29	Significant	2	Low	Decay column on west, high crown, twig and branch dieback.
46	Monterey cypress	25	Significant	2	Low	Upright form; high crown, twig and branch dieback.
47	Monterey cypress	27	Significant	2	Low	Upright form; high crown, twig and branch dieback.
48	Monterey cypress	29	Significant	2	Low	Upright form; high crown; one sided to north.; twig and branch dieback..
49	Monterey cypress	29	Significant	3	Low	Upright form; high crown.
50	Monterey cypress	15	Significant	0	-	Dead.
51	Monterey cypress	12	Significant	0	-	Dead.
52	Monterey cypress	32	Significant	2	Low	Cd arise at 20 ft; high sparse crown twig and branch dieback.
53	Monterey cypress	9	No	0	-	Dead.
54	Monterey cypress	36	Significant	2	Low	Cd arise at 20 ft; high sparse crown; One sided to west; Lower branches dead.

Tree Assessment

Cypress Point
Moss Beach, CA
May 2022

HORT SCIENCE
BARTLETT CONSULTING
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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
55	Monterey cypress	28	Significant	2	Low	Sweep at base to north; High sparse crown twig and branch dieback.
56	Monterey cypress	45	Significant	3	Low	High canopy branching to ground, history of branch failure, twig and branch dieback.
57	Monterey cypress	32	Significant	2	Low	High sparse canopy; history of branch failure, twig and branch dieback.
58	Monterey cypress	13	Significant	1	Low	Little live foliage.
59	Monterey cypress	24	Significant	2	Low	Upright form; high canopy; one sided to west.
60	Monterey cypress	33	Significant	2	Low	Upright form; high canopy; twig and branch dieback.
61	Monterey cypress	33	Significant	3	Moderate	Upright form; high canopy; twig and branch dieback.
62	Monterey cypress	14,12	Significant	0	-	Dead.
63	Monterey cypress	11	No	0	-	Dead.
64	Monterey cypress	8	No	0	-	Dead.
65	Monterey cypress	12	Significant	1	Low	Upright form; Little live foliage.
66	Monterey pine	11	No	2	Low	Lean and one sided to west; Twig and branch dieback.
67	Monterey cypress	34	Significant	4	Moderate	Good form and structure; dead lower branches.
68	Monterey cypress	11	No	2	Low	Suppressed form.
69	Monterey pine	13	Significant	0	-	Dead.
70	Monterey pine	18	Significant	0	-	Dead, 18 ft stub.
71	Monterey pine	15,13	Significant	2	Low	Topped for utility clearance, codominant arising at 1ft; One sided to west; Twig and branch dieback.
72	Monterey pine	25	Significant	1	Low	Topped for utility clearance, little live foliage.
73	Monterey pine	23,13	Significant	1	Low	Codominant arising at 2ft; little live foliage, history of branch failure.
74	Monterey pine	31,16	Significant	1	Low	One stem lays on ground to west, all but dead.
75	Monterey pine	17	Significant	1	Low	All but dead.

Tree Assessment

Cypress Point
Moss Beach, CA
May 2022

HORT SCIENCE
BARTLETT CONSULTING
Division of The F.A. Bartlett Tree Expert Company

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
76	Monterey pine	28,18,10,6	Significant	2	Low	Codominant arises from base, twig and branch dieback.
77	Monterey cypress	21,20,19,19,18,16,13,13,10,7	Significant	3	Low	Multiple attachments arise at base, topped for utility clearance.
78	Monterey cypress	28,8	Significant	4	Moderate	Codominant arise from 5ft; low branching.
79	Monterey cypress	36,19,11,7,6	Significant	3	Moderate	Codominant arising from base, pruned for road clearance.
80	Monterey pine	14	Significant	3	Moderate	Mid slope, good upright form, healthy foliage.
81	Monterey cypress	14	Significant	3	Moderate	Topped for line clearance, full crown.
82	Monterey cypress	11	No	3	Moderate	Upright form; crowded; one sided to west.
83	Monterey cypress	14	Significant	3	Moderate	Upright form; crowded; one sided to east.
84	Monterey cypress	22,6	Significant	4	High	Codominant arises from base; upright form; slightly sparse.
85	Monterey cypress	13	Significant	3	Moderate	One sided to south, crowded.
86	Monterey pine	14	Significant	2	Low	High sparse foliage; twig and branch dieback.
87	Monterey cypress	26,26,18,14,14,12,11,9,8,7,7,7	Significant	3	Low	Codominant arising from base; poor structure .one sided to west.
88	Monterey cypress	16,13	Significant	2	Low	Codominant arising from 3ft; high sparse canopy.
89	Monterey cypress	34	Significant	3	Low	Upright form; high crown bows to east; history of branch failure, twig and branch failure.
90	Monterey cypress	28	Significant	3	Low	Upright form; high crown twig and branch dieback.
91	Monterey cypress	6	No	1	Low	Heavily suppressed to west; Twig and branch dieback.
92	Monterey cypress	6	No	1	Low	One sided to west; sparse crown twig and branch dieback.
93	Monterey cypress	29	Significant	2	Low	Upright; high sparse crown twig and branch dieback.

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
94	Monterey cypress	32	Significant	2	Low	Engulfed in ivy; high crown twig and branch dieback.
95	Monterey cypress	32	Significant	2	Low	High crown twig and branch dieback; history of branch failure.
96	Monterey cypress	23,22,17,17,16,10	Significant	2	Low	Codominant arising from 1ft; Engulfed in ivy; high sparse crown twig and branch dieback; history of stem failure.
97	Monterey cypress	25	Significant	2	Low	High sparse crown twig and branch dieback.
98	Monterey cypress	26	Significant	2	Low	High sparse crown twig and branch dieback.
99	Monterey cypress	25	Significant	2	Low	High sparse crown twig and branch dieback.
100	Monterey cypress	24	Significant	2	Low	High sparse crown twig and branch dieback.
101	Monterey cypress	36	Significant	2	Low	Topped and pruned for road; one sided to west; dieback of main leader.
102	Monterey cypress	16	Significant	3	Low	Growing through utility lines; sweep and one sided to east.
103	Monterey cypress	27	Significant	4	High	Utility lines pass through canopy; full dense canopy; good form.
104	Monterey pine	22	Significant	3	Low	Codominant at 4 ft; branching to ground on west; slightly sparse canopy.
105	Monterey pine	24	Significant	3	Moderate	One sided to SE; good form.
106	Monterey cypress	40,10,10,7,7,6,5	Significant	4	Moderate	Multiple attachments at base; full canopy; distanced from other trees.
107	Monterey pine	14	Significant	3	Low	One sided to south; crowded canopy; lower branches dead.
108	Monterey cypress	42	Significant	3	Moderate	Multiple attachments at 6ft; one sided to south; history of branch failure.
109	Monterey cypress	48,36,26,20,18,17,16,12,12	Significant	3	Moderate	Multiple attachments at base; stems on a side bow to south; main leader upright.
110	Monterey pine	10	No	3	Low	One sided to SE; crowded on NE; young; codominant at 10ft.
111	Monterey cypress	48	Significant	3	Moderate	Multiple attachments at 4 ft; one sided to SE.

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112	Monterey cypress	26,24,20,15,15,12,10,10,9	Significant	3	Low	Multiple attachments at base; sparse canopy; top of slope.
113	Monterey cypress	32	Significant	3	Moderate	Codominant at 6ft; interior tree; crowded form.
114	Monterey cypress	32	Significant	3	Moderate	Good upright form; high canopy; lower branches dead.
115	Monterey cypress	18,14,10,9,6,5	Significant	1	Low	Failed at base to south; all but dead.
116	Monterey cypress	9	No	1	Low	Lost central leader; all but dead.
117	Monterey cypress	30	Significant	3	Moderate	Upright form; high small canopy.
118	Monterey pine	26	Significant	2	Low	One sided and bows to NW; high sparse canopy.
119	Monterey pine	25	Significant	2	Low	One sided and bows to NW; high sparse canopy.
120	Monterey pine	31	Significant	2	Low	Upright form; high sparse canopy; branch dieback.
121	Monterey cypress	42	Significant	4	High	Good upright form; slightly one sided to west.
122	Monterey cypress	28	Significant	3	Moderate	Upright narrow form; slightly sparse canopy.
123	Monterey cypress	35	Significant	4	Moderate	Upright form; one sided to west; ivy nearly to top of tree.
124	Monterey pine	7,6	No	3	Low	Codominant at base; one sided to west; young.
125	Monterey cypress	6	No	2	Low	No central leader; crowded; sparse canopy.
126	Monterey cypress	12,4	Significant	3	Low	Upright form; one sided to west; crowded on south.
127	Monterey pine	17	Significant	4	Moderate	Good upright form; full canopy.
128	Monterey pine	7	No	3	Moderate	Crowded; high canopy.
129	Monterey pine	10	No	3	Low	Codominant at 4 ft; crowded.
130	Monterey pine	8,5	No	3	Moderate	Codominant at 3 ft; slightly crowded; full canopy.
131	Monterey pine	11,7	Significant	4	Moderate	Codominant at 3 ft; crowded on east; branching nearly to ground on S.
132	Monterey pine	9	No	3	Moderate	Upright form; lost central leader; full canopy.

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133	Monterey pine	35,28,17	Significant	1	Low	Multiple attachments at 3 ft; 17 in leader dead; history of branch failure; sparse canopy.
134	Monterey pine	14,11	Significant	3	Low	Codominant at 2 ft; leaders leaning away from one another.
135	Monterey pine	12	Significant	2	Low	Failed at base to east; all but dead.
136	Monterey pine	10	No	2	Low	One sided to west; suppressed.
137	Monterey pine	23	Significant	4	Moderate	Upright form; full canopy; small amount of tip dieback; bottom of slope.
138	Monterey pine	18	Significant	4	Moderate	Good upright form; branching nearly to ground; full canopy.
139	Monterey pine	24	Significant	4	Moderate	Good upright form; full canopy; branching nearly to ground.
140	Monterey pine	18	Significant	4	Moderate	Codominant at 7 ft; one sided to west; crowded on east; full canopy.
141	Monterey pine	14	Significant	4	Moderate	Good upright form; full canopy; branching to ground on south.
142	Monterey pine	8	No	3	Low	Good upright form; full canopy; crowded on NE.
143	Monterey pine	10,6,5	Significant	2	Low	Multiple attachments at 2 ft; twig and branch dieback; sparse canopy.
144	Monterey pine	6	No	5	High	Good upright form; full dense canopy; good young tree.
145	Monterey pine	48,28,28,22,20,16	Significant	3	Low	Multiple attachments at 1 ft; poor structure; utility lines pass through canopy; wide slightly sparse canopy.
146	Monterey pine	11	No	3	Moderate	Upright narrow form; one sided to west; crowded on east.
147	Monterey cypress	28,17,13,10,10,8,8,8	Significant	3	Low	Topped for high voltage; multiple attachments at 1 ft; crowded on east; history of branch failure.
148	Monterey cypress	45,38,26,14,13,13	Significant	3	Low	Eastern half failed; topped for utility lines; V-shaped canopy.
149	Monterey pine	7	No	3	Moderate	Upright form; young tree; crowded.
150	Monterey pine	16	Significant	3	Moderate	Good upright form; crowded on NE by dead tree; full canopy.
151	Monterey cypress	36,14,10	Significant	3	Moderate	No tag private property; topped for utility lines.

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
152	Monterey cypress	32	Significant	4	High	No tag private property; good upright form; crowded.
153	Monterey cypress	31	Significant	4	High	No tag private property; upright form; crowded; full canopy.
154	Monterey cypress	17	Significant	4	High	No tag private property; upright form; crowded; full canopy.
155	Monterey cypress	37,9	Significant	4	High	No tag private property; sweep to NE; crowded; full canopy.
156	Monterey cypress	18	Significant	4	High	No tag private property; upright form; crowded; full canopy.
157	Monterey cypress	26,7	Significant	4	High	No tag private property; upright form; crowded; full canopy.
158	Monterey cypress	32	Significant	4	High	No tag private property; upright form; crowded; full canopy.
159	Monterey cypress	13,9	Significant	4	High	No tag private property; codominant at 2 ft; crowded.
160	Monterey cypress	36	Significant	4	Moderate	No tag private property; codominant at 8 ft with seam; crowded; full canopy.
161	Monterey cypress	34	Significant	4	High	No tag private property; multiple attachments at 7 ft; crowded; full canopy.
162	Monterey cypress	29	Significant	4	High	No tag private property; codominant at 3ft; crowded.
163	Monterey cypress	13,7	Significant	4	Moderate	No tag private property; codominant at 2 ft; crowded.
164	Monterey cypress	14,	Significant	4	Moderate	No tag private property; codominant at 2 ft; E side sweep to E; crowded.
165	Monterey cypress	28,13	Significant	4	Moderate	No tag private property; codominant at 1 ft; crowded; full canopy.
166	Monterey cypress	21,12	Significant	4	Moderate	No tag private property; codominant at 2 ft; crowded.
167	Italian stone pine	13,12,11,10	Significant	4	Moderate	Codominant and multiple attachments at base; full dense canopy; branching to ground.
168	Monterey cypress	19,19,15,14,14,13,12,12,10,9,7,7	Significant	4	Moderate	Multiple attachments at base; low branching; full canopy.
169	Monterey pine	25	Significant	3	Low	Multiple attachments at base; pruned for utility lines; branching to the ground; somewhat sparse canopy.

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
170	Monterey pine	8	No	2	Low	Upright form; high sparse canopy; crowded.
171	Monterey pine	9	No	2	Low	Multiple attachments at 7 ft; suppressed; one sided to S.
172	Monterey pine	14	Significant	2	Low	Multiple attachments at base; one sided to S; lower branches dead.
173	Monterey pine	11	No	2	Low	High sparse canopy; crowded.
174	Monterey pine	14	Significant	2	Low	Upright form; high sparse canopy; crowded.
175	Monterey pine	8	No	2	Low	Upright form; high sparse canopy; crowded.
176	Monterey pine	18	Significant	2	Low	One sided to north; upright form; crowded.
177	Monterey pine	16	Significant	3	Low	One sided to north; sparse canopy; branching to ground.
178	Monterey pine	17	Significant	2	Low	Multiple attachments at 5 ft; one sided to south; sparse canopy.
179	Monterey pine	17	Significant	4	Moderate	Good upright form; sparse on north side.
180	Monterey pine	17	Significant	2	Low	Codominant at 5 ft; low branches dead; crowded on E.
181	Monterey pine	16	Significant	2	Low	Upright form; one sided sparse canopy to south.
182	Monterey pine	12	Significant	2	Low	Upright form; one sided to south; sparse canopy.
183	Monterey pine	8	No	2	Low	Upright form; high sparse canopy.
184	Monterey pine	15	Significant	3	Low	Upright narrow form; sparse canopy.
185	Monterey pine	15	Significant	2	Low	Sparse canopy; canker girdling main trunk at 15 ft; crowded on south.
186	Monterey pine	11	No	2	Low	Upright form; western gall rust infestation in vicinity; high sparse canopy.
187	Monterey pine	9	No	1	Low	All but dead; suppressed.
188	Monterey pine	11	No	2	Low	Lean to S; crowded on N; high sparse canopy.
189	Monterey cypress	21,16,15,15,14,10,10	Significant	3	Low	Multiple attachments at base; one sided to north; branching to ground.
190	Monterey pine	15	Significant	3	Low	Upright; high sparse canopy; low branches dead.

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
191	Monterey pine	8	No	1	Low	Lost main leader; all but dead.
192	Monterey pine	10	No	2	Low	High sparse canopy; upright crowded form.
193	Monterey pine	14	Significant	2	Low	High sparse canopy; one sided to east; crowded.
194	Monterey pine	14	Significant	3	Low	Upright form; high canopy; one sided to south.
195	Monterey pine	13	Significant	3	Low	Good upright form; western gall rust infestation in area; somewhat sparse canopy.
196	Monterey pine	11	No	2	Low	High sparse canopy; crowded.
197	Monterey pine	15	Significant	1	Low	Codominant with narrow attachment at 5 ft; high sparse canopy.
198	Monterey cypress	28,24,16,12,9	Significant	3	Low	Multiple attachments at base; high sparse canopy; low branches dead.
199	Monterey pine	8	No	2	Low	One sided to north; suppressed.
200	Monterey pine	6	No	1	Low	All but dead; suppressed.
201	Monterey pine	14,8	Significant	2	Low	Multiple attachments at 2 ft; suppressed; one sided to north.
202	Monterey pine	14	Significant	2	Low	One sided to north; suppressed; low branches dead.
203	Monterey pine	6	No	3	Low	Upright crowded form; poor color.
204	Monterey pine	7	No	1	Low	Suppressed; all but dead.
205	Monterey pine	10	No	2	Low	Suppressed; one sided to south; high sparse canopy.
206	Monterey pine	9	No	2	Low	High sparse canopy; one sided to south; crowded on north.
207	Monterey pine	13	Significant	2	Low	Upright form; crowded on south; crook in trunk at 4 ft.
208	Monterey pine	11	No	2	Low	Upright form; high sparse canopy; crowded on west.
209	Monterey pine	13	Significant	2	Low	Lean to west; one sided to west.
210	Monterey pine	18	Significant	1	Low	Sweep in low trunk; all but dead.
211	Monterey cypress	24,24,22,18,13,13,12,8	Significant	4	Moderate	Multiple attachments at base; full canopy; low branches dead.
212	Monterey pine	9	No	2	Low	Upright form; main leader dying; sparse canopy.

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
213	Monterey pine	16,11	Significant	1	Low	All but dead.
214	Monterey pine	17,15,8	Significant	1	Low	Multiple attachments at base; sparse canopy.
215	Monterey cypress	10,5,5,5,5	Significant	2	Low	Multiple attachments at 1 ft; sparse canopy; one sided to north.
216	Monterey pine	9	No	2	Low	Upright form; lost main leader at top; sparse canopy.
217	Monterey pine	22,18	Significant	2	Low	Codominant at 3 ft; one sided to SW; sparse canopy.
218	Monterey cypress	60	Significant	4	Moderate	Multiple attachments at base; branching to ground on SE; full canopy.
219	Monterey pine	12	Significant	2	Low	Lean to NW; one sided to NW; crowded.
220	Monterey pine	9	No	2	Low	High canopy; growing through canopy of cypress.
221	Monterey cypress	9,4,3,2	No	3	Low	Multiple attachments at 1 ft; one sided to north.
222	Monterey pine	16,10,9,8,6	Significant	1	Low	Multiple attachments at base; 3 leaders horizontally growing at ground; all but dead.
223	Monterey pine	16	Significant	2	Low	Upright form; lost main leader at 20 ft; high canopy.
224	Monterey pine	19	Significant	1	Low	One sided to south; high very sparse canopy.
225	Monterey pine	18	Significant	2	Low	Codominant at 15 ft; high sparse canopy.
226	Monterey cypress	18	Significant	2	Low	High sparse canopy; main leader removed at top.
227	Monterey cypress	8	No	2	Low	One sided to west; sparse canopy; crowded.
228	Monterey pine	13	Significant	3	Low	Upright form; main leader lost at top; one sided to NW.
229	Monterey cypress	17,7	Significant	3	Low	Multiple attachments at base; crowded form; high canopy.
230	Monterey pine	8	No	3	Low	Lean to N; one sided to north; crowded on S.
231	Monterey pine	13,9	Significant	4	Moderate	Multiple attachments at 1 ft; good young tree.
232	Monterey pine	7	No	5	High	Good upright young tree; branching to the ground.
233	Monterey cypress	13,7,4,4	Significant	4	High	Multiple attachments at base; full dense canopy; branching nearly to ground.
234	Monterey cypress	9,7,4	Significant	4	Moderate	Multiple attachments at 1 ft; somewhat one sided to west; some twig dieback.

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235	Monterey cypress	37	Significant	3	Moderate	Multiple attachments at 3ft; one sided to east.
236	Monterey cypress	17	Significant	3	Low	One sided to north; canopy overhangs driveway.
237	Monterey cypress	22	Significant	2	Low	One sided to west; base sweeps to west; located on top of slope.
238	Monterey cypress	38	Significant	3	Low	Codominant at 3 ft and 8 ft; one sided to south; utility lines pass through canopy; pruned for pole clearance.
239	Monterey cypress	18	Significant	2	Low	High sparse canopy; lines in contact with trunk; lower branches shaded and dead.
240	Monterey cypress	22	Significant	3	Low	Multiple attachments at 3 ft; one sided to east.
241	Monterey cypress	24,13,10,8,7,6,4	Significant	3	Low	Multiple attachments at base; one sided to east; pruned for road and sidewalk.
242	Italian stone pine	6	No	5	High	Good upright young tree.
243	Monterey pine	10,9	Significant	3	Low	Codominant at base; sparse canopy; lower limb dieback.
244	Monterey pine	6,3	No	4	Moderate	Multiple attachments at 3 ft; good upright young tree.
245	Monterey pine	6	No	3	Moderate	Sparse lower canopy; slight lean west; one sided to SW.
246	Monterey pine	19	Significant	3	Low	Sparse canopy; branching to the ground; twig dieback.
247	Monterey pine	7,4	No	2	Low	Sparse canopy; pine pitch canker infestation; dieback throughout canopy.
248	Monterey pine	14,11	Significant	3	Low	Codominant at 2 ft with large seam; sparse canopy; lower limbs dead.
249	Monterey cypress	19,18,12,12,7,6,6,5,5,4,4,4,4	Significant	3	Low	Multiple attachments at base; half of tree failed on SW.
250	Monterey pine	18,15,8	Significant	2	Low	Codominant at 2 ft; one sided to west; sparse canopy.
251	Monterey pine	22	Significant	3	Low	Crowded on east; sparse canopy; lower limb dieback.
252	Monterey pine	16	Significant	3	Low	Slight lean and one sided to east; sparse canopy.
253	Monterey pine	21,11	Significant	3	Low	Multiple attachments at 2 ft; slight dieback in upper canopy.

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254	Monterey pine	34,12	Significant	1	Low	Multiple attachments at base; all but dead.
255	Monterey pine	7	No	4	High	Good young tree; slightly sparse.
256	Monterey pine	8	No	4	Moderate	Codominant at 5 ft; full canopy.
257	Monterey pine	7	No	3	Low	Sparse canopy; trunk damage at 4 ft; one sided to S.
258	Monterey pine	8	No	4	Moderate	Somewhat one sided to NW; branching nearly to ground on west.
259	Monterey pine	10	No	4	Moderate	Codominant at 9 ft; lower limbs removed for path clearance.
260	Monterey pine	8	No	4	Moderate	Good young tree; slightly sparse; base crowded by toyon.
261	Monterey pine	8	No	4	High	Good young tree; full canopy; branching to ground.
262	Monterey pine	12	Significant	5	High	Good upright form; full dense canopy; ivy climbing trunk.
263	Monterey cypress	38	Significant	3	Moderate	Large failure on north side; multiple attachments at 5 ft; full canopy.
264	Monterey pine	6	No	4	Low	Good upright form; pine pitch canker and dieback.
265	Monterey pine	15	Significant	4	Low	Full dense canopy; pine pitch canker.
266	Monterey pine	7	No	3	Low	Codominant at 8 ft; sparse canopy.
267	Monterey pine	40	Significant	3	Low	No physical tag; engulfed in poison oak; lost central leader; branching to the ground.
268	Monterey pine	13	Significant	4	Moderate	Young tree; top of slope; slight dieback at top.
269	Monterey pine	17	Significant	4	High	Full dense canopy; low branching; possible pine pitch canker.
270	Italian stone pine	6,5,4,4,4	No	4	High	Tagged on outside branch; engulfed in poison oak; multiple attachments at base; good young tree.
271	Monterey pine	7,5	No	4	Moderate	Codominant at base; full dense canopy.
272	Monterey pine	24,10,7,5	Significant	3	Low	Multiple attachments at 2 ft; dieback throughout canopy; pine pitch canker.
273	Monterey pine	22,13,11	Significant	3	Low	Multiple attachments at 1 ft; topped; lower branches dead.

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
274	Monterey pine	26,10,6	Significant	2	Low	Multiple attachments at base; topped; lower branches dead; sparse canopy.
275	Monterey pine	25,9	Significant	2	Low	Multiple attachments at base; high sparse canopy; lower branches dead.
276	Monterey pine	9,8	Significant	3	Low	Partial failure at base; topped for utility lines; somewhat sparse canopy.
277	Monterey pine	20	Significant	2	Low	Multiple attachments at 4 ft; high sparse canopy; lower branches dead.
278	Monterey pine	6	No	3	Low	High sparse canopy; upright form.
279	Monterey pine	8	No	3	Low	High sparse canopy; slightly crowded form.
280	Monterey pine	11	No	3	Low	High sparse canopy; slightly crowded.
281	Monterey pine	7	No	3	Low	Sparse canopy; crowded.
282	Monterey pine	7	No	3	Moderate	Somewhat sparse canopy; slightly one sided to SW.
283	Monterey pine	7	No	3	Moderate	High sparse canopy; somewhat crowded.
284	Monterey pine	22	Significant	3	Low	Codominant at 4 ft; somewhat sparse canopy; lower branches dead.
285	Monterey pine	10	No	3	Moderate	Crowded on north; full canopy.
286	Monterey cypress	26,13,13,6,6	Significant	3	Moderate	Multiple attachments at 1 ft; codominant at 15 ft; pruned on east for road clearance.
287	Monterey cypress	38,30,28,26,13	Significant	2	Low	Multiple attachments at base; topped for utility lines; remaining live branches bow over road to west.
288	Monterey cypress	15,15	Significant	1	Low	Codominant at base; half tree failed and is laying on ground; all but dead.
289	Monterey cypress	22,20	Significant	1	Low	Topped for utility lines; all but dead.
290	Monterey cypress	15	Significant	1	Low	Topped for utility lines; all but dead.
291	Monterey cypress	14	Significant	1	Low	Topped for utility lines; all but dead.
292	Monterey cypress	30,22,20	Significant	1	Low	Topped for utility lines; all but dead.

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
293	Monterey cypress	34,30,28,27,24,12	Significant	1	Low	Topped for utility lines; failed stem to NE; all but dead.
294	Monterey cypress	14	Significant	2	Low	Suppressed; central leader extends SE.
295	Monterey pine	7	No	2	Low	High sparse canopy; suppressed.
296	Monterey cypress	6	No	2	Low	High sparse canopy; suppressed.
297	Monterey cypress	6,4	No	3	Low	Multiple attachments at base; lean to west.
298	Monterey pine	8	No	2	Low	Lost central leader; high sparse canopy.
299	Monterey cypress	7	No	3	Moderate	High sparse canopy; suppressed.
300	Monterey cypress	9	No	4	Moderate	High slightly sparse foliage; upright.
301	Monterey pine	8	No	1	Low	All but dead.
302	Monterey pine	13	Significant	3	Moderate	Somewhat sparse canopy; upright form.
303	Monterey pine	14	Significant	2	Low	Lost central leader; very sparse canopy.
304	Monterey cypress	38	Significant	3	Moderate	Somewhat one sided to west; lower branches dead.
305	Monterey pine	22	Significant	1	Low	All but dead.
306	Monterey pine	7	No	3	Low	Suppressed; high sparse canopy.
307	Monterey cypress	24	Significant	2	Low	Tree bows to east over dirt road.
308	Monterey cypress	29	Significant	3	Low	One sided to north; suppressed.
309	Monterey cypress	68	Significant	3	Low	Multiple attachments at 5 ft; crowded.
310	Monterey cypress	25	Significant	3	Low	High sparse canopy; crowded.
311	Monterey cypress	18,15,13,13,13,12,12,12	Significant	1	Low	One sided to south; all but dead.
312	Monterey cypress	20,13,6,6,6,5	Significant	3	Low	Multiple attachments at 1 ft; high sparse canopy; lower branches dead.
313	Monterey pine	15	Significant	2	Low	One sided to south; sparse canopy.

Tree Assessment

Cypress Point
Moss Beach, CA
May 2022

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
314	Monterey cypress	22,8,5,4	Significant	3	Moderate	Multiple attachments at base; one sided to north; crowded on south.
315	Monterey pine	24	Significant	3	Low	One sided to south; sparse canopy.
316	Monterey pine	15	Significant	3	Low	High sparse canopy; crowded.
317	Monterey pine	14	Significant	1	Low	All but dead.
318	Monterey pine	8	No	2	Low	High sparse canopy; slight lean to south.
319	Monterey pine	25	Significant	2	Low	Slightly one sided to south; sparse canopy; lower branches dead.
320	Monterey pine	28	Significant	3	Low	Sparse canopy; upright form; low branching.
321	Monterey pine	10	No	3	Low	Suppressed; high canopy.
322	Monterey pine	18	Significant	3	Low	One sided to north; pine pitch canker; lower branches dead.
323	Monterey pine	25	Significant	2	Low	Lost leader; sparse canopy.
324	Monterey pine	15,14,13	Significant	3	Low	Multiple attachments at base; east leader partially laying on ground.
325	Monterey pine	16	Significant	3	Low	High sparse canopy; suppressed.
326	Monterey cypress	15,14,7,6,4,4	Significant	3	Low	Multiple attachments at base somewhat suppressed; sparse canopy.
327	Monterey cypress	9,6	No	3	Low	Codominant at base; fused branches at 15 ft; suppressed.
328	Monterey pine	15	Significant	2	Low	Suppressed upright form; sparse canopy.
329	Monterey pine	17	Significant	1	Low	All but dead.
330	Monterey pine	6	No	2	Low	High sparse canopy; suppressed.
331	Monterey cypress	6,5	No	3	Low	Multiple attachments at base; suppressed.
332	Monterey cypress	9,4	No	3	Low	Multiple attachments at base; suppressed.
333	Monterey pine	16	Significant	1	Low	All but dead.
334	Monterey cypress	8,5,5,4,3	Significant	2	Low	Multiple attachments at base; suppressed; fused stems.
335	Monterey pine	21	Significant	1	Low	Codominant at 4 ft; all but dead.

Tree Assessment

Cypress Point
Moss Beach, CA
May 2022

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
336	Monterey pine	9	No	2	Low	One sided to east; slight lean to east; sparse canopy.
337	Monterey cypress	10	No	3	Moderate	One sided to north; low branching; somewhat sparse.
338	Monterey pine	12	Significant	2	Low	Very sparse high canopy; suppressed.
339	Monterey pine	7	No	2	Low	Very sparse high canopy; suppressed.
340	Monterey pine	10	No	2	Low	Slight lean to south; high sparse canopy.
341	Monterey pine	12	Significant	2	Low	High sparse canopy; suppressed.
342	Monterey cypress	20,10,7,7,6,6	Significant	3	Moderate	Multiple attachments at base and codominant at 5 ft; one sided to NW.
343	Monterey cypress	48,25,14,12,12	Significant	3	Moderate	Multiple attachments at 5 ft; one sided to west.
344	Monterey pine	19	Significant	1	Low	All but dead; base close to 343.
345	Monterey pine	17	Significant	2	Low	One sided to west; very sparse.
346	Monterey pine	12	Significant	2	Low	Lost leader; sparse.
347	Monterey pine	16	Significant	2	Low	Lost leader; very sparse.
348	Monterey pine	6	No	3	Low	Slight lean to south; sparse.
349	Monterey pine	8	No	3	Moderate	Upright form; slightly sparse canopy; good young tree.
350	Monterey pine	6	No	3	Low	Upright; slightly sparse.
351	Monterey pine	7	No	2	Low	Lost leader; all but dead.
352	Monterey pine	10	No	3	Moderate	Good upright form; slightly sparse canopy.
353	Monterey pine	6	No	2	Low	Suppressed; sparse canopy.
354	Monterey cypress	7	No	3	Moderate	Good upright form; slightly one sided to west.
355	Monterey pine	12	Significant	3	Low	One sided to west; upright; high canopy.
356	Monterey pine	16	Significant	3	Low	Lower branches dead; high canopy; slightly one sided to west.
357	Monterey cypress	9,8,4	Significant	3	Low	Multiple attachments at base; narrow attachment; narrow form.
358	Monterey cypress	9	No	4	High	Good upright form; slightly one sided to west.

Tree Assessment

Cypress Point
Moss Beach, CA
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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
359	Monterey pine	7	No	3	Moderate	Narrow upright form; slightly sparse canopy.
360	Monterey pine	10	No	3	Moderate	One sided to west; crowded on east; narrow upright form.
361	Monterey cypress	6	No	3	Moderate	Top bows to east; slightly sparse canopy.
362	Monterey pine	13,11	Significant	3	Low	Leaders originate from stump; full canopy; poor structure.
363	Monterey cypress	11	No	3	Moderate	Full dense canopy; low branching; lean to south.
364	Monterey cypress	6,6,5,5,4,4	Significant	4	Moderate	Multiple attachments at base; full dense canopy; low branching.
365	Monterey cypress	8,6,5,4	Significant	4	Moderate	Tag on small stump; multiple attachments at base; full dense canopy; low branching.
366	Monterey cypress	7,6,4,4,3,3	Significant	4	Moderate	Multiple attachments at base; full dense canopy; low branching.
367	Monterey cypress	6,4,2,2	No	3	Moderate	One sided to west; suppressed on north.
368	Monterey cypress	52	Significant	3	Moderate	Multiple attachments at 5 ft; slight lean to south; failed leader on east.
369	Monterey pine	18	Significant	5	High	Good upright form; full canopy.
370	Monterey pine	12	Significant	3	Moderate	Good upright form; full canopy; poor color high in canopy.
371	Monterey pine	20,18	Significant	3	Low	18 inch stem attached at base and turns upward at 1 ft; N leader codominant at 5 ft.
372	Monterey pine	8,7,5	Significant	3	Low	Multiple attachments at 1 ft; full canopy.
373	Monterey pine	10	No	3	Moderate	Slightly one sided to north; upright form.
374	Monterey pine	9	No	3	Moderate	Good upright form; slightly one sided to south.
375	Monterey pine	24	Significant	4	Moderate	Good upright form; full canopy; significant sap ooze on trunk.
376	Monterey pine	45	Significant	1	Low	Utility pole to south; very sparse canopy; all but dead.
377	Monterey pine	6,3	No	4	Moderate	Multiple attachments at 1 ft; full canopy.
378	Monterey pine	22,9,8,6,6	Significant	3	Low	Multiple attachments at 3 ft; topped; dieback throughout canopy.

Tree Assessment

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
379	Monterey pine	12	Significant	3	Low	Slight bow to south; high canopy.
380	Monterey pine	22	Significant	3	Low	Lost central leader; low branching on west; slight dieback in canopy.
381	Monterey pine	9	No	2	Low	Canker on west side; dieback throughout canopy; poor color.
382	Monterey pine	24	Significant	2	Low	Lost central leader; dieback throughout canopy.
383	Monterey pine	6	No	4	High	Good young upright tree.
384	Monterey pine	7	No	3	Moderate	Codominant at 9 ft; crowded.
385	Monterey pine	6	No	3	Moderate	Good upright form; crowded.
386	Monterey pine	7	No	5	High	Good young tree.
387	Monterey pine	6	No	3	Low	Upright form; poor color.
388	Monterey pine	7	No	4	Moderate	Slight lean to west; signage and pole at base; young tree.
389	Monterey pine	34,18,17,12,10	Significant	2	Low	Multiple attachments at base; sparse canopy; one sided to west.
390	Monterey pine	36	Significant	2	Low	Codominant at 11 ft; one sided to S; sparse canopy.
391	Monterey pine	36	Significant	2	Low	One sided to north; sparse canopy.
392	Monterey pine	13	Significant	2	Low	One sided to north; sparse canopy; younger tree.
393	Monterey pine	26	Significant	2	Low	One sided to W; branching to ground on W.
394	Monterey pine	17	Significant	1	Low	Tagged on low branch; engulfed in poison oak; leader dead at top; all but dead.
395	Monterey pine	16	Significant	2	Low	High sparse canopy; one sided to south.
396	Monterey pine	17	Significant	1	Low	All but dead.
397	Monterey pine	25	Significant	2	Low	High sparse canopy; lower branches dead.
398	Monterey pine	19	Significant	2	Low	Mostly one sided to north; high sparse canopy.
399	Monterey pine	16	Significant	2	Low	One sided and slight lean to north; top of steep slope.
400	Monterey pine	17	Significant	2	Low	One sided and slight lean to north; top of steep slope.

Tree Assessment

Cypress Point
Moss Beach, CA
May 2022

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
401	Monterey pine	13	Significant	1	Low	Lost leader; all but dead.
402	Monterey pine	26	Significant	2	Low	Codominant at 7 ft; poor attachment; high sparse canopy.
403	Monterey pine	20	Significant	2	Low	Codominant at 25 ft; lean to east.
404	Monterey pine	13	Significant	1	Low	Codominant at 30 ft; all but dead.
405	Monterey pine	19	Significant	2	Low	High sparse canopy; crowded on south.
406	Monterey pine	17	Significant	2	Low	High sparse canopy; crowded on North.
407	Monterey pine	19,10,7	Significant	2	Low	Multiple attachments at base and 3 ft; one sided to south.
408	Monterey pine	20	Significant	2	Low	Lost main leader; sparse canopy.
409	Monterey pine	24	Significant	2	Low	One sided to south; sparse canopy.
410	Monterey pine	16	Significant	3	Low	One sided and lean to the west.
411	Monterey pine	10	No	1	Low	All but dead; suppressed.
412	Monterey pine	40	Significant	3	Low	Multiple attachments at 6 ft; somewhat one sided to west.
413	Myoporum	10	No	3	Moderate	Suppressed; good young tree.
414	Monterey pine	45	Significant	3	Low	Upright form; somewhat suppressed on north.
415	Monterey pine	14	Significant	2	Low	Slight lean to north; high sparse canopy.
416	Monterey pine	27	Significant	2	Low	Lean and one sided to SE; crowded on NW.
417	Monterey pine	17	Significant	2	Low	One sided to west; sparse canopy.
418	Monterey pine	22	Significant	2	Low	One sided to south; sparse canopy.
419	Monterey pine	35	Significant	1	Low	One sided to south; extremely sparse canopy.
420	Monterey pine	44	Significant	1	Low	Codominant at 5 ft; tight fused attachment; high sparse canopy.
421	Monterey pine	38	Significant	1	Low	Multiple attachments at 5 ft; poor attachment; high sparse canopy.
422	Monterey pine	25,16	Significant	2	Low	Main leader curves to east at 25 ft; high sparse canopy.
423	Monterey pine	38	Significant	2	Low	Lost main leader at top; heavy to south; sparse canopy.
424	Monterey pine	15	Significant	2	Low	Suppressed; crook in main leader high in canopy.

Tree Assessment

Cypress Point
Moss Beach, CA
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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
425	Monterey pine	28	Significant	3	Low	One sided to north; sparse canopy.
426	Monterey pine	10	No	2	Low	Narrow upright form; pine pitch canker; sparse canopy.
427	Monterey pine	6	No	2	Low	Narrow upright form; sparse canopy.
428	Monterey pine	8	No	2	Low	Narrow upright form; lost main leader; sparse canopy.
429	Monterey pine	7	No	2	Low	Narrow upright form; sparse canopy; one sided to north.
430	Monterey cypress	8	No	3	Moderate	Narrow upright form; sparse lower canopy.
431	Monterey pine	10	No	3	Moderate	Narrow upright form; sparse lower canopy.
432	Monterey pine	7	No	2	Low	Narrow upright form; sparse canopy.
433	Monterey cypress	8	No	2	Low	One sided to west; narrow upright form; sparse canopy.
434	Monterey pine	7	No	2	Low	Codominant at 5 ft; one sided to west.
435	Monterey pine	18	Significant	1	Low	All but dead.
436	Monterey cypress	8	No	3	Low	Narrow upright form; suppressed.
437	Monterey pine	9	No	2	Low	Lower trunk growing diagonally out of slope; leader turns vertical at 10 ft; suppressed.
438	Monterey cypress	24,18,15,12,12,6,6,6	Significant	3	Low	Multiple attachments at base; one sided to west.
439	Monterey pine	20	Significant	4	Moderate	One sided and slight lean to west.
440	Monterey cypress	19	Significant	3	Moderate	One sided to north; top of slope.
441	Monterey cypress	15	Significant	3	Low	Multiple attachments high in canopy; sparse canopy.
442	Monterey pine	16	Significant	3	Moderate	Upright form; somewhat sparse canopy.
443	Monterey pine	23	Significant	2	Low	One sided to north; crowded; sparse canopy.
444	Monterey pine	16	Significant	2	Low	High sparse canopy; upright form.
445	Monterey pine	10	No	2	Low	Crook in main leader high in canopy; high sparse canopy.
446	Monterey cypress	44	Significant	4	Moderate	Upright form; full canopy.

Tree Assessment

Cypress Point
Moss Beach, CA
May 2022

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
447	Monterey pine	30	Significant	2	Low	Codominant at base; poor attachment; sparse canopy.
448	Monterey pine	13	Significant	2	Low	Lean to south; crook in main leader high in canopy; sparse canopy.
449	Monterey pine	18	Significant	3	Moderate	Crowded; high canopy; upright form.
450	Monterey pine	10	No	2	Low	Slight lean and one sided to west; high sparse canopy.
451	Monterey pine	14	Significant	2	Low	Crowded; high sparse canopy.
452	Monterey pine	18	Significant	2	Low	Crook in main leader at 25 ft; high sparse canopy.
453	Monterey pine	6	No	2	Low	Suppressed; sparse canopy.
454	Monterey pine	8	No	2	Low	Suppressed; high sparse canopy; crook in leader high in canopy.
455	Monterey pine	18	Significant	2	Low	Crowded; high sparse canopy; .
456	Monterey pine	18	Significant	3	Low	Lean to south; multiple attachments at 25 ft.
457	Monterey pine	33,28,24	Significant	3	Low	Multiple attachments at base; history of limb failure; somewhat sparse.
458	Monterey pine	13	Significant	3	Low	Upright form; high sparse canopy.
459	Monterey pine	12	Significant	2	Low	Lean to north; curvy main leader.
460	Monterey pine	6	No	3	Moderate	Suppressed; good upright form.
461	Monterey pine	23	Significant	3	Low	Multiple attachments at 6 ft; no main leader high in canopy; high canopy.
462	Monterey pine	45	Significant	2	Low	Crowded; high sparse canopy.
463	Monterey pine	36	Significant	3	Low	No tag; inaccessible; mid slope; heavy lateral limbs.
464	Monterey pine	24	Significant	3	Low	No tag; inaccessible; upright form; sparse canopy.
465	Monterey pine	17	Significant	3	Moderate	One sided to north; upright form.
466	Monterey pine	24	Significant	3	Low	Codominant at 25 ft; slight lean and one sided to west.
467	Monterey pine	12	Significant	3	Low	Suppressed; high sparse canopy.
468	Monterey pine	18	Significant	3	Low	Slight lean to west; high canopy.

Tree Assessment

Cypress Point
Moss Beach, CA
May 2022

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
469	Monterey pine	16	Significant	3	Low	Suppressed; lean to west.
470	Monterey pine	8	No	2	Low	Suppressed; slight bow to east.
471	Monterey pine	18	Significant	4	Moderate	One sided to west; upright form.
472	Monterey pine	9	No	3	Low	Codominant at 20 ft; narrow angle attachment; narrow form.
473	Monterey pine	6	No	3	Moderate	Suppressed; slight lean to west.
474	Monterey pine	9	No	3	Low	Mid slope next to hwy 1; young tree.
475	Monterey pine	13,9,9,8,7	Significant	2	Low	Multiple attachments at base; dieback throughout canopy.
476	Monterey pine	15	Significant	3	Moderate	Good upright form; shaded branches dead.
477	Monterey pine	17	Significant	3	Moderate	Upright form; branching to ground on west.
478	Monterey pine	14	Significant	3	Low	One sided to west; upright form.
479	Monterey pine	14	Significant	3	Moderate	Crowded on NW; upright form.
480	Monterey pine	12,9	Significant	3	Low	Multiple attachments at 1 ft; twig dieback throughout canopy.
481	Monterey pine	11	No	3	Low	Sappy trunk; upright form; sparse canopy.
482	Monterey pine	9	No	3	Moderate	Slightly sparse canopy; upright form.
483	Monterey pine	10	No	2	Low	Main leader dead at top; sappy trunk.
484	Monterey pine	10	No	2	Low	No main leader at top; branch dieback in canopy.
485	Monterey cypress	26,25,22,13	Significant	4	Moderate	Multiple attachments at 3 ft; pruned for road clearance; on steep slope.
486	Monterey pine	14,9	Significant	2	Low	Multiple attachments at 2 ft; sappy trunk; pine pitch canker; top of slope.
487	Monterey pine	13	Significant	3	Low	Branches removed for bike trail; under utility lines; one sided to west.
488	Monterey pine	18	Significant	3	Low	Just N of 318; high sparse canopy; upright form.

Tree Assessment Plan

Cypress Point
Moss Beach

Prepared for:
Mid Penninsula Housing Corporation
Foster City, CA

May 2022

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No Scale

Notes:
Base map provided by:
BKF
Redwood City, CA

Tree locations are approximate.

Trees assessed were 6" and larger
TS = Too small

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Tree Disposition

Cypress Point
Moss Beach, CA
July 1, 2022

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments
1	Monterey pine	19	Significant	Preserve	More than 30 feet from grading
2	Monterey cypress	23,13	Significant	Preserve	More than 30 feet from grading
3	Monterey cypress	22	Significant	Preserve	More than 30 feet from grading
4	Monterey cypress	21	Significant	Preserve	More than 30 feet from grading
5	Monterey cypress	25,10,6	Significant	Preserve	More than 30 feet from grading
6	Monterey cypress	18	Significant	Preserve	More than 30 feet from grading
7	Monterey cypress	18	Significant	Preserve	More than 30 feet from grading
8	Monterey pine	15	Significant	Preserve	More than 30 feet from grading
9	Monterey cypress	26	Significant	Preserve	More than 30 feet from grading
10	Monterey cypress	16	Significant	Preserve	More than 30 feet from grading
11	Monterey pine	8,6	No	Preserve	More than 30 feet from grading
12	Monterey pine	10	No	Preserve	More than 30 feet from grading
13	Monterey pine	7	No	Preserve	More than 30 feet from grading
14	Monterey cypress	15	Significant	Preserve	More than 30 feet from grading
15	Monterey cypress	15	Significant	Preserve	More than 30 feet from grading
16	Monterey cypress	12,12	Significant	Preserve	More than 30 feet from grading
17	Monterey cypress	36	Significant	Preserve	More than 30 feet from grading
18	Monterey pine	7	No	Preserve	More than 30 feet from grading
19	Monterey pine	16	Significant	Preserve	More than 30 feet from grading
20	Monterey cypress	17	Significant	Preserve	More than 30 feet from grading
21	Monterey cypress	36,27	Significant	Preserve	More than 30 feet from grading
22	Monterey cypress	33	Significant	Preserve	More than 30 feet from grading
23	Monterey cypress	24	Significant	Preserve	More than 30 feet from grading
24	Monterey cypress	29,8	Significant	Preserve	More than 30 feet from grading
25	Monterey cypress	23	Significant	Preserve	More than 30 feet from grading
26	Monterey cypress	44	Significant	Preserve	More than 30 feet from grading
27	Monterey cypress	21	Significant	Preserve	More than 30 feet from grading

Tree Disposition

Cypress Point
Moss Beach, CA
July 1, 2022

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments
28	Monterey cypress	14	Significant	Preserve	More than 30 feet from grading
29	Monterey cypress	18,5,4,4,3	Significant	Preserve	More than 30 feet from grading
30	Monterey cypress	23	Significant	Preserve	More than 30 feet from grading
31	Monterey cypress	36,26	Significant	Preserve	More than 30 feet from grading
32	Monterey cypress	18	Significant	Preserve	More than 30 feet from grading
33	Monterey cypress	35	Significant	Preserve	More than 30 feet from grading
34	Monterey cypress	14	Significant	Preserve	More than 30 feet from grading
35	Monterey pine	21	Significant	Preserve	More than 30 feet from grading
36	Monterey pine	14	Significant	Preserve	More than 30 feet from grading
37	Monterey pine	18	Significant	Preserve	More than 30 feet from grading
38	Monterey pine	21	Significant	Preserve	More than 30 feet from grading
39	Monterey pine	25	Significant	Preserve	More than 30 feet from grading
40	Monterey cypress	26	Significant	Preserve	More than 30 feet from grading
41	Monterey cypress	9	No	Preserve	More than 30 feet from grading
42	Monterey cypress	28,14	Significant	Preserve	More than 30 feet from grading
43	Monterey cypress	48	Significant	Preserve	More than 30 feet from grading
44	Monterey cypress	48	Significant	Preserve	More than 30 feet from grading
45	Monterey cypress	29	Significant	Preserve	More than 30 feet from grading
46	Monterey cypress	25	Significant	Preserve	More than 30 feet from grading
47	Monterey cypress	27	Significant	Preserve	More than 30 feet from grading
48	Monterey cypress	29	Significant	Preserve	More than 30 feet from grading
49	Monterey cypress	29	Significant	Preserve	More than 30 feet from grading
50	Monterey cypress	15	Significant	Preserve	More than 30 feet from grading
51	Monterey cypress	12	Significant	Preserve	More than 30 feet from grading
52	Monterey cypress	32	Significant	Preserve	More than 30 feet from grading
53	Monterey cypress	9	No	Preserve	More than 30 feet from grading
54	Monterey cypress	36	Significant	Preserve	More than 30 feet from grading

Tree Disposition

Cypress Point
Moss Beach, CA
July 1, 2022

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments
55	Monterey cypress	28	Significant	Preserve	More than 30 feet from grading
56	Monterey cypress	45	Significant	Preserve	More than 30 feet from grading
57	Monterey cypress	32	Significant	Preserve	More than 30 feet from grading
58	Monterey cypress	13	Significant	Preserve	More than 30 feet from grading
59	Monterey cypress	24	Significant	Preserve	More than 30 feet from grading
60	Monterey cypress	33	Significant	Preserve	More than 30 feet from grading
61	Monterey cypress	33	Significant	Preserve	More than 30 feet from grading
62	Monterey cypress	14,12	Significant	Preserve	More than 30 feet from grading
63	Monterey cypress	11	No	Preserve	More than 30 feet from grading
64	Monterey cypress	8	No	Preserve	More than 30 feet from grading
65	Monterey cypress	12	Significant	Preserve	More than 30 feet from grading
66	Monterey pine	11	No	Preserve	More than 30 feet from grading
67	Monterey cypress	34	Significant	Preserve	More than 30 feet from grading
68	Monterey cypress	11	No	Preserve	More than 30 feet from grading
69	Monterey pine	13	Significant	Preserve	More than 30 feet from grading
70	Monterey pine	18	Significant	Preserve	More than 30 feet from grading
71	Monterey pine	15,13	Significant	Preserve	More than 30 feet from grading
72	Monterey pine	25	Significant	Preserve	More than 30 feet from grading
73	Monterey pine	23,13	Significant	Preserve	More than 30 feet from grading
74	Monterey pine	31,16	Significant	Preserve	More than 30 feet from grading
75	Monterey pine	17	Significant	Preserve	More than 30 feet from grading
76	Monterey pine	28,18,10,6	Significant	Preserve	More than 30 feet from grading
77	Monterey cypress	21,20,19,19,18,16,13,13,10,7	Significant	Preserve	More than 30 feet from grading
78	Monterey cypress	28,8	Significant	Preserve	More than 30 feet from grading
79	Monterey cypress	36,19,11,7,6	Significant	Preserve	More than 30 feet from grading
80	Monterey pine	14	Significant	Preserve	More than 30 feet from grading
81	Monterey cypress	14	Significant	Preserve	More than 30 feet from grading

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments
82	Monterey cypress	11	No	Preserve	More than 30 feet from grading
83	Monterey cypress	14	Significant	Preserve	More than 30 feet from grading
84	Monterey cypress	22,6	Significant	Preserve	More than 30 feet from grading
85	Monterey cypress	13	Significant	Preserve	More than 30 feet from grading
86	Monterey pine	14	Significant	Preserve	More than 30 feet from grading
87	Monterey cypress	26,26,18,14,14,12,11,9,8,7,7,7	Significant	Preserve	More than 30 feet from grading
88	Monterey cypress	16,13	Significant	Preserve	More than 30 feet from grading
89	Monterey cypress	34	Significant	Preserve	More than 30 feet from grading
90	Monterey cypress	28	Significant	Preserve	More than 30 feet from grading
91	Monterey cypress	6	No	Preserve	More than 30 feet from grading
92	Monterey cypress	6	No	Preserve	More than 30 feet from grading
93	Monterey cypress	29	Significant	Preserve	More than 30 feet from grading
94	Monterey cypress	32	Significant	Preserve	More than 30 feet from grading
95	Monterey cypress	32	Significant	Preserve	More than 30 feet from grading
96	Monterey cypress	23,22,17,17,16,10	Significant	Preserve	More than 30 feet from grading
97	Monterey cypress	25	Significant	Preserve	More than 30 feet from grading
98	Monterey cypress	26	Significant	Preserve	More than 30 feet from grading
99	Monterey cypress	25	Significant	Preserve	More than 30 feet from grading
100	Monterey cypress	24	Significant	Preserve	More than 30 feet from grading
101	Monterey cypress	36	Significant	Remove	25 feet from grading
102	Monterey cypress	16	Significant	Remove	15 feet from grading
103	Monterey cypress	27	Significant	Remove	5 feet from grading
104	Monterey pine	22	Significant	Remove	Within grading
105	Monterey pine	24	Significant	Remove	Within grading
106	Monterey cypress	40,10,10,7,7,6,5	Significant	Remove	Within grading
107	Monterey pine	14	Significant	Remove	Within grading
108	Monterey cypress	42	Significant	Remove	9 feet from grading

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments
109	Monterey cypress	48,36,26,20,18,17,16,12,12	Significant	Remove	11 feet from grading
110	Monterey pine	10	No	Remove	Within grading
111	Monterey cypress	48	Significant	Remove	5 feet from grading
112	Monterey cypress	26,24,20,15,15,12,10,10,9	Significant	Preserve	More than 30 feet from grading
113	Monterey cypress	32	Significant	Preserve	More than 30 feet from grading
114	Monterey cypress	32	Significant	Preserve	More than 30 feet from grading
115	Monterey cypress	18,14,10,9,6,5	Significant	Preserve	More than 30 feet from grading
116	Monterey cypress	9	No	Preserve	More than 30 feet from grading
117	Monterey cypress	30	Significant	Preserve	More than 30 feet from grading
118	Monterey pine	26	Significant	Preserve	More than 30 feet from grading
119	Monterey pine	25	Significant	Preserve	More than 30 feet from grading
120	Monterey pine	31	Significant	Preserve	More than 30 feet from grading
121	Monterey cypress	42	Significant	Preserve	More than 30 feet from grading
122	Monterey cypress	28	Significant	Preserve	More than 30 feet from grading
123	Monterey cypress	35	Significant	Preserve	More than 30 feet from grading
124	Monterey pine	7,6	No	Preserve	More than 30 feet from grading
125	Monterey cypress	6	No	Preserve	More than 30 feet from grading
126	Monterey cypress	12,4	Significant	Preserve	More than 30 feet from grading
127	Monterey pine	17	Significant	Remove	Within grading
128	Monterey pine	7	No	Remove	Within grading
129	Monterey pine	10	No	Remove	Within grading
130	Monterey pine	8,5	No	Remove	Within grading
131	Monterey pine	11,7	Significant	Remove	Within grading
132	Monterey pine	9	No	Remove	Within grading
133	Monterey pine	35,28,17	Significant	Remove	Within grading
134	Monterey pine	14,11	Significant	Remove	Within grading
135	Monterey pine	12	Significant	Remove	Within grading

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments
136	Monterey pine	10	No	Remove	Within grading
137	Monterey pine	23	Significant	Remove	Within grading
138	Monterey pine	18	Significant	Remove	Within grading
139	Monterey pine	24	Significant	Remove	Within grading
140	Monterey pine	18	Significant	Remove	Within grading
141	Monterey pine	14	Significant	Remove	Within grading
142	Monterey pine	8	No	Remove	Within grading
143	Monterey pine	10,6,5	Significant	Remove	Within grading
144	Monterey pine	6	No	Remove	Within grading
145	Monterey pine	48,28,28,22,20,16	Significant	Remove	Within grading
146	Monterey pine	11	No	Remove	6 feet from grading
147	Monterey cypress	28,17,13,10,10,8,8,8	Significant	Remove	Within grading
148	Monterey cypress	45,38,26,14,13,13	Significant	Preserve	More than 30 feet from grading
149	Monterey pine	7	No	Preserve	More than 30 feet from grading
150	Monterey pine	16	Significant	Remove	12 feet from grading
151	Monterey cypress	36,14,10	Significant	Preserve	25 feet from grading
152	Monterey cypress	32	Significant	Preserve	27 feet from grading
153	Monterey cypress	31	Significant	Preserve	More than 30 feet from grading
154	Monterey cypress	17	Significant	Preserve	More than 30 feet from grading
155	Monterey cypress	37,9	Significant	Preserve	More than 30 feet from grading
156	Monterey cypress	18	Significant	Preserve	More than 30 feet from grading
157	Monterey cypress	26,7	Significant	Preserve	More than 30 feet from grading
158	Monterey cypress	32	Significant	Preserve	More than 30 feet from grading
159	Monterey cypress	13,9	Significant	Preserve	More than 30 feet from grading
160	Monterey cypress	36	Significant	Preserve	28 feet from grading
161	Monterey cypress	34	Significant	Preserve	27 feet from grading
162	Monterey cypress	29	Significant	Preserve	24 feet from grading

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments
163	Monterey cypress	13,7	Significant	Preserve	23 feet from grading
164	Monterey cypress	14,	Significant	Preserve	22 feet from grading
165	Monterey cypress	28,13	Significant	Preserve	21 feet from grading
166	Monterey cypress	21,12	Significant	Preserve	23 feet from grading
167	Italian stone pine	13,12,11,10	Significant	Remove	Within grading
168	Monterey cypress	19,19,15,14,14,13,12,12,10,9,7,7	Significant	Remove	Within grading
169	Monterey pine	25	Significant	Remove	Within grading
170	Monterey pine	8	No	Remove	Within grading
171	Monterey pine	9	No	Remove	Within grading
172	Monterey pine	14	Significant	Remove	Within grading
173	Monterey pine	11	No	Remove	Within grading
174	Monterey pine	14	Significant	Remove	Within grading
175	Monterey pine	8	No	Remove	Within grading
176	Monterey pine	18	Significant	Remove	Within grading
177	Monterey pine	16	Significant	Remove	Within grading
178	Monterey pine	17	Significant	Remove	Within grading
179	Monterey pine	17	Significant	Remove	Within grading
180	Monterey pine	17	Significant	Remove	Within grading
181	Monterey pine	16	Significant	Remove	Within grading
182	Monterey pine	12	Significant	Remove	Within grading
183	Monterey pine	8	No	Remove	Within grading
184	Monterey pine	15	Significant	Remove	Within grading
185	Monterey pine	15	Significant	Remove	Within grading
186	Monterey pine	11	No	Remove	Within grading
187	Monterey pine	9	No	Remove	Within grading
188	Monterey pine	11	No	Remove	Within grading
189	Monterey cypress	21,16,15,15,14,10,10	Significant	Remove	Within grading

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments
190	Monterey pine	15	Significant	Remove	Within grading
191	Monterey pine	8	No	Remove	Within grading
192	Monterey pine	10	No	Remove	Within grading
193	Monterey pine	14	Significant	Remove	Within grading
194	Monterey pine	14	Significant	Remove	Within grading
195	Monterey pine	13	Significant	Remove	Within grading
196	Monterey pine	11	No	Remove	Within grading
197	Monterey pine	15	Significant	Remove	Within grading
198	Monterey cypress	28,24,16,12,9	Significant	Remove	Within grading
199	Monterey pine	8	No	Remove	Within grading
200	Monterey pine	6	No	Remove	Within grading
201	Monterey pine	14,8	Significant	Remove	Within grading
202	Monterey pine	14	Significant	Remove	Within grading
203	Monterey pine	6	No	Remove	Within grading
204	Monterey pine	7	No	Remove	Within grading
205	Monterey pine	10	No	Remove	Within grading
206	Monterey pine	9	No	Remove	Within grading
207	Monterey pine	13	Significant	Remove	Within grading
208	Monterey pine	11	No	Remove	Within grading
209	Monterey pine	13	Significant	Remove	Within grading
210	Monterey pine	18	Significant	Remove	Within grading
211	Monterey cypress	24,24,22,18,13,13,12,8	Significant	Remove	Within grading
212	Monterey pine	9	No	Remove	Within grading
213	Monterey pine	16,11	Significant	Remove	Within grading
214	Monterey pine	17,15,8	Significant	Remove	Within grading
215	Monterey cypress	10,5,5,5,5	Significant	Remove	Within grading
216	Monterey pine	9	No	Remove	Within grading

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments
217	Monterey pine	22,18	Significant	Remove	Within grading
218	Monterey cypress	60	Significant	Remove	Within grading
219	Monterey pine	12	Significant	Remove	Within grading
220	Monterey pine	9	No	Remove	Within grading
221	Monterey cypress	9,4,3,2	No	Remove	Within grading
222	Monterey pine	16,10,9,8,6	Significant	Remove	Within grading
223	Monterey pine	16	Significant	Remove	Within grading
224	Monterey pine	19	Significant	Remove	Within grading
225	Monterey pine	18	Significant	Remove	Within grading
226	Monterey cypress	18	Significant	Remove	Within grading
227	Monterey cypress	8	No	Remove	Within grading
228	Monterey pine	13	Significant	Remove	Within grading
229	Monterey cypress	17,7	Significant	Remove	Within grading
230	Monterey pine	8	No	Remove	Within grading
231	Monterey pine	13,9	Significant	Remove	Within grading
232	Monterey pine	7	No	Remove	4 feet from grading
233	Monterey cypress	13,7,4,4	Significant	Preserve	23 feet from grading
234	Monterey cypress	9,7,4	Significant	Preserve	25 feet from grading
235	Monterey cypress	37	Significant	Preserve	14 feet from grading
236	Monterey cypress	17	Significant	Preserve	More than 30 feet from grading
237	Monterey cypress	22	Significant	Preserve	More than 30 feet from grading
238	Monterey cypress	38	Significant	Preserve	More than 30 feet from grading
239	Monterey cypress	18	Significant	Preserve	More than 30 feet from grading
240	Monterey cypress	22	Significant	Preserve	More than 30 feet from grading
241	Monterey cypress	24,13,10,8,7,6,4	Significant	Preserve	More than 30 feet from grading
242	Italian stone pine	6	No	Remove	Within grading
243	Monterey pine	10,9	Significant	Remove	Within grading

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments
244	Monterey pine	6,3	No	Remove	2 feet from grading
245	Monterey pine	6	No	Remove	Within grading
246	Monterey pine	19	Significant	Remove	2 feet from grading
247	Monterey pine	7,4	No	Remove	Within grading
248	Monterey pine	14,11	Significant	Remove	Within grading
249	Monterey cypress	19,18,12,12,7,6,6,5,5,4,4,4,4	Significant	Remove	Within grading
250	Monterey pine	18,15,8	Significant	Preserve	More than 30 feet from grading
251	Monterey pine	22	Significant	Preserve	More than 30 feet from grading
252	Monterey pine	16	Significant	Preserve	More than 30 feet from grading
253	Monterey pine	21,11	Significant	Remove	18 feet from grading
254	Monterey pine	34,12	Significant	Preserve	More than 30 feet from grading
255	Monterey pine	7	No	Preserve	More than 30 feet from grading
256	Monterey pine	8	No	Preserve	More than 30 feet from grading
257	Monterey pine	7	No	Preserve	More than 30 feet from grading
258	Monterey pine	8	No	Preserve	28 feet from grading
259	Monterey pine	10	No	Preserve	More than 30 feet from grading
260	Monterey pine	8	No	Preserve	More than 30 feet from grading
261	Monterey pine	8	No	Preserve	More than 30 feet from grading
262	Monterey pine	12	Significant	Preserve	More than 30 feet from grading
263	Monterey cypress	38	Significant	Preserve	More than 30 feet from grading
264	Monterey pine	6	No	Preserve	More than 30 feet from grading
265	Monterey pine	15	Significant	Preserve	More than 30 feet from grading
266	Monterey pine	7	No	Preserve	More than 30 feet from grading
267	Monterey pine	40	Significant	Preserve	More than 30 feet from grading
268	Monterey pine	13	Significant	Preserve	More than 30 feet from grading
269	Monterey pine	17	Significant	Preserve	More than 30 feet from grading
270	Italian stone pine	6,5,4,4,4	No	Preserve	More than 30 feet from grading

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments
271	Monterey pine	7,5	No	Preserve	More than 30 feet from grading
272	Monterey pine	24,10,7,5	Significant	Preserve	More than 30 feet from grading
273	Monterey pine	22,13,11	Significant	Remove	5 feet from grading
274	Monterey pine	26,10,6	Significant	Remove	Within grading
275	Monterey pine	25,9	Significant	Remove	Within grading
276	Monterey pine	9,8	Significant	Remove	Within grading
277	Monterey pine	20	Significant	Remove	Within grading
278	Monterey pine	6	No	Remove	Within grading
279	Monterey pine	8	No	Remove	Within grading
280	Monterey pine	11	No	Remove	Within grading
281	Monterey pine	7	No	Remove	Within grading
282	Monterey pine	7	No	Remove	Within grading
283	Monterey pine	7	No	Remove	Within grading
284	Monterey pine	22	Significant	Remove	Within grading
285	Monterey pine	10	No	Remove	Within grading
286	Monterey cypress	26,13,13,6,6	Significant	Remove	Within grading
287	Monterey cypress	38,30,28,26,13	Significant	Remove	Within grading
288	Monterey cypress	15,15	Significant	Remove	Within grading
289	Monterey cypress	22,20	Significant	Remove	Within grading
290	Monterey cypress	15	Significant	Remove	Within grading
291	Monterey cypress	14	Significant	Remove	Within grading
292	Monterey cypress	30,22,20	Significant	Remove	Within grading
293	Monterey cypress	34,30,28,27,24,12	Significant	Remove	Within grading
294	Monterey cypress	14	Significant	Remove	Within grading
295	Monterey pine	7	No	Remove	Within grading
296	Monterey cypress	6	No	Remove	Within grading
297	Monterey cypress	6,4	No	Remove	Within grading

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments
298	Monterey pine	8	No	Remove	Within grading
299	Monterey cypress	7	No	Remove	Within grading
300	Monterey cypress	9	No	Remove	Within grading
301	Monterey pine	8	No	Remove	Within grading
302	Monterey pine	13	Significant	Remove	Within grading
303	Monterey pine	14	Significant	Remove	Within grading
304	Monterey cypress	38	Significant	Remove	Within grading
305	Monterey pine	22	Significant	Remove	Within grading
306	Monterey pine	7	No	Remove	Within grading
307	Monterey cypress	24	Significant	Remove	Within grading
308	Monterey cypress	29	Significant	Remove	Within grading
309	Monterey cypress	68	Significant	Remove	Within grading
310	Monterey cypress	25	Significant	Remove	Within grading
311	Monterey cypress	18,15,13,13,13,12,12,12	Significant	Remove	Within grading
312	Monterey cypress	20,13,6,6,6,5	Significant	Remove	Within grading
313	Monterey pine	15	Significant	Remove	Within grading
314	Monterey cypress	22,8,5,4	Significant	Remove	Within grading
315	Monterey pine	24	Significant	Remove	Within grading
316	Monterey pine	15	Significant	Remove	Within grading
317	Monterey pine	14	Significant	Remove	Within grading
318	Monterey pine	8	No	Remove	Within grading
319	Monterey pine	25	Significant	Remove	Within grading
320	Monterey pine	28	Significant	Remove	Within grading
321	Monterey pine	10	No	Remove	Within grading
322	Monterey pine	18	Significant	Remove	Within grading
323	Monterey pine	25	Significant	Remove	Within grading
324	Monterey pine	15,14,13	Significant	Remove	Within grading

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments
325	Monterey pine	16	Significant	Remove	Within grading
326	Monterey cypress	15,14,7,6,4,4	Significant	Remove	Within grading
327	Monterey cypress	9,6	No	Remove	Within grading
328	Monterey pine	15	Significant	Remove	Within grading
329	Monterey pine	17	Significant	Remove	Within grading
330	Monterey pine	6	No	Remove	Within grading
331	Monterey cypress	6,5	No	Remove	Within grading
332	Monterey cypress	9,4	No	Remove	Within grading
333	Monterey pine	16	Significant	Remove	Within grading
334	Monterey cypress	8,5,5,4,3	Significant	Remove	Within grading
335	Monterey pine	21	Significant	Remove	Within grading
336	Monterey pine	9	No	Remove	Within grading
337	Monterey cypress	10	No	Remove	Within grading
338	Monterey pine	12	Significant	Remove	Within grading
339	Monterey pine	7	No	Remove	Within grading
340	Monterey pine	10	No	Remove	Within grading
341	Monterey pine	12	Significant	Remove	Within grading
342	Monterey cypress	20,10,7,7,6,6	Significant	Remove	Within grading
343	Monterey cypress	48,25,14,12,12	Significant	Remove	Within grading
344	Monterey pine	19	Significant	Remove	Within grading
345	Monterey pine	17	Significant	Remove	Within grading
346	Monterey pine	12	Significant	Remove	Within grading
347	Monterey pine	16	Significant	Remove	Within grading
348	Monterey pine	6	No	Remove	Within grading
349	Monterey pine	8	No	Remove	Within grading
350	Monterey pine	6	No	Remove	Within grading
351	Monterey pine	7	No	Remove	Within grading

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments
352	Monterey pine	10	No	Remove	Within grading
353	Monterey pine	6	No	Remove	Within grading
354	Monterey cypress	7	No	Remove	Within grading
355	Monterey pine	12	Significant	Remove	Within grading
356	Monterey pine	16	Significant	Remove	Within grading
357	Monterey cypress	9,8,4	Significant	Remove	Within grading
358	Monterey cypress	9	No	Remove	Within grading
359	Monterey pine	7	No	Remove	Within grading
360	Monterey pine	10	No	Remove	Within grading
361	Monterey cypress	6	No	Remove	Within grading
362	Monterey pine	13,11	Significant	Preserve	More than 30 feet from grading
363	Monterey cypress	11	No	Preserve	20 feet from grading
364	Monterey cypress	6,6,5,5,4,4	Significant	Preserve	19 feet from grading
365	Monterey cypress	8,6,5,4	Significant	Preserve	13 feet from grading
366	Monterey cypress	7,6,4,4,3,3	Significant	Remove	3 feet from grading
367	Monterey cypress	6,4,2,2	No	Remove	2 feet from grading
368	Monterey cypress	52	Significant	Remove	2 feet from grading
369	Monterey pine	18	Significant	Remove	Within grading
370	Monterey pine	12	Significant	Remove	Within grading
371	Monterey pine	20,18	Significant	Remove	Within grading
372	Monterey pine	8,7,5	Significant	Remove	Within grading
373	Monterey pine	10	No	Remove	Within grading
374	Monterey pine	9	No	Remove	Within grading
375	Monterey pine	24	Significant	Remove	Within grading
376	Monterey pine	45	Significant	Preserve	More than 30 feet from grading
377	Monterey pine	6,3	No	Remove	Within grading
378	Monterey pine	22,9,8,6,6	Significant	Remove	Within grading

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Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments
379	Monterey pine	12	Significant	Remove	Within grading
380	Monterey pine	22	Significant	Remove	Within grading
381	Monterey pine	9	No	Remove	Within grading
382	Monterey pine	24	Significant	Remove	Within grading
383	Monterey pine	6	No	Remove	Within grading
384	Monterey pine	7	No	Remove	Within grading
385	Monterey pine	6	No	Remove	Within grading
386	Monterey pine	7	No	Remove	Within grading
387	Monterey pine	6	No	Remove	Within grading
388	Monterey pine	7	No	Remove	Within grading
389	Monterey pine	34,18,17,12,10	Significant	Remove	Within grading
390	Monterey pine	36	Significant	Remove	Within grading
391	Monterey pine	36	Significant	Remove	4 feet from grading
392	Monterey pine	13	Significant	Remove	2 feet from grading
393	Monterey pine	26	Significant	Remove	Within grading
394	Monterey pine	17	Significant	Remove	19 feet from grading
395	Monterey pine	16	Significant	Remove	17 feet from grading
396	Monterey pine	17	Significant	Remove	10 feet from grading
397	Monterey pine	25	Significant	Remove	11 feet from grading
398	Monterey pine	19	Significant	Remove	16 feet from grading
399	Monterey pine	16	Significant	Preserve	More than 30 feet from grading
400	Monterey pine	17	Significant	Preserve	More than 30 feet from grading
401	Monterey pine	13	Significant	Remove	17 feet from grading
402	Monterey pine	26	Significant	Remove	12 feet from grading
403	Monterey pine	20	Significant	Preserve	24 feet from grading
404	Monterey pine	13	Significant	Remove	Within grading
405	Monterey pine	19	Significant	Remove	Within grading

Tree Disposition

Cypress Point
Moss Beach, CA
July 1, 2022

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments
406	Monterey pine	17	Significant	Remove	Within grading
407	Monterey pine	19,10,7	Significant	Remove	Within grading
408	Monterey pine	20	Significant	Remove	Within grading
409	Monterey pine	24	Significant	Remove	Within grading
410	Monterey pine	16	Significant	Remove	Within grading
411	Monterey pine	10	No	Remove	Within grading
412	Monterey pine	40	Significant	Remove	Within grading
413	Myoporum	10	No	Remove	16 feet from grading, invasive
414	Monterey pine	45	Significant	Remove	Within grading
415	Monterey pine	14	Significant	Remove	Within grading
416	Monterey pine	27	Significant	Remove	Within grading
417	Monterey pine	17	Significant	Remove	Within grading
418	Monterey pine	22	Significant	Remove	Within grading
419	Monterey pine	35	Significant	Remove	Within grading
420	Monterey pine	44	Significant	Remove	Within grading
421	Monterey pine	38	Significant	Remove	Within grading
422	Monterey pine	25,16	Significant	Remove	Within grading
423	Monterey pine	38	Significant	Remove	21 feet from grading
424	Monterey pine	15	Significant	Remove	22 feet from grading
425	Monterey pine	28	Significant	Remove	19 feet from grading
426	Monterey pine	10	No	Remove	Within grading
427	Monterey pine	6	No	Remove	Within grading
428	Monterey pine	8	No	Remove	Within grading
429	Monterey pine	7	No	Remove	Within grading
430	Monterey cypress	8	No	Remove	Within grading
431	Monterey pine	10	No	Remove	Within grading
432	Monterey pine	7	No	Remove	Within grading

Tree Disposition

Cypress Point
Moss Beach, CA
July 1, 2022

HORT SCIENCE
BARTLETT CONSULTING
Divisions of The F.A. Bartlett Tree Expert Company

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments
433	Monterey cypress	8	No	Remove	Within grading
434	Monterey pine	7	No	Remove	Within grading
435	Monterey pine	18	Significant	Remove	Within grading
436	Monterey cypress	8	No	Remove	Within grading
437	Monterey pine	9	No	Remove	Within grading
438	Monterey cypress	24,18,15,12,12,6,6,6	Significant	Remove	Within grading
439	Monterey pine	20	Significant	Remove	Within grading
440	Monterey cypress	19	Significant	Remove	Within grading
441	Monterey cypress	15	Significant	Remove	Within grading
442	Monterey pine	16	Significant	Remove	Within grading
443	Monterey pine	23	Significant	Remove	Within grading
444	Monterey pine	16	Significant	Remove	Within grading
445	Monterey pine	10	No	Remove	Within grading
446	Monterey cypress	44	Significant	Preserve	17 feet from grading
447	Monterey pine	30	Significant	Remove	11 feet from grading
448	Monterey pine	13	Significant	Remove	27 feet from grading
449	Monterey pine	18	Significant	Preserve	More than 30 feet from grading
450	Monterey pine	10	No	Remove	4 feet from grading
451	Monterey pine	14	Significant	Remove	12 feet from grading
452	Monterey pine	18	Significant	Remove	10 feet from grading
453	Monterey pine	6	No	Remove	6 feet from grading
454	Monterey pine	8	No	Remove	1 foot from grading
455	Monterey pine	18	Significant	Remove	Within grading
456	Monterey pine	18	Significant	Remove	16 feet from grading
457	Monterey pine	33,28,24	Significant	Remove	1 foot from grading
458	Monterey pine	13	Significant	Preserve	More than 30 feet from grading
459	Monterey pine	12	Significant	Preserve	24 feet from grading

Tree Disposition

Cypress Point
Moss Beach, CA
July 1, 2022

HORT SCIENCE
BARTLETT CONSULTING
Divisions of The F.A. Bartlett Tree Expert Company

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments
460	Monterey pine	6	No	Preserve	15 feet from grading
461	Monterey pine	23	Significant	Remove	5 feet from grading
462	Monterey pine	45	Significant	Remove	5 feet from grading
463	Monterey pine	36	Significant	Preserve	More than 30 feet from grading
464	Monterey pine	24	Significant	Preserve	More than 30 feet from grading
465	Monterey pine	17	Significant	Remove	Within grading
466	Monterey pine	24	Significant	Remove	Within grading
467	Monterey pine	12	Significant	Remove	Within grading
468	Monterey pine	18	Significant	Remove	Within grading
469	Monterey pine	16	Significant	Remove	Within grading
470	Monterey pine	8	No	Remove	Within grading
471	Monterey pine	18	Significant	Remove	Within grading
472	Monterey pine	9	No	Remove	Within grading
473	Monterey pine	6	No	Remove	Within grading
474	Monterey pine	9	No	Preserve	More than 30 feet from grading
475	Monterey pine	13,9,9,8,7	Significant	Preserve	More than 30 feet from grading
476	Monterey pine	15	Significant	Preserve	More than 30 feet from grading
477	Monterey pine	17	Significant	Preserve	More than 30 feet from grading
478	Monterey pine	14	Significant	Preserve	More than 30 feet from grading
479	Monterey pine	14	Significant	Preserve	More than 30 feet from grading
480	Monterey pine	12,9	Significant	Preserve	More than 30 feet from grading
481	Monterey pine	11	No	Preserve	More than 30 feet from grading
482	Monterey pine	9	No	Preserve	More than 30 feet from grading
483	Monterey pine	10	No	Preserve	More than 30 feet from grading
484	Monterey pine	10	No	Preserve	More than 30 feet from grading
485	Monterey cypress	26,25,22,13	Significant	Preserve	More than 30 feet from grading
486	Monterey pine	14,9	Significant	Preserve	More than 30 feet from grading

Tree Disposition

Cypress Point
Moss Beach, CA
July 1, 2022

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Disposition	Comments
487	Monterey pine	13	Significant	Preserve	21 feet from grading
488	Monterey pine	18	Significant	Remove	Within grading

APPENDIX F

Geotechnical Investigation

ROCKRIDGE GEOTECHNICAL

Prepared for **MP Moss Beach Associates, L.P.**

GEOTECHNICAL INVESTIGATION
CYPRESS POINT FAMILY COMMUNITY
16TH AND CARLOS STREETS
MOSS BEACH, CALIFORNIA

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June 28, 2022
Project No. 17-1286

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Oakland, CA 94610

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510 420-5738 tel
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ROCKRIDGE GEOTECHNICAL

June 28, 2022
Project No. 17-1286

MP Moss Beach Associates, L.P.
c/o MidPen Housing Corporation
303 Vintage Park Drive, Suite 250
Foster City, California 94404

Attention: Serena Ip

Subject: Geotechnical Investigation Report
Cypress Point Family Community
16th and Carlos Streets
Moss Beach, California

Dear Ms. Ip,

We are pleased to present our geotechnical investigation report, dated June 28, 2022, for the proposed Cypress Point Family Community affordable housing development in Moss Beach, California. Our geotechnical investigation was performed in accordance with our General Consultant Services Agreement with MP Moss Beach Associates L.P., dated March 21, 2017.

The project site is located on the eastern side of Carlos Street between Sierra Street to the south and 16th Street to the north. The subject property encompasses an area of 10.875 acres of vacant land and is bordered by a combination of single-family homes and vacant land to the north and east, single-family homes to the south, and Carlos Street to the west. The site slopes up gently to moderately to the east/northeast except for a north-facing slope along the northern side of the site, which slopes moderately down to the north, and some localized flat areas near the center and eastern portions of the site. There are numerous concrete slabs along with low concrete retaining walls that are remnants from previous military buildings that were part of a World War II training facility that occupied the site around 1945. Heavy vegetation, including numerous mature trees and shrubs, occupies much of the site outside the limits of the concrete slabs.

Plans are to construct 16 two-story buildings containing 71 residential units and one community building. Proposed improvements on the remainder of the site will include surface parking, drive aisles, landscaping, and storm water retention areas.

Based on our investigation, we conclude the site can be developed as planned, provided the recommendations presented in this report are incorporated into the project plans and specifications and implemented during construction. The primary geotechnical concern

for development of the site is the presence of undocumented fill and unknown buried foundations and utility lines from the previous site development, as well as the likely presence of large tree roots beneath some of the proposed improvements. We conclude the proposed buildings may be supported on conventional spread footings bearing on engineered fill.

The recommendations contained in our report are based on a limited subsurface exploration. Consequently, variations between expected and actual subsurface conditions may be found in localized areas during construction. Therefore, we should be engaged to observe site preparation and grading and footing subgrade preparation, during which time we may make changes in our recommendations, if deemed necessary.

We appreciate the opportunity to provide our services to you on this project. If you have any questions, please call.

Sincerely yours,
ROCKRIDGE GEOTECHNICAL, INC.



Linda H. J. Liang, P.E., G.E.
Principal Engineer



Craig S. Shields, P.E., G.E.
Principal Engineer

Enclosure

ROCKRIDGE GEOTECHNICAL

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ROCKRIDGE GEOTECHNICAL

GEOTECHNICAL INVESTIGATION
CYPRESS POINT FAMILY COMMUNITY
16TH AND CARLOS STREETS
Moss Beach, California

1.0 INTRODUCTION

This report presents the results of the geotechnical investigation performed by Rockridge Geotechnical, Inc. for the proposed Cypress Point Family Community affordable housing development in Moss Beach, California. The project site is on the eastern side of Carlos Street between Sierra Street to the south and 16th Street to the north, as shown on the Site Location Map, Figure 1.

The subject property encompasses an area of 10.875 acres of vacant land, as shown on the Site Plan and Existing Geology, Figure 2A. It is bordered by a combination of single-family homes and vacant land to the north and east, single-family homes to the south, and Carlos Street to the west. The site slopes up gently to moderately to the east/northeast except for a north-facing slope along the northern side of the site, which slopes moderately down to the north, and some localized flat areas near the center and eastern portions of the site. There are numerous concrete slabs along with low concrete retaining walls that are remnants from previous military buildings that were part of a World War II training facility that occupied the site around 1945. Heavy vegetation, including numerous mature trees and shrubs, occupies much of the site outside the limits of the concrete slabs.

Easements for the Montara Water and Sanitary District (MWSD) and Pacific Gas & Electric (PG&E) utilities extend along the unpaved roadways within the property. MWSD infrastructure on the site includes water storage tanks in the southeastern portion of the site, a booster pump system, and distribution facilities with a fenced-in parcel of land adjacent to and west of the intersection of Lincoln Street and Buena Vista Street near the eastern boundary of the property.

Plans are to construct 16 two story-buildings containing 71 residential units and one community building as shown on the attached Site Plan - Proposed Building Layout, Figure 2B. Proposed

improvements on the remainder of the site will include surface parking, drive aisles, landscaping, and storm water retention areas.

Structural design loads were not available at the time this report was prepared. Based on our experience with similar buildings we estimate the buildings will impose an average building pressure of 300 pounds per square foot (psf).

2.0 SCOPE OF SERVICES

Our investigation was performed in accordance with our General Consultant Services Agreement with MP Moss Beach Associates L.P., dated March 21, 2017. Our scope of services consisted of exploring subsurface conditions at the site by drilling nine test borings, performing a geologic site reconnaissance, performing laboratory testing on selected soil samples, and performing engineering analyses to develop conclusions and recommendations regarding:

- subsurface conditions
- site seismicity and seismic hazards, including the potential for liquefaction and liquefaction-induced ground failure
- geological hazard evaluation, including slope stability
- the most appropriate foundation type(s) for the proposed buildings
- design criteria for the recommended foundation type(s), including vertical and lateral capacities
- estimates of foundation settlement
- subgrade preparation for slab-on-grade floors and concrete flatwork
- site grading and excavation, including criteria for the fill quality and compaction
- pavement section for asphalt concrete and Portland-cement concrete
- 2019 California Building Code (CBC) site class and design spectral response acceleration parameters
- construction considerations.

3.0 GEOLOGIC RECONNAISSANCE AND FIELD INVESTIGATION

Our geologist performed a geologic reconnaissance of the site on June 12, 2018 to visually identify any geologic hazards, including landslide hazards. Our field investigation consisted of drilling nine test borings and performing laboratory testing on selected soil samples. Details of the field investigation and laboratory testing are described below.

3.1 Test Borings

We planned to drill 10 borings; however, one of the proposed boring locations (Boring B-1) could not be accessed with the track-mounted drill rig. Prior to mobilizing to the site, we prepared a Drilling Notification Form (attached in Appendix A) in accordance with our Annual Geotechnical Drilling Permit with the San Mateo County Environmental Health Services Division (SMCEHSD), contacted Underground Service Alert (USA) to notify them of our work, as required by law, and retained a private utility locator, Precision Locating LLC, to check that the borehole locations were clear of existing utilities.

The test borings, designated B-2 through B-10, were drilled on May 11 and 12, 2017 at the approximate locations shown on Figures 2A and 2B. The borings were drilled by Britton Exploration of Los Gatos, California to depths ranging from 11.5 to 25 feet below the existing ground surface (bgs) using a track-mounted CME-55 drill rig equipped with eight-inch-outside-diameter hollow-stem flight augers. During drilling, our field engineer logged the soil encountered and obtained representative samples for visual classification and laboratory testing. The logs of the borings are presented on Figures A-1 through A-9 in Appendix A. The soil encountered in the borings was classified in accordance with the classification chart shown on Figure A-10.

Soil samples were obtained using the following samplers:

- Sprague and Henwood (S&H) split-barrel sampler with a 3.0-inch outside diameter and 2.5-inch inside diameter, lined with 2.43-inch inside diameter brass/stainless steel tubes.
- Standard Penetration Test (SPT) split-barrel sampler with a 2.0-inch outside and 1.5-inch inside diameter, without liners.

The S&H and SPT samplers were driven with a 140-pound automatic hammer falling 30 inches per drop. The samplers were driven up to 18 inches and the hammer blows required to drive the samplers were recorded every six inches and are presented on the boring logs. A "blow count" is defined as the number of hammer blows per six inches of penetration or 50 blows for six inches or less of penetration. The blow counts used for this conversion were: (1) the last two blow counts if the sampler was driven more than 12 inches, (2) the last one blow count if the sampler was driven more than six inches but less than 12 inches, and (3) the only blow count if the sampler was driven six inches or less. The blow counts required to drive the S&H and SPT samplers were converted to approximate SPT N-values using factors of 0.84 and 1.44, respectively, to account for sampler type and approximate hammer energy. The converted SPT N-values are presented on the boring logs.

Upon completion, the boreholes were backfilled with neat cement grout in accordance with SMCEHSD grouting guidelines. The soil cuttings generated by the borings were placed on the ground next to each boring location. Straw wattles were placed and staked around the soil cuttings at each boring location to reduce silt content in surface water runoff that comes in contact with the cuttings.

3.2 Laboratory Testing

We re-examined each soil sample obtained from our borings to confirm the field classifications and select representative samples for laboratory testing. Soil samples were tested to measure moisture content, dry density, Atterberg limits, grain-size distribution, resistance value (R-value), and corrosivity. The results of the laboratory tests are presented on the boring logs and in Appendix B.

4.0 SITE AND SUBSURFACE CONDITIONS

4.1 Site Conditions

The subject property encompasses an area of 10.875 acres of vacant land. It is bordered by a combination of single-family homes and vacant land to the north and east, single-family homes

to the south, and Carlos Street to the west. The site slopes up gently to moderately to the east/northeast except for a north-facing slope along the northern side of the site, which slopes moderately down to the north, and some localized flat areas near the center and eastern portions of the site. Ground surface elevations across the site range from about 95 feet (datum unknown) along the northern edge of the site to about 205 feet along the eastern edge of the site. The inclinations of on-site slopes are generally 5:1 (horizontal:vertical) or flatter, except in localized areas and along the northern and southern property lines where the slope inclinations are as steep approximately 3:1.

There are numerous concrete slabs along with low concrete retaining walls that are remnants from previous military buildings that were part of a World War II training facility that occupied the site around 1945. The site was also previously used as a school and a fire training facility for firefighters. Heavy vegetation, including numerous mature trees and shrubs, occupies much of the site outside the limits of the concrete slabs. Notable hydrophilic plants (pampas grass) are abundant on the eastern part of the lower terrace; these pampas grass likely grows where surface run off from the relatively steeper and impermeable upper terrace accumulates within the relatively thicker soil and low-angle down-slope terrace deposits.

Easements for the Montara Water and Sanitary District (MWSD) and Pacific Gas & Electric (PG&E) utilities extend along the unpaved roadways within the property. MWSD infrastructure on the site includes water storage tanks in the southeastern portion of the site, a booster pump system, and distribution facilities with a fenced-in parcel of land adjacent to and west of the intersection of Lincoln Street and Buena Vista Street near the eastern boundary of the property.

According to a Limited Phase II Subsurface Investigation report prepared by AEI Consultants, dated February 15, 2017, there are records of two water wells on the site. One well, referred to as the “upper well”, was found along the northern edge of the site; however, the second well could not be located. It is not known whether either of these wells was properly abandoned in accordance with local regulations.

4.2 Site Geology and Subsurface Conditions

The geologic units in the site vicinity are mapped as Quaternary (1.6 million years [Ma] to recent) alluvial fan (Qf) and marine terrace deposits (Qmt) and Cretaceous (145 to 65 Ma) Montara Mountain granitic rocks (Kgr) of the Salinian Complex (Brabb *et al*., 1983; Wagner *et al*.,1990 and Brabb *et al*.,1998). The site locality is shown lying in part, on marine terrace deposits (Qmt) in the eastern half and granitic rocks (Kgr) in the western half (Brabb *et al*.,1998), as shown on Figure 2A.

Our borings indicate there is up to 3-1/2 feet of undocumented fill consisting of medium stiff sandy clay or medium dense clayey sand with varying amounts of gravel in localized areas of the site. Beneath the fill is stiff to hard clay and sandy clay interbedded with medium dense to very dense clayey sand and sand with clay that extend to the top of bedrock, where encountered, or to the maximum depths explored. Atterberg limits tests indicate the soil underlying the site has low plasticity and, therefore, has low expansion potential.

During our subsurface exploration and reconnaissance, we encountered granitic bedrock in the western part of the site (Borings B-2, B-5, B-6, B-7, B-9, and B-10) at depths of greater than 17.5 feet bgs and at the eastern part of the site (Borings B-3, B-4, and B-8) as shallow as 4.5 feet bgs. More specifically, the depth to granitic bedrock increased from east to west between Borings B-8 and B-7 from 8.5 feet bgs to greater than 25 feet bgs, respectively, and within B-3 and B-2 from 4.5 feet bgs to greater than 21 feet bgs, respectively; this suggests a relatively steeply westward dipping bedrock surface that bisects the site from north to south that is overlain by shallow (4.5 to 8.5 feet) terrace deposits in the eastern part and thicker (>17 feet) terrace deposits in the western part of the property. We interpret that the relatively steeply dipping bedrock surface is perhaps a buried and eroded paleoseacliff that is separating two different age marine terrace surfaces. Borings B-3, B-4 and B-8 are located on the outer (western) edge of a older and eroded marine terrace surface and the western borings (Borings B-2, B-5, B-6, B-7, B-9, and B-10) lie on the eastern part of the younger terrace in an area where more accumulation of colluvium and alluvium has occurred.

4.3 Groundwater Conditions

Groundwater was not encountered in our borings which were drilled to depths up to 26.5 feet bgs. The AEI report referenced above indicates "standing and static water levels" were measured in an on-site water well depths of 168 and 35 feet, respectively, in June 1986. The depth to groundwater is expected to fluctuate several feet seasonally, depending on the amount of rainfall.

5.0 SEISMIC CONSIDERATIONS

5.1 Regional Seismicity

The site is located in the Coast Ranges Geomorphic Province of California that is characterized by northwest-trending valleys and ridges. These topographic features are controlled by folds and faults that resulted from the collision of the Farallon plate and North American plate and subsequent strike-slip faulting along the San Andreas Fault system. The San Andreas Fault is more than 600 miles long from Point Arena in the north to the Gulf of California in the south. The Coast Ranges Geomorphic Province is bounded on the east by the Great Valley and on the west by the Pacific Ocean.

The geologic structure in the site vicinity is dominated by the Seal Cove Fault which is believed to be the onshore-strand of the greater Holocene-active San Gregorio Fault. The San Gregorio Fault extends for about 143 miles from the Big Sur region south of Monterey Bay and northward to where it merges with the San Andreas Fault System near Bolinas Bay north of San Francisco. Continuing activity along the Seal Cove Fault is revealed by a northwestward striking fault scarp that offsets the young Half Moon Bay Terrace near the Half Moon Bay Airport approximately three quarters of mile to the south of the site.

The major active faults in the area are the San Gregorio, San Andreas, and Hayward faults. These and other faults in the region are shown on the Regional Fault Map, Figure 3. For these and other active faults within a 50-kilometer radius of the site, the distance and direction from

the site, and characteristic moment magnitude[1] [Petersen et al. (2014) & Thompson et al. (2016)] are summarized in Table 1. These references are based on the Third Uniform California Earthquake Rupture Forecast (UCERF3), prepared by Field et al. (2013).

TABLE 1
Regional Faults and Seismicity

Fault Segment	Approximate Distance from Site (km)	Direction from Site	Mean Characteristic Moment Magnitude
San Gregorio North	0.2	West	7.44
Total North San Andreas (SAO+SAN+SAP+SAS)	11	East	8.04
North San Andreas (Peninsula, SAP)	11	East	7.38
Monte Vista - Shannon	19	East	7.14
Butano	28	Southeast	6.93
Total Hayward + Rodgers Creek (RC+HN+HS+HE)	40	East	7.58
Hayward (South, HS)	40	East	7.00
Hayward (North, HN)	41	Northeast	6.90
Zayante – Vergeles (2011 CFM)	42	Southeast	7.48
North San Andreas (North Coast, SAN)	42	North	7.52

Since 1800, four major earthquakes have been recorded on the San Andreas Fault. In 1836, an earthquake with an estimated maximum intensity of VII on the Modified Mercalli (MM) scale occurred east of Monterey Bay on the San Andreas Fault (Toppozada and Borchardt 1998). The estimated Moment magnitude, M_w, for this earthquake is about 6.25. In 1838, an earthquake occurred with an estimated intensity of about VIII-IX (MM), corresponding to an M_w of about 7.5. The San Francisco Earthquake of 1906 caused the most significant damage in the history of

[1] Moment magnitude (M_w) is an energy-based scale and provides a physically meaningful measure of the size of a faulting event. Moment magnitude is directly related to average slip and fault rupture area.

the Bay Area in terms of loss of lives and property damage. This earthquake created a surface rupture along the San Andreas Fault from Shelter Cove to San Juan Bautista approximately 470 kilometers in length. It had a maximum intensity of XI (MM), an M_w of about 7.9, and was felt 560 kilometers away in Oregon, Nevada, and Los Angeles. The most recent earthquake to affect the Bay Area was the Loma Prieta Earthquake of 17 October 1989 with an M_w of 6.9. This earthquake occurred in the Santa Cruz Mountains about 58 kilometers southwest of the site.

In 1868, an earthquake with an estimated maximum intensity of X on the MM scale occurred on the southern segment (between San Leandro and Fremont) of the Hayward Fault. The estimated M_w for the earthquake is 7.0. In 1861, an earthquake of unknown magnitude (probably an M_w of about 6.5) was reported on the Calaveras Fault. The most recent significant earthquake on this fault was the 1984 Morgan Hill earthquake (M_w of 6.2).

As a part of the UCERF3 project, researchers estimated that the probability of at least one $M_w \geq 6.7$ earthquake occurring in the greater San Francisco Bay Area during a 30-year period (starting in 2014) is 72 percent. The highest probabilities are assigned to sections of the Hayward (South), Calaveras (Central), and the North San Andreas (Santa Cruz Mountains) faults. The respective probabilities are approximately 25, 21, and 17 percent.

5.2 Geologic Hazards

Because the project site is in a seismically active region, we evaluated the potential for earthquake-induced geologic hazards including ground shaking, ground surface rupture, liquefaction,[2] lateral spreading,[3] and cyclic densification[4]. We used the results of our field investigation to evaluate the potential of these phenomena occurring at the project site.

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[2] Liquefaction is a phenomenon where loose, saturated, cohesionless soil experiences temporary reduction in strength during cyclic loading such as that produced by earthquakes.

[3] Lateral spreading is a phenomenon in which surficial soil displaces along a shear zone that has formed within an underlying liquefied layer. Upon reaching mobilization, the surficial blocks are transported downslope or in the direction of a free face by earthquake and gravitational forces.

[4] Cyclic densification is a phenomenon in which non-saturated, cohesionless soil is compacted by earthquake vibrations, causing ground-surface settlement.

5.2.1 Ground Shaking

The seismicity of the site is governed by the activity of the nearby San Gregorio Fault, although ground shaking from future earthquakes on other faults, including the San Andreas and Hayward faults, will also be felt at the site. The intensity of earthquake ground motion at the site will depend upon the characteristics of the generating fault, distance to the earthquake epicenter, and magnitude and duration of the earthquake. We judge that strong to very strong ground shaking could occur at the site during a large earthquake on one of the nearby faults.

5.2.2 Ground Surface Rupture

The active Seal Cove part of San Gregorio Fault system lies approximately 0.4 miles south of the site. Several subsidiary splays of the Seal Cove Fault have been mapped sub-parallel and to the northeast of Seal Cove Fault that project toward the site from the southeast; however, the California Geological Survey (CGS) has concluded that these subsidiary splays are not Holocene active and extensive trench studies to the southeast of the site suggest that these fault traces do not strike through the site (CGS, 2003).

Historically, ground surface displacements closely follow the trace of geologically young faults. The site is not within an Earthquake Fault Zone, as defined by the Alquist-Priolo Earthquake Fault Zoning Act, and no known active or potentially active faults exist on the site. We therefore conclude the risk of fault offset at the site from a known active fault is very low. In a seismically active area, the remote possibility exists for future faulting in areas where no faults previously existed; however, we conclude the risk of surface faulting and consequent secondary ground failure from previously unknown faults is also very low.

5.2.3 Liquefaction and Associated Hazards

When a saturated, cohesionless soil liquefies, it experiences a temporary loss of shear strength created by a transient rise in excess pore pressure generated by strong ground motion. Soil susceptible to liquefaction includes loose to medium dense sand and gravel, low-plasticity silt, and some low-plasticity clay deposits. Flow failure, lateral spreading, differential settlement, loss

of bearing strength, ground fissures and sand boils are evidence of excess pore pressure generation and liquefaction. The project site is **not** located within a zone of liquefaction potential on the map titled *Earthquake Zones of Required Investigation, Montara Mountain Quadrangle*, dated April 4, 2019, and shown on Figure 4.

The site is underlain by stiff to very stiff cohesive soil and medium dense to dense clayey sand and sand with clay that is not susceptible to liquefaction because of its cohesion and/or its high relative density. Further, it appears the depth to groundwater is more than 30 feet bgs. Therefore, we conclude the potential for liquefaction and liquefaction-related hazards, such as lateral spreading, is nil.

5.2.4 Cyclic Densification

Cyclic densification (also referred to as differential compaction) of non-saturated sand (sand above groundwater table) can occur during an earthquake, resulting in settlement of the ground surface and overlying improvements. We used the data from our borings to evaluate the potential for settlement due to cyclic densification within the soil above the water table. The results of our investigation indicate the soil encountered above the groundwater table has sufficient cohesion and/or sufficiently high relative density, such that the potential for cyclic densification to occur at the site is nil.

5.2.5 Landslide Hazards

To evaluate the potential for landslides to occur on the site, we performed a geologic reconnaissance and reviewed available published maps showing mapped existing landslides in San Mateo County. A portion of a landslide map prepared by Brabb and Pampeyan (1972) is attached (Figure 5). No evidence of landslides, slope instability, or erosional issues was observed during the geologic reconnaissance.

On the basis of our geologic reconnaissance and the findings from our subsurface investigation, we conclude the potential for landsliding at the site under both static and seismic conditions is low because of the lack of evidence of historic slope instability on the site, the high shear

strength of the soil and weathered bedrock underlying the site and the apparent absence of any significant seepage on the slope faces. Further, we conclude construction of the proposed improvements will not impact slope stability at the site or in the surrounding area provided the grading and construction of improvements are performed in accordance with the recommendations presented in this report. Therefore, in our opinion, no slope instability mitigation measures are required for this project.

6.0 DISCUSSION AND CONCLUSIONS

From a geotechnical standpoint, we conclude the site can be developed as planned, provided the recommendations presented in this report are incorporated into the project plans and specifications and implemented during construction. The primary geotechnical concern at the site is the presence of undocumented fill and unknown buried foundations and utility lines from the previous site development, as well as the likely presence of large tree roots beneath some of the proposed improvements. Our conclusions and recommendations for this and other geotechnical aspects of the project are presented in this section.

6.1 Foundation Support and Settlement

The results of our investigation indicate the native soil underlying the site has moderate to high strength and low compressibility and, therefore, is capable of supporting the proposed structures on conventional spread footings. For conventional spread footings to be feasible, however, it will be necessary to overexcavate and recompact any existing undocumented fill beneath and within five horizontal feet from proposed buildings. We estimate settlement of buildings supported on spread footings bearing on stiff native soil and/or properly compacted fill will be less than 1/2 inch and differential settlement will be less than 1/4 inch over a horizontal distance of 30 feet.

6.2 Construction Considerations

The soil to be excavated consists primarily of clay and clayey sand, which can be excavated with conventional earth-moving equipment such as loaders and backhoes. If site grading is performed during the rainy season, repeated loads by heavy equipment will reduce the strength of the

surficial soil and decrease its ability to resist deformation; this phenomenon could result in severe rutting and pumping of the exposed subgrade. To reduce the potential for this behavior, heavy rubber-tired equipment as well as vibratory rollers, should be avoided during the rainy season.

6.3 Soil Corrosivity

Corrosivity testing was performed by Project X Corrosion Engineering of Murrieta, California on samples of soil obtained during our field investigation from Boring B-2 at a depth of four feet bgs and from Boring B-6 at a depth of two feet bgs. The results of the tests are presented in Appendix B of this report.

The resistivity test results (7,370 and 5,963 ohm-cm) indicate the near-surface soil is "moderately corrosive[5]" to buried metallic structures. Accordingly, buried iron, steel, cast iron, galvanized steel, and dielectric-coated steel or iron should be properly protected against corrosion. The results of the pH tests (8.4 and 7.5) indicate the near-surface is "negligibly" corrosive to buried metallic and concrete structures. The chloride ion concentrations (84 and 156 mg/kg) indicate the chlorides in the near-surface soil are "negligibly to mildly corrosive" to buried metallic structures and reinforcing steel in concrete structures below ground. The results also indicate the sulfate ion concentrations (30 and 210 mg/kg) are sufficiently low such that sulfates do not to pose a threat to buried concrete.

7.0 RECOMMENDATIONS

Our recommendations for site preparation and grading, design of foundations and retaining walls, pavement design, seismic design, and other geotechnical aspects of the project are presented in this section.

[5] Roberge, Pierre R. (2018). *Corrosion Basics, an Introduction, Third Edition*. NACE International, P. 189.

7.1 Site Preparation and Grading

Site clearing should include removal of existing foundations, slabs, pavements, and underground utilities, if present. In general, abandoned underground utilities should be removed to the property line or service connections and properly capped or plugged with concrete. Where existing utility lines are outside of the footprint of the proposed improvements and will not interfere with the proposed construction, they may be abandoned in-place provided the lines are filled with lean concrete or cement grout to the property line. Voids resulting from demolition activities should be properly backfilled with engineered fill following the recommendations provided later in this section. Any vegetation and the upper 2 to 3 inches of organic topsoil should be stripped in areas to receive improvements (i.e., building, pavement, or flatwork). Stripped organic soil, if any, can be placed in future landscaped areas. Tree roots larger than 1/2 inch in diameter within three feet of the existing ground surface beneath the proposed buildings should also be removed.

After site clearing is completed, the proposed building pads should be excavated to a depth of at least three feet below existing site grades. In proposed pavement and flatwork areas, the overexcavation depth should be at least 18 inches below existing site grades. The excavations should extend at least five feet beyond the perimeters of the proposed buildings, except where constrained by property lines or existing utilities. The excavations should extend at least one foot beyond the edges of proposed pavements and flatwork. The exposed subgrade at the base of the excavations should be scarified to a depth of at least eight inches, moisture-conditioned to above optimum moisture content, and compacted to at least 92 percent relative compaction[6]. The excavated material and imported select fill, if needed, should then be placed in lifts not exceeding eight inches in loose thickness, moisture-conditioned to above optimum moisture content, and compacted to at least 92 percent relative compaction beneath buildings and at least 90 percent below pavements and flatwork.

[6] Relative compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density of the same material, as determined by the ASTM D1557 laboratory compaction procedure.

Subgrade soil or general fill consisting of clean sand or gravel (defined as soil with less than five percent fines by weight) should be compacted to at least 95 percent relative compaction. Soil subgrade for vehicular pavements should be compacted to at least 95 percent relative compaction and be non-yielding. The soil subgrade should be kept moist until it is covered by fill for improvements.

Excavations should be backfilled with properly compacted fill. Fill should consist of on-site soil or imported soil (select fill) that is free of organic matter (including roots larger than 1/2 inch in diameter), contains no rocks or lumps larger than three inches in greatest dimension, and is approved by the Geotechnical Engineer. Select fill should also have a liquid limit of less than 40 and a plasticity index lower than 15. Samples of proposed imported fill material should be submitted to the Geotechnical Engineer at least three business days prior to use at the site. The grading contractor should provide analytical test results or other suitable environmental documentation indicating the imported fill is free of hazardous materials at least three days before use at the site. If this data is not available, up to two weeks should be allowed to perform analytical testing on the proposed imported material.

7.1.1 Utility Trench Backfill

Excavations for utility trenches can be readily made with a backhoe. All trenches should conform to the current CAL-OSHA requirements. To provide uniform support, pipes or conduits should be bedded on a minimum of four inches of clean sand or fine gravel. After the pipes and conduits are tested, inspected (if required) and approved, they should be covered to a depth of six inches with sand or fine gravel, which should be mechanically tamped. Backfill for utility trenches and other excavations is also considered fill, and should be placed and compacted according to the recommendations previously presented. If imported clean sand or gravel (defined as soil with less than five percent fines) is used as backfill, it should be compacted to at least 95 percent relative compaction. Jetting of trench backfill should not be permitted. Special care should be taken when backfilling utility trenches in pavement areas. Poor compaction may cause excessive settlements, resulting in damage to the pavement section.

7.1.2 Temporary and Permanent Slopes

Excavations that will be deeper than five feet and will be entered by workers should be sloped or shored in accordance with CAL-OSHA standards (29 CFR Part 1926). The contractor should be responsible for the construction and safety of temporary slopes. We judge temporary slopes excavated in the near-surface clay and clayey sand with a maximum inclination of 1:1 (horizontal to vertical) should be stable, provided the slope is not surcharged by adjacent structures, construction equipment, or stockpiled soil. If granular soil is encountered, however, flatter slopes will be required.

Permanent cut and fill slopes should be constructed at gradients no steeper than 2:1 (horizontal:vertical). If fills will be placed on existing slopes within an inclination steeper than 5:1, the slopes should be constructed with a keyway at least 10 feet wide and founded at least four feet into competent soil on the downslope side. The need for installing a subdrain in keyways will be assessed once grading plans are available. Fill slopes should be overbuilt two feet and cut back to exposed a firm compacted surface.

7.1.3 Erosion Control

Areas disturbed by grading should be protected against erosion during rainfall events. The bare portions of cut and fill slopes should be planted with deep-rooted, fast growing vegetation prior to winter. The surface slopes should be rolled to create a firm slope surface. The finished surface should be covered with appropriate erosion matting or hydro-seeded. Best Management Practices (BMP's) should be implemented to prevent silt from entering the storm drains during and after construction.

7.1.4 Drainage and Landscaping

Positive surface drainage should be provided around the building to direct surface water away from the foundations. To reduce the potential for water ponding adjacent to the buildings, we recommend the ground surface within a horizontal distance of five feet from the building slope down away from the building with a surface gradient of at least two percent in unpaved areas and

one percent in paved areas. In addition, roof downspouts should be discharged into controlled drainage facilities to keep the water away from the foundations. The use of water-intensive landscaping around the perimeter of the buildings should be avoided to reduce the amount of water introduced to the near-surface clay.

Care should be taken to minimize the potential for subsurface water to collect beneath non-permeable pavements and pedestrian walkways. Where landscape beds and tree wells are immediately adjacent to pavements and flatwork which are not designed as permeable systems, we recommend vertical cutoff barriers be incorporated into the design to prevent irrigation water from saturating the subgrade and aggregate base. These barriers may consist of either flexible impermeable membranes or deepened concrete curbs.

7.1.5 Bio-Retention Areas

The primary concerns with the proposed bio-retention areas are: 1) providing suitable support for foundations and curbs constructed near the bio-retention areas, and 2) potential for subsurface water from the bio-retention areas to migrate (and possibly build up) beneath pavements and proposed buildings. Consequently, we recommended that bio-retention features constructed at the site be provided with underdrains and/or drain inlets. In addition, we recommend bio-retention features, such as bioswales, be constructed no closer than five feet from buildings or pavements. If it is necessary to construct bio-retention features within five horizontal feet of buildings or pavements, the features should be constructed with an impermeable membrane at least 15 mils thick. Unlined bio-retention features should not be constructed on slopes steeper than 5:1. Bio-retention features may be constructed on slopes steeper than 5:1 provided they are lined with an impermeable membrane.

Due to the low permeability of the on-site near-surface soil, these systems should be designed for *no exfiltration* into the subgrade soil. The drainage layer beneath the “treatment” soil should consist of a minimum 12-inch-thick layer of Caltrans Class 2 Permeable drainage material and include a minimum 4-inch-diameter perforated drain pipe placed with the perforations facing downward. An impermeable liner consisting of a high-density polyethylene liner (or equivalent)

that is at least 15 mils thick should line the entire bottom and sides of the system, where required. The sides of bioswales should be sloped at a maximum gradient of 2:1 above the gravel layer. The sides of the bioswales may be cut vertical where they are adjacent to the gravel layer.

Where a vertical curb or foundation is constructed near a bio-retention area, the curb and the edge of the foundations should be founded below an imaginary line extending up at an inclination of 1.5:1 (horizontal: vertical) from the base of the bio-retention area.

7.2 Spread Footings

The proposed structures, including site retaining walls, may be supported on conventional spread footings bottomed in stiff, undisturbed native soil and/or properly compacted fill. Continuous footings should be at least 16 inches wide. Footings should bottom at least 18 inches below the lowest adjacent exterior grade or 12 inches below the bottom of the capillary break, whichever is deeper. If footings will be constructed on sloping ground or on level ground near slopes, the footings should be bottomed at a depth such that the face of the footing, measured at the footing bottom, is at least seven feet from the face of the slope. Footings for buildings, retaining walls, and other improvements may be designed using allowable bearing pressures of 3,000 psf for dead-plus-live loads and 4,000 psf for total design loads, which include wind or seismic forces.

Lateral loads may be resisted by a combination of passive pressure on the vertical faces of the footings and friction between the bottoms of the footings and the supporting soil. To compute lateral resistance for transient and sustained loads, we recommend using a uniform pressure of 1,500 psf and an equivalent fluid weight (triangular distribution) of 270 pcf, respectively. The upper foot of soil should be ignored unless confined by a slab or pavement. Frictional resistance should be computed using a base friction coefficient of 0.30. The passive pressure and frictional resistance values include a factor of safety of at least 1.5.

In general, we recommend all footings be founded below an imaginary plane extending up at an inclination of 1.5:1 (horizontal:vertical) from the base of any vault, utility trench, bioswale/ storm water treatment area, etc. If the design footing depth is above this plane, the footing can

either be deepened, or over-excavated below the line and replaced with lean concrete (200 psi minimum) to make up the difference.

Footing excavations should be free of standing water, debris, and disturbed materials prior to placing concrete. The bottoms and sides of the excavations should be moistened following excavation and maintained in a moist condition until concrete is placed. We should check footing excavations prior to placement of reinforcing steel to check for proper bearing and cleanout.

7.3 Concrete Slab-on-Grade Floor

If water vapor moving through the building floor slabs is considered detrimental, we recommend installing a capillary moisture break and water vapor retarder beneath the floor slabs. A capillary moisture break consists of at least four inches of clean, free-draining gravel or crushed rock. The particle size of the capillary break material should meet the gradation requirements presented in Table 2.

TABLE 2
Gradation Requirements for Capillary Moisture Break

Sieve Size	Percentage Passing Sieve
1 inch	90 – 100
¾ inch	30 – 100
½ inch	5 – 25
3/8 inch	0 – 6

The vapor retarder should meet the requirements for Class B vapor retarders stated in ASTM E1745. The vapor retarder should be placed in accordance with the requirements of ASTM E1643. These requirements include overlapping seams by six inches, taping seams, and sealing penetrations in the vapor retarder.

Concrete mixes with high water/cement (w/c) ratios result in excess water in the concrete, which increases the cure time and can result in excessive vapor transmission through the slab. Where the concrete is poured directly over the vapor retarder, we recommend the w/c ratio of the

concrete not exceed 0.45. Water should not be added to the concrete mix in the field. If necessary, workability should be increased by adding plasticizers. In addition, the slab should be properly cured. Before the floor covering is placed, the contractor should check that the concrete surface and the moisture emission levels (if emission testing is required) meet the manufacturer's requirements.

7.4 Exterior Concrete Flatwork

Exterior concrete flatwork that will not receive vehicular traffic (i.e. sidewalk) should be underlain by at least four inches of Class 2 aggregate base compacted to at least 90 percent relative compaction. Prior to placement of the aggregate base, the upper eight inches of the subgrade soil should be scarified, moisture-conditioned to above optimum moisture content, and compacted to at least 90 percent relative compaction.

7.5 Retaining Walls

Retaining walls should be designed to resist static lateral earth pressures, lateral pressures caused by earthquakes, and traffic loads (if vehicular traffic is expected within a horizontal distance equal to 1.5 times the wall height). All on-site walls, including low retaining walls in landscaped areas, should be designed in accordance with the recommendations presented in this section, although checking the walls for seismic loading is not required for walls less than six feet high. Retaining walls that are restrained from movement at the top or sides (e.g., a wall with a 90-degree turn) should be designed using the at-rest pressure presented in Table 3. Walls that are not restrained from rotation may be designed using the active pressure presented in Table 3.

TABLE 3
Lateral Earth Pressures for Retaining Wall Design

Soil Backfill Type	Active Static Condition (Unrestrained)	At-Rest Static Condition (Restrained)	Seismic Condition
On-site Soil - Drained	35 pcf[1]	55 pcf	35 pcf + 14 pcf
On-site Soil - Undrained	80 pcf	90 pcf	80 pcf + 7 pcf

1. Equivalent fluid weight (triangular distribution); pcf = pounds per cubic foot

The recommended lateral earth pressures above are based on a level backfill condition with no additional surcharge loads. If the retained soil will be sloped, we can provide additional recommendations after the degree to which the soil will be sloped has been determined. Where the below-grade walls are subject to traffic loading within a horizontal distance equal to 1.5 times the wall height, an additional uniform lateral pressure of 100 psf, applied to the entire height of the wall.

The "drained" design pressures presented Table 3 are based on fully drained walls. Although a majority of the retaining walls will be above the groundwater level, water can accumulate behind the walls from other sources, such as rainfall, irrigation, and broken water lines, etc. One acceptable method for backdraining a basement wall is to place a prefabricated drainage panel against the back of the wall. The drainage panel should extend down to a perforated PVC collector pipe at the base of the retaining wall. The pipe should be surrounded on all sides by at least four inches of Caltrans Class 2 permeable material or 3/4-inch drain rock wrapped in filter fabric (Mirafi NC or equivalent). The pipe should be connected to a suitable discharge point; a sump and pump system may be required to drain the collector pipes.

Wall backfill material and compaction should conform to the recommendations presented previously in Section 7.1 of this report. Lightweight compaction equipment should be used to reduce stresses induced on the retaining walls during fill placement unless the walls are appropriately braced.

Site retaining walls may be supported on spread footings bottomed on stiff native soil and/or properly compacted fill. The footings should be bottomed at least 18 inches below the lowest adjacent finished grade. The allowable bearing pressure, friction factor, and passive pressure presented for footings design in Section 7.2 may be used for design of site retaining walls.

7.6 Pavement Design

7.6.1 Flexible (Asphalt Concrete) Pavement Design

The State of California flexible pavement design method was used to develop the recommended asphalt concrete pavement sections. The resistance value (R-value) test results indicate the upper native soil has an R-value of approximately 29.

If the proposed pavement will experience little or no truck traffic, including garbage trucks, we recommend a traffic index (TI) of 4.5 be used for asphalt concrete pavement design. Pavement areas that will be subject to garbage truck traffic should be designed for a TI of 5.5. The project civil engineer should check that the TI's presented in this report are appropriate for the intended use. Recommended pavement sections for these traffic indices are presented in Table 4.

TABLE 4
Recommended Asphalt Concrete Pavement Sections

TI	Asphaltic Concrete (inches)	Class 2 Aggregate Base R = 78 (inches)
4.5	2.5	6.0
5.0	3.0	6.0
5.5	3.0	7.5
6.0	3.5	8.0
6.5	4.0	8.0
7.0	4.0	10.0

The upper six inches of the subgrade and the Class 2 aggregate base beneath pavements should be moisture-conditioned to above optimum moisture content and compacted to at least 95 percent relative compaction.

To prevent irrigation water from entering the pavement section, curbs adjacent to landscaped areas should extend through the base rock and at least three inches into the underlying subgrade soil. Where pavement is constructed near bio-swales or other storm water treatment areas, curbs

should be deepened so that the base is founded below an imaginary line extending up at an inclination of 1.5:1 (horizontal:vertical) from the base of the bio-swale/treatment area.

7.6.2 Rigid (Portland Cement Concrete) Pavement

Concrete pavement design is based on a maximum single-axle load of 20,000 pounds and a maximum tandem axle load of 32,000 pounds and light truck traffic (i.e., a few trucks per week). The recommended rigid pavement section for these axle loads is 6-1/2 inches of Portland cement concrete (PCC) over six inches of Class 2 aggregate base. If the concrete pavement will be subject to fire truck traffic, the PCC should be at least seven inches thick. For residential driveways, the recommended pavement section is five inches of PCC over six inches of Class 2 aggregate base.

The modulus of rupture of the concrete should be at least 500 psi at 28 days. Contraction joints should be constructed at 15-foot spacing. Where the outer edge of a concrete pavement meets asphalt concrete pavement, the concrete slab should be thickened by 50 percent at a taper not to exceed a slope of 1 in 10. For areas that will receive weekly garbage truck traffic, we recommend the slab be reinforced with a minimum of No. 4 bars at 16-inch spacing in both directions. Recommendations for subgrade preparation and aggregate base compaction for concrete pavement are the same as those we have described above for asphalt concrete pavement.

7.7 Seismic Design

We understand the proposed building will be designed using the seismic provisions in the 2019 CBC. The latitude and longitude of the site are 37.5343° and -122.5168°, respectively. Based on our borings, we recommend Site Class C (Very Dense Soil and Soft Rock) be used. Hence, in accordance with the 2019 CBC, we recommend the following:

- S_S = 2.148g, S_1 = 0.88g
- S_{MS} = 2.577g, S_{M1} = 1.232g
- S_{DS} = 1.718g, S_{D1} = 0.821g

- PGA_M = 1.16g
- Seismic Design Category E for Risk Categories I, II, and III.

8.0 ADDITIONAL GEOTECHNICAL SERVICES

Prior to construction, Rockridge Geotechnical should review the project plans and specifications to verify that they conform to the intent of our recommendations. During construction, our field engineer should provide on-site observation and testing during site preparation, placement and compaction of fill, and installation of foundations. These observations will allow us to compare actual with anticipated subsurface conditions and to verify that the contractor's work conforms to the geotechnical aspects of the plans and specifications.

9.0 LIMITATIONS

This geotechnical investigation has been conducted in accordance with the standard of care commonly used as state-of-practice in the profession. No other warranties are either expressed or implied. The recommendations made in this report are based on the assumption that the subsurface conditions do not deviate appreciably from those disclosed in the exploratory borings. If any variations or undesirable conditions are encountered during construction, we should be notified so that additional recommendations can be made. The foundation recommendations presented in this report are developed exclusively for the proposed development described in this report and are not valid for other locations and construction in the project vicinity.

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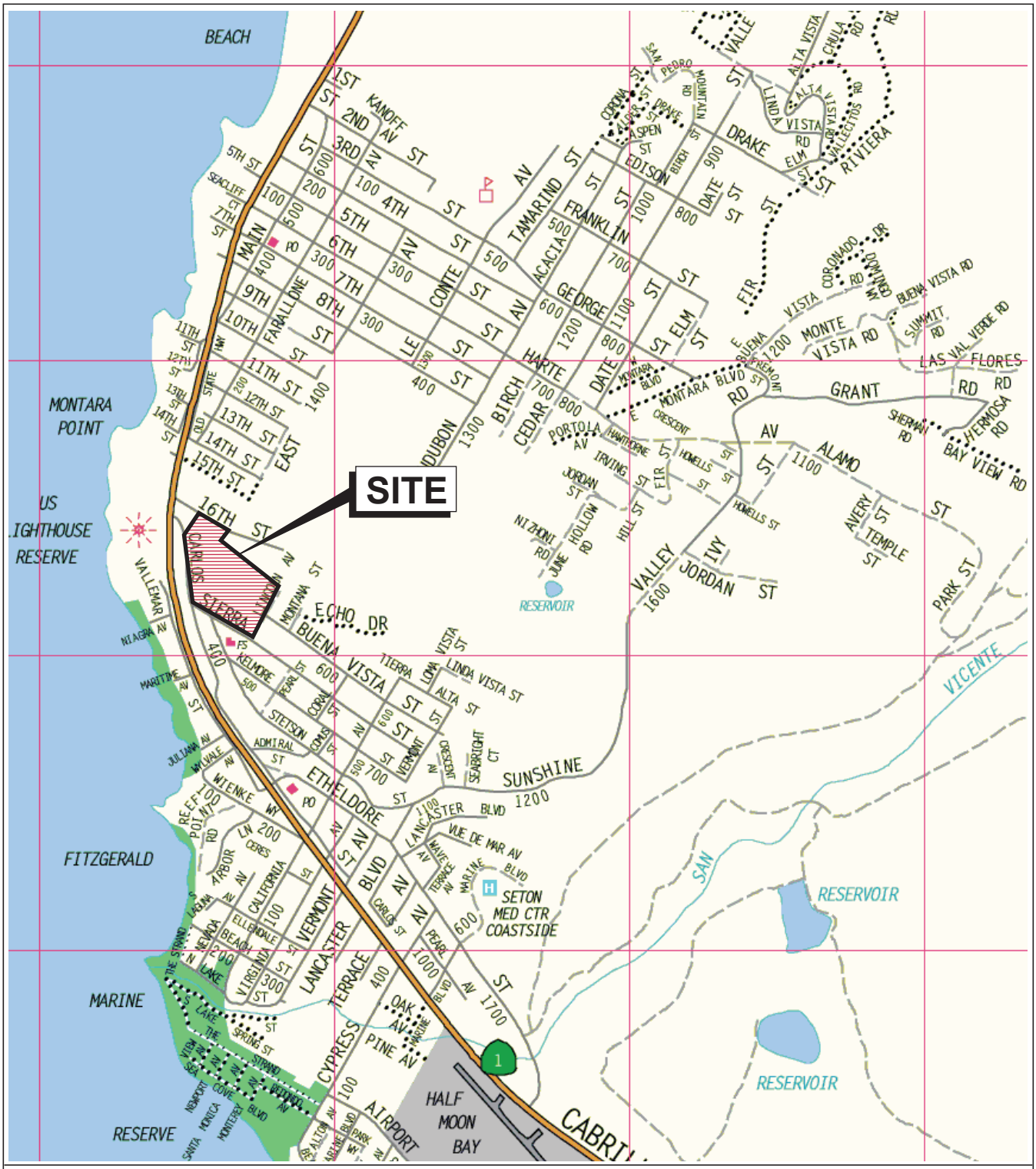
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ROCKRIDGE GEOTECHNICAL

FIGURES



Base map: The Thomas Guide
San Mateo County
2002

0 1/4 1/2 Mile

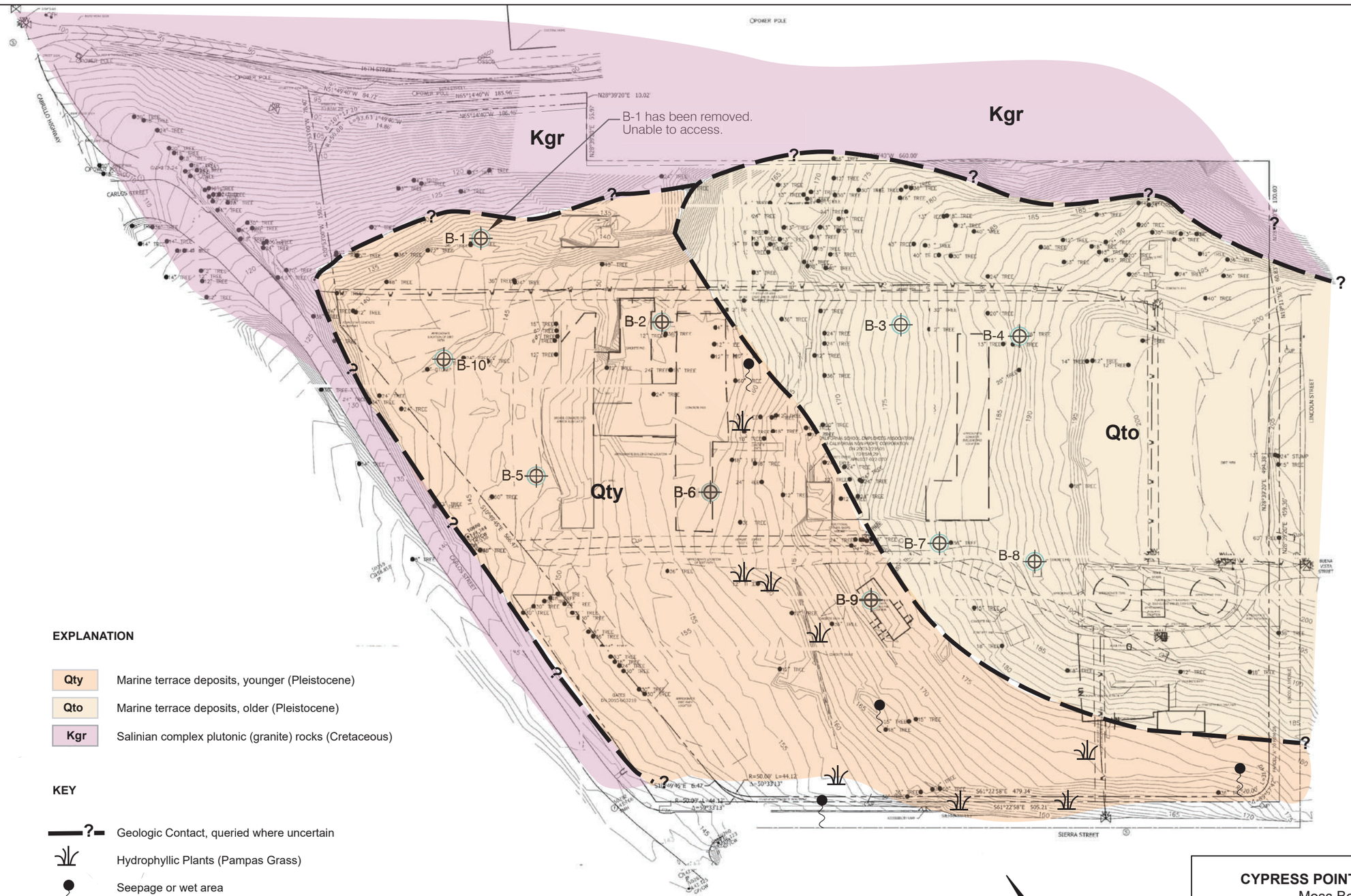
Approximate scale

CYPRESS POINT FAMILY COMMUNITY
Moss Beach, California

SITE LOCATION MAP

ROCKRIDGE GEOTECHNICAL

Date 06/27/22	Project No. 17-1286	Figure 1



EXPLANATION

Qty	Marine terrace deposits, younger (Pleistocene)
Qto	Marine terrace deposits, older (Pleistocene)
Kgr	Salinian complex plutonic (granite) rocks (Cretaceous)

KEY

- ?— Geologic Contact, queried where uncertain
- Hydrophyllic Plants (Pampas Grass)
- Seepage or wet area
- B-2 Approximate location of geotechnical boring by Rockridge Geotechnical Inc., May 11 & 12, 2017

0 100 Feet

Approximate scale

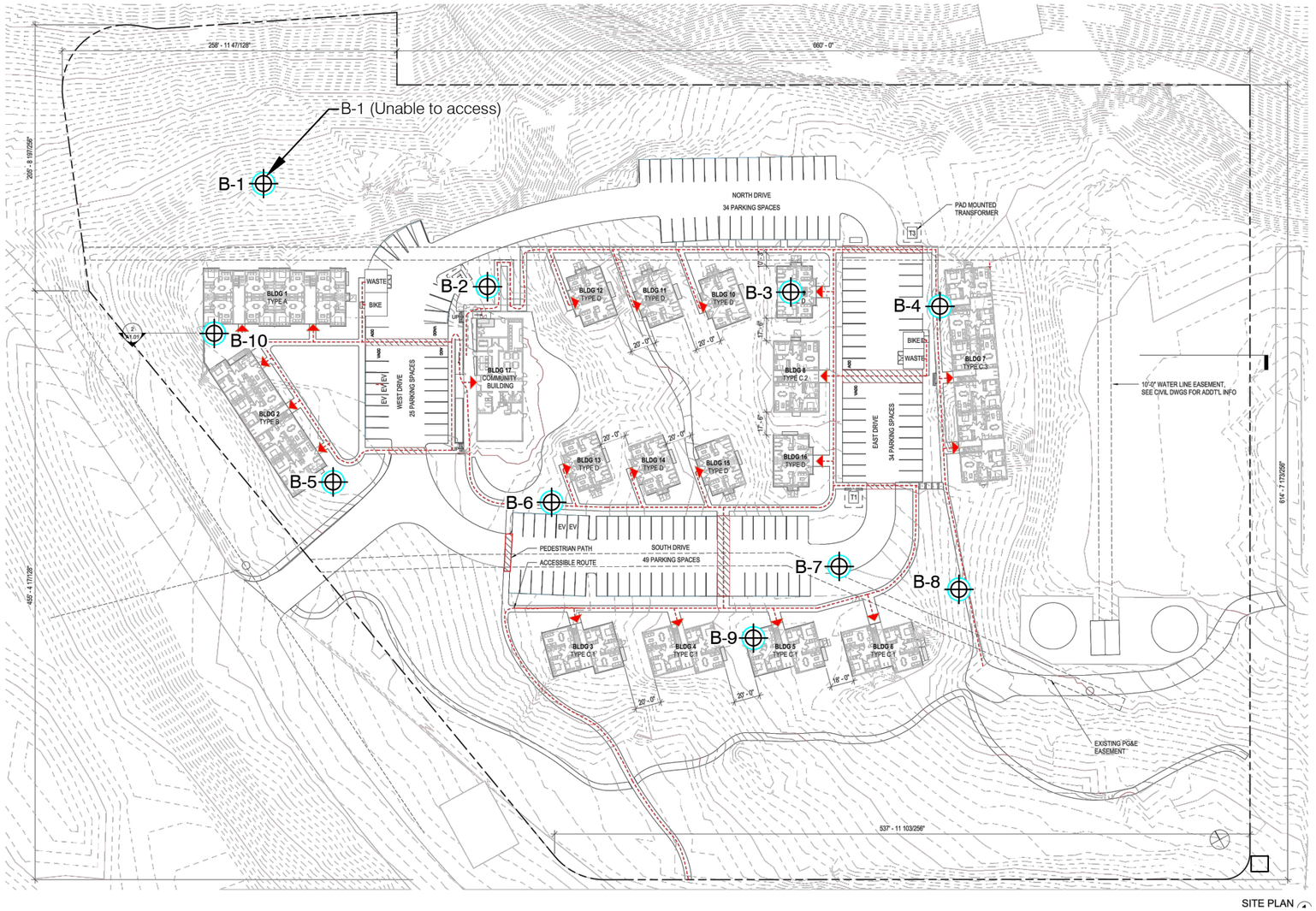
Reference: Base map from a drawing titled "Topographic Survey", by BKF, dated June 6, 2017.

CYPRESS POINT FAMILY COMMUNITY
Moss Beach, California

SITE PLAN AND GEOLOGY MAP
EXISTING BUILDING LAYOUT

Date	Project No.	Figure
06/29/22	17-1286	2A

ROCKRIDGE GEOTECHNICAL



SITE PLAN

0 100 Feet

Approximate scale

EXPLANATION

B-2 Approximate location of geotechnical boring by Rockridge Geotechnical Inc., May 11 & 12, 2017

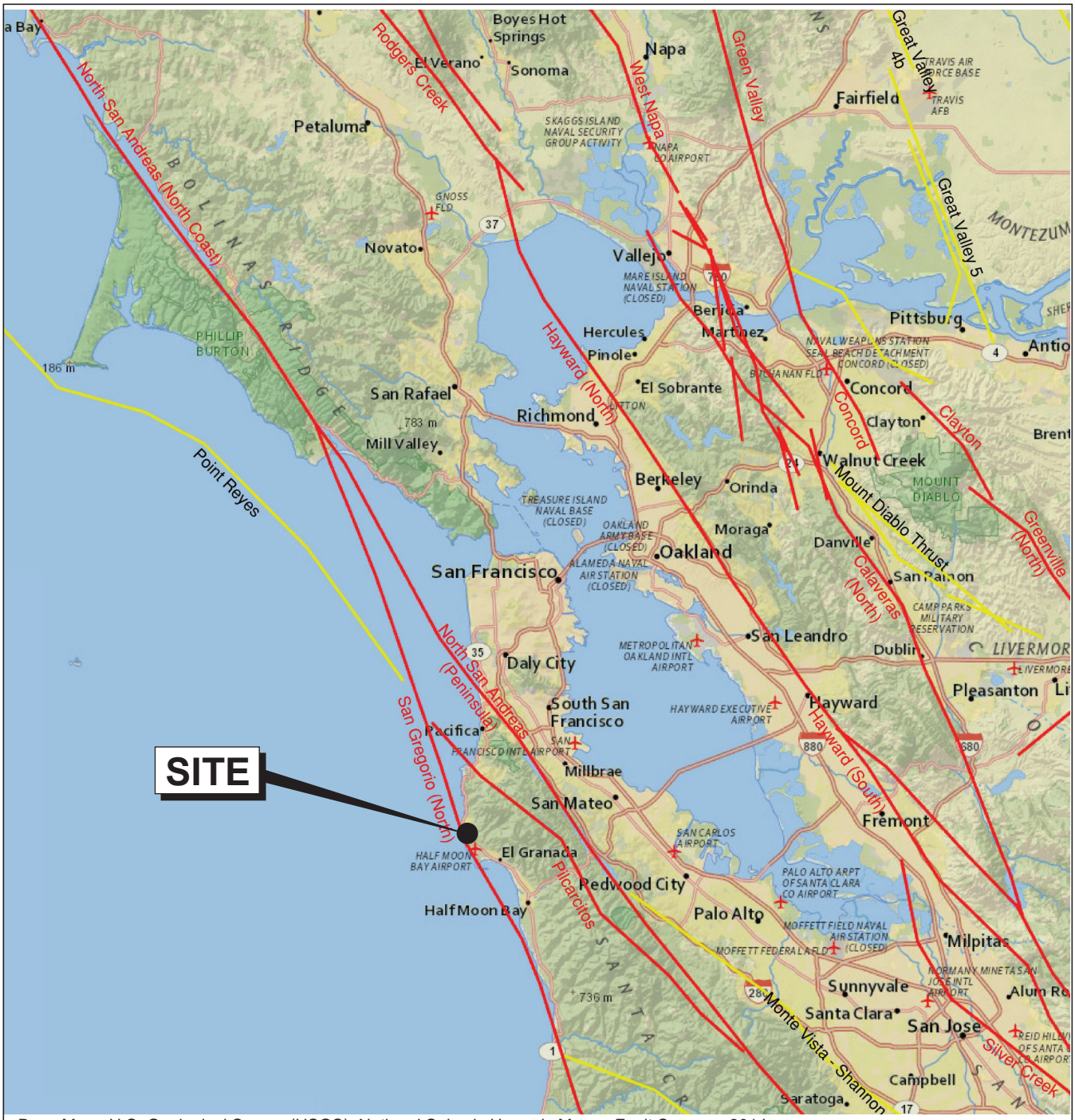
Reference: Base map from a drawing titled "Site Plan", by Pyatok, dated June 17, 2022.

CYPRESS POINT FAMILY COMMUNITY
Moss Beach, California

SITE PLAN
PROPOSED BUILDING LAYOUT

Date 06/27/22	Project No. 17-1286	Figure 2B

ROCKRIDGE GEOTECHNICAL



Base Map: U.S. Geological Survey (USGS), National Seismic Hazards Maps - Fault Sources, 2014.

EXPLANATION

Strike slip

Thrust (Reverse)

N

0 5 10 Miles

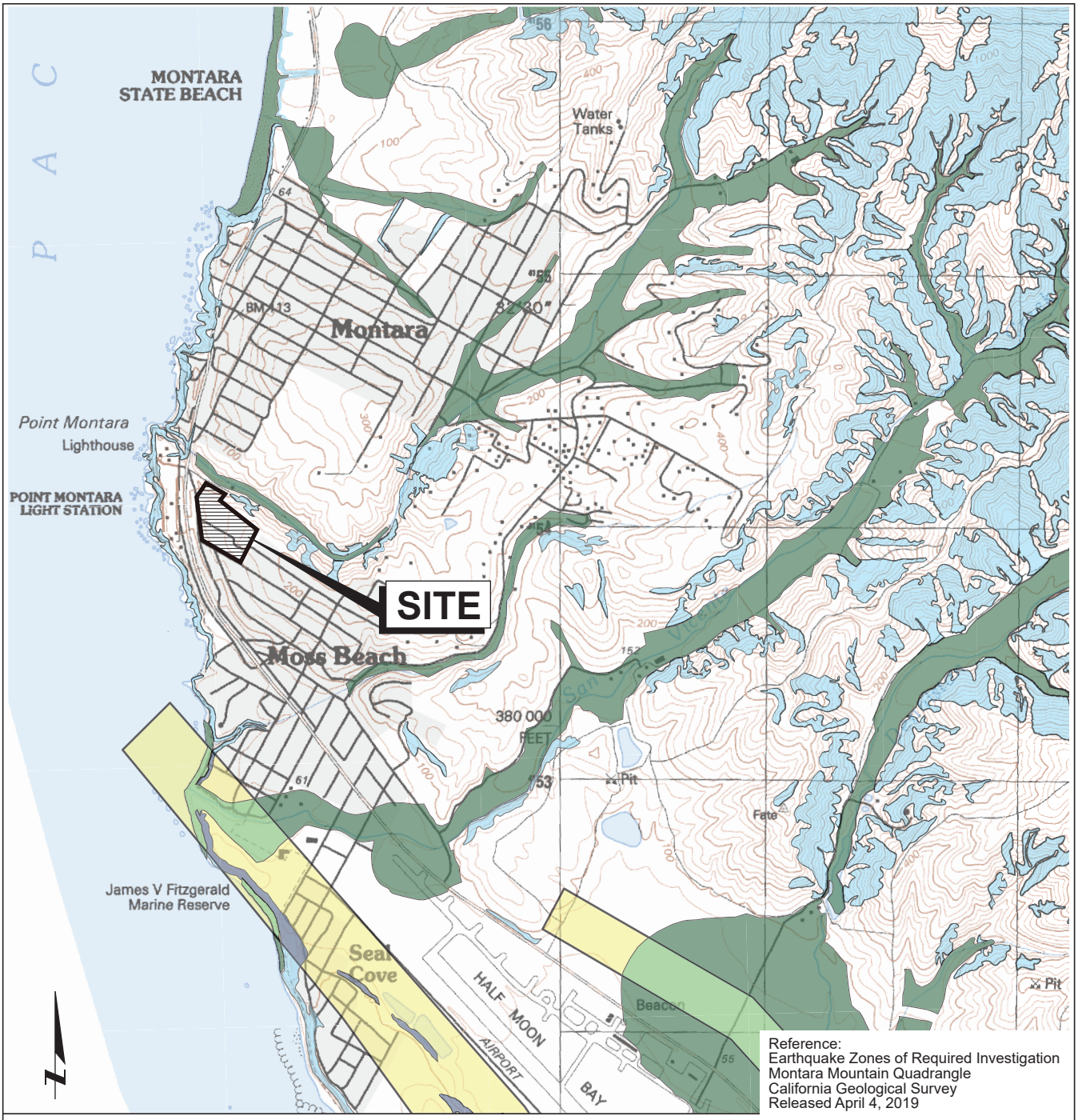
Approximate scale

CYPRESS POINT FAMILY COMMUNITY
Moss Beach, California

REGIONAL FAULT MAP

ROCKRIDGE GEOTECHNICAL

Date 06/27/22	Project No. 17-1286	Figure 3



Liquefaction Zones
Areas where historical occurrence of liquefaction, or local geological, geotechnical and ground water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Earthquake-Induced Landslide Zones
Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Earthquake Fault Zones
Zone boundaries are delineated by straight-line segments; the boundaries define the zone encompassing active faults that consititute a potential hazard to structures from surface faulting or fault creep such that avoidance as described in Public Resources Code Sections 2621.5(a) would be required.

0 2,000 4,000 Feet

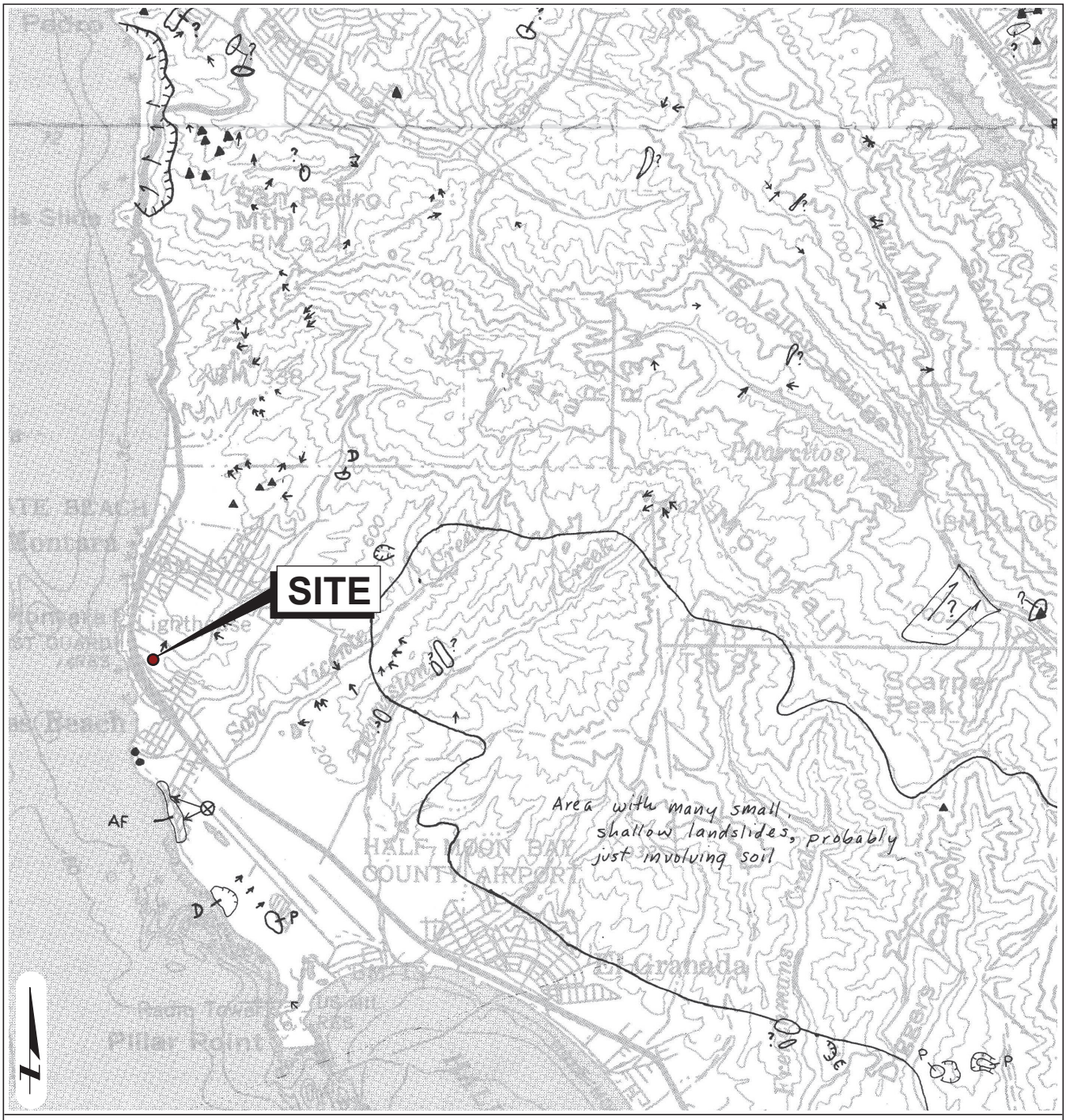
Approximate scale

CYPRESS POINT FAMILY COMMUNITY
Moss Beach, California

EARTHQUAKE ZONES OF REQUIRED INVESTIGATION MAP

ROCKRIDGE GEOTECHNICAL

Date 06/28/22	Project No. 17-1286	Figure 4



LANDSLIDE DEPOSISTS MAPPED IN THE FIELD

▲ Small landslide deposit, 50 to 500 feet in maximum dimension

FA Large landslide deposit, more than 500 feet in maximum dimension
F, mapped in field; A, active

LANDSLIDE INFORMATION FROM PUBLIC SOURCES

⊗ Subsidence of road or ground

△ Active landslide, Area greater than 100 square feet

LANDSLIDE INFORMATION FROM PRIVATE CONSULTING FIRMS

● Landslide

Reference:
Preliminary Map of landslide Deposits in San Mateo County, California by Earl E. Brabb and Earl H. Pampeyan, 1972.

0 1 2 Mile

Approximate scale

CYPRESS POINT FAMILY COMMUNITY
Moss Beach, California

ROCKRIDGE GEOTECHNICAL

REGIONAL PRELIMINARY MAP OF LANDSLIDE DEPOSITS

Date 06/28/22	Project No. 17-1286	Figure 5

ROCKRIDGE GEOTECHNICAL

APPENDIX A

Logs of Test Borings

PROJECT: **CYPRESS POINT FAMILY COMMUNITY**
Moss Beach, California

Log of Boring B-2

Boring location: See Site Plan, Figure 2 | Logged by: S. Magallon

Date started: 5/11/17 | Date finished: 5/11/17

Drilling method: Hollow Stem Auger

Hammer weight/drop: 140 lbs./30 inches | Hammer type: Automatic Hammer

Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1					SC	CLAYEY SAND (SC) brown, medium dense, moist, fine-grained, trace rootlets FILL						
2	S&H		5 7 10	14								
3					CL	SANDY CLAY (CL) orange-brown to brown						
4	S&H		5 8 9	14		SANDY CLAY (CL) dark brown to black, stiff to very stiff, moist Corrosivity Test; see Appendix B						
5												
6	S&H		4 8 10	15		LL = 28, PI = 11; see Appendix B-1					18.9	108
7					CL							
8												
9	SPT		3 3 2	7		medium stiff						
10						color change observed in cuttings						
11						SANDY CLAY (CL) yellow-brown to brown with white grains, very stiff, moist						
12												
13												
14	S&H		4 8 11	16								
15												
16					CL							
17												
18						hard, with olive pockets of clayey sand						
19	SPT		8 13 17	43								
20	SPT		16 21 24	65								
21												
22												
23												
24												
25												
26												
27												

Boring terminated at a depth of 21 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.84 and 1.44, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 17-1286 | Figure: A-1

PROJECT: **CYPRESS POINT FAMILY COMMUNITY**
Moss Beach, California

Log of Boring B-3

Boring location: See Site Plan, Figure 2
Logged by: S. Magallon
Date started: 5/11/17 Date finished: 5/11/17
Drilling method: Hollow Stem Auger
Hammer weight/drop: 140 lbs./30 inches Hammer type: Automatic Hammer
Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1					SC	CLAYEY SAND (SC) yellow to yellow-brown, with white grains, medium dense, moist, fine- to medium-grained						
2	S&H		9 10 19	24								
3												
4	S&H		10 18 30	40		dense						
5					Kgr	GRANITE (Kgr) mottled brown and red-brown with white grains, low hardness, friable, deeply weathered, manganese and iron oxidation						
6	SPT		6 23 29	75								
7												
8												
9												
10												
11	SPT		17 22 35	82								
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												

Boring terminated at a depth of 11.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.84 and 1.44, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 17-1286
Figure: A-2

PROJECT: **CYPRESS POINT FAMILY COMMUNITY**
Moss Beach, California

Log of Boring B-4

Boring location: See Site Plan, Figure 2
Logged by: S. Magallon
Date started: 5/11/17 Date finished: 5/11/17
Drilling method: Hollow Stem Auger
Hammer weight/drop: 140 lbs./30 inches Hammer type: Automatic Hammer
Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1					SC	CLAYEY SAND (SC) dark brown to black, loose, moist, with some gravel and trace rootlets LL = 29, PI = 10; see Figure B-1 FILL/ TOPSOIL						
2	S&H		4 4 6	8							10.1	111
3					CL	SANDY CLAY (CL) yellow to yellow-brown with white gaines, medium stiff to stiff, moist						
4	S&H		10 11 18	24						42	24.9	98
5					SC	CLAYEY SAND (SC) dark brown to yellow-brown with white grains, medium dense, moist, fine- to medium-grained Corrosivity Test; see Appendix B						
6	SPT		7 10 12	32		Particle Size Distribution; see Figure B-2						
7						GRANITE (Kgr) yellow and olive with white grains, low hardness, friable, deeply weathered, with iron and manganese oxidation						
8					Kgr							
9												
10												
11	SPT		8 13 20	48								
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												

Boring terminated at a depth of 11.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.84 and 1.44, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 17-1286
Figure: A-3

PROJECT: **CYPRESS POINT FAMILY COMMUNITY**
Moss Beach, California

Log of Boring B-5

Boring location: See Site Plan, Figure 2 | Logged by: S. Magallon

Date started: 5/11/17 | Date finished: 5/11/17

Drilling method: Hollow Stem Auger

Hammer weight/drop: 140 lbs./30 inches | Hammer type: Automatic Hammer

Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1					SP	SAND and GRAVEL (SP) olive-brown FILL						
2	S&H		11 11 12	19		SANDY CLAY (CL) brown to red-brown, very stiff, moist, fine-grained sand R-Value Test; see Figure B-4						
3												
4	S&H		4 5 8	11	CL	stiff, with oxidation staining LL = 29, PI = 14; see Figure B-1					17.9	114
5												
6	S&H		5 8 12	17		very stiff						
7												
8					SC	CLAYEY SAND (SC) brown to red-brown, medium dense, moist, fine-grained Particle Size Distribution; see Figure B-2						
9	SPT		6 9 11	29						13	15.4	
10												
11	SPT		4 4 6	14	CL	SANDY CLAY (CL) red-brown with mottling olive-brown, stiff, moist						
12					SC	CLAYEY SAND (SC) olive-brown to olive with white grains, medium dense, moist, fine- to medium-grained						
13												
14	SPT		5 10 12	32	CL	SANDY CLAY (CL) brown to red-brown with red oxidation staining, hard, moist, fine- to medium-grained sand						
15						SILTY SAND (SM) olive, dense, moist, with clay						
16					SM							
17												
18						increase clay content						
19	SPT		6 8 9	24		SAND with CLAY (SP-SC) yellow to yellow-brown with white grains, medium dense, moist, fine- to medium-grained						
20												
21					SP-SC							
22												
23						medium dense to dense						
24	SPT		7 9 12	30								
25												
26												
27												

Boring terminated at a depth of 24.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.84 and 1.44, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 17-1286 | Figure: A-4

PROJECT: **CYPRESS POINT FAMILY COMMUNITY**
Moss Beach, California

Log of Boring B-6

Boring location: See Site Plan, Figure 2 | Logged by: S. Magallon

Date started: 5/11/17 | Date finished: 5/11/17

Drilling method: Hollow Stem Auger

Hammer weight/drop: 140 lbs./30 inches | Hammer type: Automatic Hammer

Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1	S&H		10 15 22	31	CL	SANDY CLAY (CL) dark brown, hard, moist, with coarse, subangular gravel Corrosivity Test; see Appendix B FILL/TOPSOIL						
3	SPT		3 4 5	13	SC	CLAYEY SAND (SC) yellow-brown and brown, medium dense, moist, trace fine, subrounded gravel Particle Size Distribution; see Figure B-2				46	15.5	
5	S&H		6 11 12	19		yellow-brown to red-brown, increase sand content						
8					SC	CLAYEY SAND (SC) yellow-brown, dense, moist						
10	SPT		10 13 14	39								
14					CL	SANDY CLAY (CL) yellow-brown and olive with red-brown, and white grains, hard, moist, fine- to medium-grained sand						
15	SPT		11 13 15	40								
18					Kgr	GRANITE (Kgr) yellow and olive with white grains, low hardness, friable, deeply weathered, poorly cemented						
20	SPT		11 18 22	58								
25	SPT		16 18 25	62								
27												

Boring terminated at a depth of 26.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.84 and 1.44, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 17-1286 | Figure: A-5

PROJECT: **CYPRESS POINT FAMILY COMMUNITY**
Moss Beach, California

Log of Boring B-7

Boring location: See Site Plan, Figure 2 | Logged by: K. Samlik

Date started: 5/12/17 | Date finished: 5/12/17

Drilling method: Hollow Stem Auger

Hammer weight/drop: 140 lbs./30 inches | Hammer type: Automatic Hammer

Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
0						3.5 inches of concrete slab						
1	S&H		10 9 9	15	SC	CLAYEY SAND with GRAVEL (SC) dark brown with brown mottling, medium dense, moist, fine to medium sand						
3					SC	CLAYEY SAND (SC) brown, medium dense, moist, trace gravel, medium grained sand Particle Size Distribution; see Figure B-3				40	18.1	117
4	S&H		8 13 18	26								
5	S&H		12 22 26	40	CL	SANDY CLAY (CL) brown with dark brown, hard, moist, fine to medium sand						
8	SPT		4 15 16	45	SP-SC	SAND with CLAY (SP-SC) red-brown, dense, moist, fine to medium sand						
12	SPT		6 8 10	26	SP-SC	SAND with CLAY (SP-SC) dark red-brown, medium dense, moist Particle Size Distribution; see Figure B-3				9	16.1	
17	SPT		3 4 5	13	CL	CLAY with SAND (CL) brown with light mottling of red-brown and white, stiff, moist						
22	SPT		8 11 13	35	CL	SANDY CLAY (CL) red-brown, hard, fine to medium sand						
25												
27												

Boring terminated at a depth of 25 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.84 and 1.44, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 17-1286 | Figure: A-6

PROJECT: **CYPRESS POINT FAMILY COMMUNITY**
Moss Beach, California

Log of Boring B-8

Boring location: See Site Plan, Figure 2
Logged by: K. Samlik
Date started: 5/12/17 Date finished: 5/12/17
Drilling method: Hollow Stem Auger
Hammer weight/drop: 140 lbs./30 inches Hammer type: Automatic Hammer
Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION
1	S&H		17 16 19	29	SC	CLAYEY SAND with GRAVEL (SC) dark brown, medium dense, moist, fine to medium sand
3	S&H		5 9 11	17		SANDY CLAY (CL) red-brown with brown mottling, very stiff, moist
5	S&H		10 14 19	28	CL	yellow brown
9	SPT		12 16 20	52	Kgr	GRANITE (Kgr) yellow with brown, dark brown, orange mottling and white crystals, highly to completely weathered (deeply weathered), low hardness, intensely fractured to crushed, poorly cemented, friable
14	SPT		16 25 29	78		
19	SPT		20 25 43	98		

LABORATORY TEST DATA

Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft

Boring terminated at a depth of 20 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.84 and 1.44, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 17-1286
Figure: A-7

PROJECT: **CYPRESS POINT FAMILY COMMUNITY**
Moss Beach, California

Log of Boring B-9

Boring location: See Site Plan, Figure 2 | Logged by: K. Samlik

Date started: 5/12/17 | Date finished: 5/12/17

Drilling method: Hollow Stem Auger

Hammer weight/drop: 140 lbs./30 inches | Hammer type: Automatic Hammer

Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1					SP-SC	SAND with GRAVEL and CLAY (SP-SC) yellow, medium dense, moist, medium to coarse sand						
2	S&H		9 16 11	23								
3					CL	SANDY CLAY with GRAVEL (CL) dark brown, very stiff, moist, fine to medium sand no gravel, stiff LL = 28, PI = 15; see Figure B-1 LL = 20, PI = 5; see Figure B-1					14.4 15.3	118 110
4	S&H		3 5 8	11								
5												
6	S&H		6 11 13	20		very stiff						
7												
8												
9					SP-SC	SAND with CLAY (SP-SC) red-brown, dense, moist, medium sand						
10												
11	SPT		9 11 16	39								
12												
13						SAND with CLAY (SP-SC) red-brown, dense, moist, fine to medium sand						
14	SPT		11 12 13	36								
15												
16					SP-SC							
17												
18												
19	SPT		8 11 12	33		Particle Size Distribution; see Figure B-3				8	15.4	
20												
21						CLAY with SAND (CL) red-brown, hard, moist						
22												
23					CL							
24	SPT		8 10 13	33								
25												
26												
27												

Boring terminated at a depth of 25 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.84 and 1.44, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 17-1286 | Figure: A-8

PROJECT: **CYPRESS POINT FAMILY COMMUNITY**
Moss Beach, California

Log of Boring B-10

Boring location: See Site Plan, Figure 2
Logged by: S. Magallon
Date started: 5/11/17 Date finished: 5/11/17
Drilling method: Hollow Stem Auger
Hammer weight/drop: 140 lbs./30 inches Hammer type: Automatic Hammer
Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1												
2	S&H		4 4 5	8	CL	SANDY CLAY (CL) brown, medium stiff to stiff, moist, trace coarse, subgular gravel FILL						
3												
4	S&H		5 11 13	20								
5					CL	SANDY CLAY (CL) orange-brown, very stiff, moist						
6	S&H		6 8 10	15								
7												
8												
9					SP-SC	SAND with CLAY (SP-SC) red-brown to yellow-brown, medium dense, moist						
10												
11	SPT		7 4 5	13		Particle Size Distribution; see Figure B-3				11	19.2	
12					CL	CLAY (CL) olive with yellow-brown, stiff, moist, trace fine-grained sand						
13												
14												
15					SP-SC	SAND with CLAY (SP-SC) yellow to yellow-brown with white grains, medium dense, moist, fine to medium gravel						
16	SPT		5 9 11	29								
17												
18												
19												
20					SC	CLAYEY SAND (SC) yellow-brown with red-brown mottling, very dense, moist						
21	SPT		12 18 19	53	SP-SC	SAND with CLAY (SP-SC) yellow-brown and olive with white gaines, very dense, moist, fine- to medium-grained, trace silt						
22												
23												
24												
25												
26												
27												

Boring terminated at a depth of 21.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.84 and 1.44, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 17-1286
Figure: A-9

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		Symbols	Typical Names
Coarse-Grained Soils (more than half of soil > no. 200 sieve size)	Gravels (More than half of coarse fraction > no. 4 sieve size)	GW	Well-graded gravels or gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels or gravel-sand mixtures, little or no fines
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	Sands (More than half of coarse fraction < no. 4 sieve size)	SW	Well-graded sands or gravelly sands, little or no fines
		SP	Poorly-graded sands or gravelly sands, little or no fines
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
Fine -Grained Soils (more than half of soil < no. 200 sieve size)	Silts and Clays LL = < 50	ML	Inorganic silts and clayey silts of low plasticity, sandy silts, gravelly silts
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
		OL	Organic silts and organic silt-clays of low plasticity
	Silts and Clays LL = > 50	MH	Inorganic silts of high plasticity
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic silts and clays of high plasticity
Highly Organic Soils		PT	Peat and other highly organic soils

GRAIN SIZE CHART

Classification	Range of Grain Sizes	
	U.S. Standard Sieve Size	Grain Size in Millimeters
Boulders	Above 12"	Above 305
Cobbles	12" to 3"	305 to 76.2
Gravel coarse fine	3" to No. 4 3" to 3/4" 3/4" to No. 4	76.2 to 4.76 76.2 to 19.1 19.1 to 4.76
Sand coarse medium fine	No. 4 to No. 200 No. 4 to No. 10 No. 10 to No. 40 No. 40 to No. 200	4.76 to 0.075 4.76 to 2.00 2.00 to 0.420 0.420 to 0.075
Silt and Clay	Below No. 200	Below 0.075

Unstabilized groundwater level

Stabilized groundwater level

SAMPLE DESIGNATIONS/SYMBOLS

Sample taken with Sprague & Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter. Darkened area indicates soil recovered

Classification sample taken with Standard Penetration Test sampler

Undisturbed sample taken with thin-walled tube

Disturbed sample

Sampling attempted with no recovery

Core sample

Analytical laboratory sample

Sample taken with Direct Push sampler

Sonic

SAMPLER TYPE

C	Core barrel
CA	California split-barrel sampler with 2.5-inch outside diameter and a 1.93-inch inside diameter
D&M	Dames & Moore piston sampler using 2.5-inch outside diameter, thin-walled tube
O	Osterberg piston sampler using 3.0-inch outside diameter, thin-walled Shelby tube
PT	Pitcher tube sampler using 3.0-inch outside diameter, thin-walled Shelby tube
S&H	Sprague & Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter
SPT	Standard Penetration Test (SPT) split-barrel sampler with a 2.0-inch outside diameter and a 1.5-inch inside diameter
ST	Shelby Tube (3.0-inch outside diameter, thin-walled tube) advanced with hydraulic pressure

CYPRESS POINT FAMILY COMMUNITY
Moss Beach, California

ROCKRIDGE GEOTECHNICAL

CLASSIFICATION CHART

Date 06/27/22 | Project No. 17-1286 | Figure A-10

DRILLING NOTIFICATION FORM FOR ANNUAL GEOTECHNICAL DRILLING PERMIT

SAN MATEO COUNTY ENVIRONMENTAL HEALTH SERVICES DIVISION
2000 ALAMEDA DE LAS PULGAS, SUITE 100, SAN MATEO, CA. 94403
VOICE (650) 372-6200 FAX (650) 627-8244 WWW.SMCHEALTH.ORG

An accurate & correct map of proposed boring locations must be included with notification.

Notification is hereby given under Annual Geotechnical Drilling Permit No. AGDP-16-2247 with expiration date December 12, 2017 that Rockridge Geotechnical Inc will be drilling for soil boring geotechnical investigation only, not permanent structures or for environmental investigations, as described below.

ALL DRILLING MUST BE SCHEDULED WITH COUNTY STAFF (drilling@smcgov.org) AT LEAST TWO (2) WORKING DAYS (48 HOURS) IN ADVANCE

DRILLING WILL BEGIN ON: May 11 AT: 8 AM (AM/PM) NO. OF BORINGS 9

BORING DESIGNATIONS# B-2 through B-10

DRILLING INFORMATION (MUST BE FILLED OUT COMPLETELY)

SITE NAME Carlos Street Affordable Housing ASSESSOR'S PARCEL # (REQUIRED) 037-022-070 (one per permit)

DRILLING LOCATION ADDRESS Southeast of Intersection of Carlo and 16th Streets CITY Moss Beach ZIP 94038

Borings To Be Constructed In: ☐ Public Property ☒ Private Property ☐ Refuse ☐ Other

Maximum Proposed Depth Wells/Borings 25 (feet) Drilling Method 8-inch-outside-diameter hollow-stem augers

Boring Diameter 8 inches Grout Material: use 6 gallons water max per 94 lb cement, can add up to 5% bentonite

BORING OWNER (BORING OWNER NAME OR CONTACT NAME SHOULD MATCH SIGNATURE)

NAME California School Employees Association CONTACT PERSON Steve Brashear

ADDRESS 2045 Lundy Avenue CITY, STATE, ZIP San Jose, CA 95131-1825

TELEPHONE 408-433-1227 EMAIL sbrashear@csea.com

(Letter signed by boring owner attesting to knowledge of all permit requirements and conditions, may be substituted for signature on permit application.)

Boring Owner's Signature X Steve Brashear **Date** 5/3/2017

PROPERTY OWNER (NAME AS APPEARS ON ASSESSOR'S ROLES SHOULD MATCH SIGNATURE)

NAME California School Employees Association (same as above) CONTACT PERSON Same as above

ADDRESS CITY, STATE, ZIP

TELEPHONE EMAIL

I understand that a boring(s) is being installed on my property. *(Letter signed by property owner, containing previous language, or encroachment permit may be substituted for signature on permit application.)*

Property Owner's Signature **Date**

DRILLING COMPANY

DRILLING COMPANY Britton Exploration CONTACT PERSON Paul Britton

ADDRESS 23051 Evergreen Lane CITY, STATE, ZIP Los Gatos, CA 95031

TELEPHONE 408-355-5781 C 57 LICENSE # C57 849905 E-MAIL brittonexploration@gmail.com

I certify that borings under this notification will be constructed/destroyed in compliance with the conditions of the Annual Geotechnical Drilling Permit listed above, the San Mateo County Ordinance, and the State Water Well Standards, and that the license listed above is considered current and active by the Contractor's State License Board.

Driller's Signature **Date**

CONSULTANT COMPANY

CONSULTANT COMPANY Rockridge Geotechnical, Inc. PROJECT MANAGER Craig Shields

ADDRESS 270 Grand Avenue TELEPHONE # 510-420-4738

CITY, STATE, ZIP Oakland, CA 94610 E-MAIL csshields@rockridgegeo.com

I certify that this notification is correct to the best of my knowledge. I certify that the geotechnical borings under this notification will be constructed/destroyed in compliance with the conditions of the Annual Geotechnical Drilling Permit listed above, the San Mateo County Ordinance, and the State Water Well Standards. I certify if I indicated the purpose of drilling is geotechnical, then no one will use the boring to collect any samples for environmental analyses. *(Responsible Professional must be a California Professional Geologist or Civil Engineer.)*

Responsible Professional's Name (Please print legibly) Craig Shields

Responsible Professional's Signature **Date** 5/3/17

California Professional Geologist (PG) No. **or Civil Engineer (PE) No.** CE38755

Revised every January 1

DRILLING NOTIFICATION FORM FOR ANNUAL GEOTECHNICAL DRILLING PERMIT

SAN MATEO COUNTY ENVIRONMENTAL HEALTH SERVICES DIVISION
2000 ALAMEDA DE LAS PULGAS, SUITE 100, SAN MATEO, CA. 94403
VOICE (650) 372-6200 FAX (650) 627-8244 WWW.SMCHEALTH.ORG

An accurate & correct map of proposed boring locations must be included with notification.

Notification is hereby given under Annual Geotechnical Drilling Permit No. AGDP-16-2247 with expiration date December 12, 2017 that Rockridge Geotechnical Inc will be drilling for soil boring geotechnical investigation only, not permanent structures or for environmental investigations, as described below.

ALL DRILLING MUST BE SCHEDULED WITH COUNTY STAFF (drilling@smcgov.org) AT LEAST TWO (2) WORKING DAYS (48 HOURS) IN ADVANCE

DRILLING WILL BEGIN ON: May 11 AT: 8 AM (AM)/PM) NO. OF BORINGS 10 9

BORING DESIGNATIONS# B-1 through B-10 B-2

DRILLING INFORMATION (MUST BE FILLED OUT COMPLETELY)

SITE NAME Carlos Street Affordable Housing ASSESSOR'S PARCEL # (REQUIRED) 037-022-070 (one per permit)

DRILLING LOCATION ADDRESS Southeast of Intersection of Carlo and 16th Streets CITY Moss Beach ZIP 94038

Borings To Be Constructed In: ☐ Public Property ☐ Private Property ☐ Refuse ☐ Other

Maximum Proposed Depth Wells/Borings 25 (feet) Drilling Method 8-inch-outside-diameter hollow-stem augers

Boring Diameter 8 inches Grout Material: use 6 gallons water max per 94 lb cement, can add up to 5% bentonite

BORING OWNER (BORING OWNER NAME OR CONTACT NAME SHOULD MATCH SIGNATURE)

NAME CONTACT PERSON

ADDRESS CITY, STATE, ZIP

TELEPHONE EMAIL

(Letter signed by boring owner attesting to knowledge of all permit requirements and conditions, may be substituted for signature on permit application.)

Boring Owner's Signature **Date**

PROPERTY OWNER (NAME AS APPEARS ON ASSESSOR'S ROLES SHOULD MATCH SIGNATURE)

NAME Same as boring owner CONTACT PERSON

ADDRESS CITY, STATE, ZIP

TELEPHONE EMAIL

I understand that a boring(s) is being installed on my property. *(Letter signed by property owner, containing previous language, or encroachment permit may be substituted for signature on permit application.)*

Property Owner's Signature **Date**

DRILLING COMPANY

DRILLING COMPANY Britton Exploration CONTACT PERSON Paul Britton

ADDRESS 23051 Evergreen Lane CITY, STATE, ZIP Los Gatos, CA 95031

TELEPHONE 408-355-5781 C 57 LICENSE # C57 849905 E-MAIL brittonexploration@gmail.com

I certify that borings under this notification will be constructed/destroyed in compliance with the conditions of the Annual Geotechnical Drilling Permit listed above, the San Mateo County Ordinance, and the State Water Well Standards, and that the license listed above is considered current and active by the Contractor's State License Board.

Driller's Signature P.A. Britton **Date** 4-28-17

CONSULTANT COMPANY

CONSULTANT COMPANY Rockridge Geotechnical, Inc. PROJECT MANAGER Craig Shields

ADDRESS 270 Grand Avenue TELEPHONE # 510-420-4738

CITY,STATE, ZIP Oakland, CA 94610 E-MAIL csshields@rockridgegeo.com

I certify that this notification is correct to the best of my knowledge. I certify that the geotechnical borings under this notification will be constructed/destroyed in compliance with the conditions of the Annual Geotechnical Drilling Permit listed above, the San Mateo County Ordinance, and the State Water Well Standards. I certify if I indicated the purpose of drilling is geotechnical, then no one will use the boring to collect any samples for environmental analyses. *(Responsible Professional must be a California Professional Geologist or Civil Engineer.)*

Responsible Professional's Name (Please print legibly) Craig Shields

Responsible Professional's Signature **Date** 5/3/17

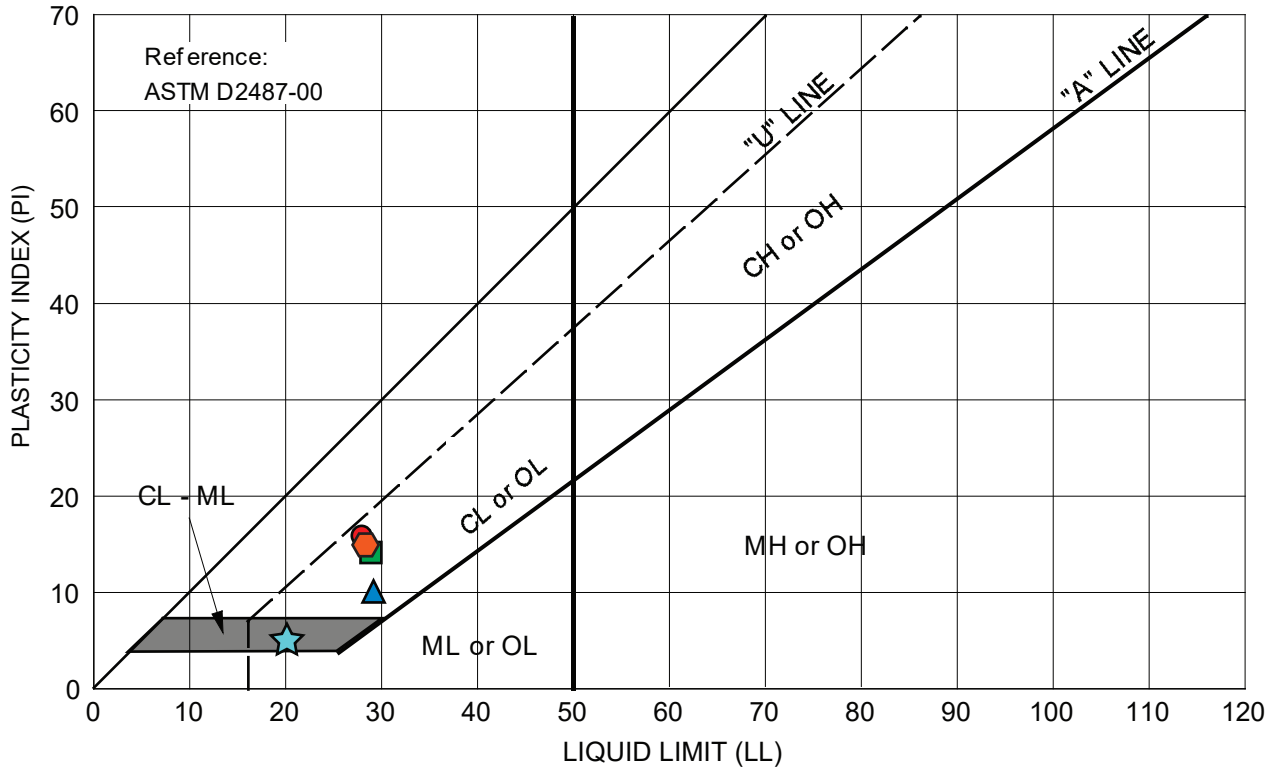
California Professional Geologist (PG) No. **or Civil Engineer (PE) No.** CE38755

Revised every January 1

ROCKRIDGE GEOTECHNICAL

APPENDIX B

Laboratory Test Data



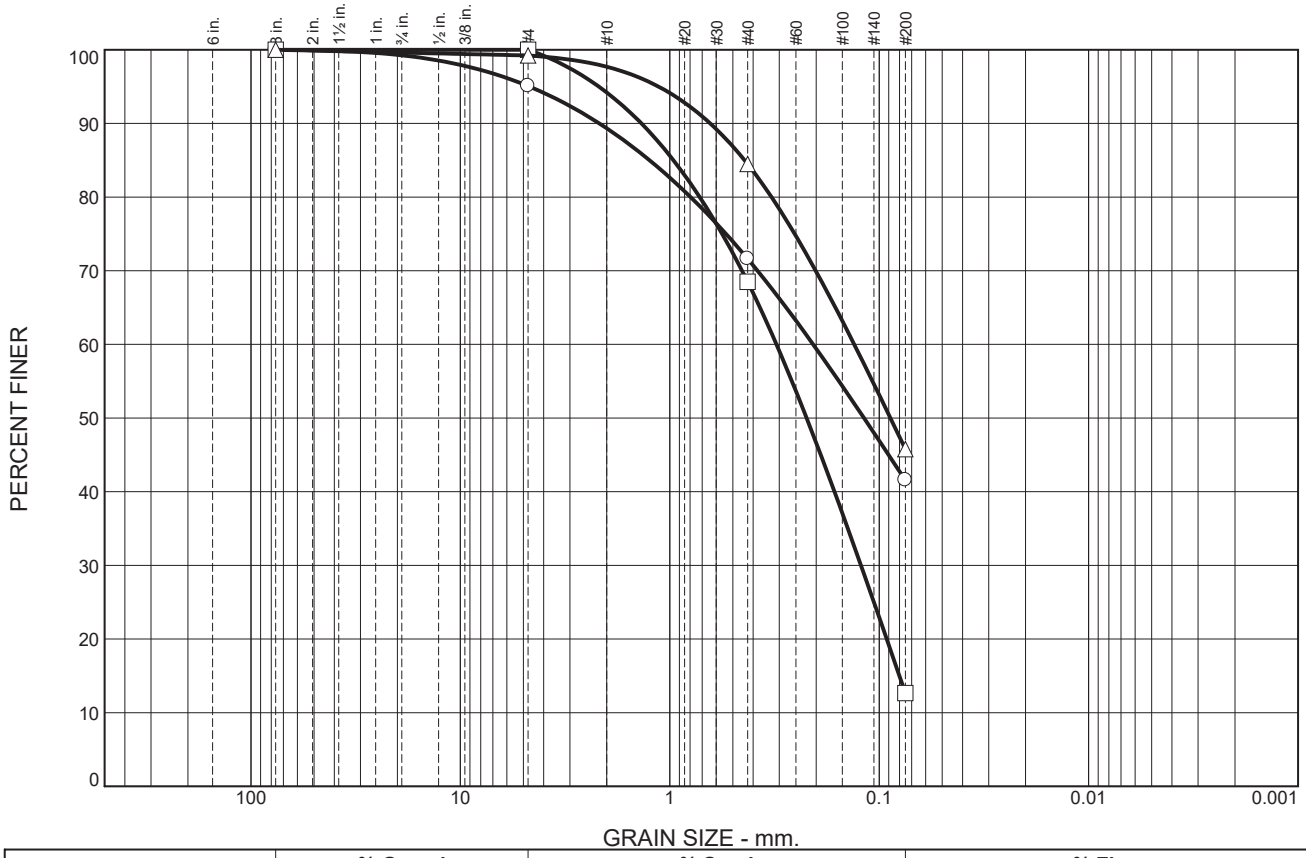
Symbol	Source	Description and Classification	Natural M.C. (%)	Liquid Limit (%)	Plasticity Index (%)	% Passing #200 Sieve
●	B-2 at 6.0 feet	SANDY CLAY (CL), dark brown to black	18.9	28	11	--
▲	B-4 at 1.5 feet	CLAYEY SAND (SC), dark brown to black	10.1	29	10	--
■	B-5 at 4.0 feet	SANDY CLAY (CL), brown to red-brown	17.9	29	14	--
⬢	B-9 at 3.5 feet	SANDY CLAY with GRAVEL (CL), dark brown	14.4	28	15	--
★	B-9 at 4.0 feet	SANDY CLAY with GRAVEL (CL), dark brown	15.3	20	5	--

CYPRESS POINT FAMILY COMMUNITY
Moss Beach, California

ROCKRIDGE GEOTECHNICAL

PLASTICITY CHART

Date 06/27/22 | Project No. 17-1286 | Figure B-1



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay

MATERIAL DATA

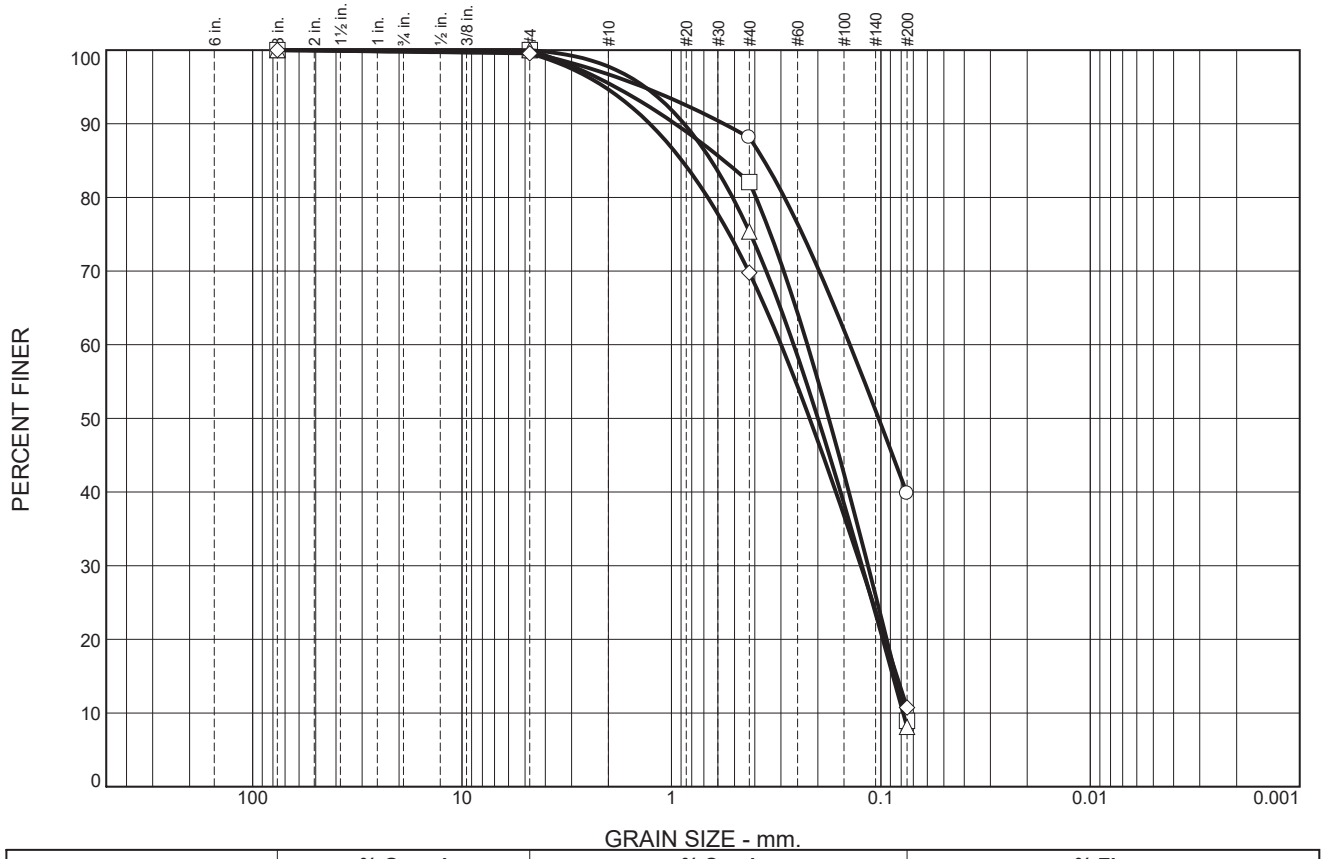
SYMBOL	SOURCE	DEPTH (ft.)	Material Description	USCS
○	B-4	4.0'	CLAYEY SAND, dark brown to yellow-brown with white grains	SC
□	B-5	8.0'	CLAYEY SAND, brown to red-brown	SC
△	B-6	3.0'	CLAYEY SAND, yellow-brown to brown	SC

CYPRESS POINT FAMILY COMMUNITY
Moss Beach, California

ROCKRIDGE GEOTECHNICAL

PARTICLE SIZE DISTRIBUTION REPORT

Date 06/27/22 | Project No. 17-1286 | Figure B-2



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay

MATERIAL DATA

SYMBOL	SOURCE	DEPTH (ft.)	Material Description	USCS
○	B-7	4.0'	CLAYEY SAND, brown	SC
□	B-7	13.5'	SAND with CLAY, dark red-brown	SP-SC
△	B-9	18.5'	SAND with CLAY, red-brown	SP-SC
◇	B-10	10.0'	SAND with CLAY, red-brown to yellow-brown	SP-SC

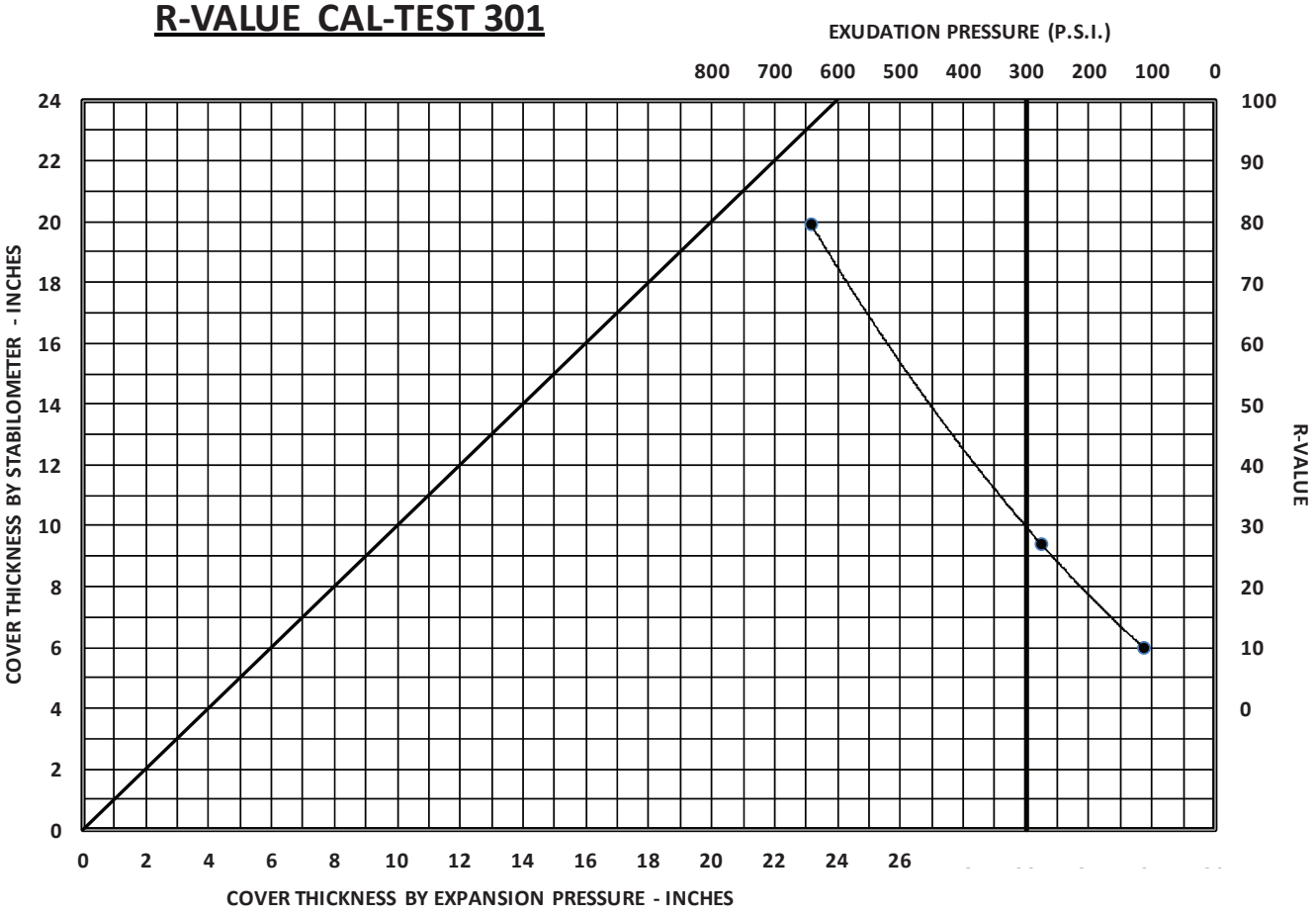
CYPRESS POINT FAMILY COMMUNITY
Moss Beach, California

ROCKRIDGE GEOTECHNICAL

PARTICLE SIZE DISTRIBUTION REPORT

Date 06/27/22 | Project No. 17-1286 | Figure B-3

R-VALUE CAL-TEST 301



Exudation psi	Compaction (psi)	Expansion (0.0001")	Expansion (psf)	Moisture %	Dry Density	Resistance Value
643	350	37	160	10.6	128.9	80
277	162	0	0	12.7	124.2	27
114	83	0	0	15.5	116.9	10

Test Results	Material Description
R-Value at 300 psi exudation pressure = 29	SANDY CLAY (CL), brown to red-brown Sample Source: B-5 Depth: 1-5' - 3'

CYPRESS POINT FAMILY COMMUNITY
Moss Beach, California

R-VALUE TEST REPORT

ROCKRIDGE GEOTECHNICAL

Date 06/27/22	Project No. 17-1286	Figure B-4

Project X
Corrosion Engineering
Corrosion Control – Soil, Water, Metallurgy Testing Lab

REPORT S170517A

	Method	ASTM G187	ASTM G187	ASTM D516		ASTM D512B		SM 4500-E	SM 4500-C	SM 4500-D	ASTM G200	ASTM G51
Bore# / Description	Depth	As-Rec'd Resistivity	Min-Resistivity	Sulfates		Chlorides		Nitrate	Ammonia	Sulfide	Redox	pH
	(ft)	(Ohm-cm)	(Ohm-cm)	(mg/kg)	(wt%)	(mg/kg)	(wt%)	(mg/kg)	(mg/kg)	(mg/kg)	(mV)	
B - 6	2	27,470	7,370	30	0.0030	84	0.0084	ND	15	2.82	152	8.36
B - 2	4	7,370	5,963	210	0.0210	156	0.0156	21	27	2.85	159	7.47

Unk = Unknown
NT = Not Tested
ND = 0 = Not Detected
mg/kg = milligrams per kilogram (parts per million) of dry soil weight
mg/L - milligrams per liter of liquid volume
Chemical Analysis performed on 1:3 Soil-To-Water extract

29990 Technology Dr., Suite 13, Murrieta, CA 92563 Tel: 213-928-7213 Fax: 951-226-1720
www.projectxcorrosion.com

CYPRESS POINT FAMILY COMMUNITY
Moss Beach, California

ROCKRIDGE GEOTECHNICAL

SOIL CORROSIVITY TEST RESULTS

Date 06/27/22 | Project No. 17-1286 | Figure B-5

APPENDIX G

Cultural Resources Evaluation

APPENDIX A

Cultural Resource Evaluation of the Cypress Point Project in Moss Beach, County of San Mateo

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County Review Draft

CULTURAL RESOURCE EVALUATION OF THE CYPRESS POINT PROJECT IN MOSS BEACH, COUNTY OF SAN MATEO

FOR

ATTN: MR. CRAIG STEVENS
AEM CONSULTING
1241 LARKIN WAY
SACRAMENTO, CA 95818
NWIC# 17-0815

BY

Archaeological Resource Management
Dr. Robert Cartier, Principal Investigator
496 North Fifth Street
San Jose, CA 95112
(408) 295-1373
FAX: (408) 286-2040

JUNE 1, 2018

County Review Draft

ADMONITION

Certain information contained in this report is not intended for general public distribution. Portions of this report locate significant archaeological sites in the region of the project area, and indiscriminate distribution of these data could result in the desecration and destruction of invaluable cultural resources. In order to ensure the security of the critical data in this report, certain maps and passages may be deleted in copies not delivered directly into the hands of environmental personnel and qualified archaeologists.

ABSTRACT

This cultural resource evaluation was carried out for the proposed Cypress Point Project in Moss Beach, County of San Mateo. This evaluation included archival research and a surface survey of the project area. The archival research revealed that there are no recorded cultural resources located within the study area. However, four previously recorded resources are located within a one quarter mile radius of the proposed project area. The closest of these is CA-SMA-55, a prehistoric shell mound site originally recorded by N. Nelson in the early 20th Century and located approximately 150 feet away from the northwest corner of the proposed project area. Midden soils, containing fragments of mussel shell were noted in the central portion of the subject property during surface reconnaissance (see Midden Location Map). Historic foundations, associated with WWII era military activities on the site were also noted in the field. Based on the presence of midden soils within the project area, it is recommended that a subsurface testing program be carried out in this portion of the proposed project area to ascertain the boundaries, depth, and constituents of this archaeological deposit. It is further recommended that the archaeological monitoring and other mitigation measures presented in the Archaeological Treatment Plan for the project (Cartier 2018) be carried out for the proposed project.

REQUEST FOR CULTURAL RESOURCE EVALUATION

The cultural resource evaluation was carried out to determine the presence or absence of any significant cultural resources. Cultural resource services were requested in September of 2017 in order to provide a cultural resource report of the project. This report meets the requirements of CEQA (California Environmental Quality Act).

QUALIFICATIONS OF ARCHAEOLOGICAL RESOURCE MANAGEMENT

Archaeological Resource Management has been specifically engaged in cultural resource management projects in central California since 1977. The firm is owned and supervised by Dr. Robert Cartier. Dr. Cartier is the Principal Investigator, with additional personnel hired to satisfy the needs for specific investigations. ARM's offices are located in downtown San Jose which provides a centrally located headquarters for the majority of the work contracted in the Central California area. These studies have included archival overviews, surface surveys, extensive excavations, and National Register evaluations for both prehistoric and historic resources that meet requirements of CEQA, NHPA, and NEPA (National Environmental Policy Act). Dr. Cartier has a Ph.D. in anthropology, and is certified by the Register of Professional Archaeologists (ROPA) for conducting cultural resource investigations as well as other specialized work in archaeology and history. He also fulfills the standards set forth by the Secretary of the Interior for inclusion as a historian and architectural historian and is certified as such on the State of California referral lists.

Dr. Cartier completed his undergraduate work in anthropology at San Jose State University and earned his M.A. and Ph.D. in anthropology from Rice University in 1975. He is

certified by the Register of Professional Archaeologists (ROPA) in the categories of teaching, field work, and cultural resource management. Cartier organized the firm of Archaeological Resource Management in 1977. Since that time he has been directing archaeological and historical investigations in Santa Clara County and the central California area. The firm has completed projects for private individuals, local cities and counties, the Santa Clara Valley Water District, the State of California (CALTRANS), and the Federal Government (Army Corps of Engineers), as well as purely academic investigations.

LOCATION AND DESCRIPTION OF THE SUBJECT AREA

The subject area consists of approximately 10.66 acres of land off of Sierra Street in Moss Beach, County of San Mateo. On the USGS 7.5 minute quadrangle of Montara Mountain OE W, CA, the Universal Transverse Mercator Grid (UTMG) centerpoint of the project area is 10S 5 42 699mE,41 54 262mN. The elevation ranges from approximately 100 to 150 feet MSL, and the nearest source of fresh water is the Montara Denniston Creek which is located approximately 300 feet north of the proposed project area.

The proposed project consists of the construction of 71 affordable housing units consisting of approximately 25 two-story buildings holding 3-4 units each. This project will involve the necessary excavation, grading, trenching, and other earthmoving activities.

METHODOLOGY

The methodology used in this investigation consists of an archival search, a surface reconnaissance, an evaluation of the potential significance of the property according to the California Register of Historic Resources (CRHR), and a written report of the findings with appropriate recommendations. The archival research is conducted by transferring the study location to a state archaeological office which maintains all records of archaeological investigations. This is done in order to learn if any archaeological sites or surveys have been recorded within a half mile of the subject area. Each archival search with the State is given a file number for verification. The surface reconnaissance portion of the evaluation is done to determine if traces of historic or prehistoric materials exist within the study area. This survey is conducted by a field archaeologist who examines exposed soils for cultural material. The archaeologist is looking for early ceramics, Native American cooking debris, and artifacts of stone, bone, and shell. For historic cultural resources, the field evaluation also considers older structures, distinctive architecture, and subsurface historic trash deposits of potentially significant antiquity. A report is written containing the archival information, record search number, the survey findings, and appropriate recommendations. A copy of this evaluation is sent to the State archaeological office by requirements of State procedure.

Regulatory Framework

California Register Criteria

A cultural resource is considered "significant" if it qualifies as eligible for listing in the California Register of Historic Resources (CRHR). Properties that are eligible for listing in the CRHR must meet one or more of the following criteria:

1. Association with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States;
2. Association with the lives of persons important to local, California, or national history;
3. Embodying the distinctive characteristics of a type, period, region, or method of construction, or representing the work of a master, or possessing high artistic values; or
4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

Most Native American prehistoric sites are eligible due to their age, scientific potential, and/or burial remains.

The CRHR interprets the integrity of a cultural resource based upon its physical authenticity. An historic cultural resource must retain its historic character or appearance and thus be recognizable as an historic resource. Integrity is evaluated by examining the subject's location, design, setting, materials, workmanship, feeling, and association. If the subject has retained these qualities, it may be said to have integrity. It is possible that a cultural resource may not retain sufficient integrity to be listed in the National Register of Historic Places yet still be eligible for listing in the CRHR. If a cultural resource retains the potential to convey significant historical/scientific data, it may be said to retain sufficient integrity for potential listing in the CRHR.

National Register Criteria

The National Register of Historic Places was first established in 1966, with major revisions in 1976. The register is set forth in 36 CFR 60 which establishes the responsibilities of the State Historic Preservation Officers (SHPO), standards for their staffs and review boards, and describes the statewide survey and planning process for historic preservation. Within this regulation guidelines are set forth concerning the National Register of Historic Places (36 CFR 60.6). In addition, further regulations are found in 36 CFR 63-66 and 800 which define procedures for determination of eligibility, identification of historic properties, recovery, reporting, and protection procedures.

The National Register of Historic Places was established to recognize resources associated with the accomplishments of all peoples who have contributed to the country's history and heritage. Guidelines were designed for Federal and State agencies in nominating cultural resources to the National Register. These guidelines are based upon integrity and significance of the resource. Integrity applies to specific items such as location, design, setting, materials, workmanship, feeling, and association. Quality of significance in

American history, architecture, archaeology, engineering and culture is present in resources that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet at least one of the following criteria:

a. that are associated with events that have made a significant contribution to broad patterns of our history;
b. that are associated with the lives of persons significant in our past;
c. that embody distinctive characteristics of type, period, or method of construction, or that represent the work of master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction;
d. that have yielded, or are likely to yield, information important in prehistory or history.

Ordinarily, properties that have achieved significance within the last 50 years are not considered eligible for the National Register. However, such properties will qualify if they are integral parts of districts that do meet the criteria of the NRHP listed above or if they fall within the following categories:

a. a religious property deriving primary significance from architectural significance or artistic distinction or historic importance; or
b. a building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with an historic person or event; or
c. a birthplace or grave of a historical figure of outstanding importance if there is no other appropriate site or building directly associated with his (or her) productive life; or
d. a cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or
e. a reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or
f. a property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own historical significance; or
g. a property achieving significance within the past 50 years if it is of exceptional importance.

Section 30244 of the California Coastal Act

Article 5; Land Resources, Section 30244 of the California Coastal Act states that:

> "Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required."

This cultural resource evaluation identifies a portion of the proposed project area as containing a potentially significant archaeological resource, and recommends archaeological testing for the purpose of determining the boundaries, depth, and constituents of the archaeological deposit within the proposed project area. The results of

this testing will be used to determine reasonable mitigation measures for the proposed project. Sensitivity for paleontological resources is being addressed in a separate report.

San Mateo County Midcoast Local Coastal Program Policies

In late 1980, the County Board of Supervisors and the California Coastal Commission approved the San Mateo County's Local Coastal Program. In April 1981, the County assumed responsibility for implementing the State Coastal Act in the unincorporated area of San Mateo County, including issuance of Coastal Development Permits. Three policies outlined within the Local Coastal Program have a bearing on cultural resources for the proposed project. These policies are discussed below.

1.25 Protection of Archaeological/Paleontological Resources

> "Based on County Archaeology/Paleontology Sensitivity Maps, determine whether or not sites proposed for new development are located within areas containing potential archaeological/paleontological resources. Prior to approval of development proposed in sensitive areas, require that a mitigation plan, adequate to protect the resource and prepared by a qualified archaeologist/paleontologist be submitted for review and approval and implemented as part of the project."

This cultural resource evaluation identifies a portion of the proposed project area as archaeologically sensitive, and recommends archaeological testing for the purpose of determining the boundaries, depth, and constituents of the archaeological deposit within the proposed project area. The results of this testing will be used to determine appropriate mitigation plan for the proposed project. Sensitivity for paleontological resources is being addressed in a separate report.

8.26 Structural Features

> "Employ the regulations of the Historical and Cultural Preservation Ordinance to protect any structure or site listed as an Official County or State Historic Landmark or is listed in the National Register of Historic Sites."

None of the structures within the proposed project area are currently listed on the County, State, or National Registers as historic resources. In addition, they do not appear to be eligible for listing in any of these registers. Although the proposed project area contains the concrete foundations of structures from the Point Montara Anti-Aircraft Training Center which operated during WWII, these remnants do not appear to adequately convey the character of the original structures or the activities which took place during this period for listing in these registers. Montara Water and Sanitary District infrastructure including tanks, culverts, and other fixtures are also present on the property. These structures are utilitarian in character and do not appear historically significant.

8.27 Natural Features

> "Prohibit the destruction or significant alteration of special natural features through implementation of Landform Policies and Vegetative Form Policies of the LCP."

No special natural features appear to be present within the proposed project area, thus no special natural features will be destroyed or altered by the proposed project.

ETHNOGRAPHIC BACKGROUND

Early ethnographic accounts of local Native American cultures provide a cultural context for archaeological studies. The Ohlone, or Costanoan, Indians inhabited the San Francisco Bay regions from the Golden Gate south to Monterey. Derived from a Spanish word, Costanoan means "people of the coast," and is an older term. Descendants of these people prefer to refer to themselves as "Ohlone," and it is now the generally accepted term. The research area is located in the Salson linguistic area, which shared many cultural traits with other linguistic groups in the Ohlone region. It is believed that the Ohlone Indians inhabited the area since A.D. 500, and that speakers of the Hokan language previously inhabited at least part of the region (Levy 1978). However, it is unclear when the Hokan or even earlier Paleo-Indians first came to the area. Archaeological data documents Native American coastal activity in the Central Coast area over the past 10,000 years, with some indications of occupation as early as 12,000 to 13,000 years ago (Jones et al, 2007). The earliest radiocarbon dates that are available for the area to which the Ohlone came to live are 12,000 B.P. (years before present) at SCR-177 in Scotts Valley (Cartier 1993), 3,200 B.P. at the University Village Site (SMA-77) (Gerow 1968), 6,349 B.P. at Palm Canyon (SCL-106) near Gilroy (Cartier 1980), 6,628 B.P. at Camden Avenue (SCL-64) (Winter 1978), CA-SCR-38 on the Santa Cruz coast, dated to ca. 8850 B.P., CA-SCR-7 dated to ca. 6050 B.P. (Jones and Hilderbrandt 1990), and CA-SCR-239 in Scotts Valley, dated to ca. 4950 B.P. (Cartier 1992).

The Ohlone were gatherers and hunters who utilized only the native flora and fauna with the exception of one domesticate, the dog. Yet, the abundance and high quality of natural resources allowed them to settle in semi-sedentary villages. The Ohlone were typically organized in basic political units called "tribelets" that consisted of 100 to 250 members (Kroeber 1954). The "tribelet" was an autonomous social unit consisting of one or more permanent villages with smaller villages in a relatively close proximity (Kroeber 1962). Parties went out from the major villages to locations within the tribal territory to obtain various resources.

The proximity of both mountainous and bay regions in the local environment made a diversity of resources available during different seasons to the native inhabitants. During the winter months, the low-lying flats near the San Francisco Bay have abundant marine and waterfowl resources, while the surrounding mountainous areas are best in the summer months for their nut, seed, and mammalian resources (King and Hickman 1973). A primary food source was acorns, abundant in autumn and easily stored for the remainder of the year. According to Gifford, the acorn industry of California was probably the most characteristic feature of its domestic economy (Gifford 1951). An

elaborate process of grinding and leaching acorns is necessary to render them palatable. The acorn industry first became a major source of food in the Middle Period as is indicated by the appearance of mortars and pestles in the archaeological record (King and Hickman 1973). Other important resources include various plant foods, land animals, and the marine resources of the San Francisco Bay. Both large and small land mammals were typically hunted, trapped or poisoned. Many items, including shell beads and ornaments, were extensively traded with other groups as far away as the Great Basin of Nevada (Davis 1974).

It is argued that contrary to usual conceptions of hunters and gatherers, native Californian groups, including the Ohlone, practiced a form of resource management that was close to agriculture. Bean and Lawton (1976) consider this pattern a "semi-agricultural" stage which included quasi-agricultural harvesting activity and proto-agricultural techniques. Some plants were pruned and reseeded seasonally for optimal production. Foods such as acorns were stored for many months at a time. Ethnographic accounts also report the repeated burning of woodlands grassbelt to increase animal and plant resources. It is likely to have made hunting conditions better by reducing scrubby growth and encouraging the growth of grasses and other plants that are appealing to grazers such as deer and elk. The plant growth succession after a burning is also rich in grains and legumes that were major food sources for Native Californians.

Bean and Lawton also claim that the abundance of plant and animal resources in California and the development of ingenious technological processes allowed Native Californians to develop social structures beyond the normal parameters of hunting and gathering. These include extensive political systems, controlled production and redistribution of goods, and alliances and trade with other groups.

ARCHIVAL BACKGROUND

Prior to surface reconnaissance of the subject area, a study of the maps and records at the Northwest Information Center of the California Archaeological Site Inventory was conducted and given the file number NWIC# 17-0815. The purpose of this research was to determine if any known archaeological resources had previously been reported in or around the subject area. No previously recorded archaeological sites are located within the project area. However, four previously recorded resources are located within one quarter mile of the proposed project area. These resources are briefly described below:

CA-SMA-55

This prehistoric site, originally designated Nelson 405, was a shell mound originally documented by N. Nelson in 1908. Nels Nelson documented and investigated numerous shell mounds along the Central California Coast in the early years of the 20th Century, many of which have been significantly damaged or completely destroyed.

CA-SMA-171H

This historic district was originally recorded by H. Casper in 1973 and is described as containing the Point Montara Artillery Training Station and the Point Montara Light Station. None of the recorded elements are located within the proposed project area.

P-41-2108

This historic structure was recorded by D. Painter and C. Losee in 2003. It is described as the Montara Cottage.

P-41-2154

This historic resource was recorded in 2005 by D. Edwards. It is described as the Montara Water and Sanitary District Office at Point Montara Training Station.

Four previous studies have been carried out within or adjacent to the proposed project area. These studies are described below:

S-3082

This study was carried out by S. Dietz and T. Jackson in 1970 and entitled "An Archaeological and Historical Reconnaissance of a Portion of the San Mateo County Coastside." This was a broad survey with included the entirety of the current proposed project area within its scope.

S-5389

Carried out by M. Melandry in 1977, this study is entitled "Archaeological Survey Report on Excess Parcels 6695-01-01, 6696-01-01, 7091-01-091-02-01, on Route 1 in San Mateo County P.M. 35.5/35.8." This study extends southwards from the southwest corner of the proposed project area.

S-25083

This study was carried out by J. Holson in 2002 and entitled "Archaeological Survey for Highway 1/ Montara, 8211.38 (PL 1004-07) (letter report)." Archival maps for this study indicate its location as a small circular area located within the eastern central portion of the proposed project area.

S-31887

Carried out by C. Busby in 2005, this study is entitled "Archaeological Assessment - Montara Water and Sanitary District EIR, Vicinity of Montara and Moss Beach and Within Half Moon Bay Airport, San Mateo County (letter report)." This study is located within the eastern central portion of the proposed project area.

A total of 26 additional previous studies have been carried out within a one quarter mile radius of the proposed project area.

AB52: NATIVE AMERICAN CONSULTATION

AB 52 Native American Consultation will be completed by County of San Mateo as the lead agency for the project. This consultation will be presented in a separate document.

HISTORIC BACKGROUND

The proposed project area formerly made up a portion of the Point Montara Artillery Training Facility, a World War II era military complex in use between 1943 and 1945. Several structures within this complex were located within the current proposed project area, including barracks, offices, a mess hall, a library, a garage, a boiler room, an incinerator, a "TDD" hanger, and a drill field.

The Point Montara Artillery Training Facility was a top secret military installation operated by the U.S. Navy during World War II, containing 48 permanent structures, and housing over 1500 personnel. Throughout the course of its operation, about 320,000 Navy sailors and merchant marines were trained on what was then the latest technology in anti-aircraft weapons, including the 20mm "Oerlokin", the 40mm "Bofers" and 3 inch/50 caliber anti-aircraft guns.

The facility was notable for its extensive use of Women Air Service Pilots (known as WASPs) who flew planes towing targets for the artillery firing from the coast along Point Montara.

The facility also heavily utilized some of the earliest drone aircraft for target practice. These radio controlled planes were pioneered by Reginald Denny, a Hollywood film star and remote control hobbyist. He realized the potential of the planes for target practice, and entered contracts with the U.S. Army and the U.S. Navy which eventually became a multi-million dollar industry through the course of WWII. These planes were named Target Drone Dennys (TDD's) by the Navy after their inventor (Oeswein 2016).

In the late 1960's the proposed project area was in use as a training facility for firefighters. During this period, the structures within the proposed project area were razed by a controlled burn, leaving only exposed concrete foundations. The property has been vacant since 1970. The project area currently contains concrete foundations, as well as well as a fenced area containing the Montara Water and Sanitary District infrastructure. Some structures and features associated with the military training facility remain standing outside the current proposed project area, along the coast of Point Montara.

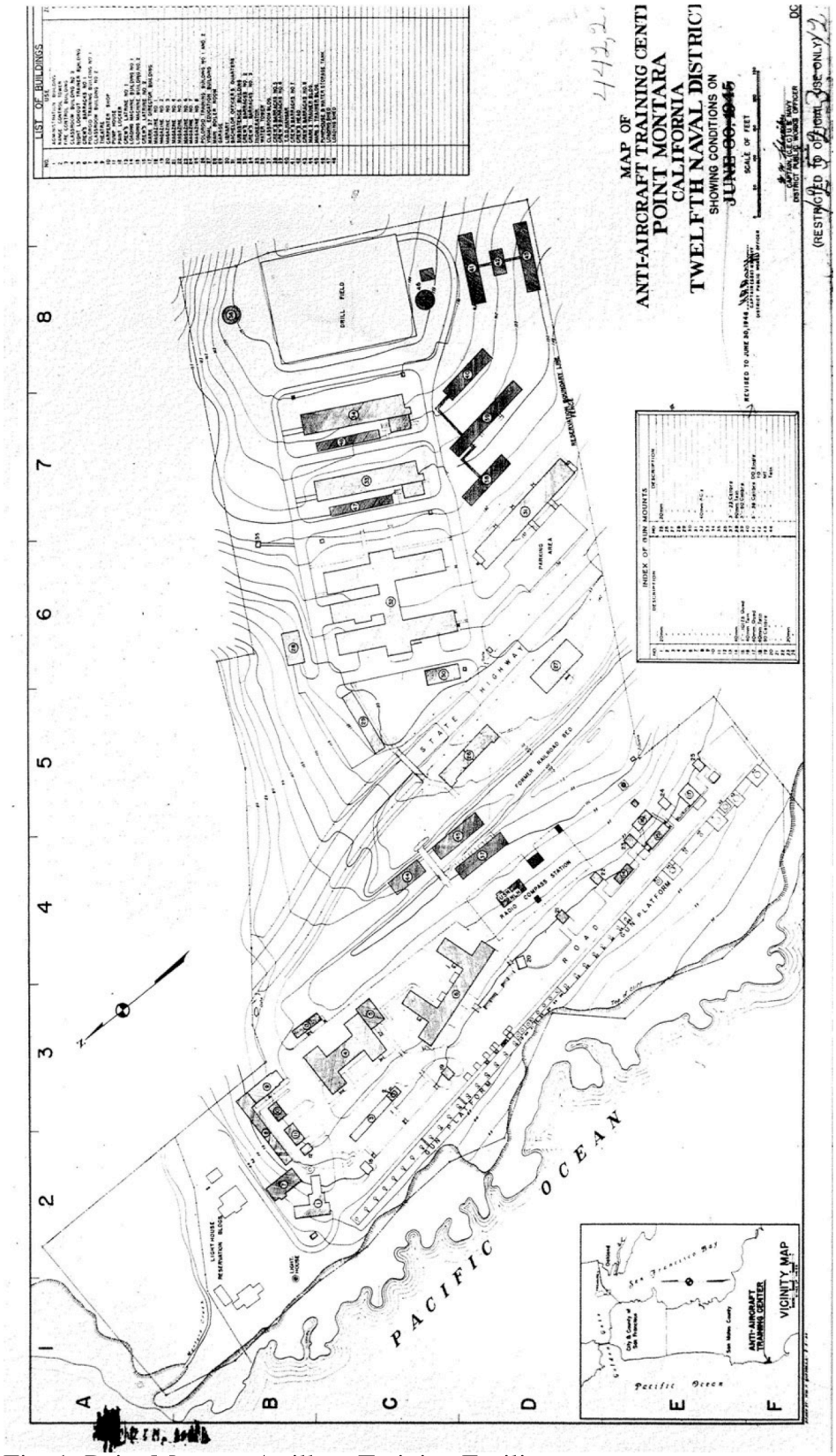


Fig. 1: Point Montara Artillery Training Facility.



Figure 2: Training on the 20mm Oerlikon anti-aircraft gun at Point Montara, 1943.

SURFACE RECONNAISSANCE

A "general surface reconnaissance" was conducted by a field archaeologist on all open land surfaces in the subject area. A "controlled intuitive reconnaissance" was performed in places where burrowing animals, exposed banks and inclines, and other activities had revealed subsurface stratigraphy and soil contents. The boundaries of the proposed project area were well defined in the field by Sierra Street to the South, Carlos Street to the West, Lincoln Street to the East, and 16th Street along the northern boundary. Accessibility to the property was good to fair; the majority of the proposed project area was accessible, however some areas were blocked by dense vegetation and steep slopes. Soil visibility was fair to poor; the majority of the surface area was obscured by vegetation, however sporadic soil exposures provided an understanding of soil characteristics. In addition, portions of the surface were obscured by imported or disturbed soils, particularly in those areas modified for mountain bike recreational activities. Where visible, native soils consisted of a tan sandy loam and clay. Rock types noted included native siltstone gravel as well as imported gravel. Foundations, as well as other concrete features (culverts, other infrastructure) dating from WWII era military activities on the site were noted. A small area of prehistoric shell midden was noted during surface reconnaissance. The midden was sparse, and surface elements consisted of a scatter of *Mytilus* (Mussel) shell fragments. The soil itself was light brown in color,

potentially indicating an older deposit, largely leached of organic materials. This midden soil was observed alongside an informal footpath northwest of the existing water tanks on the property (see Midden Location Map).

CONCLUSION AND RECOMMENDATIONS

The archival research revealed that there are no recorded cultural resources located within the study area. However, four previously recorded resources are located within a one quarter mile radius of the proposed project area. The closest of these is CA-SMA-55, a prehistoric shell mound site originally recorded by N. Nelson in the early 20th Century and located approximately 150 feet away from the northwest corner of the proposed project area. Midden soils, containing fragments of mussel shell were noted in the central portion of the subject property during surface reconnaissance (see Midden Location Map). Historic foundations, associated with WWII era military activities on the site were also noted in the field. Based on the presence of midden soils within the project area, it is recommended that a subsurface testing program be carried out in this portion of the proposed project area to ascertain the boundaries, depth, and constituents of this archaeological deposit. It is further recommended that the archaeological monitoring and other mitigation measures presented in the Archaeological Treatment Plan for the project (Cartier 2018) be carried out for the proposed project.

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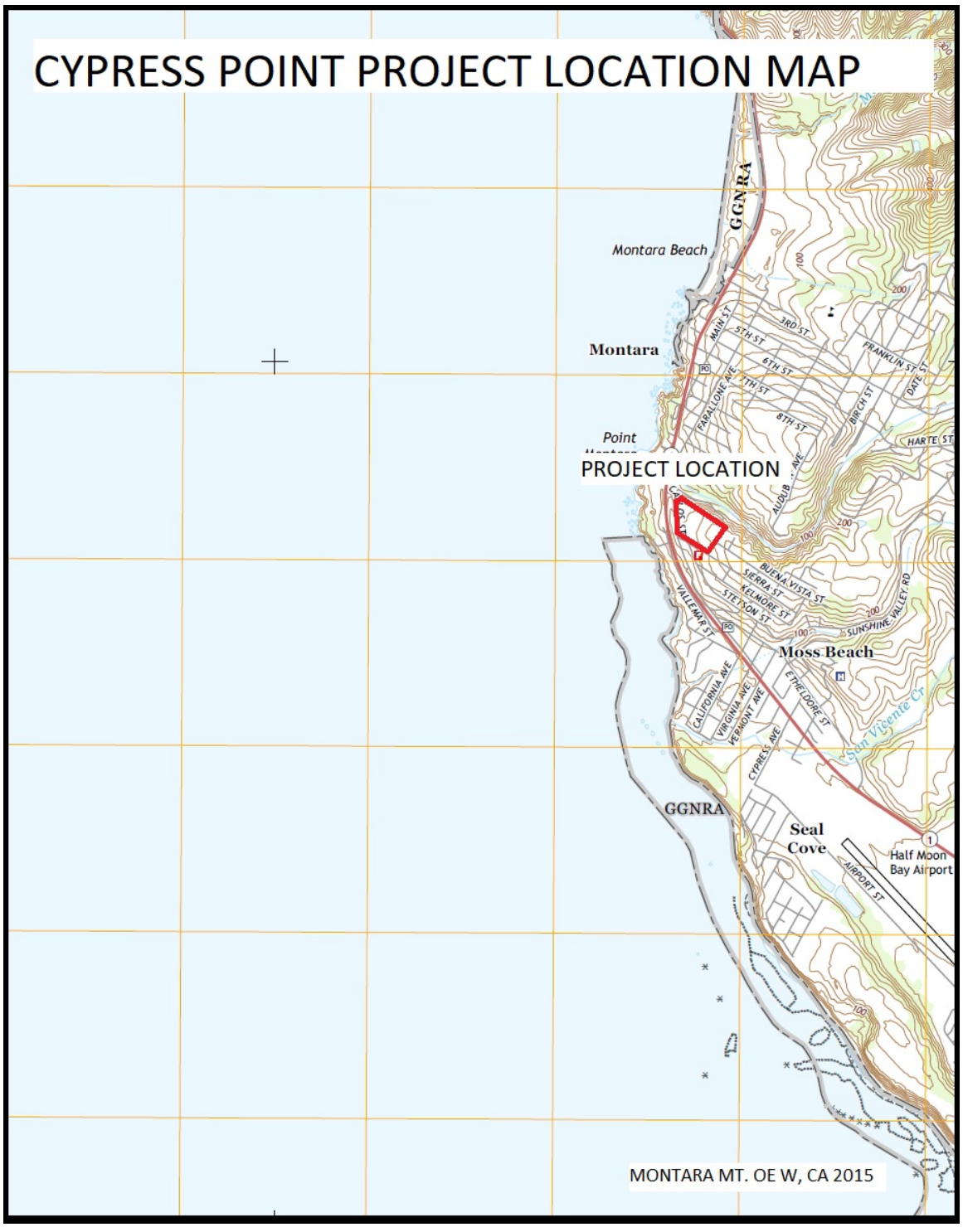
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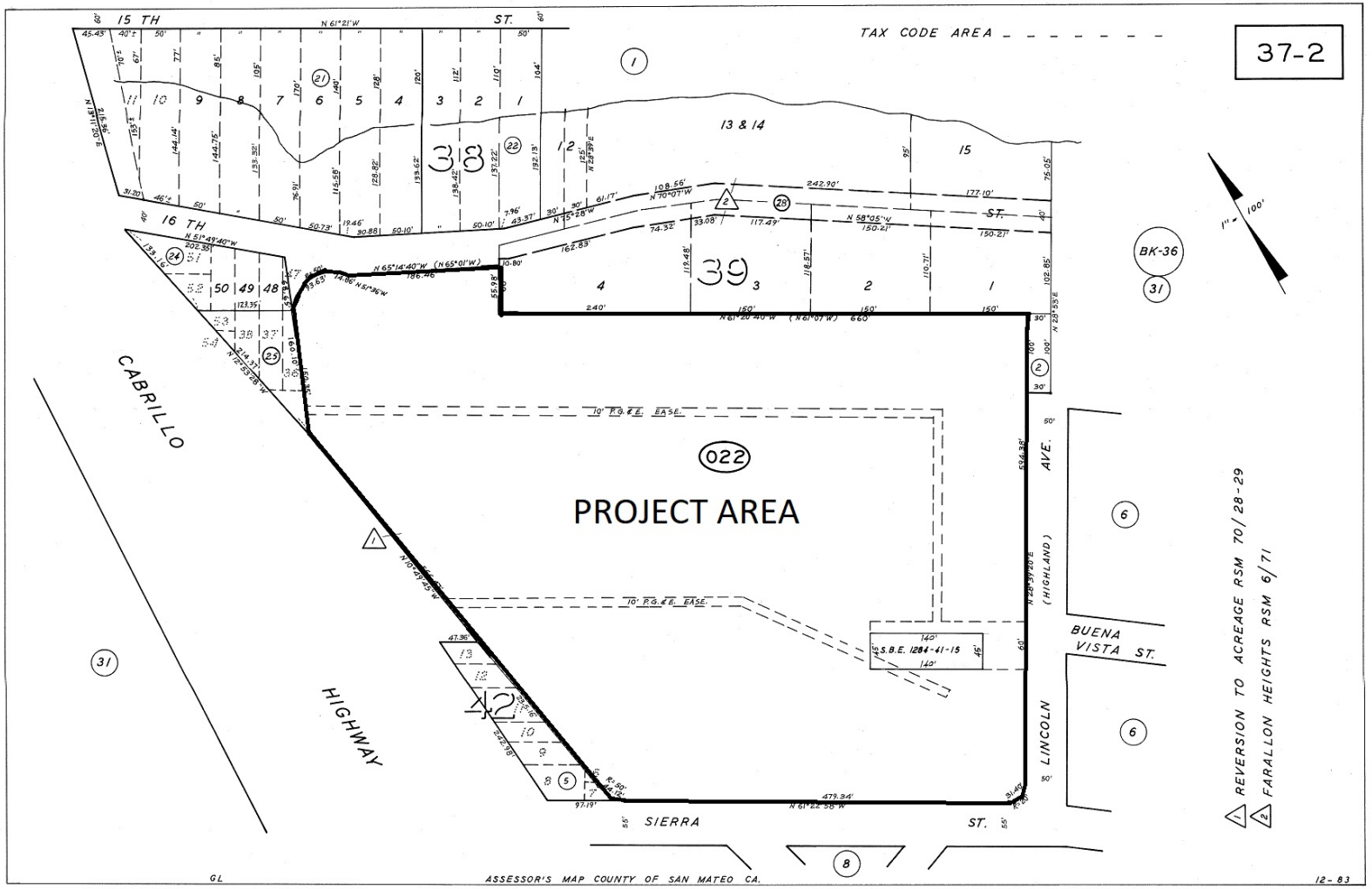
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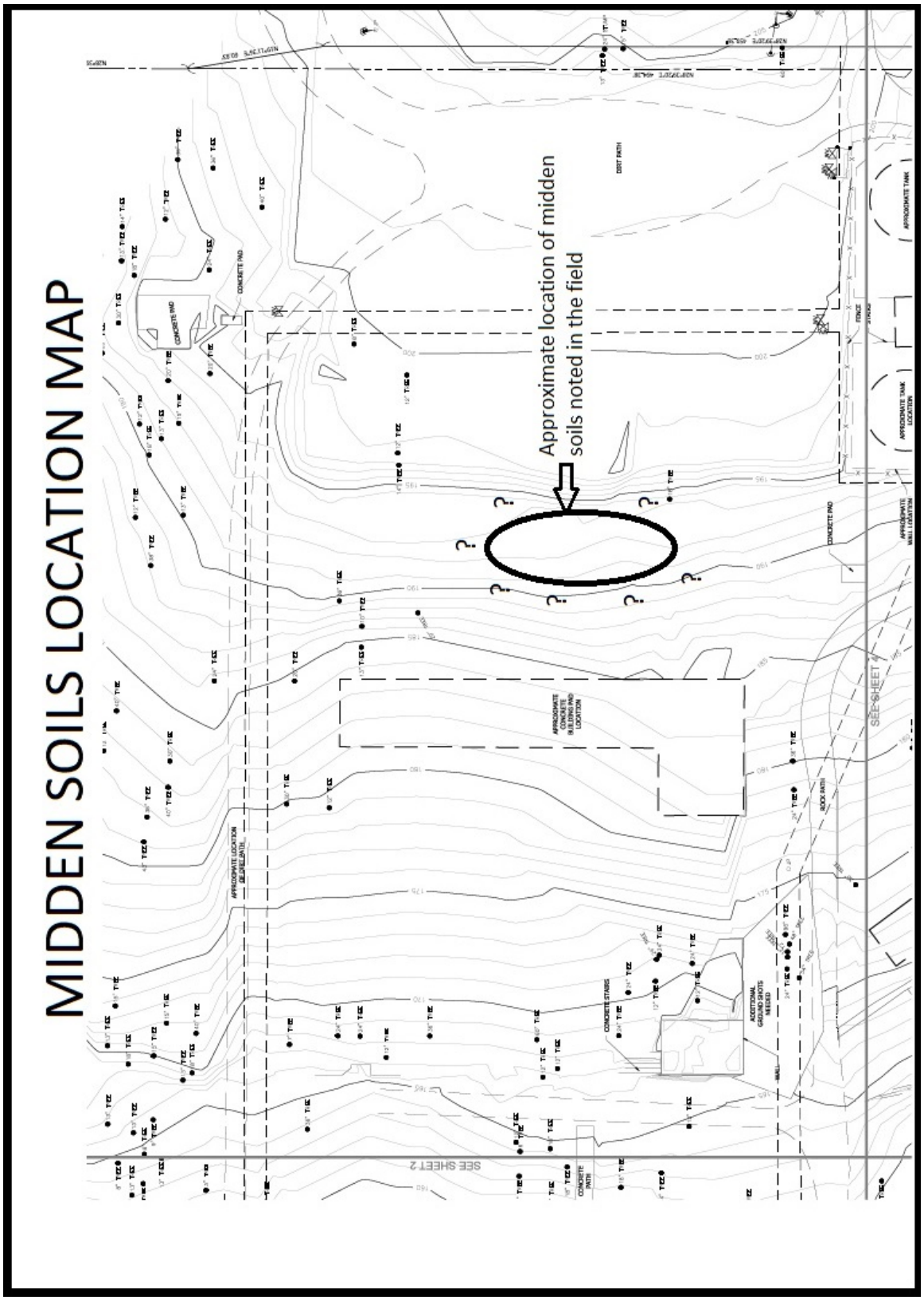

CYPRESS POINT PROJECT LOCATION MAP
GGNRA
Montara Beach
Montara
Point
PROJECT LOCATION
Moss Beach
GGNRA
Seal Cove
Half Moon Bay Airport
MONTARA MT. OE W, CA 2015

CYPRESS POINT PROJECT AREA MAP



County Review Draft

County Review Draft



APPENDIX B

Paleontological Review
MidPen Cypress Point Affordable Housing Community Project
San Mateo County, California

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County Review Draft

FIRSTCARBONSOLUTIONS™

Paleontological Review
MidPen Cypress Point Affordable Housing Community Project
San Mateo County, California

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INTRODUCTION

Project Undertaking and Location

MidPen Housing (MidPen) is developing an affordable housing project located to the north northeast of the intersection of Carlos Street and Sierra Street in Moss Beach, an unincorporated area in San Mateo County (Attachment A: Exhibits 1 through 3). The proposed Project, MidPen Cypress Point Affordable Housing Community Project (Project), is located within the Montara Mountain 7.5-minute U.S. Geological Survey Quadrangle. The Project does not have a legal description, as it lies within an area that has not been so divided. The elevation of the Project ranges between 100 and 200 feet above mean sea level (amsl), based on the National Geodetic Datum of 1929.

The UTM coordinates near the center of the parcel are as follows: 4154197 meters north and 542770 meters east.

The Project is bounded by residential properties along 16th Street and vacant land to the north; residential properties along Carlos, Sierra, and Stetson Streets to the south; residential properties along Lincoln and Buena Vista Street to the east; and one residential property and vacant land along Carlos Street to the west.

On August 15, 2017, the California Coastal Commission asked the Project proponents to provide the following information:

- Include an evaluation of paleontological resources at the project site.
- Include an evaluation of the consistency of the proposed project with California Coastal Act Section 30244, which states "**Archaeological or paleontological resources**. Where development would adversely impact archaeological or paleontological resources as identified by State Historic Preservation Officer, reasonable mitigation measures shall be required."
- Include an evaluation of the consistency of the proposed project with the San Mateo County MidCoast Local Coast Program.

This report is in response to those requests.

Scope of Study and Personnel

The scope of work of this paleontological assessment included a paleontological resource records search at the University of California Museum of Paleontology (UCMP) and a search of published and unpublished literature pertinent to the Project, in conformance with the guidelines established by the Society of Vertebrate Paleontology (SVP 2010). No field survey of the project site has been conducted. Within this report are the conclusions of the comprehensive paleontological resources assessment, with

the intention of satisfying the cultural resource requirements of the California Environmental Quality Act (CEQA) and the County of San Mateo.

Dr. Joe Stewart of FirstCarbon Solutions served as the professional paleontologist. His qualifications are provided in Attachment B.

ENVIRONMENTAL SETTING

The proposed Project lies within the Coastal Ranges Physiographic Province, specifically at the north end of the South Coastal Ranges. The Project is located in the neighborhood of City of Moss Beach in unincorporated San Mateo County, California.

REGULATORY SETTING

CEQA provides regulations concerning significant impacts to paleontological resources. The following is concise description of state and local laws and regulations.

State Level

CEQA provides protection for paleontological resources through environmental legislation. Direction regarding significant impacts on paleontological resources is found under Appendix G (part V) of the CEQA Guidelines. The Guidelines state, "A project will normally result in a significant impact on the environment if it will . . . disrupt or adversely affect a paleontological resource or site or unique geologic feature, except as part of a scientific study." As stated in Section 5097.5 of the Public Resource Code, it is unlawful to remove paleontological remains without authorization and can result in a misdemeanor. In addition, Section 622.5 of the California Penal Code sets the penalties for damage or removal of paleontological resources.

The procedures, types of activities, persons, and public agencies required to comply with the CEQA are defined in the Guidelines for Implementation of CEQA (CEQA Guidelines), as amended on March 18, 2010 (Title 14, Section 15000, et seq. of the California Code of Regulations [i.e., 14 CCR Section 15000, et seq.]) and further amended January 4, 2013. One of the questions listed in the CEQA Environmental Checklist is: "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" (CEQA Guidelines Section 15064.5 and Appendix G, Section V, Part C).

Local Level

The San Mateo County General Plan has policies that fall into 15 groups. The fifth of these groupings is the County Historical and Archaeological Resources Policies. These historical and archaeological policies contain 27 policies (5.1 through 5.27) to which the County is committed. Policy 5.20 reads as follows:

5.20. Site Survey
Determine if sites proposed for new development contain archaeological/paleontological resources. Prior to approval of a development for these sites, require that a mitigation plan, adequate to protect the resource and prepared by a qualified professional, be reviewed and implemented as a part of the project.

The MidCoast Local Coast Program is the vehicle by which the County of San Mateo assumes responsibility for implementing the State Coastal Act. The project site falls within the Midcoast Land Use Plan area on the map provided by the County. Thus, the Project is subject to the MidCoast Local Coast Program. The program requirements are set forth in the document entitled Local Coastal Program Policies.

There are twelve components to these policies. Within the Locating and Planning New Development Component is this sub-policy:

1.25. Protection of Archaeological/Paleontological Resources
Based on County Archaeological/Paleontological Sensitivity Maps, determine whether or not sites proposed for new development are located within areas containing potential archaeological/paleontological resources. Prior to approval of development proposed in sensitive areas, require that a mitigation plan, adequate to protect the resource and prepared by a qualified archaeologist/paleontologist be submitted for review and approved and implemented as part of the project.

Within the Shoreline Access Component is this sub-policy:

10.24. Definition of Fragile Resources
Define fragile resource as (1) exposed rocky cliff faces, steep slopes as defined in the Hazard Component and hilly coastal terraces, (2) all sensitive habitats defined in the Sensitive Habitats component, and archaeological/paleontological resources.

Within the Sensitive Habitats Component is this sub-policy:

a. Conduct studies by a qualified person agreed by the County and the applicant during the planning and design phases of facilities located within or near sensitive habitats and archaeological/paleontological resources to determine the least disruptive locations for improvements and the methods of construction. These studies should consider the appropriate intensity of use, improvement and management to protect the resources and reduce or mitigate impacts.

b. Provide improvements and management adequate to protect sensitive habitats. These may include, but are not limited to, the following: (1) informative displays, brochures, and signs to minimize public intrusion and impact, (2) organized tours of sensitive areas, (3) landscaped buffers or fences, and (4) staff to maintain improvements and manage the use of sensitive habitats.

Professional Standards

The Society of Vertebrate Paleontology (2010) has provided Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. These guidelines are recognized throughout the paleontological resource management community.

METHODS

Paleontological Resources Records Search

On September 13, 2017, FirstCarbon Solutions requested a paleontological records search of the UCMP through Dr. Kenneth Finger. Site records with supporting maps and documents are maintained at this facility. The records search included the examination of current geologic maps and paleontological locality maps. The records search is used to determine if any paleontological resources have been recovered within and around the project site, and establish a foundation for gauging the sensitivity of the project site for additional and buried paleontological resources.

Paleontological Resources Literature Search

Published reports concerning pertinent geologic and paleontological topics were investigated.

Pedestrian Survey

No pedestrian survey was performed for this study.

RESULTS

Paleontological Resources Records Search

Dr. Kenneth Finger's report, based on the UCMP paleontology collection, reported that the Project has Pleistocene marine terrace deposits underlain by Cretaceous granitic rocks (Attachment C). The granitic rocks will not produce paleontological resources, but Pleistocene terrace deposits have produced them. A search of the UCMP database records nine localities in unnamed late Pleistocene deposits in San Mateo County. The closest locality in its records is a site at El Granada Beach that is approximately 3 miles to the south of the Area of Potential Effect. Their composite assemblage includes *Uria algae* (guillemot or murre), *Mammuthus columbi* (Columbian mammoth), *Mammut americanum* (American mastodon), *Equus* (horse), *Glossotherium halani* (Harlan's ground sloth), *Camelops hesternus* (extinct large camel), and *Bison latifrons* (giant North American bison). Of these localities, the *Bison* specimen found at V92009 (El Granada Beach), at approximately 3 miles to the south, is the closest to the project site. The existence of *Bison* in the marine terrace deposits demonstrates that the fauna is from the Rancholabrean North American Land Mammal Age.

The report recommended a preconstruction survey of the site for paleontological resources, as well as a paleontological monitoring program for the parts of the Project having Pleistocene marine terrace deposits. Such a program should also involve reporting and curation of any fossils recovered.

The author contacted the County of San Mateo Planning Department in response to its Local Coastal Program Policy 1.25 requirement that County archaeology/paleontology sensitivity maps be consulted. The reality is that the County has no such maps. Any questions concerning archaeological sites are referred to the Northwest Information Center (NWIC) at Sonoma State University. A separate cultural resources assessment was done for this project, and the NWIC was contacted. The NWIC does not specialize in paleontological records, and the records search done for this report through the UCMP is standard and fulfills the intent of this requirement. It showed no known localities within 1 mile of the Project site.

Literature Search

The survey of published literature revealed no paleontological resources within the project footprint. The geologic mappings of Brabb et al. (1988) and of Pampeyan (1994) show the Project to lie on the Pleistocene marine terrace deposits and Cretaceous granitic rocks. The marine terrace deposits are potentially fossiliferous, but the granitic rocks are not. The thickness of the Pleistocene terrace deposits in the Montara area is given as 75 feet (Jack 1969).

Both of the compendia of California Pleistocene vertebrate fossil localities (Jefferson 1991a, b) list localities in coastal Pleistocene deposits of San Mateo County. UCMP localities are discussed, but the collections of the U.S. Geological Survey also contain remains of *Equus* and *Cervus nanodes* (tule elk) from Laguna Alta, and *Smilodon* (sabertooth) and *Mammut americanum* from Montara Beach (Jefferson 1991b).

RECOMMENDATIONS

The sources consulted indicate that the Pleistocene marine terrace deposits, which are underlain by Cretaceous granitic rocks, have a high sensitivity for significant paleontological resources. Therefore, earthmoving of previously undisturbed sediments for the Project could have a significant impact on paleontological resources. The paleontological resources records search from the UCMP recommends a pedestrian survey of the site prior to construction, and paleontological monitoring of construction activities.

MM PAL-1 The project proponent shall retain the services of a paleontologist with the qualifications listed by the Society of Vertebrate Paleontology (SVP 2010). The paleontologist shall be provided with construction plans and shall execute a pedestrian survey of the project footprint for paleontological resources and geologic indicators pertinent to these resources.

MM PAL-2 The paleontologist shall be provided with construction plans and design a paleontological resource monitoring program to be approved by the County of San Mateo. It will address monitoring of all disturbance of previously undisturbed sediments during demolition and construction, sediment sampling and testing, specimen preparation, identification, reporting, and curation.

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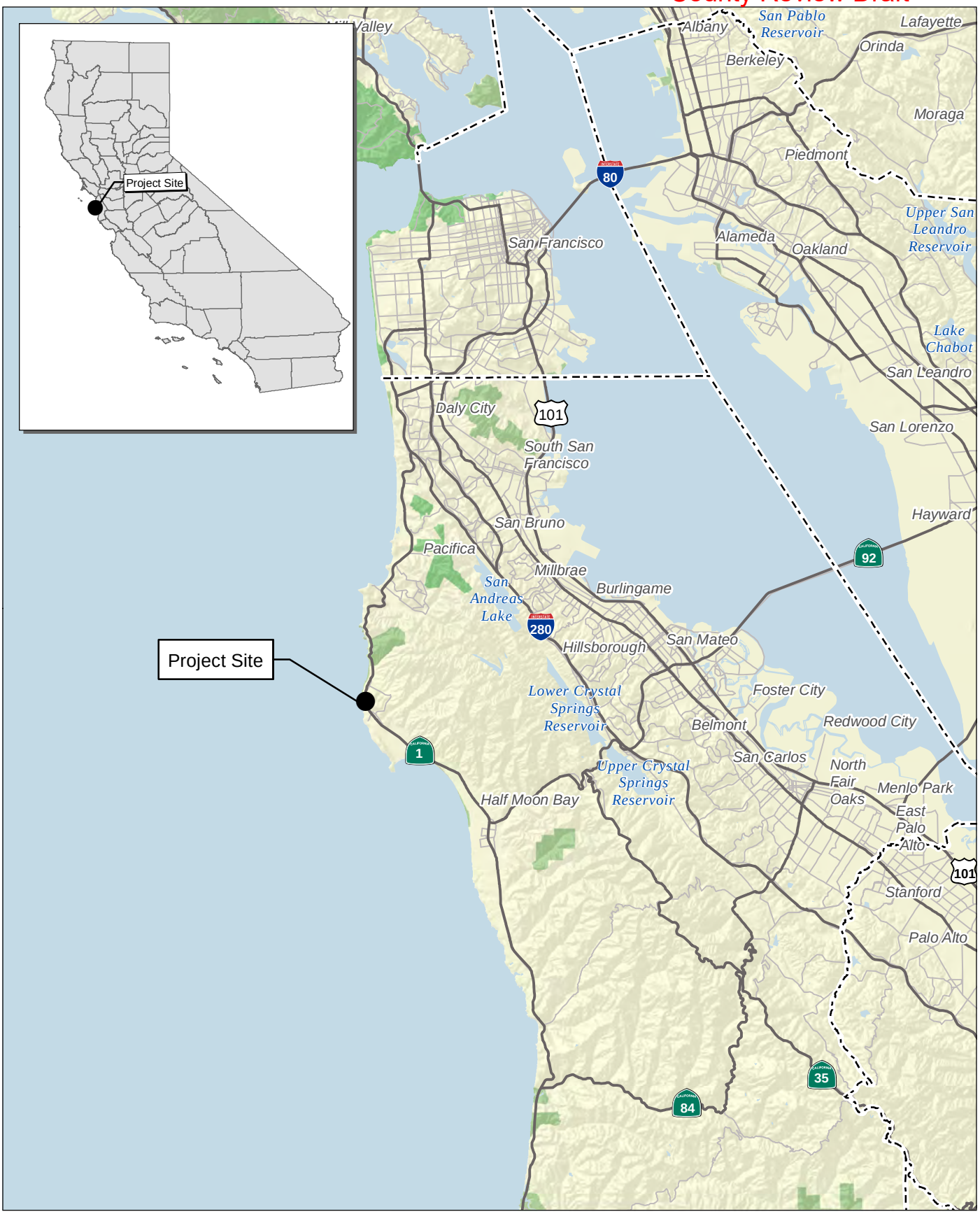
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County Review Draft

Attachment A:
Exhibits 1–3

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County Review Draft



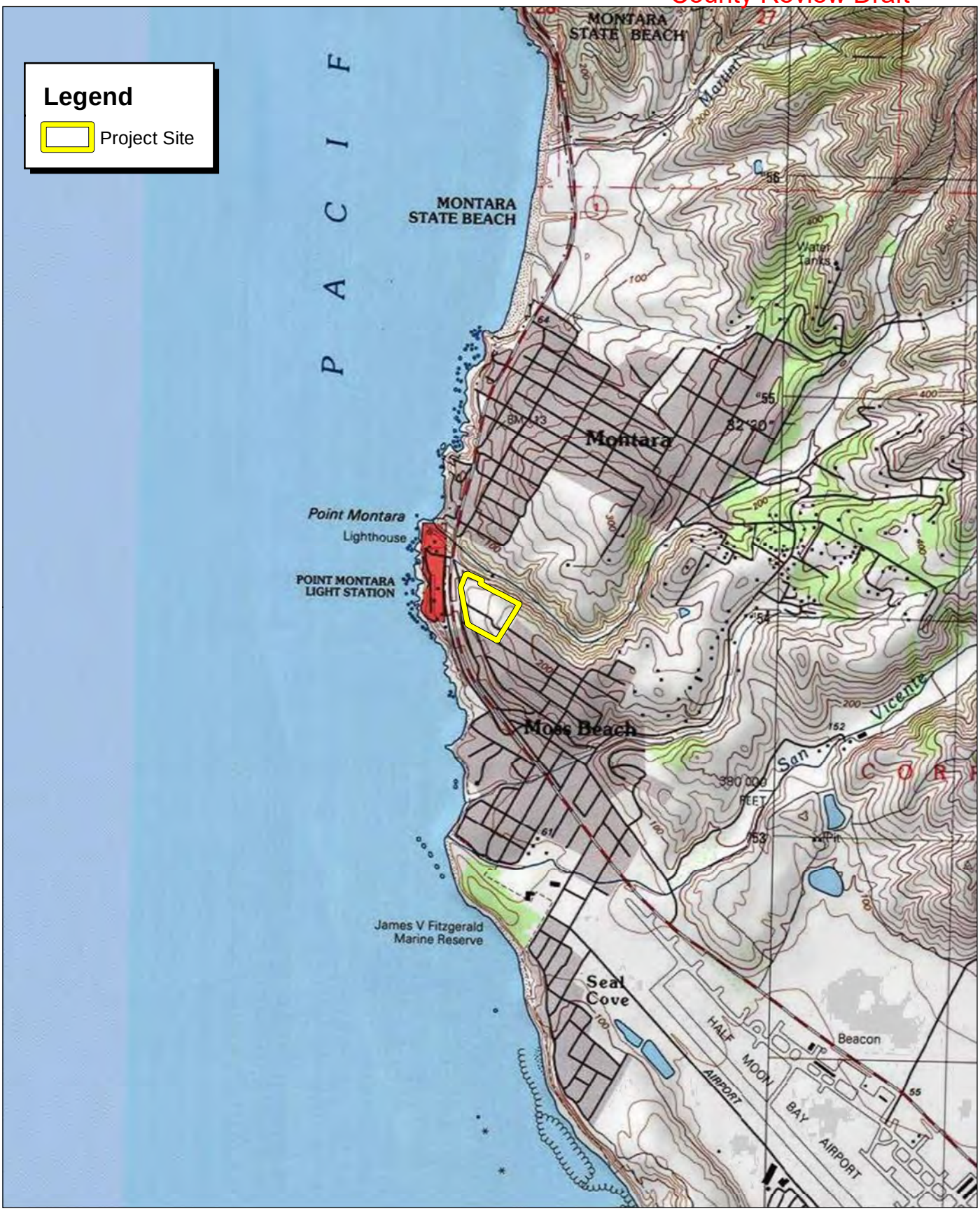
Source: Census 2000 Data, The CaSIL, FCS GIS 2016.

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Exhibit 1
Regional Location Map

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Source: USGS Montara Mountain (1980) 7.5' Quadrangle / Rancho Corral de Tierra (Palomares) Mexican Land Grant

FIRSTCARBON SOLUTIONS™

2,000 1,000 0 2,000 Feet

Exhibit 2
Local Vicinity Map
Topographic Base

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Source: ESRI Imagery

FIRSTCARBON SOLUTIONS™

750 375 0 750
Feet

Exhibit 3
Local Vicinity Map
Aerial Base

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County Review Draft

Attachment B:
Resume

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J. D. STEWART, PH.D.—ON-CALL PRINCIPAL PALEONTOLOGIST

OVERVIEW

- 39 years of experience

Education

- Doctor of Philosophy, Systematics & Ecology, University of Kansas, 1984
- Master of Arts, Systematics & Ecology, University of Kansas, 1979

Training and Certifications

- Certified Paleontologist, Orange and Riverside counties, California
- Hazardous Waste Operations and Emergency Response 40 Hr.
- General Site Worker

Professional Affiliations

- Society of Vertebrate Paleontology

J.D. Stewart, PhD, is a vertebrate paleontologist with 40 years of experience in paleontology and 30 years of experience in the geology and paleontology of California. He has been involved in the permitting or construction of more than ten power plants and has directed the paleontological monitoring and mitigation program for Path 15, a major transmission line project. His publications include more than 40 peer-reviewed articles in books and journals. His research specialties are fossil fishes and Pleistocene vertebrate faunas.

RELATED EXPERIENCE AND CLIENT SUMMARY

Tenaska Imperial Solar Energy Center (ISEC) West Project, Imperial Valley, CA

For the ISEC West Solar Project, Dr. Stewart supervised paleontological monitoring activities on private lands.

BrightSource Sonoran West Solar Project, Blythe, CA

Dr. Stewart supervised paleontological surveys on U.S. Bureau of Land Management (BLM) and private lands. He worked on the Application for Certification (AFC) and wrote the final report when the project was terminated.

TerraGen Project

Dr. Stewart performed pedestrian paleontological surveys of the TerraGen Project site and wrote the Paleontological Resources section for the AFC.

BrightSource Rio Mesa Solar Project, Blythe, CA

Dr. Stewart supervised paleontological surveys on BLM and private lands and prepared the Paleontological Resources section for the AFC.

J. D. STEWART, PH.D.—ON-CALL PRINCIPAL PALEONTOLOGIST

Pio Pico Energy Center, Otay Mesa, CA

The Pio Pico Energy Center (PPEC) is a 300 MW simple-cycle electrical generating facility that is contracted under a 25-year power purchase agreement (PPA) with San Diego Gas & Electric (SDG&E). Pio Pico is located on a ten-acre site in Otay Mesa, an unincorporated area of San Diego County, California, approximately 15 miles southeast of downtown San Diego. Dr. Stewart supervised paleontological surveys and wrote the Paleontological Resources section for the AFC for this project.

Mesquite Nevada Replacement General Aviation Airport, Clark County, NV

Dr. Stewart prepared the Paleontological Resource Assessment for the Federal Aviation Administration (FAA).

Marsh Landing Generating Station Application for Certification, Contra Costa County

Dr. Stewart performed a paleontological pedestrian survey of a project area in Contra Costa County and wrote the Paleontological Resources section of the AFC. He also served as the Paleontological Resource Specialist during construction and prepared the final report.

Imperial Valley Solar Application for Certification, Imperial Valley, CA

Dr. Stewart directed paleontological pedestrian surveys within a project area in San Bernardino County and wrote the Paleontological Resources section of the AFC.

Calico Solar Application for Certification, San Bernardino County, CA

Dr. Stewart participated in paleontological pedestrian surveys of the Calico Solar project area, edited the Paleontology section of the AFC, and served as the Paleontological Resource Specialist.

Starwood Power-Midway, LLC Peaking Project Construction

Dr. Stewart wrote a mitigation plan for paleontological resources, oversaw paleontological monitoring during project construction, and wrote the final report.

Calnev Pipeline Project, San Bernardino County, CA and Clark County, NV

Dr. Stewart directed paleontological surveys of a 234-mile-long project area in San Bernardino County, California, and Clark County, Nevada. He also prepared the paleontological assessment.

Willow Pass Generating Station Application for Certification, Contra Costa County, CA

Dr. Stewart participated in paleontological pedestrian surveys of a project area in Contra Costa County and wrote the Paleontological Resources section of the AFC.

San Joaquin One and Two Application for Certification, Fresno County, CA

Dr. Stewart directed paleontological pedestrian surveys of a project area in Fresno County and prepared the Paleontological Resources section of the AFC.

J. D. STEWART, PH.D.—ON-CALL PRINCIPAL PALEONTOLOGIST

Carrizo Energy Solar Farm (Ausra) Application for Certification, Simmler, CA

Dr. Stewart participated in paleontological pedestrian surveys of the Carrizo Energy Solar Farm project area and edited the Paleontology section of the AFC.

Starwood Power-Midway, LLC Peaking Project Application for Certification

Dr. Stewart participated in the responses to the CEC Provisional Staff Assessments for Starwood Power-Midway, LLC's Peaking Project AFC.

Path 15 500-kV Power Transmission Line between Los Banos and Gates Substations, Los Banos, CA

Dr. Stewart supervised paleontological resource monitoring, excavations, specimen preparation, specimen identification, and report writing for this 80-mile-long power line.

Publications

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County Review Draft

Attachment C:
Paleontological Records Search

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County Review Draft

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Consulting Paleontologist

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September 18, 2017

Dr. Dana Pietro
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

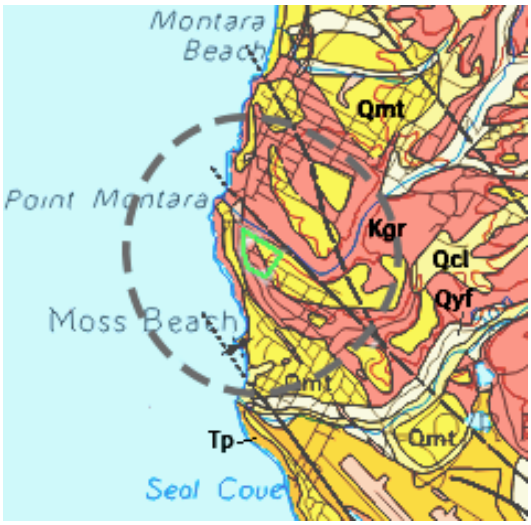
Re: **Paleontological Records Search for MidPen Affordable Housing Project (PN 50450001), Moss Beach, San Mateo County**

Dear Dr. Pietro,

As per your request, I have conducted a records search of the University of California Museum of Paleontology (UCMP) database for the proposed MidPen Affordable Housing Project in Moss Beach. The project is located in the Montara Mountain quadrangle (1980 USGS 7.5' topographic map). Google Earth imagery reveals that most of this parcel appears to be undeveloped.

Geologic Units

On the part geologic map of Brabb et al. (1998) shown here, the project site (center, outlined in green) includes Pleistocene marine terrace deposits (Qmt) and granitic rocks (Kgr). The marine terrace deposits are potentially fossiliferous. Granitic rocks crystallize from magma at great depth and therefore cannot contain fossils, and the map pattern suggest that they are subjacent to the Pleistocene terrace. None of the other three geologic units in this area are within the half-mile search radius (dashed outline). Of those, two are Holocene, which is too young to contain fossils, while the Tertiary Purisima Formation (Tp) is known to yield significant paleontological resources; however, it is restricted to the coast and is unlikely to be present in the subsurface of the project site.



Key to mapped geologic units

Qcl	Colluvium (Holocene)
Qyf	Younger alluvial fan deposits (Holocene)
Qmt	Marine terrace (Pleistocene)
Tp	Purisima Formation (Pliocene and upper Miocene)
Kgr	Granitic rocks of Montara Mountain (Cretaceous)

County Review Draft

Paleontological Records Search

The University of California Museum of Paleontology (UCMP) database was searched for Pleistocene vertebrate localities in San Mateo County. The database records 9 localities in unnamed late Pleistocene deposits in San Mateo County. Their composite assemblage includes *Uria algae* (guillemot or murre), *Mammuthus columbi* (Columbian Mammoth), *Mammut americanum* (American Mastodon), *Equus* (horse), *Glossotherium harlani* (Harlan's Ground Sloth), *Camelops hesternus* (Extinct Western Camel), and *Bison latifrons* (Giant North American Bison). The latter was the specimen found at V792009 (Grenada Beach) that, at approximately three miles to the south, is the locality closest to the project site. These species represent the Rancholabrean fauna of the late Pleistocene.

Conclusions and Recommendations

Part of the MidPen Affordable Housing Project site is located on Pleistocene marine terrace deposits that have the potential to yield terrestrial or marine vertebrate fossils. Considering that most of the site appears to be undeveloped and has geologic ezpoaures, a preconstruction paleontological survey of the site is warranted. Paleontological monitoring is also recommended for excavations into the Pleistocene terrace. Should any significant paleontological resources be discovered during construction activities, CEQA guidelines stipulate that onsite construction activities are to be diverted away from the discovery until a professional paleontologist can inspect and evaluate the find and, if deemed appropriate, salvage it in a timely manner. Collected fossils should be offered to an appropriate repository, such as the California Academy of Sciences or the UCMP, for the benefit of science and future generations.

If I can be of further assistance on this project, please do not hesitate to contact me.

Sincerely,



Reference Cited

Brabb, E.E., Graymer, R.W., and Jones, D.L., 1998, Geology of the onshore part of San Mateo County, California: a digital database. U.S. Geological Survey Open-File Report 98-137.

APPENDIX C

Archaeological Testing Program
for CA-SMA-431
at the Cypress Point Project
in Moss Beach, County of San Mateo

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County Review Draft

ARCHAEOLOGICAL TESTING PROGRAM FOR CA-SMA-431 AT THE CYPRESS POINT PROJECT IN MOSS BEACH, COUNTY OF SAN MATEO

FOR

ATTN: MR. CRAIG STEVENS
AEM CONSULTING
1241 LARKIN WAY
SACRAMENTO, CA 95818
NWIC# 17-0815

BY

Archaeological Resource Management
Dr. Robert Cartier, Principal Investigator
496 North Fifth Street
San Jose, CA 95112
(408) 295-1373
FAX: (408) 286-2040

JUNE 1, 2018

County Review Draft

ADMONITION

Certain information contained in this report is not intended for general public distribution. Portions of this report locate significant archaeological sites in the region of the project area, and indiscriminate distribution of these data could result in the desecration and destruction of invaluable cultural resources. In order to ensure the security of the critical data in this report, certain maps and passages may be deleted in copies not delivered directly into the hands of environmental personnel and qualified archaeologists.

THE PRINCIPAL INVESTIGATOR

INTRODUCTION

This report contains the results of a subsurface testing program at archaeological site CA-SMA-431, within the Cypress Point project in Moss Beach, California. A testing program was designed based upon the requirements of the County of San Mateo. The program was undertaken to determine the extent, depth, and constituents of the prehistoric archaeological deposit. The proposed project consists of a residential development. Associated construction activities that may impact the site include grading, trenching, excavation and other earthmoving activities.

Seven mechanical test trenches and two hand excavated 1 x 1 meter testing units were utilized as part of this testing program. The mechanical test trenches were excavated outside the observable surface boundaries of the archaeological site in order to confirm that the site did not extend beyond the visible boundaries. The 1x1 meter units were excavated down to a depth of 40 cm, at which point sterile clay soil was encountered. The mechanical testing trenches were excavated to a depth of 120 cm. No cultural materials were noted in any of the mechanical test trenches. The hand excavated archaeological testing units within the deposit recovered prehistoric materials including marine shell, primarily *Mytilus* (mussel) species, and fire cracked rock. The presence of shell fragments and fire cracked rock (FCR) are typical indicators of a prehistoric archaeological site (shell midden). Recent historic materials were also found in the hand excavated units, indicating historic disturbance.

After the fieldwork was completed, two shell samples were selected and submitted to Beta Analytic Laboratories, Inc., in Miami, Florida for radiocarbon analysis. Sample #1 was given a calibrated date of 1501 to 1683 Cal AD (449-267 Cal BP). Sample #2 was given a calibrated date of 1068 to 1276 Cal AD (882-674 Cal BP).

A set of Department of Parks and Recreation (DPR) forms (see Appendix D attached) was completed for the identified archaeological site and submitted to the Northwest Information Center of the California Historic Resources Information System (CHRIS). The archaeological site within the proposed project area was given the trinomial designation of CA-SMA-431.

Due to the presence of a small area of disturbed shell midden in the proposed project area, construction activity could potentially impact cultural resources. Recommendations to mitigate the project impact are outlined in the Summary and Conclusion section of this report.

QUALIFICATIONS OF ARCHAEOLOGICAL RESOURCE MANAGEMENT

Archaeological Resource Management has been specifically engaged in cultural resource management projects in central California since 1977. The firm is owned and supervised by Dr. Robert Cartier, the Principal Investigator. Dr. Cartier has a Ph.D. in anthropology, and is certified by the Register of Professional Archaeologists (RPA) for conducting cultural resource investigations as well as other specialized work in archaeology. Specific segments of this project were carried out by the following personnel:

Robert Cartier:	Principal Investigator and Report Editor
Douglas Jones:	Field Technician, Report Preparation, and Map Production
Pete Johnson:	Field Technician
Christopher Zimmer:	Native American Monitor

Radiometric Analysis was performed by Beta Analytic, Inc. in Miami, Florida.

PROJECT LOCATION AND SETTING

The subject area consists of approximately 10.66 acres of land off of Sierra Street in Moss Beach, County of San Mateo. On the USGS 7.5 minute quadrangle of Montara Mountain OE W, CA, the Universal Transverse Mercator Grid (UTMG) centerpoint of the project area is 10S 5 42 699mE,41 54 262mN. The elevation ranges from approximately 100 to 150 feet MSL, and the nearest source of fresh water is the Montara Denniston Creek which is located approximately 300 feet north of the proposed project area.

The proposed project consists of the construction of 71 affordable housing units consisting of approximately 25 two-story buildings holding 3-4 units each. This project will involve the necessary excavation, grading, trenching, and other earthmoving activities.

ETHNOGRAPHIC BACKGROUND

Early ethnographic accounts of local Native American cultures provide a cultural context for archaeological studies. The Ohlone, or Costanoan, Indians inhabited the San Francisco Bay regions from the Golden Gate south to Monterey. Derived from a Spanish word, Costanoan means "people of the coast," and is an older term. Descendants of these people prefer to refer to themselves as "Ohlone," and it is now the generally accepted term. The research area is located in the Salson linguistic area, which shared many cultural traits with other linguistic groups in the Ohlone region. It is believed that the Ohlone Indians inhabited the area since A.D. 500, and that speakers of the Hokan language previously inhabited at least part of the region (Levy 1978). However, it is unclear when the Hokan or even earlier Paleo-Indians first came to the area. Archaeological data documents Native American coastal activity in the Central Coast area over the past 10,000 years, with some indications of occupation as early as 12,000 to 13,000 years ago (Jones et al, 2007). The earliest radiocarbon dates that are available for the area to which the Ohlone came to live are 12,000 B.P. (years before present) at SCR-177 in Scotts Valley (Cartier 1993), 3,200 B.P. at the University Village Site (SMA-77) (Gerow 1968), 6,349 B.P. at Palm Canyon (SCL-106) near Gilroy (Cartier 1980), 6,628

B.P. at Camden Avenue (SCL-64) (Winter 1978), CA-SCR-38 on the Santa Cruz coast, dated to ca. 8850 B.P., CA-SCR-7 dated to ca. 6050 B.P. (Jones and Hilderbrandt 1990), and CA-SCR-239 in Scotts Valley, dated to ca. 4950 B.P. (Cartier 1992).

The Ohlone were gatherers and hunters who utilized only the native flora and fauna with the exception of one domesticate, the dog. Yet, the abundance and high quality of natural resources allowed them to settle in semi-sedentary villages. The Ohlone were typically organized in basic political units called "tribelets" that consisted of 100 to 250 members (Kroeber 1954). The "tribelet" was an autonomous social unit consisting of one or more permanent villages with smaller villages in a relatively close proximity (Kroeber 1962). Parties went out from the major villages to locations within the tribal territory to obtain various resources.

The proximity of mountainous, open coast, and bay regions in the local environment made a diversity of resources available during different seasons to the native inhabitants. During the winter months, the low-lying flats near the San Francisco Bay have abundant marine and waterfowl resources, while the surrounding mountainous areas are best in the summer months for their nut, seed, and mammalian resources (King and Hickman 1973). A primary food source was acorns, abundant in autumn and easily stored for the remainder of the year. According to Gifford, the acorn industry of California was probably the most characteristic feature of its domestic economy (Gifford 1951). An elaborate process of grinding and leaching acorns is necessary to render them palatable. The acorn industry first became a major source of food in the Middle Period as is indicated by the appearance of mortars and pestles in the archaeological record (King and Hickman 1973). Other important resources include various plant foods, land animals, and the marine resources of the San Francisco Bay. Both large and small land mammals were typically hunted, trapped or poisoned. Many items, including shell beads and ornaments, were extensively traded with other groups as far away as the Great Basin of Nevada (Davis 1974).

It is argued that contrary to usual conceptions of hunters and gatherers, native Californian groups, including the Ohlone, practiced a form of resource management that was close to agriculture. Bean and Lawton (1976) consider this pattern a "semi-agricultural" stage which included quasi-agricultural harvesting activity and proto-agricultural techniques. Some plants were pruned and reseeded seasonally for optimal production. Foods such as acorns were stored for many months at a time. Ethnographic accounts also report the repeated burning of woodlands grassbelt to increase animal and plant resources. It is likely to have made hunting conditions better by reducing scrubby growth and encouraging the growth of grasses and other plants that are appealing to grazers such as deer and elk. The plant growth succession after a burning is also rich in grains and legumes that were major food sources for Native Californians.

Bean and Lawton also claim that the abundance of plant and animal resources in California and the development of ingenious technological processes allowed Native Californians to develop social structures beyond the normal parameters of hunting and gathering. These include extensive political systems, controlled production and redistribution of goods, and alliances and trade with other groups.

Historic Background

The proposed project area formerly made up a portion of the Point Montara Artillery Training Facility, a World War II era military complex in use between 1943 and 1945. Several structures within this complex were located within the current proposed project area, including barracks, offices, a mess hall, a library, a garage, a boiler room, an incinerator, a "TDD" hanger, and a drill field.

The Point Montara Artillery Training Facility was a top secret military installation operated by the U.S. Navy during World War II, containing 48 permanent structures, and housing over 1500 personnel. Throughout the course of its operation, about 320,000 Navy sailors and merchant marines were trained on what was then the latest technology in anti-aircraft weapons, including the 20mm "Oerlokin", the 40mm "Bofers" and 3 inch/50 caliber anti-aircraft guns.

The facility was notable for its extensive use of Women Air Service Pilots (known as WASPs) who flew planes towing targets for the artillery firing from the coast along Point Montara.

The facility also heavily utilized some of the earliest drone aircraft for target practice. These radio controlled planes were pioneered by Reginald Denny, a Hollywood film star and remote control hobbyist. He realized the potential of the planes for target practice, and entered contracts with the U.S. Army and the U.S. Navy which eventually became a multi-million dollar industry through the course of WWII. These planes were named Target Drone Dennys (TDD's) by the Navy after their inventor (Oeswein 2016).

In the late 1960's the proposed project area was in use as a training facility for firefighters. During this period, the structures within the proposed project area were razed by a controlled burn, leaving only exposed concrete foundations. The property has been vacant since 1970. The project area currently contains concrete foundations, as well as well as a fenced area containing the Montara Water and Sanitary District infrastructure. Some structures and features associated with the military training facility remain standing outside the current proposed project area, along the coast of Point Montara.

ARCHIVAL BACKGROUND

Prior to surface reconnaissance of the subject area, a study of the maps and records at the Northwest Information Center of the California Archaeological Site Inventory was conducted and given the file number NWIC# 17-0815. The purpose of this research was to determine if any known archaeological resources had previously been reported in or around the subject area. No previously recorded archaeological sites are located within the project area. However, four previously recorded resources are located within one quarter mile of the proposed project area. These resources are briefly described below:

CA-SMA-55

This prehistoric site, originally designated Nelson 405, was a shell mound documented by N. Nelson in 1908. Nels Nelson documented and investigated numerous shell mounds along the Central California Coast in the early years of the 20th Century, many of which have been significantly damaged or completely destroyed. This site is located on Point Montara approximately 150 feet from the northwest corner of the proposed project boundaries.

CA-SMA-171H

This historic district was recorded by H. Casper in 1973 and is described as containing the Point Montara Artillery Training Station and the Point Montara Light Station. None of the recorded elements are located within the proposed project area.

P-41-2108

This historic structure was recorded by D. Painter and C. Losee in 2003. It is described as the Montara Cottage.

P-41-2154

This historic resource was recorded in 2005 by D. Edwards. It is described as the Montara Water and Sanitary District Office at Point Montara Training Station.

Four previous studies have been carried out within or adjacent to the proposed project area. These studies are described below:

S-3082

This study was carried out by S. Dietz and T. Jackson in 1970 and entitled "An Archaeological and Historical Reconnaissance of a Portion of the San Mateo County Coastside." This was a broad survey with included the entirety of the current proposed project area within its scope.

S-5389

Carried out by M. Melandry in 1977, this study is entitled "Archaeological Survey Report on Excess Parcels 6695-01-01, 6696-01-01, 7091-01-091-02-01, on Route 1 in San Mateo County P.M. 35.5/35.8." This study extends southwards from the southwest corner of the proposed project area.

S-25083

This study was carried out by J. Holson in 2002 and entitled "Archaeological Survey for Highway 1/ Montara, 8211.38 (PL 1004-07) (letter report)." Archival maps for this study indicate its location as a small circular area located within the eastern central portion of the proposed project area.

S-31887

Carried out by C. Busby in 2005, this study is entitled "Archaeological Assessment - Montara Water and Sanitary District EIR, Vicinity of Montara and Moss Beach and Within Half Moon Bay Airport, San Mateo County (letter report)." This study is located within the eastern central portion of the proposed project area.

A total of 26 additional previous studies have been carried out within a one quarter mile radius of the proposed project area.

AB52: NATIVE AMERICAN CONSULTATION

AB 52 Native American Consultation was completed by County of San Mateo as the lead agency for the project. All identified individuals were contacted, and no responses were received. As part of the archaeological testing program, Ms. Irene Zwierlein was contacted as a representative of the Amah Mutsun Tribal Band. Ms. Zwierlein provided a Native American monitor for the archaeological testing within CA-SMA-431. This monitor was present during hand excavation within the deposit.

RESEARCH GOALS / METHODOLOGY

Research Goals

The process of archaeological research conducted for the Cypress Point project was aimed at answering a number of questions regarding the prehistoric use of the study area and in producing an accurate model of the sensitivity and deposition of cultural resources within the project area. Specifically, the purpose of trenching and hand excavation within the project area was to determine the nature, extent, and significance of any possible prehistoric resources within the archaeological deposit, and to produce a chronology, determined by a radiocarbon sample obtained from the excavation.

As the original site boundaries were determined through surface observation, one research goal was to more systematically define the boundaries of the site. The mechanical testing trenches were excavated around the outside of the known area of the deposit in order to determine if a subsurface deposit extended beyond the site's visible surface boundaries.

The constituents and depth of the site were also unknown. Thus the hand excavated testing units were designed to determine the depth of the site, as well as provided detailed information on the cultural materials present.

An understanding of these characteristics of the site will allow for an analysis of its uniqueness, as well as a determination of its significance under the criteria of the CRHR and the NRHP. Based upon the site's significance, appropriate mitigation measures will be developed to address the impact of the proposed project on this resources.

Two shell samples were forwarded to Beta Analytic, Inc. for chronological assessment through radiocarbon analysis. In addition, questions including the contents and function of the site, the temporal period of the site, and the role the site played in the settlement and subsistence patterns of the region may be addressed.

Regulatory Framework

California Register Criteria

A cultural resource is considered "significant" if it qualifies as eligible for listing in the California Register of Historic Resources (CRHR). Properties that are eligible for listing in the CRHR must meet one or more of the following criteria:

1. Association with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States;
2. Association with the lives of persons important to local, California, or national history;
3. Embodying the distinctive characteristics of a type, period, region, or method of construction, or representing the work of a master, or possessing high artistic values; or
4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

Most Native American prehistoric sites are eligible due to their age, scientific potential, and/or burial remains.

The CRHR interprets the integrity of a cultural resource based upon its physical authenticity. An historic cultural resource must retain its historic character or appearance and thus be recognizable as an historic resource. Integrity is evaluated by examining the subject's location, design, setting, materials, workmanship, feeling, and association. If the subject has retained these qualities, it may be said to have integrity. It is possible that a cultural resource may not retain sufficient integrity to be listed in the National Register of Historic Places yet still be eligible for listing in the CRHR. If a cultural resource retains the potential to convey significant historical/scientific data, it may be said to retain sufficient integrity for potential listing in the CRHR.

National Register Criteria

The National Register of Historic Places was first established in 1966, with major revisions in 1976. The register is set forth in 36 CFR 60 which establishes the responsibilities of the State Historic Preservation Officers (SHPO), standards for their staffs and review boards, and describes the statewide survey and planning process for historic preservation. Within this regulation guidelines are set forth concerning the National Register of Historic Places (36 CFR 60.6). In addition, further regulations are found in 36 CFR 63-66 and 800 which define procedures for determination of eligibility, identification of historic properties, recovery, reporting, and protection procedures.

The National Register of Historic Places was established to recognize resources associated with the accomplishments of all peoples who have contributed to the country's history and heritage. Guidelines were designed for Federal and State agencies in nominating cultural resources to the National Register. These guidelines are based upon integrity and significance of the resource. Integrity applies to specific items such as location, design, setting, materials, workmanship, feeling, and association. Quality of

significance in American history, architecture, archaeology, engineering and culture is present in resources that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet at least one of the following criteria:

a. that are associated with events that have made a significant contribution to broad patterns of our history;
b. that are associated with the lives of persons significant in our past;
c. that embody distinctive characteristics of type, period, or method of construction, or that represent the work of master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction;
d. that have yielded, or are likely to yield, information important in prehistory or history.

Ordinarily, properties that have achieved significance within the last 50 years are not considered eligible for the National Register. However, such properties will qualify if they are integral parts of districts that do meet the criteria of the NRHP listed above or if they fall within the following categories:

a. a religious property deriving primary significance from architectural significance or artistic distinction or historic importance; or
b. a building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with an historic person or event; or
c. a birthplace or grave of a historical figure of outstanding importance if there is no other appropriate site or building directly associated with his (or her) productive life; or
d. a cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or
e. a reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or
f. a property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own historical significance; or
g. a property achieving significance within the past 50 years if it is of exceptional importance.

Section 30244 of the California Coastal Act

Article 5; Land Resources, Section 30244 of the California Coastal Act states that:

"Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required."

The completed cultural resource evaluation identified a portion of the proposed project area as containing a potentially significant archaeological resource, and recommended archaeological testing for the purpose of determining the boundaries, depth, and

constituents of the archaeological deposit within the proposed project area. The results of this testing will be used to determine reasonable mitigation measures for the proposed project.

San Mateo County Midcoast Local Coastal Program Policies

In late 1980, the County Board of Supervisors and the California Coastal Commission approved the San Mateo County's Local Coastal Program. In April 1981, the County assumed responsibility for implementing the State Coastal Act in the unincorporated area of San Mateo County, including issuance of Coastal Development Permits. Three policies outlined within the Local Coastal Program have a bearing on cultural resources for the proposed project. These policies are discussed below.

1.25 Protection of Archaeological/Paleontological Resources

"Based on County Archaeology/Paleontology Sensitivity Maps, determine whether or not sites proposed for new development are located within areas containing potential archaeological/ paleontological resources. Prior to approval of development proposed in sensitive areas, require that a mitigation plan, adequate to protect the resource and prepared by a qualified archaeologist/paleontologist be submitted for review and approval and implemented as part of the project."

This cultural resource evaluation identifies a portion of the proposed project area as archaeologically sensitive, and recommends archaeological testing for the purpose of determining the boundaries, depth, and constituents of the archaeological deposit within the proposed project area. The results of this testing will be used to determine appropriate mitigation plan for the proposed project. Sensitivity for paleontological resources is being addressed in a separate report.

8.26 Structural Features

"Employ the regulations of the Historical and Cultural Preservation Ordinance to protect any structure or site listed as an Official County or State Historic Landmark or is listed in the National Register of Historic Sites."

None of the structures within the proposed project area are currently listed on the County, State, or National Registers as historic resources. In addition, they do not appear to be eligible for listing in any of these registers. Although the proposed project area contains the concrete foundations of structures from the Point Montara Anti-Aircraft Training Center which operated during WWII, these remnants do not appear to adequately convey the character of the original structures or the activities which took place during this period for listing in these registers. Montara Water and Sanitary District infrastructure including tanks, culverts, and other fixtures are also present on the property. These structures are utilitarian in character and do not appear historically significant.

8.27 Natural Features

"Prohibit the destruction or significant alteration of special natural features through implementation of Landform Policies and Vegetative Form Policies of the LCP."

No special natural features appear to be present within the proposed project area, thus no special natural features will be destroyed or altered by the proposed project.

Field Methods

The first phase of the fieldwork involved mechanical test trenching. The test trenching was carried out on February 21, 2018. During trenching, seven mechanically excavated test trenches were placed outside the visible boundaries of the archaeological site in order to determine if subsurface elements of the site extended beyond those boundaries. The trenches were used to help identify the presence or absence of subsurface cultural resources. Trenching records (refer to Appendix B) include information on soil type, color, and rock type. None of the mechanically excavated trenches contained any cultural materials.

The second phase of the fieldwork involved hand excavation of two 1 x 1 meter test units. Excavation of the test units was carried out on February 22, 2018. Placement of the units was determined based upon the defined boundaries of the archaeological deposit. Hand excavation was conducted using standard archaeological techniques with flat-nosed shovels, round-nosed shovels, picks, and trowels in arbitrary levels and dry screened through 1/4 inch mesh. All identified artifactual material was collected from each level. Collected material was curated in level bags and each level recorded as to artifacts present, soil type, color, stratigraphy, and features present. All artifactual material from this process was then placed within its appropriate level bag from the field screening process. Hand excavation of the test units was carried out to a depth of 40 cm at which point sterile soil was encountered. A hand auger boring was then conducted to a depth of 100cm in each unit.

Laboratory Methods

In the laboratory, all materials were washed and cataloged (see Appendix B). All artifacts were washed in cool water and allowed to dry. Then, each item was examined, weighed, and entered into an artifact database.

Specific classes of cultural materials include shell, fire cracked rock (FCR), metal, and glass. All cultural materials were catalogued and weighed; shell was catalogued, weighed, and speciated. In addition, two shell samples were submitted to Beta Analytic, Inc. for radiocarbon dating analysis. The radiocarbon dating was conducted in order to provide a general chronology for the site.

RESULTS

Results of the mechanical test trenching were negative; no cultural materials were observed in soils outside the recorded boundaries of the archaeological site. The hand excavation yielded both prehistoric dietary shell remains and recent historic materials. These data were then synthesized to produce an interpretation of deposition and a chronology of the test area. A discussion of these findings follows in the order of: Mechanical Test Trenches, Unit Summary by Level, Faunal Shell, and Historic/Recent Artifacts.

Mechanical Test Trenching Results

Trench #1

The soil in this trench consisted of a medium brown silty loam for the first 20cm. Below this, a reddish brown silty clay extended to 120cm. Very little rock was present. No cultural materials, prehistoric or historic, were noted in this trench.

Trench #2

The soil in this trench consisted of a medium brown silty loam for the first 40cm. Below this, a reddish brown silty clay extended to 120cm. Very little rock was present. No cultural materials, prehistoric or historic, were noted in this trench.

Trench #3

The soil in this trench consisted of a medium brown silty loam for the first 40cm. Below this, a reddish brown silty clay extended to 120cm. Very little rock was present. No cultural materials, prehistoric or historic, were noted in this trench.

Trench #4

The soil in this trench consisted of a medium brown silty loam for the first 40cm. Below this, a reddish brown silty clay extended to 120cm. Very little rock was present. No cultural materials, prehistoric or historic, were noted in this trench.

Trench #5

The soil in this trench consisted of a medium brown silty loam for the first 80cm. Below this, a reddish brown silty clay extended to 120cm. Very little rock was present. No cultural materials, prehistoric or historic, were noted in this trench.

Trench #6

The soil in this trench consisted of a medium brown silty loam for the first 70cm. Below this, a reddish brown silty clay extended to 120cm. Very little rock was present. No cultural materials, prehistoric or historic, were noted in this trench.

Trench #7

The soil in this trench consisted of a medium brown silty loam for the first 50cm. Below this, a reddish brown silty clay extended to 120cm. Very little rock was present. No cultural materials, prehistoric or historic, were noted in this trench.

Hand Excavated Unit Results

Unit #1

The soil of Unit #1 consisted of a medium brown silty loam to a depth of approximately 27cm, at which point a reddish brown silty clay was encountered to a depth of 40cm. The surface level of this unit contained mussel (*Mytilus)* and barnacle (*Balanus)* shell fragments, as well as terrestrial snail shell. The 0-20cm level included mussel (*Mytilus)* and barnacle (*Balanus)* shell fragments, FCR, as well as historic materials including glass and plastic fragments, and a wire nail. The 20-40cm level contained mussel (*Mytilus)* and barnacle (*Balanus)* shell fragments as well as one brown bottle glass fragment. This material was almost entirely concentrated in the upped 7cm of the level; the reddish silty clay from 27-40cm appeared sterile. A hand auger boring was conducted at the base of the 20-40cm level, to a depth of 100cm. Soils in this auger boring consisted of a reddish brown silty clay gradually shifting to an orange clay and sand. No cultural materials were noted in the auger boring.

Unit #2

The soil of Unit #2 consisted of a medium brown silty loam to a depth of approximately 40cm, at which point a reddish brown silty clay was encountered. The surface level of this unit contained mussel (*Mytilus)* and barnacle (*Balanus)* shell fragments. The 0-20cm level included mussel (*Mytilus),* barnacle (*Balanus),* turban shell, and chiton (*Cryptochiton*) shell fragments, terrestrial snail shell, and FCR, as well as historic materials including one fragment of clear glass. The 20-40cm level contained mussel (*Mytilus)* and barnacle (*Balanus)* shell fragments as well as terrestrial snail shell. Dense reddish brown silty clay was encountered at approximately 40cm. A hand auger boring was conducted at the base of the 20-40cm level, to a depth of 100cm. Soils in this auger boring consisted of a reddish brown silty clay gradually shifting to an orange clay and sand. No cultural materials were noted in the auger boring.

Faunal Shell

Shell remains comprised a majority of the cultural material in both the hand excavated units. The shell recovered was comprised of multiple species. Recovered shell included mussel (*Mytilus*), which was the most abundant species, as well as smaller amounts of barnacle (*Balanus)* shell, Turban shell (*Turbinidae*), and chiton (*Cryptochiton*). These shell species are discussed briefly below.

Mytilus californianus (California mussel) is a large mussel that can grow to a length of 80-130 mm. This shell is considerably elongated with a straight, narrow anterior margin and a curved, posterior margin. Its ribs are prominent, especially near its base, but they are not high in number. Its usual color is a bluish-black; however, younger mussels often display brown and white streaks. This bivalve can be found on the rocky open coast between tide lines where it is exposed to the surf. It attaches itself to rock by byssal threads. This species of shell was used by the Ohlone as a food resource.

Balanus glandula (Acorn barnacle)
This small barnacle is a filter feeder usually about one inch in height with a rough tube for a shell, closed at its basal end and open at its feeding aperture. It attaches itself to the shells of other animals, such as mussels. Consequently, its appearance in a midden is not neccessarily the result of intentional harvest. This species occurs in great numbers on rocks in the high zone but they also occur in lower zones.

Tegula funebralis (black top) is a snail with a bluntly pyramidal robust shell, with 4-5 wrinkled whorls. It is found on rocky shorelines in the intertidal zone and was used by the Ohlone as a food resource (Morris 1966).

Cryptochiton stelleri (Chiton) is a large (usually 6-8 inches), oblong mollusk with shell plates completely hidden under a leathery girdle when alive. They are found in moderately deep water, and the plates are usually found separate. The Ohlone used them as a food resource.

As noted, these shellfish varieties were used primarily as dietary resources. Mytilus shell could be collected from shallow water or the shoreline at low tide. The species of shell identified at CA-SMA-431 were all locally available to its prehistoric residents. Of the total of 934.5 grams of shell recovered from the test units, 801.2g (approximately 86%) were *Mytilus* (mussel shell).

Fire-Cracked Rock

Fire-cracked rock (FCR) is often used as a surface indicator of a prehistoric archaeological deposit. Prehistoric inhabitants of the region often used rock in their cooking activities. Heated rocks were placed in baskets in order to boil water and cook foods. Rocks were also used in the construction of hearths, and may have become fire-cracked from repeated fire burning. Although rocks may be affected by fires which burn naturally across the land, rocks which are fire-cracked and heavily damaged appear to have been repeatedly exposed to high temperature fires and rapid cooling, potentially related to human activity. Fire-cracked rock is characterized by sharp foliations and cracks in the surface that contrasts with the worn natural exterior of the rock. There is often a pinkish discoloration on the cracked surface.

Historic Artifacts

Small amounts of historic material were encountered in both hand excavated units. These historic artifacts were mixed with the prehistoric deposit and may be the result of previous construction activities or rodent burrowing at this location. Historic materials including glass and metal were noted down to 40 centimeters in both units, indicating that the deposit is disturbed. In general, the historic artifacts recovered appear to date from the mid to late 20th Century to the present.

Radiometric Analysis (C-14)

The most reliable of the absolute dating techniques available to archaeologists involves the analysis of carbon 14 (C14), an unstable isotope of carbon. This dating technique relies on three characteristics of C14. The first is that all living things contain a set percentage of C14 in their bodies while they are alive. The second is that C14 has a characteristic half-life (the time needed for half the original number of unstable atoms to change to stable ones) of 5,730 years. Third, although the levels of C14 atoms in the environment have fluctuated through geological time, scientists have been able to document these changes using ice cores, dendrochronology, and other cross checks. Radiocarbon dates are calibrated to compensate for the varying levels of C14. Once an organism dies, it no longer exchanges carbon with its environment, and the amount of C14 that was originally in the organism begins to decay into stable N14, while the amount of stable C12 remains the same. The C14 decays by ejecting electrons from its nucleus, a process known as beta decay. By measuring the amount of C14 that remains

in the organism, it is possible to determine the time elapsed since the organism's death (Fagan, 1994).

The amount of C14 remaining is measured by one of two methods. In the AMS (accelerator mass spectrometric) method, only a few milligrams of organic material are needed as a sample, the C14 and the C12 atoms are counted using a laser enabled instrument called a mass spectrometer. In the second and more common method, larger samples are used and the radiation from these samples is measured directly. It should be noted that the C14 measurement refers to the date of the organism's death, not necessarily the use of the dated item (Cartier, 1993b).

It is also important to note that the age of any given radiocarbon sample can be expressed in several different ways, resulting in a potentially confusing suite of dates for any given sample. The Measured or Conventional Radiocarbon Age represents the original raw date obtained from the dating process, and is expressed as a date with a range (i.e., 8700 $\pm$ 60 BP.). This date is then calibrated, using climatic, tree-ring, and coral cross checks, in an effort to arrive at a more accurate calendric date. Calibrated dates are expressed as ranges with varying degrees of probability (i.e., 9730 to 9555 BP.), or simply as a single date (i.e., 9665 BP). Ranges are provided for 1 Sigma Calibrated Results (68% probability), and for 2 Sigma Calibrated Results (95% probability). The Calibrated Radiocarbon Age represents the intercept of the Conventional Radiocarbon Age with the given calibration curve. The dates for the current study will be specified as either "conventional" or "calibrated," and calibrated dates will be in the 2 Sigma range for the greatest accuracy possible.

After the fieldwork was completed, two samples were selected and submitted to Beta Analytic Laboratories, Inc., in Miami, Florida. Sample #1 was taken from the 0-20cm level of Unit #1. Sample #2 was taken from the 20-40cm level of Unit #2. Sample #1 was given a conventional radiocarbon age of 1000 +/- 30 BP (Before Present) and a calendar calibration date of 1501 to 1683 Cal AD (449-267 Cal BP). Sample #2 was given a conventional radiocarbon age of 1520 +/- 30 BP, and a calendar calibration date of 1068 to 1276 Cal AD (882-674 Cal BP).

The carbon date suggests that the site was occupied during the Late Period. A short description of each of the major cultural periods in the central California chronological sequence is given below.

Early Period (3000 to 500 B.C)

Early Period sites are rare, and little information is known about this period. Early period sites are often characterized by general cultural patterns such as the practice of burying the dead in a fully extended position and the common use of red ochre in graves. Hunting during the Early Period primarily made use of spear throwers, the bow and arrow were not introduced to California until much later. Shell beads were used as a medium of exchange, and in early period sites the most commonly occurring style of bead is known as the L Type (Bennyhoff and Hughes, 1987). L type beads were made of abalone (*Haliotis*) shell, and are distinguished by a thick, rectangular shape.

Middle Period (500 B.C. to 900 A.D.)

Variation, in a multiplicity of dimensions, is the pervasive characteristic of the Middle Period. This variation is found both spatially and temporally. The duration of period is

marked by change and transition in almost every cultural element studied by archaeologists. Initial portions of the Middle Period share many traits of the Early Period, whereas the closing of the Middle Period is marked in many ways by characteristics of the Late Period. In this sense, the Middle Period was very aptly referred to by Lilliard et al. as the "Transitional" (1939). There are also synchronic variations within the period between geographic regions. Assemblages reported at the same point in time, but with some spatial distance from one another, show wide contrasts in artifactual make up. The Middle Period is marked by a massive growth of population. This can been seen in the archaeological record as the higher proportion of sites dating to the Middle Period then any other prehistoric time frame. Perhaps due to this increase in population, violence seems to have been common during the Middle Period. Many of the burials excavated from this period have projectile points penetrating into their bones or exhibit other signs of violent death. A specific form of shell bead, known as an F Type bead, is closely associated with this period. The Middle Period also exhibited a marked change in the economy of the native peoples of the area. This included such things as the use of the acorn as a staple food and the use of heated groundstones to prepare it. These stones are referred to as fire cracked rock, or FCR, and are most abundant in Middle Period sites.

Late Period (900 A.D. to 1700 A.D.)

The Late Period in the local chronological sequence is characterized by several broad cultural characteristics. Burials from this period are predominantly flexed, and their orientation is indiscriminate. An increase in the frequency and elaboration of grave goods is also noted. Burials may contain bone whistles and other bone artifacts with incised design, as well as ceremonially "killed" artifacts (artifacts which are punctured or broken to release their spirit before burial), as well as shell beads. Beads frequently found in Late Period sites include types M, S.1, B.1. and C.1.a (Bennyhoff and Hughes 1987). During the Late Period, the primary staple used by the Native Americans was the acorn, leached and ground into meal. Mortars and pestles of granite or sandstone, used for grinding the acorns, are frequently associated with Late Period sites, and the bow-and-arrow was introduced. Population apparently was lower than during the Middle Period as evidenced by a decline in the number of sites dating from the late period.

Discussion

The archaeological deposit at CA-SMA-431 is contained within a small, well defined area (approximately 80 feet by 30 feet). Based upon the surface dimensions and depth of the deposit as observed during this testing program (approximately 1 foot), it is estimated that the entire deposit contains approximately 90 cubic yards of soil.

As the deposit consists primarily of mussel shell, which has been consumed throughout the historic period up until today, a question arises as to whether the deposit may represent historic activities, such as a mussel bake by military personnel during the WWII occupation of the site. However, the deposit is identifiable as Native American in origin due to multiple factors. These include the presence of dietary shell not generally consumed during the historic period in this area (such as barnacles, turban shells, and chiton). In addition, the very weathered and fragmentary nature of the shell points to a prehistoric origin. The deposit also contained fire cracked rock (FCR), which is characteristic of Native American food preparation activities in this area of California. Radiocarbon analysis of two shell samples returned calibrated dates of 1501 to 1683 Cal AD (449-267 Cal BP) and 1068 to 1276 Cal AD (882-674 Cal BP).

However, historic artifacts in the form of materials such as glass, plastic, and metal were present at all levels of the deposit. This indicates that the deposit is heavily disturbed. The property as a whole was extensively developed by the military during WWII, and the archaeological deposit at CA-SMA-431 is located within a small terrace a short distance from a large concrete foundation which is a remnant of this era. Hummocks of soil material spread throughout the larger subject property also indicate that more recent importations of soil have taken place. Earthmoving activities by the Montara Water and Sanitary District within the proposed project area have been largely restricted to pipeline construction (Martinez 2018).

Local historian J.Q. Oswein has written extensively about the history of the Point Montara Artillery Training Facility and has visited the project area many time. He notes that the proposed project area has frequently been used as a dumping site for a variety of materials, including garbage, rocks, and spoils dirt (Oswein 2018).

The presence of relatively modern plastic fragments within the deposit indicate disturbance after military ownership of the property, either during its use as a firefighter training facility in the 1960's, or as a result of more recent dumping activities. Thus the historic patterns of grading and construction on this property point to the possibility that the deposit itself was imported from a nearby archaeological site, such as CA-SMA-55, located on Point Montara approximately 150 feet from the northwest corner of the proposed project boundaries. Alternatively, the deposit may represent the heavily disturbed basal layer of a deeper site removed during historic earthmoving on the property. Thus the deposit may contain isolated intact features.

Based upon the lack of diagnostic artifactual material within the deposit, and its heavily disturbed nature, CA-SMA-431 does not appear to have the potential to yield important prehistoric or historic information, and thus does not appear eligible for either the CRHR or the NRHP. However there is the possibility that isolated artifacts/remains are present within the deposit.

SUMMARY AND CONCLUSION

This archaeological testing program was undertaken to determine the extent, depth, and constituents of the prehistoric archaeological deposit. The proposed project consists of a residential development. Associated construction activities that may impact the site include grading, trenching, excavation and other earthmoving activities.

Seven mechanical test trenches and two hand excavated 1 x 1 meter testing units were utilized as part of this testing program. The mechanical test trenching was excavated outside the observable surface boundaries of the deposit in order to confirm that buried portion of the site did not extend beyond the visible boundaries. No cultural materials were noted in any of the mechanical test trenches. The hand excavated archaeological testing units within the deposit recovered prehistoric materials including marine shell, primarily *Mytilus* (mussel) species, and fire cracked rock. The presence of shell fragments is a typical indicator of a prehistoric archaeological site (shell midden) in this region. Traces of historic materials were also found in the hand excavated units.

A set of Department of Parks and Recreation (DPR) forms (see Appendix D attached) was completed for the identified archaeological site and submitted to the Northwest Information Center of the California Historic Resources Information System (CHRIS). The archaeological site within the proposed project area was given the trinomial designation of CA-SMA-431.

The 1x1 meter units were excavated down to a depth of 40 cm, at which point sterile clay soil was encountered. The mechanical testing trenches were excavated to a depth of 120 cm.

A small area of disturbed prehistoric shell midden deposit was found within the proposed project area. Based upon the results of the hand excavation, it appears that this deposit is highly disturbed and possibly imported from outside the proposed project area during modern dumping activities. The midden material is not significant enough to warrant preservation, however it may contain significant isolated artifacts/remains and any construction activities carried out within the vicinity of the site should be monitored by an archaeologist. Realizing that imported soils may have brought in/buried archaeological materials on the property, it is also recommended that archaeological monitoring take place during subsurface demolition/construction throughout the project area as a whole. This archaeological monitoring should be carried out as per the measures presented in the Archaeological Treatment Plan for the project (Cartier 2018b).

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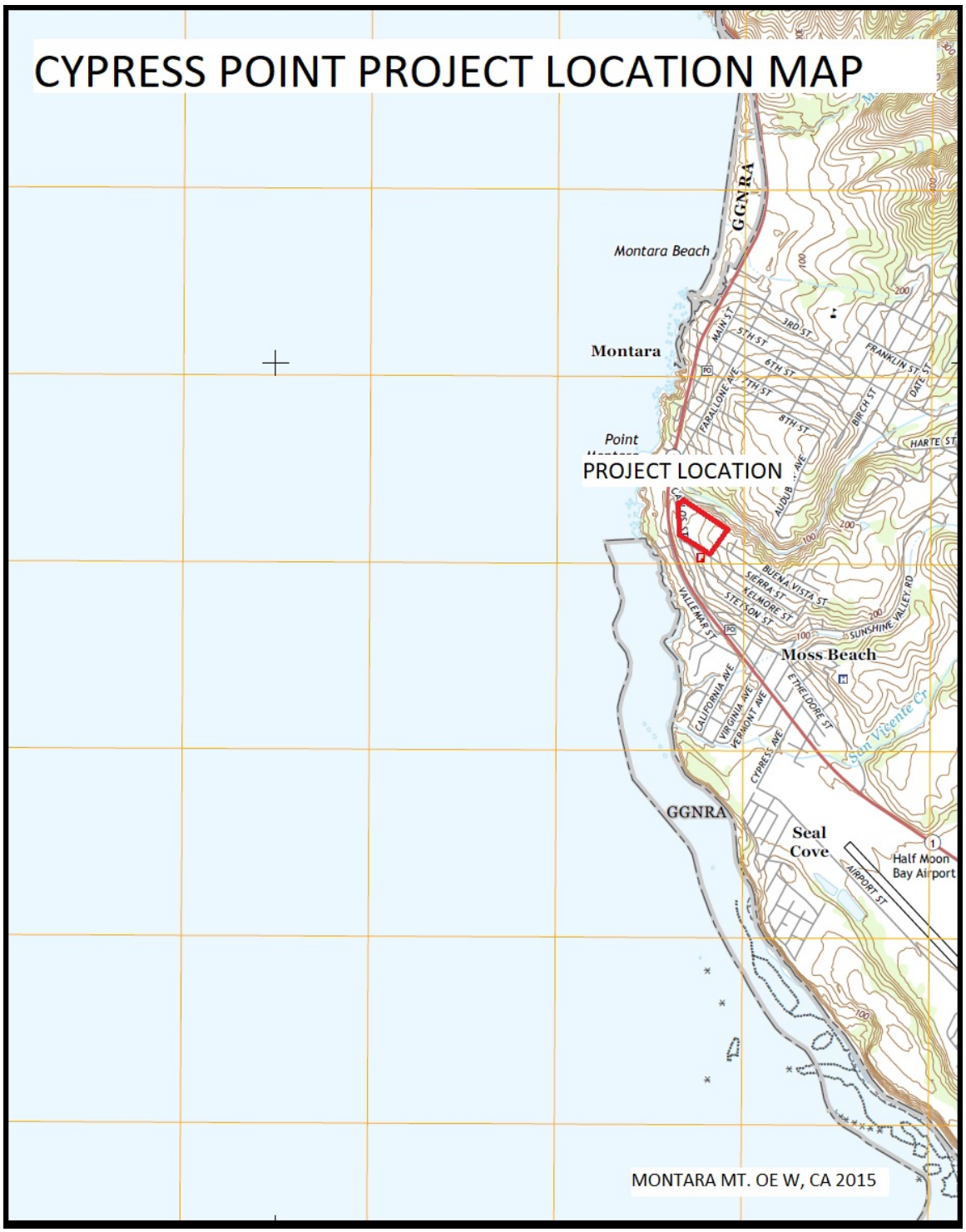
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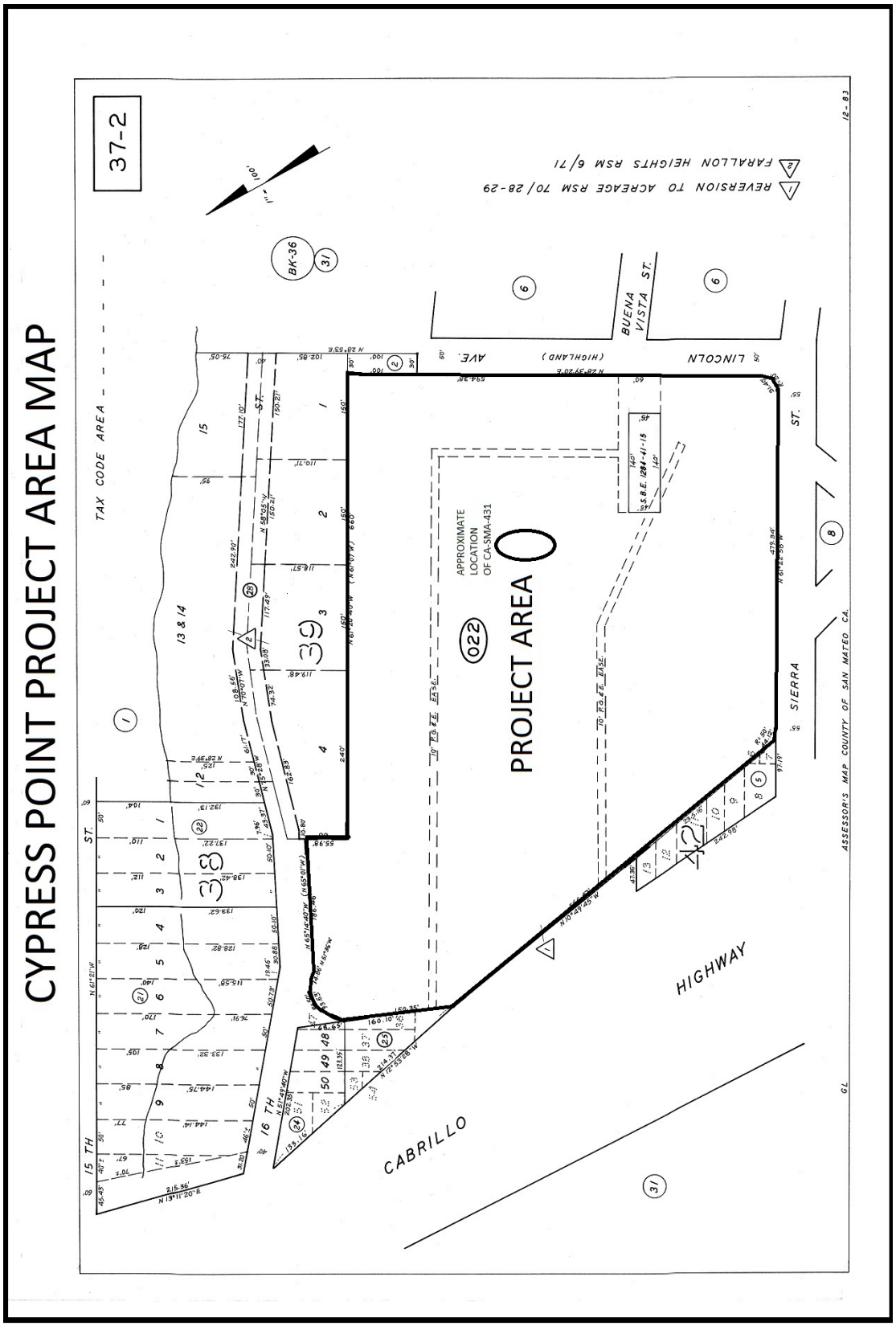
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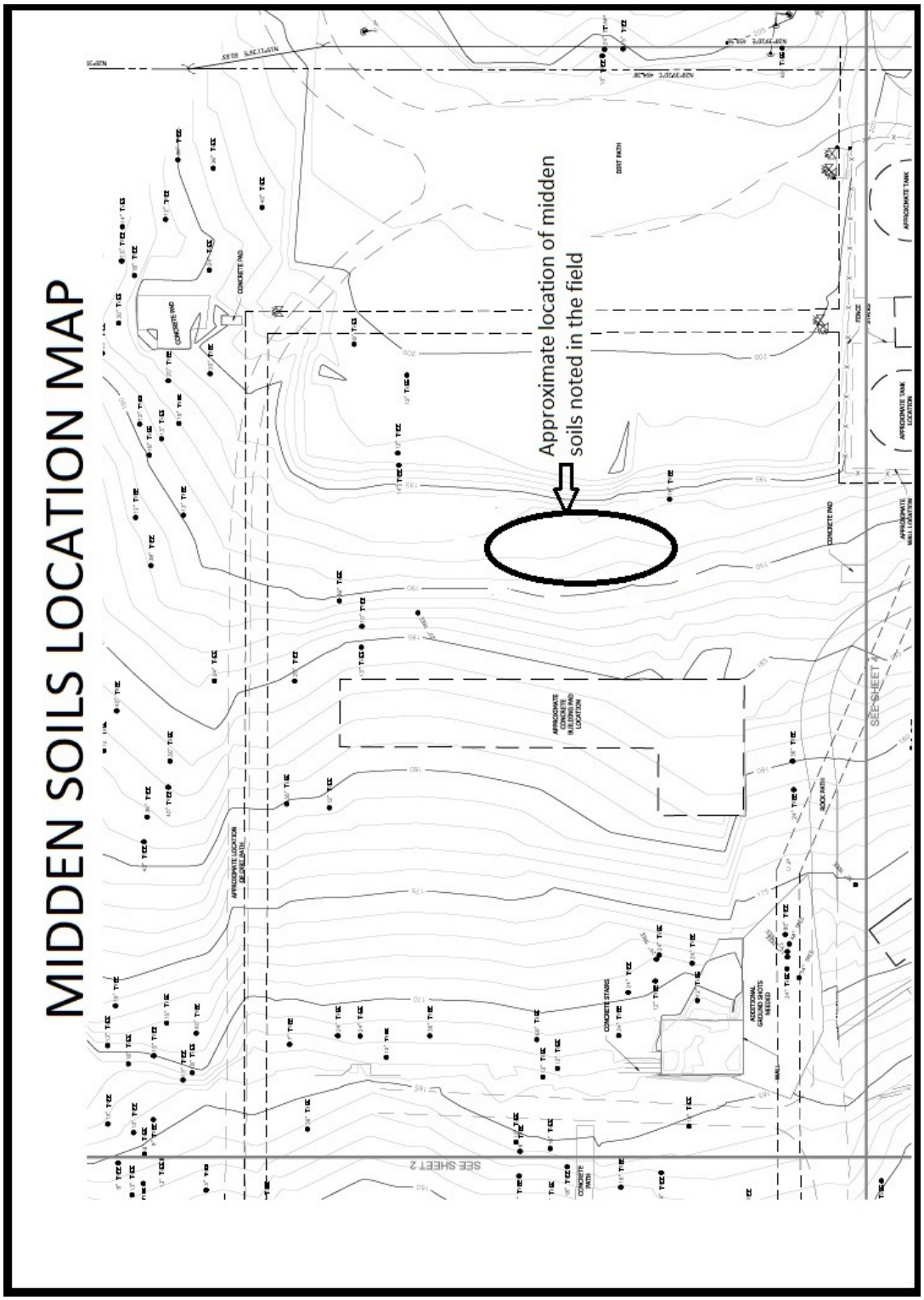
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APPENDIX A:
Project Maps

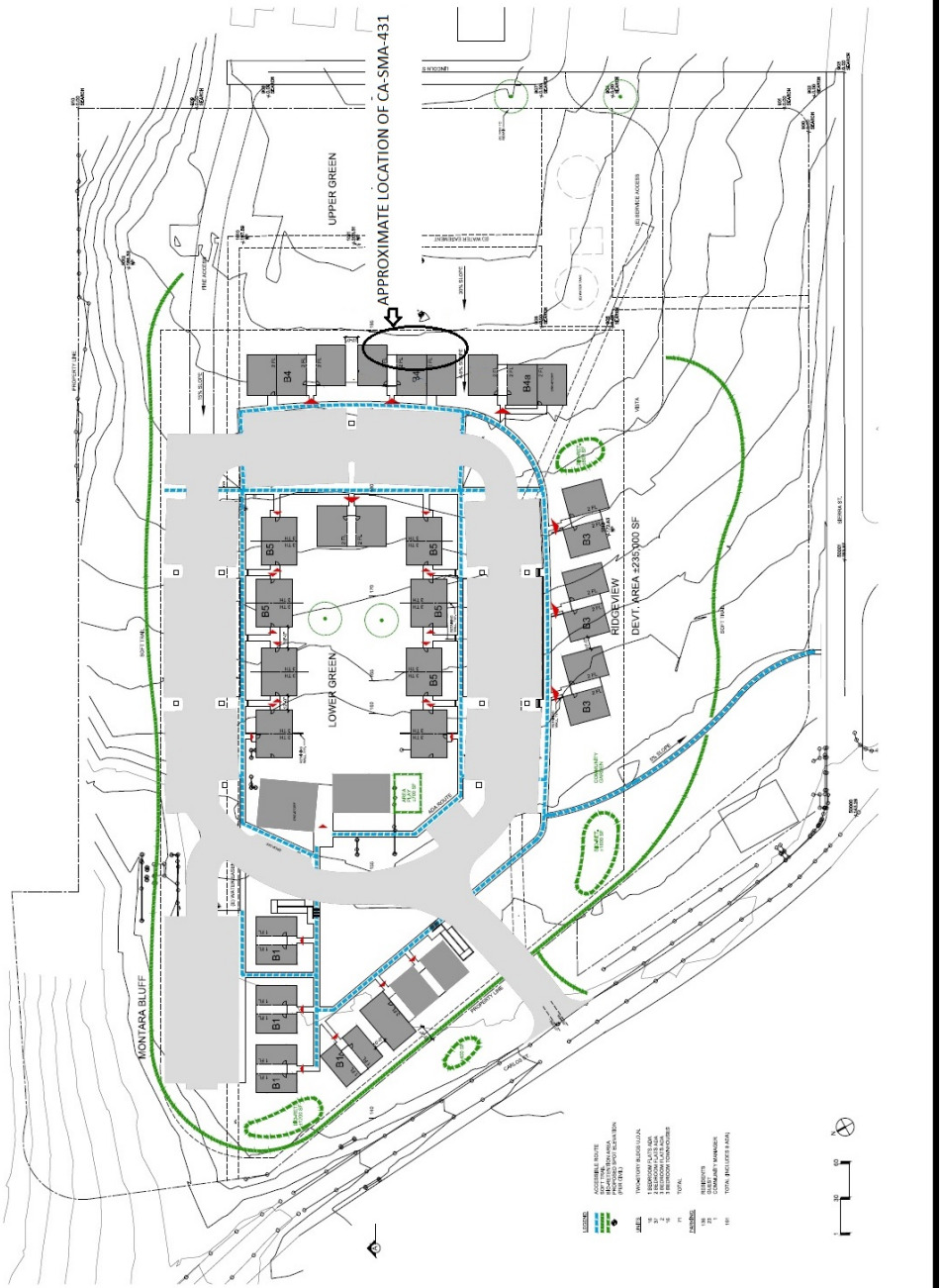

CYPRESS POINT PROJECT LOCATION MAP
GGNRA
Montara Beach
Montara
Point
PROJECT LOCATION
Moss Beach
GGNRA
Seal
Cove
Half Moon
Bay Airport
MONTARA MT. OE W, CA 2015

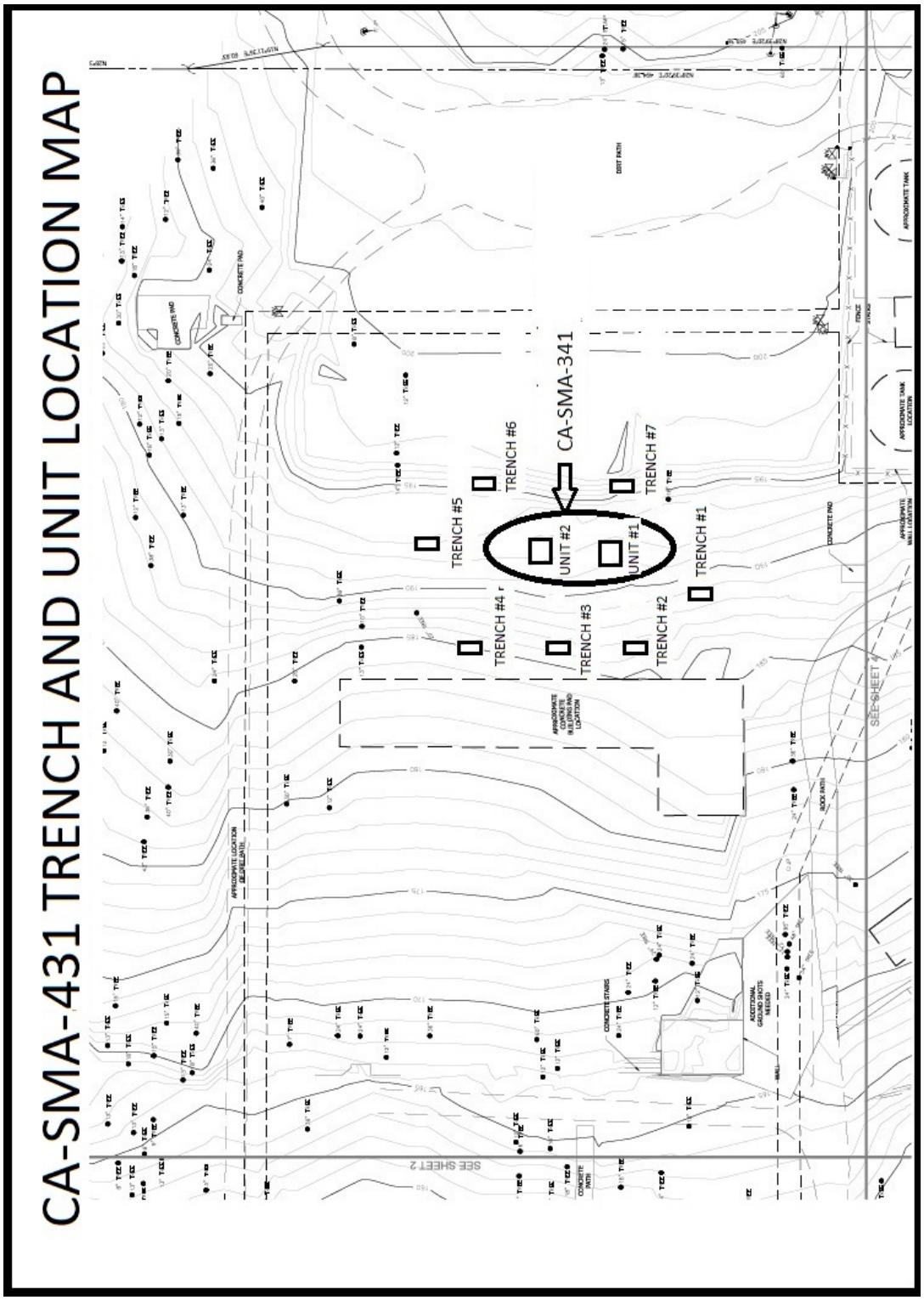
CYPRESS POINT PROJECT AREA MAP




MIDDEN SOILS LOCATION MAP
Approximate location of midden soils noted in the field
SEE SHEET 2
SEE SHEET 4

CA-SMA-431 SITE LOCATION IN RELATION TO PROPOSED DEVELOPMENT




CA-SMA-431 TRENCH AND UNIT LOCATION MAP
CA-SMA-341
TRENCH #1
TRENCH #2
TRENCH #3
TRENCH #4
TRENCH #5
TRENCH #6
TRENCH #7
UNIT #1
UNIT #2
SEE SHEET 2
SEE SHEET 4

APPENDIX B:
Artifact Catalog

County Review Draft

CYPRESS POINT TESTING CATALOG

Ref. #	Unit	Depth(cm)	Material	Artifact Type	Count	Wt. (gms.)	Description
1	1	0-20	C14 Sample 1	*Mytilus*		123	mussel shell C14 sample
2	2	20-40	C14 Sample 2	*Mytilus*		69	mussel shell C14 sample
3	1	Surface	marine shell	*Mytilus*	133	75	mussel shell fragments
4	1	Surface	marine shell	*Balanus*	13	6.9	barnacle shell fragments
5	1	Surface	terrestrial shell	snail	4	0.2	terrestrial snail shell fragments
6	1	0-20	stone	FCR	23	662.1	fire cracked rock
7	1	0-20	glass	clear glass	4	4.9	thin glass fragments
8	1	0-20	plastic	clear plastic	2	0.8	thin plastic fragments
9	1	0-20	iron	wire nail	1	7.5	heavily rusted
10	1	0-20	marine shell	*Mytilus*	531	234.9	mussel shell fragments
11	1	0-20	marine shell	*Balanus*	55	59.9	barnacle shell fragments
12	1	20-40	stone	FCR	1	32.6	fire cracked rock
13	1	20-40	glass	brown glass	1	0.8	brown bottle glass
14	1	20-40	marine shell	*Mytilus*	171	83.3	mussel shell fragments
15	1	20-40	marine shell	*Balanus*	10	3.9	barnacle shell fragments
16	2	Surface	marine shell	*Mytilus*	66	57.2	mussel shell fragments
17	2	Surface	marine shell	*Balanus*	11	12.8	barnacle shell fragments
18	2	0-20	stone	FCR	3	156.2	fire cracked rock
19	2	0-20	glass	clear glass	1	0.6	clear bottle glass fragment
20	2	0-20	marine shell	*Mytilus*	177	152.8	mussel shell fragments
21	2	0-20	marine shell	*Balanus*	29	28.8	barnacle shell fragments
22	2	0-20	marine shell	*Cryptochiton*	2	7.5	Chiton shell fragmenrs
23	2	0-20	marine shell	Turban shell	6	2.8	turban shells and fragments
24	2	0-20	terrestrial shell	snail	2	2.5	terrestrial snail shell fragments
25	2	20-40	glass	clear glass	1	5.7	clear bottle glass fragment
26	2	20-40	marine shell	*Mytilus*	27	6	mussel shell fragments
27	2	20-40	marine shell	*Balanus*	9	10.7	barnacle shell fragments
28	2	20-40	terrestrial shell	snail	2	7.3	terrestrial snail shells

APPENDIX C:
Trenching Records

County Review Draft

TEST TRENCH RECORD

LOGGED BY: D. Jones
DATE: 2/21/2018
JOB NAME: CA-SMA-431
TRENCH #: 1
DEPTH: 120cm

SOIL COLOR									reddish brown										medium brown		SURFACE ELEVATION
SOIL TYPE									silty clay										silty loam		
ROCK									none noted										traces of gravel		
MOISTURE									slightly moist										slightly moist		
FIRED ROCK/ FIRED CLAY									none noted										none noted		
DEPTH (DECIMETERS)	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
MATERIALS/ SYMBOL									A Horizon										topsoil		
CULTURAL CONTENTS									none noted										none noted		
COMMENTS																					

County Review Draft

TEST TRENCH RECORD

LOGGED BY: D. Jones
DATE: 2/21/2018
JOB NAME: CA-SMA-431
TRENCH #: 2
DEPTH: 120cm

SOIL COLOR									reddish brown									medium brown				
SOIL TYPE									silty clay									silty loam				
ROCK									none noted									traces of gravel				SURFACE ELEVATION
MOISTURE									slightly moist									slightly moist				
FIRED ROCK/ FIRED CLAY									none noted									none noted				
DEPTH (DECIMETERS)	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		
MATERIALS/ SYMBOL									A Horizon									topsoil				
CULTURAL CONTENTS									none noted									none noted				
COMMENTS																						

County Review Draft

TEST TRENCH RECORD

LOGGED BY: D. Jones
DATE: 2/21/2018
JOB NAME: CA-SMA-431
TRENCH #: 3
DEPTH: 120cm

SOIL COLOR									reddish brown									medium brown				
SOIL TYPE									silty clay									silty loam				
ROCK									none noted									traces of gravel				SURFACE ELEVATION
MOISTURE									moist									moist				
FIRED ROCK/ FIRED CLAY									none noted									none noted				
DEPTH (DECIMETERS)	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		
MATERIALS/ SYMBOL									A Horizon									topsoil				
CULTURAL CONTENTS									none noted									none noted				
COMMENTS																						

County Review Draft

TEST TRENCH RECORD

LOGGED BY: D. Jones
DATE: 2/21/2018
JOB NAME: CA-SMA-431
TRENCH #: 4
DEPTH: 120cm

SOIL COLOR									reddish brown								medium brown				
SOIL TYPE									silty clay								silty loam				
ROCK									none noted								none noted				SURFACE ELEVATION
MOISTURE									moist								somewhat moist				
FIRED ROCK/ FIRED CLAY									none noted								none noted				
DEPTH (DECIMETERS)	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
MATERIALS/ SYMBOL									A Horizon								topsoil				
CULTURAL CONTENTS									none noted								none noted				
COMMENTS									roots												

County Review Draft

TEST TRENCH RECORD

LOGGED BY: D. Jones
DATE: 2/21/2018
JOB NAME: CA-SMA-431
TRENCH #: 5
DEPTH: 120cm

SOIL COLOR									reddish brown				medium brown												SURFACE ELEVATION
SOIL TYPE									silty clay				silty loam												
ROCK									none noted				traces of gravel												
MOISTURE									slightly moist				slightly moist												
FIRED ROCK/ FIRED CLAY									none noted				none noted												
DEPTH (DECIMETERS)	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1					
MATERIALS/ SYMBOL									A Horizon				topsoil												
CULTURAL CONTENTS									none noted				none noted												
COMMENTS													lighter w/depth												

County Review Draft

TEST TRENCH RECORD

LOGGED BY: D. Jones
DATE: 2/21/2018
JOB NAME: CA-SMA-431
TRENCH #: 6
DEPTH: 120cm

SOIL COLOR									reddish brown					medium brown											
SOIL TYPE									silty clay					silty loam											
ROCK									none noted					very little gravel											SURFACE ELEVATION
MOISTURE									slightly moist					slightly moist											
FIRED ROCK/ FIRED CLAY									none noted					none noted											
DEPTH (DECIMETERS)	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1					
MATERIALS/ SYMBOL									A Horizon					topsoil											
CULTURAL CONTENTS									none noted					none noted											
COMMENTS																									

County Review Draft

TEST TRENCH RECORD

LOGGED BY: D. Jones
DATE: 2/21/2018
JOB NAME: CA-SMA-431
TRENCH #: 7
DEPTH: 120cm

SOIL COLOR												reddish brown								medium brown		SURFACE ELEVATION
SOIL TYPE												loam & clay								silty loam		
ROCK												none noted								traces of gravel		
MOISTURE												slightly moist								slightly moist		
FIRED ROCK/ FIRED CLAY												none noted								none noted		
DEPTH (DECIMETERS)	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		
MATERIALS/ SYMBOL												A Horizon								topsoil		
CULTURAL CONTENTS												none noted								none noted		
COMMENTS																				some roots		

APPENDIX D:
Site Record Forms

County Review Draft

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # _____
HRI # _____
Trinomial _____
NRHP Status Code _____
Other Listings _____
Review Code _____ **Reviewer** _____ **Date** _____

Page _1_ **of** _4_ **Resource Name or #** ____Cypress Point Site_____

P1. Other Identifier: _____

P2. Location: _x_ **Not for Publication** ____ **Unrestricted** ***a. County** __San Mateo_____
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** Montara Mt.OEW **Date:** 2015 **T** ; **R** ; **1/4 of** **1/4 of Sec** ; **BM**

c. Address: N/A **City:** Moss Beach **Zip:**94038

d. UTM: 10S 5 42 699mE,41 54 262mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
APN 37-02-022

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries.)
This site consists of a dietary shell midden, primarily *Mytilus sp.* (mussel). No artifactual materials were noted during preliminary reconnaissance. The boundaries, depth, and constituents of this site are currently very poorly defined.

***P3b. Resource Attributes:** AP15 – Habitation Debris

***P4. Resources Present:** __Building __Structure __Object __District __Element of District x Site __Other

P5a. Photo or drawing (Photo required for buildings, structures, objects.)



P5b. Description of Photo:
View of shell scatter in midden soil

***P6. Date Constructed/Age and Sources**
Historic Prehistoric x Both
Prehistoric; undated

***P7. Owner and Address:**
MidPen Housing
303 Vintage Park Dr #250,
Foster City, CA 94404

***P8. Recorded by:**
Robert Cartier
Archaeological Resource Management
496 North 5th Street
San Jose, CA 95112

***P9. Date Recorded:** 10/20/17

***P10. Survey Type:** Intensive

***P11. Report Citation:** (Cite Survey Report and other sources, or enter "none.")
Cartier, R. 2017: Cultural Resource Evaluation of the Cypress Point Project in Moss Beach, County of San Mateo

* Attachments: __None x_Location Map x_Sketch Map __Continuation Sheet __Building, Structure, and Object Record x_Archaeological Record __District Record __Linear Feature Record __Milling Station Record __Rock Art Record __Artifact Record __Photographic Record __Other (List):

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary # _____
Trinomial _____

ARCHAEOLOGICAL SITE RECORD

Page 2__ **of** _4 **Resource Name or #** ___Cypress Point Site_____

***A1. Dimensions: a. Length:** 80 **(ft) b. Width:** 30 **(ft)**

Method of Measurement: ___ paced ____taped _x_visual estimate ____other:

Method of Determination (Check any that apply)**:** ____Artifact ____Features x_Soil ____Vegetation _x_Topography
____Cut bank ____Animal burrow ____Excavation ____Property boundary ____Other (Explain):

Reliability of Determination: ___High ___Medium _x_Low Explain: extensive vegetation limited visibility

Limitations (Check any that apply): ___Restricted access __Paved/built over x_Site limits incompletely defined
x_Disturbances _x_Vegetation ___Other (Explain):

A2. Depth: _____ None___ Unknown_x_ Method of Determination: _____

***A3. Human Remains:** ___Present ___Absent __Possible x_Unknown (Explain):

***A4. Features** (Number, briefly describe, indicate size, list associated cultural constituents, and show location of each feature on sketch map.):
None

***A5. Cultural Constituents** (Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features):
The site consists of midden soils containing *Mytilus* (mussel) shell fragments. The boundaries, depth, and constituents are currently incompletely defined.

***A6. Were specimens collected?** _x_No __Yes (If yes, attach Artifact Record or Catalog and identify where specimens are curated.)

***A7. Site Condition:** ___Good _x_Fair __Poor (Describe disturbances):
The prehistoric site appears to have been disturbed by WWII era development on the property.

***A8. Nearest Water** (Type, distance, and direction): Montara Denniston Creek, ~ 400 feet north

***A9. Elevation:** Approximately 140 feet MSL

A10. Environmental Setting (Describe culturally relevant variables such as fauna, soils, geology, landform, slope, aspect, exposure, etc.): The site is located within a coastal woodland environment.

A11. Historical Information:
The surrounding property was developed during WWII as an artillery training facility.

***A12. Age:** _x_Prehistoric ___Protohistoric ___1542-1769 ___1769-1848 ___1848-1880 ___1880-1914 ___1914-1945 ___Post 1945 ___Undetermined **Describe position in regional chronology or factual historic dates if known.**

A13. Interpretations (Discuss data potential, function(s), ethnic affiliation, and other interpretations):
The boundaries, depth and constituents of the site are currently unknown. The site has the potential to yield significant information regarding local prehistory.

A14. Remarks:

A15. References (Documents, informants, maps, and other references)**:**

A16. Photographs (List subjects, direction of view, accession numbers, or attach a Photograph Record.)**:**

Original Media/Negatives Kept at:

***A17. Form Prepared by:** Robert Cartier
Affiliation and Address:
A.R.M.
496 North 5th Street
San Jose, CA 95112

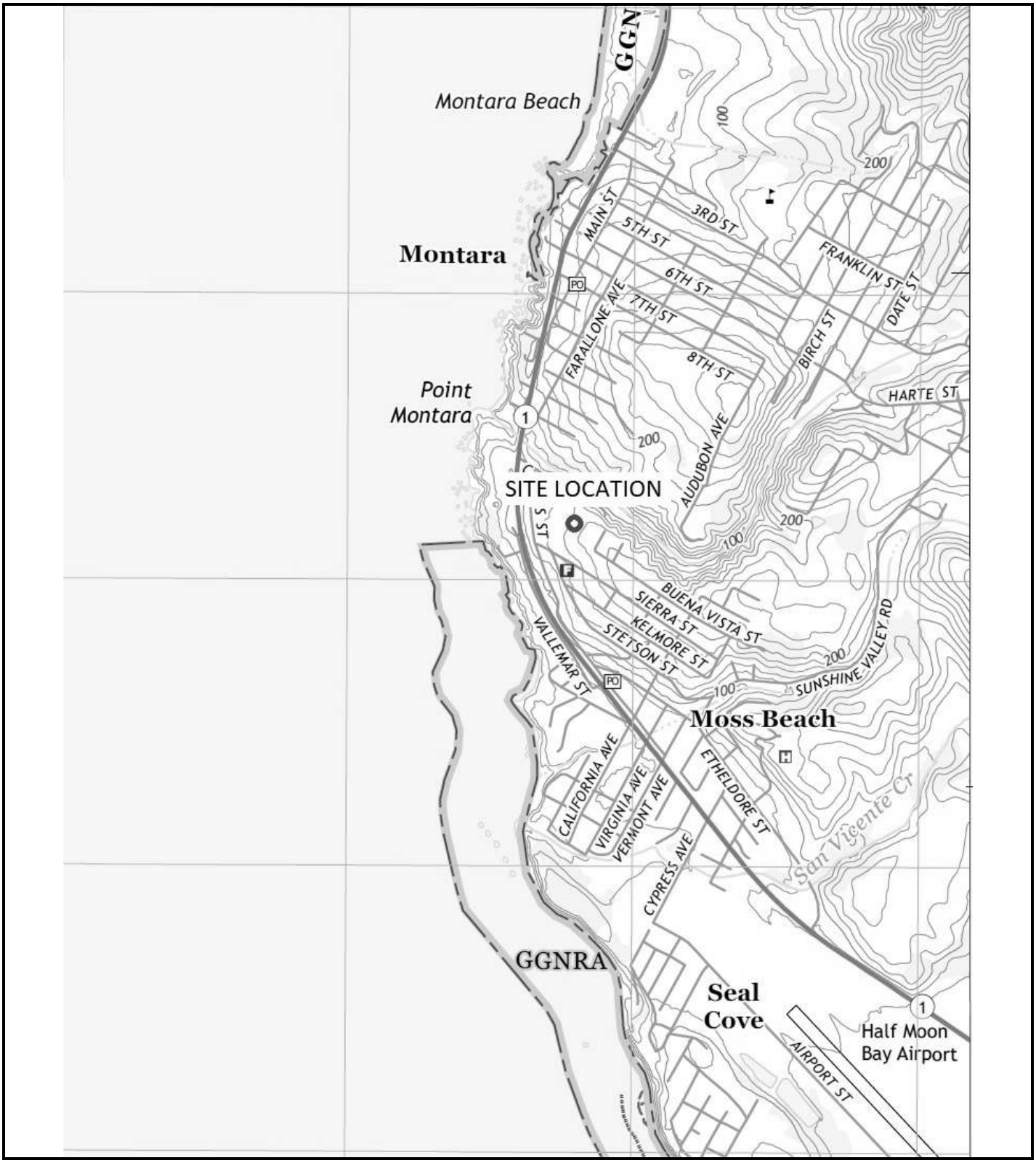
Date: 10/20/2017

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # _____
HRI # _____
Trinomial _____

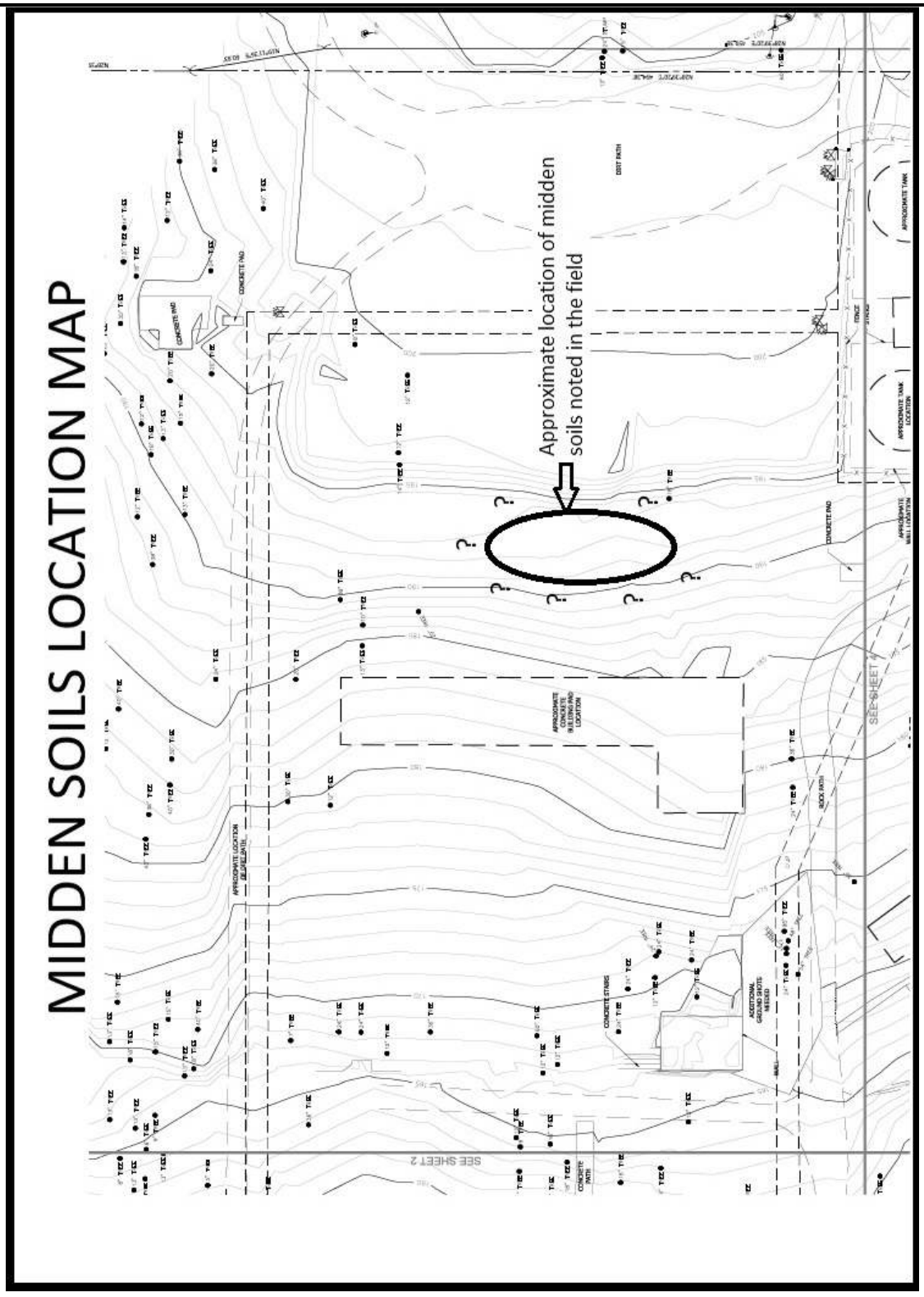
Page _3_ **of** _4_ **Resource Name or #** (Assigned by recorder) Cypress Point Site
***Map Name:** Montara Mt. OE W ***Scale:** 7.5 Minute ***Date of Map:** 2015



State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # _____
HRI # _____
Trinomial _____

Page _4_ **of** _4_ ***Resource Name or #** (Assigned by recorder) Cypress Point Site
***Recorded by** Archaeological Resource Management **Date** 10/20/17 **Continuation** x **Update**



APPENDIX E:
Radiocarbon Analysis

Beta Analytic Inc
4985 SW 74 Court
Miami, Florida 33155
Tel: 305-667-5167
Fax: 305-663-0964
beta@radiocarbon.com

County Review Draft

Mr. Darden Hood
President

Mr. Ronald Hatfield
Mr. Christopher Patrick
Deputy Directors

ISO/IEC 2005:17025-Accredited Testing Laboratory

REPORT OF RADIOCARBON DATING ANALYSES

Robert R. Cartier

Archeological Resource Management

Report Date: March 19, 2018

Material Received: March 02, 2018

Laboratory Number	Sample Code Number	Conventional Radiocarbon Age (BP) or Percent Modern Carbon (pMC) & Stable Isotopes Calendar Calibrated Results: 95.4 % Probability High Probability Density Range Method (HPD)	
Beta - 488906	**CypressPt#1**	**1000 +/- 30 BP**	IRMS δ13C: 0.0 o/oo IRMS δ18O: +1.1 o/oo

(95.4%) 1501 - 1683 cal AD (449 - 267 cal BP)

Submitter Material:	Shell (Marine)
Pretreatment:	(shell) acid etch
Analyzed Material:	Shell
Analysis Service:	RadiometricPLUS-Standard delivery
Percent Modern Carbon:	88.29 +/- 0.33 pMC
Fraction Modern Carbon:	0.8829 +/- 0.0033
D14C:	-117.05 +/- 3.30 o/oo
Δ14C:	-124.18 +/- 3.30 o/oo(1950:2017)
Measured Radiocarbon Age:	(without d13C correction): 590 +/- 30 BP
Calibration:	BetaCal3.21: HPD method: MARINE13
DeltaR:	297 +/- 35

Results are ISO/IEC-17025:2005 accredited. No sub-contracting or student labor was used in the analyses. All work was done at Beta in 4 in-house NEC accelerator mass spectrometers and 4 Thermo IRMSs. The "Conventional Radiocarbon Age" was calculated using the Libby half-life (5568 years), is corrected for total isotopic fraction and was used for calendar calibration where applicable. The Age is rounded to the nearest 10 years and is reported as radiocarbon years before present (BP), "present" = AD 1950. Results greater than the modern reference are reported as percent modern carbon (pMC). The modern reference standard was 95% the 14C signature of NIST SRM-4990C (oxalic acid). Quoted errors are 1 sigma counting statistics. Calculated sigmas less than 30 BP on the Conventional Radiocarbon Age are conservatively rounded up to 30. d13C values are on the material itself (not the AMS d13C). d13C and d15N values are relative to VPDB-1. References for calendar calibrations are cited at the bottom of calibration graph pages.

Beta Analytic Inc
4985 SW 74 Court
Miami, Florida 33155
Tel: 305-667-5167
Fax: 305-663-0964
beta@radiocarbon.com

County Review Draft

Mr. Darden Hood
President

Mr. Ronald Hatfield
Mr. Christopher Patrick
Deputy Directors

ISO/IEC 2005:17025-Accredited Testing Laboratory

REPORT OF RADIOCARBON DATING ANALYSES

Robert R. Cartier

Archeological Resource Management

Report Date: March 19, 2018

Material Received: March 02, 2018

Laboratory Number	Sample Code Number	Conventional Radiocarbon Age (BP) or Percent Modern Carbon (pMC) & Stable Isotopes Calendar Calibrated Results: 95.4 % Probability High Probability Density Range Method (HPD)	
Beta - 488907	**CypressPt#2**	**1520 +/- 30 BP**	IRMS δ13C: +0.7 o/oo IRMS δ18O: +1.3 o/oo

(95.4%) 1068 - 1276 cal AD (882 - 674 cal BP)

Submitter Material:	Shell (Marine)
Pretreatment:	(shell) acid etch
Analyzed Material:	Shell
Analysis Service:	RadiometricPLUS-Standard delivery
Percent Modern Carbon:	82.76 +/- 0.31 pMC
Fraction Modern Carbon:	0.8276 +/- 0.0031
D14C:	-172.40 +/- 3.09 o/oo
Δ14C:	-179.08 +/- 3.09 o/oo(1950:2017)
Measured Radiocarbon Age:	(without d13C correction): 1100 +/- 30 BP
Calibration:	BetaCal3.21: HPD method: MARINE13
DeltaR:	297 +/- 35

Results are ISO/IEC-17025:2005 accredited. No sub-contracting or student labor was used in the analyses. All work was done at Beta in 4 in-house NEC accelerator mass spectrometers and 4 Thermo IRMSs. The "Conventional Radiocarbon Age" was calculated using the Libby half-life (5568 years), is corrected for total isotopic fraction and was used for calendar calibration where applicable. The Age is rounded to the nearest 10 years and is reported as radiocarbon years before present (BP), "present" = AD 1950. Results greater than the modern reference are reported as percent modern carbon (pMC). The modern reference standard was 95% the 14C signature of NIST SRM-4990C (oxalic acid). Quoted errors are 1 sigma counting statistics. Calculated sigmas less than 30 BP on the Conventional Radiocarbon Age are conservatively rounded up to 30. d13C values are on the material itself (not the AMS d13C). d13C and d15N values are relative to VPDB-1. References for calendar calibrations are cited at the bottom of calibration graph pages.

County Review Draft

Calibration of Radiocarbon Age to Calendar Years

(High Probability Density Range Method (HPD): MARINE13)

(Variables: d13C = 0.0 o/oo : Delta-R = 297 ± 35 : Glob res = -200 to 500)

Laboratory number **Beta-488906**

Conventional radiocarbon age **1000 ± 30 BP**

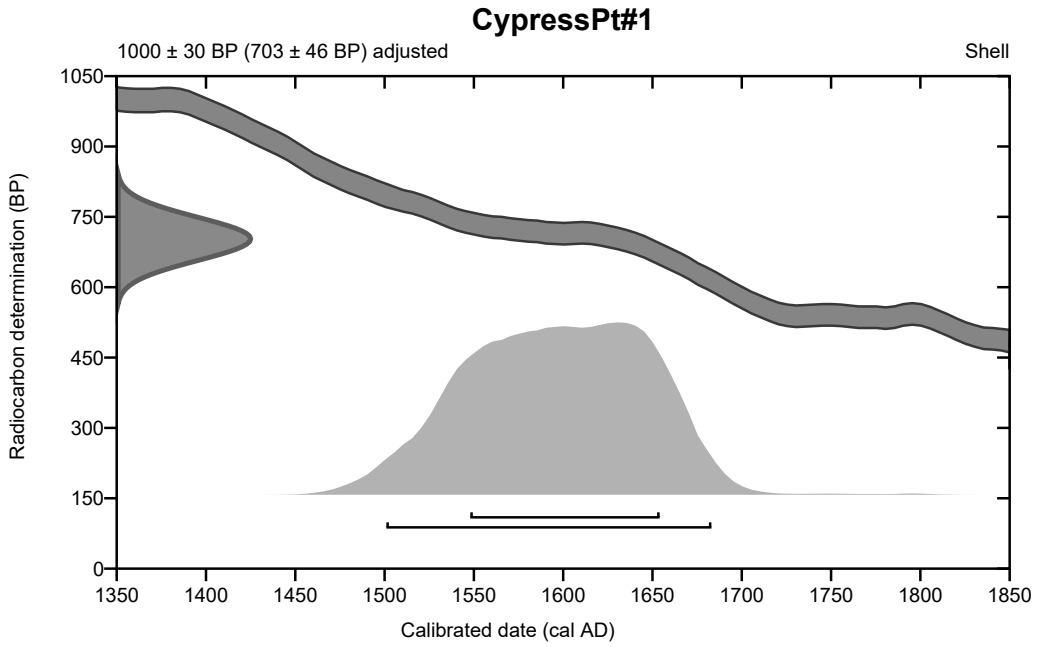
703 ± 46 Adjusted for local reservoir correction

95.4% probability

(95.4%) 1501 - 1683 cal AD (449 - 267 cal BP)

68.2% probability

(68.2%) 1548 - 1654 cal AD (402 - 296 cal BP)



Database used

MARINE13

References

References to Probability Method

Bronk Ramsey, C. (2009). Bayesian analysis of radiocarbon dates. Radiocarbon, 51(1), 337-360.

References to Database MARINE13

Reimer, et.al., 2013, Radiocarbon 55(4).

County Review Draft

Calibration of Radiocarbon Age to Calendar Years

(High Probability Density Range Method (HPD): MARINE13)

(Variables: d13C = +0.7 o/oo : Delta-R = 297 ± 35 : Glob res = -200 to 500)

Laboratory number **Beta-488907**

Conventional radiocarbon age **1520 ± 30 BP**

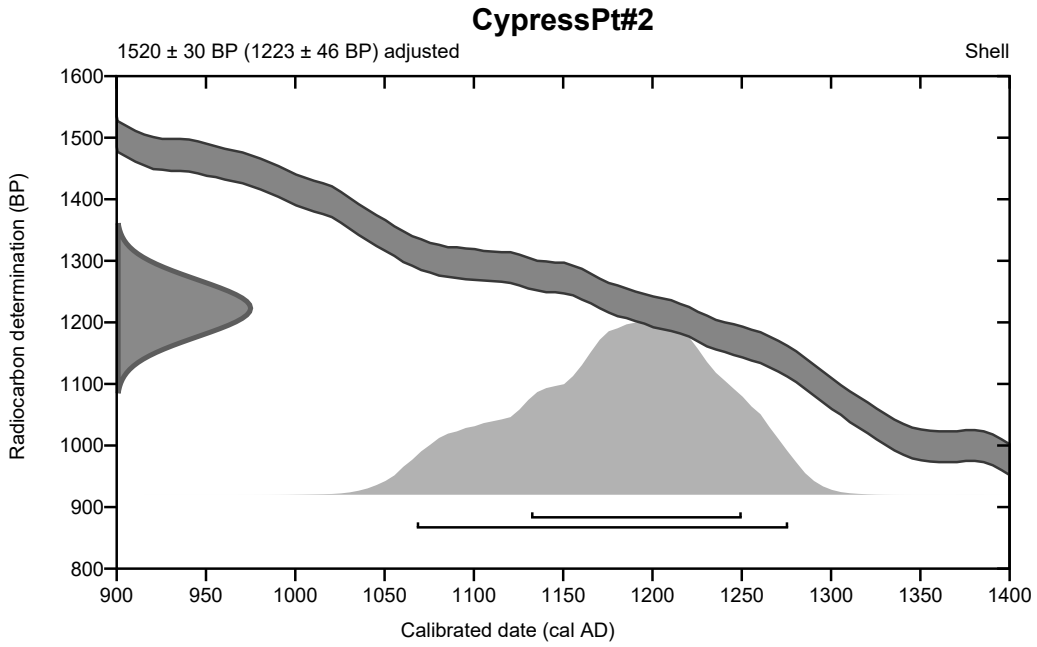
1223 ± 46 Adjusted for local reservoir correction

95.4% probability

(95.4%) 1068 - 1276 cal AD (882 - 674 cal BP)

68.2% probability

(68.2%) 1132 - 1250 cal AD (818 - 700 cal BP)



Database used

MARINE13

References

References to Probability Method

Bronk Ramsey, C. (2009). Bayesian analysis of radiocarbon dates. Radiocarbon, 51(1), 337-360.

References to Database MARINE13

Reimer, et.al., 2013, Radiocarbon 55(4).

Beta Analytic
RADIOCARBON DATING

Beta Analytic Inc
4985 SW 74 Court
Miami, Florida 33155
Tel: 305-667-5167
Fax: 305-663-0964
beta@radiocarbon.com

County Review Draft

Mr. Darden Hood
President

Mr. Ronald Hatfield
Mr. Christopher Patrick
Deputy Directors

ISO/IEC 2005:17025-Accredited Testing Laboratory

Quality Assurance Report

This report provides the results of reference materials used to validate radiocarbon analyses prior to reporting. Known-value reference materials were analyzed quasi-simultaneously with the unknowns. Results are reported as expected values vs measured values. Reported values are calculated relative to NIST SRM-4990B and corrected for isotopic fractionation. Results are reported using the direct analytical measure percent modern carbon (pMC) with one relative standard deviation. Agreement between expected and measured values is taken as being within 2 sigma agreement (error x 2) to account for total laboratory error.

Report Date: March 19, 2018
Submitter: Dr. Robert R. Cartier

QA MEASUREMENTS

Reference 1	
Expected Value:	0.44 +/- 0.10 pMC
Measured Value:	0.44 +/- 0.03 pMC
Agreement:	Accepted
Reference 2	
Expected Value:	129.41 +/- 0.06 pMC
Measured Value:	129.43 +/- 0.37 pMC
Agreement:	Accepted
Reference 3	
Expected Value:	96.69 +/- 0.50 pMC
Measured Value:	96.78 +/- 0.29 pMC
Agreement:	Accepted

COMMENT: All measurements passed acceptance tests.

Validation: Darden Hood Date: March 19, 2018

APPENDIX D

Archaeological Treatment Program for the Proposed Cypress Point Project in Moss Beach, County of San Mateo

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County Review Draft

ARCHAEOLOGICAL TREATMENT PLAN FOR THE PROPOSED CYPRESS POINT PROJECT IN MOSS BEACH, COUNTY OF SAN MATEO

FOR

ATTN: MR. CRAIG STEVENS
STEVENS CONSULTING
1241 LARKIN WAY
SACRAMENTO, CA 95818

BY

Archaeological Resource Management
Dr. Robert Cartier, Principal Investigator
496 North Fifth Street
San Jose, CA 95112
(408) 295-1373
FAX: (408) 286-2040

MAY 31, 2018

County Review Draft

ADMONITION

Certain information contained in this report is not intended for general public distribution. Portions of this report locate significant archaeological sites in the region of the project area, and indiscriminate distribution of these data could result in the desecration and destruction of invaluable cultural resources. In order to ensure the security of the critical data in this report, certain maps and passages may be deleted in copies not delivered directly into the hands of environmental personnel and qualified archaeologists.

THE PRINCIPAL INVESTIGATOR

INTRODUCTION

This archaeological treatment plan is designed to mitigate the possible impact to prehistoric or historic cultural resources that may be unearthed as part of the proposed Cypress Point Project in the County of San Mateo. During surface reconnaissance in 2017, a prehistoric deposit was noted within the proposed project area. This prehistoric deposit was recorded on Department of Parks and Recreation (DPR) forms and given the trinomial CA-SMA-431. An archaeological testing excavation was carried out within this deposit in February 2018.

Seven mechanical test trenches and two hand excavated 1 x 1 meter testing units were utilized as part of this testing program. The mechanical test trenches were excavated outside the observable surface boundaries of the archaeological site in order to confirm that the site did not extend beyond the visible boundaries. The 1x1 meter units were excavated down to a depth of 40 cm, at which point sterile clay soil was encountered. The mechanical testing trenches were excavated to a depth of 120 cm. No cultural materials were noted in any of the mechanical test trenches. The hand excavated archaeological testing units within the deposit recovered prehistoric materials including marine shell, primarily *Mytilus* (mussel) species, and fire cracked rock.

Thus it has been determined that the proposed earthmoving activities at the project site have the potential to impact cultural materials. In accordance with the California Environmental Quality Act (CEQA) it is required that potential impacts to cultural resources be addressed prior to proceeding with project implementation.

The treatment plan is designed to mitigate the specific impacts to these potential resources resulting from earthmoving activities associated with the Cypress Point project. The treatment plan includes archival background information for the proposed project area, discussing the potential for both prehistoric and historic subsurface archaeological materials to occur on the property. It outlines the methods to be employed for data recovery within the project area during construction in order to reduce impacts to these resources to a less-than-significant level. In addition, this archaeological treatment plan outlines the methods for archaeological monitoring during earthmoving activities and treatment of additional cultural materials that may be uncovered during the excavations.

QUALIFICATIONS OF ARCHAEOLOGICAL RESOURCE MANAGEMENT

Archaeological Resource Management has been specifically engaged in cultural resource management projects in Santa Clara County since 1977. The firm is owned and supervised by Dr. Robert Cartier. Dr. Cartier is the Principal Investigator, with additional personnel hired to satisfy the needs for specific investigations. ARM's offices are located in downtown San Jose which provides a centrally located headquarters for the majority of the work contracted in the Central California area. These studies have included archival overviews, surface surveys, extensive excavations, and National Register evaluations for both prehistoric and historic resources that meet requirements of CEQA, NHPA and NEPA (National Environmental Policy Act).

PROJECT PERSONNEL

Specific segments of this project will be carried out by the following personnel:

Robert Cartier: Principal Investigator, Field Director, and Report Editor

Dr. Cartier completed his undergraduate work in anthropology at San Jose State University and earned his M.A. and Ph.D. in anthropology from Rice University in 1975. He is certified by the Register of Professional Archaeologists (RPA) in the categories of teaching, field work, and cultural resource management. Cartier organized the firm of Archaeological Resource Management in 1977. Since that time he has been directing archaeological and historical investigations in Santa Clara County and the central California area. The firm has completed projects for private individuals, local cities and counties, the Santa Clara Valley Water District, the State of California (CALTRANS), and the Federal Government (Army Corps of Engineers), as well as purely academic investigations. He also fulfills the standards set forth by the Secretary of the Interior for inclusion as a Historian and architectural historian and is certified as such on the State of California referral lists.

Doug Jones: Field Monitor, Report Preparation, Graphics Production

Doug Jones joined ARM in February 2000, working full-time. Mr. Jones completed his Masters in Applied Anthropology from San Jose State University in 2016. He has written cultural and historic evaluations in both CEQA and NEPA formats, and has experience with bone identification, prehistoric, and historic remains. He assists office staff in the preparation of graphics for report production and in laboratory analysis for catalog production. He also acts as an excavator and as a monitor in the field under the direction of Dr. Cartier.

LOCATION AND DESCRIPTION OF THE SUBJECT AREA

The subject area consists of approximately 10.88 acres of land adjacent to Carlos Street and Sierra Street in Moss Beach, County of San Mateo. On the USGS 7.5 minute quadrangle of Montara Mountain OE W, CA, the Universal Transverse Mercator Grid (UTMG) center point of the project area is 10S 5 42 699mE,41 54 262mN. The elevation ranges from approximately 100 to 150 feet MSL, and the nearest source of fresh water is the Montara Denniston Creek which is located approximately 300 feet north of the proposed project area.

The proposed project consists of the construction of 71 affordable housing units consisting of approximately 22 two-story buildings holding 2-4 units each. This project will involve excavation, grading, trenching, and other earthmoving activities.

CALIFORNIA REGISTER CRITERIA

A cultural resource is considered "significant" if it qualifies as eligible for listing in the California Register of Historic Resources (CRHR). Properties that are eligible for listing in the CRHR must meet one or more of the following criteria, as well as have integrity as described below:

1. Association with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States;
2. Association with the lives of persons important to local, California, or national history;
3. Embodying the distinctive characteristics of a type, period, region, or method of construction, or representing the work of a master, or possessing high artistic values; or
4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

Most Native American prehistoric sites are eligible due to their age, scientific potential, and/or burial remains.

The CRHR interprets the integrity of a cultural resource based upon its physical authenticity. An historic cultural resource must retain its historic character or appearance and thus be recognizable as an historic resource. Integrity is evaluated by examining the subject's location, design, setting, materials, workmanship, feeling, and association. If the subject has retained these qualities, it may be said to have integrity. Cultural resources may be listed as significant at the level of the National Register of Historic Places (NRHP), the CRHR, or local jurisdictions. It is possible that a cultural resource may not retain sufficient integrity to be listed in the NRHP yet still be eligible for listing in the CRHR. If a cultural resource retains the potential to convey significant historical/scientific data, it may be said to retain sufficient integrity for potential listing in the CRHR.

ETHNOGRAPHIC BACKGROUND

Early ethnographic accounts of local Native American cultures provide a cultural context for archaeological studies. The Ohlone, or Costanoan, Indians inhabited the San Francisco Bay regions from the Golden Gate south to Monterey. Derived from a Spanish word, Costanoan means "people of the coast," and is an older term. Descendants of these people prefer to refer to themselves as "Ohlone," and it is now the generally accepted term. The research area is located in the Salson linguistic area, which shared many cultural traits with other linguistic groups in the Ohlone region. It is believed that the Ohlone Indians inhabited the area since A.D. 500, and that speakers of the Hokan language previously inhabited at least part of the region (Levy 1978). However, it is unclear when the Hokan or even earlier Paleo-Indians first came to the area. Archaeological data documents Native American coastal activity in the Central Coast area over the past 10,000 years, with some indications of occupation as early as 12,000 to 13,000 years ago (Jones et al, 2007). The earliest radiocarbon dates that are available for the area to which the Ohlone came to live are 12,000 B.P. (years before present) at SCR-177 in Scotts Valley (Cartier 1993), 3,200 B.P. at the University Village Site (SMA-77) (Gerow 1968), 6,349 B.P. at Palm Canyon (SCL-106) near Gilroy (Cartier 1980), 6,628 B.P. at Camden Avenue (SCL-64) (Winter 1978), CA-SCR-38 on the Santa Cruz coast, dated to ca. 8850 B.P., CA-SCR-7 dated to ca. 6050 B.P. (Jones and Hilderbrandt 1990), and CA-SCR-239 in Scotts Valley, dated to ca. 4950 B.P. (Cartier 1992).

The Ohlone were gatherers and hunters who utilized only the native flora and fauna with the exception of one domesticate, the dog. Yet, the abundance and high quality of natural resources allowed them to settle in semi-sedentary villages. The Ohlone were typically organized in basic political units called "tribelets" that consisted of 100 to 250 members (Kroeber 1954). The "tribelet" was an autonomous social unit consisting of one or more permanent villages with smaller villages in a relatively close proximity (Kroeber 1962). Parties went out from the major villages to locations within the tribal territory to obtain various resources.

The proximity of mountainous, open coast, and bay regions in the local environment made a diversity of resources available during different seasons to the native inhabitants. During the winter months, the low-lying flats near the San Francisco Bay have abundant marine and waterfowl resources, while the surrounding mountainous areas are best in the summer months for their nut, seed, and mammalian resources (King and Hickman 1973). A primary food source was acorns, abundant in autumn and easily stored for the remainder of the year. According to Gifford, the acorn industry of California was probably the most characteristic feature of its domestic economy (Gifford 1951). An elaborate process of grinding and leaching acorns is necessary to render them palatable. The acorn industry first became a major source of food in the Middle Period as is indicated by the appearance of mortars and pestles in the archaeological record (King and Hickman 1973). Other important resources include various plant foods, land animals, and the marine resources of the San Francisco Bay. Both large and small land mammals were typically hunted, trapped or poisoned. Many items, including shell beads and ornaments, were extensively traded with other groups as far away as the Great Basin of Nevada (Davis 1974).

It is argued that contrary to usual conceptions of hunters and gatherers, native Californian groups, including the Ohlone, practiced a form of resource management that was close to agriculture. Bean and Lawton (1976) consider this pattern a "semi-agricultural" stage which included quasi-agricultural harvesting activity and proto-agricultural techniques. Some plants were pruned and reseeded seasonally for optimal production. Foods such as acorns were stored for many months at a time. Ethnographic accounts also report the repeated burning of woodlands grassbelt to increase animal and plant resources. It is likely to have made hunting conditions better by reducing scrubby growth and encouraging the growth of grasses and other plants that are appealing to grazers such as deer and elk. The plant growth succession after a burning is also rich in grains and legumes that were major food sources for Native Californians.

Bean and Lawton also claim that the abundance of plant and animal resources in California and the development of ingenious technological processes allowed Native Californians to develop social structures beyond the normal parameters of hunting and gathering. These include extensive political systems, controlled production and redistribution of goods, and alliances and trade with other groups.

HISTORIC BACKGROUND

The proposed project area formerly made up a portion of the Point Montara Artillery Training Facility, a World War II era military complex in use between 1943 and 1945. Several structures within this complex were located within the current proposed project area, including barracks, offices, a mess hall, a library, a garage, a boiler room, an incinerator, a "TDD" hanger, and a drill field.

The Point Montara Artillery Training Facility was a top secret military installation operated by the U.S. Navy during World War II, containing 48 permanent structures, and housing over 1500 personnel. Throughout the course of its operation, about 320,000 Navy sailors and merchant marines were trained on what was then the latest technology in anti-aircraft weapons, including the 20mm "Oerlokin", the 40mm "Bofers" and 3 inch/50 caliber anti-aircraft guns.

The facility was notable for its extensive use of Women Air Service Pilots (known as WASPs) who flew planes towing targets for the artillery firing from the coast along Point Montara.

The facility also heavily utilized some of the earliest drone aircraft for target practice. These radio controlled planes were pioneered by Reginald Denny, a Hollywood film star and remote control hobbyist. He realized the potential of the planes for target practice, and entered contracts with the U.S. Army and the U.S. Navy which eventually became a multi-million dollar industry through the course of WWII. These planes were named Target Drone Dennys (TDD's) by the Navy after their inventor (Oeswein 2016).

In the late 1960's the proposed project area was in use as a training facility for firefighters. During this period, the structures within the proposed project area were razed by a controlled burn, leaving only exposed concrete foundations. The property has been vacant since 1970. The project area currently contains concrete foundations, as well as well as a fenced area containing the Montara Water and Sanitary District infrastructure. Some structures and features associated with the military training facility remain standing outside the current proposed project area, along the coast of Point Montara.

ARCHIVAL BACKGROUND

Prior to surface reconnaissance of the subject area in 2017, a study of the maps and records at the Northwest Information Center of the California Archaeological Site Inventory was conducted and given the file number NWIC# 17-0815. The purpose of this research was to determine if any known archaeological resources had previously been reported in or around the subject area. No previously recorded archaeological sites are located within the project area. However, four previously recorded resources are located within one quarter mile of the proposed project area. These resources are briefly described below:

CA-SMA-55

This prehistoric site, originally designated Nelson 405, was a shell mound documented by N. Nelson in 1908. Nels Nelson documented and investigated numerous shell mounds along the Central California Coast in the early years of the 20th Century, many of which have been

significantly damaged or completely destroyed. This site is located on Point Montara approximately 150 feet from the northwest corner of the proposed project boundaries. The project as currently proposed does not appear to pose either a direct or indirect impact to this resource.

CA-SMA-171H

This historic district was recorded by H. Casper in 1973 and is described as containing the Point Montara Artillery Training Station and the Point Montara Light Station. The recorded boundaries of this site lie entirely outside the current proposed project area, approximately 150 feet to the west of the project boundary. The project as currently proposed does not appear to pose either a direct or indirect impact to this resource.

P-41-2108

This historic structure was recorded by D. Painter and C. Losee in 2003. It is described as the Montara Cottage. This resource is located at 361 14th Street in Montara, approximately 800 feet north of the proposed project area. The project as currently proposed does not appear to pose either a direct or indirect impact to this resource.

P-41-2154

This historic resource was recorded in 2005 by D. Edwards. It is described as the Montara Water and Sanitary District Office at Point Montara Training Station. This resource is located approximately 200 feet west of the proposed project area. The project as currently proposed does not appear to pose either a direct or indirect impact to this resource.

Four previous studies have been carried out within or adjacent to the proposed project area. These studies are described below:

S-3082

This study was carried out by S. Dietz and T. Jackson in 1970 and entitled "An Archaeological and Historical Reconnaissance of a Portion of the San Mateo County Coastside." This was a broad survey with included the entirety of the current proposed project area within its scope. No significant cultural resources were noted within the proposed project area as part of this study.

S-5389

Carried out by M. Melandry in 1977, this study is entitled "Archaeological Survey Report on Excess Parcels 6695-01-01, 6696-01-01, 7091-01-091-02-01, on Route 1 in San
Mateo County P.M. 35.5/35.8." This study extends southwards from the southwest corner of the proposed project area. No significant cultural resources were noted within the proposed project area as part of this study.

S-25083

This study was carried out by J. Holson in 2002 and entitled "Archaeological Survey for Highway 1/ Montara, 8211.38 (PL 1004-07) (letter report)." Archival maps for this study indicate its location as a small circular area located within the eastern central portion of the

proposed project area. No significant cultural resources were noted within the proposed project area as part of this study.

S-31887

Carried out by C. Busby in 2005, this study is entitled "Archaeological Assessment - Montara Water and Sanitary District EIR, Vicinity of Montara and Moss Beach and Within Half Moon Bay Airport, San Mateo County (letter report)." A portion of this study is located within the eastern central portion of the proposed project area. No significant cultural resources were noted within the proposed project area as part of this study.

A total of 26 additional previous studies have been carried out within a one quarter mile radius of the proposed project area.

AB52: NATIVE AMERICAN CONSULTATION

AB 52 Native American Consultation was completed by County of San Mateo as the lead agency for the project. All identified individuals were contacted, and no responses were received. As part of the archaeological testing program, Ms. Irene Zwierlein was contacted as a representative of the Amah Mutsun Tribal Band. Ms. Zwierlein provided a Native American monitor for the archaeological testing within CA-SMA-431. This monitor was present during hand excavation within the deposit.

ARCHAEOLOGICAL TESTING PROGRAM

An archaeological testing program was carried out for CA-SMA-431 in February of 2018 (see CA-SMA-431 Trench and Unit Location Map, Appendix A). The first phase of the fieldwork involved mechanical test trenching. The test trenching was carried out on February 21, 2018. During trenching, seven mechanically excavated test trenches were placed outside the visible boundaries of the archaeological site in order to determine if subsurface elements of the site extended beyond those boundaries. The trenches were used to help identify the presence or absence of subsurface cultural resources. Trenching records (refer to Appendix B) include information on soil type, color, and rock type. None of the mechanically excavated trenches contained any cultural materials.

The second phase of the fieldwork involved hand excavation of two 1 x 1 meter test units. Excavation of the test units was carried out on February 22, 2018. Placement of the units was determined based upon the defined boundaries of the archaeological deposit. Hand excavation was conducted using standard archaeological techniques with flat-nosed shovels, round-nosed shovels, picks, and trowels in arbitrary levels and dry screened through 1/4 inch mesh. All identified artifactual material was collected from each level. Collected material was curated in level bags and each level recorded as to artifacts present, soil type, color, stratigraphy, and features present. All artifactual material from this process was then placed within its appropriate level bag from the field screening process. Hand excavation of the test units was carried out to a depth of 40 cm at which point sterile soil was encountered. A hand auger boring was then conducted to a depth of 100cm in each unit.

Hand Excavated Unit Results

Unit #1

The soil of Unit #1 consisted of a medium brown silty loam to a depth of approximately 27cm, at which point a reddish brown silty clay was encountered to a depth of 40cm. The surface level of this unit contained mussel (*Mytilus)* and barnacle (*Balanus)* shell fragments, as well as terrestrial snail shell. The 0-20cm level included mussel (*Mytilus)* and barnacle (*Balanus)* shell fragments, FCR, as well as historic materials including glass and plastic fragments, and a wire nail. The 20-40cm level contained mussel (*Mytilus)* and barnacle (*Balanus)* shell fragments as well as one brown bottle glass fragment. This material was almost entirely concentrated in the upped 7cm of the level; the reddish silty clay from 27-40cm appeared sterile. A hand auger boring was conducted at the base of the 20-40cm level, to a depth of 100cm. Soils in this auger boring consisted of a reddish brown silty clay gradually shifting to an orange clay and sand. No cultural materials were noted in the auger boring.

Unit #2

The soil of Unit #2 consisted of a medium brown silty loam to a depth of approximately 40cm, at which point a reddish brown silty clay was encountered. The surface level of this unit contained mussel (*Mytilus)* and barnacle (*Balanus)* shell fragments. The 0-20cm level included mussel (*Mytilus),* barnacle (*Balanus),* turban shell, and chiton (*Cryptochiton*) shell fragments, terrestrial snail shell, and FCR, as well as historic materials including one fragment of clear glass. The 20-40cm level contained mussel (*Mytilus)* and barnacle (*Balanus)* shell fragments as well as terrestrial snail shell. Dense reddish brown silty clay was encountered at approximately 40cm. A hand auger boring was conducted at the base of the 20-40cm level, to a depth of 100cm. Soils in this auger boring consisted of a reddish brown silty clay gradually shifting to an orange clay and sand. No cultural materials were noted in the auger boring.

Summary

The hand excavations identified a large number of shell fragments in the top 40 cm of each unit, but no materials below 40 cm. It could not be conclusively determined whether the shell fragments were a natural deposit, a deposit from the occupation of the site by the U.S. military, a deposit from a prehistoric Native American settlement on the site, or whether the soil was moved to this location from another location as part of previous earth-moving activities at the site.

This analysis conservatively assumes that the project's impacts on this resource would be potential significant impacts under CEQA.

ARCHAEOLOGICAL MITIGATION PROGRAM

Based upon the results of the archaeological testing and historic background study, as documented in *Cultural Resource Evaluation Of The Cypress Point Project In Half Moon Bay* (ARM 2018x), the project area as a whole should be considered sensitive for both prehistoric and historic archaeological materials. The proposed project, as currently designed, calls for construction of three structures (labeled B4 on the proposed site plan) within and in the immediate vicinity of the identified boundaries of the CA-SMA-431 deposit, which was determined to be a potentially significant environmental impact. Thus excavation and grading for these structures will necessitate the removal of the majority or all of the archaeological deposit. Preservation in place was determined not to be feasible as the proposed project could not feasibly

be modified to avoid the deposit. Relocating these structures is not feasible in light of the project objectives because the project was designed to: a) be feasible from a construction standpoint by avoiding significant slopes that cover portions of the site, b) be consistent with the character of the surrounding neighborhood in the design and location of buildings; c) minimize impact on neighboring properties; and d) preserve open space, which requires limiting development on portions of the site. Eliminating these structures would negatively impact the key project objective of providing a significant number of affordable housing units in the MidCoast region. As mitigation for this impact, the following mitigation measures are recommended to reduce the impact of the proposed project to a less-than-significant level. Salvage excavation and monitoring procedures are described below.

Mitigation Measure CUL-1: Additional Site Excavation

An archaeological salvage program will take place prior to the commencement of construction earthmoving activities and will consist of four hand excavated 1x1 meter mitigation units. Placement of the units will be based on available archival background data, field observations, and proposed project plans. Hand excavation will be conducted using standard archaeological techniques with trowels, picks, and shovels at arbitrary levels and dry screened through 1/4 inch mesh. All identified artifactual material will be collected from each level. Collected material will be placed in level bags and each level will be recorded using level forms. Artifacts, soil type, color and stratigraphy, and features present will be recorded. All artifactual material from this process will then be placed within its appropriate level bag during the field process.

Mitigation Measure CUL-2: Archaeological Monitoring

Archaeological monitoring will be conducted during all earthmoving activities involved with the project in accordance with the schedule coordinated between the general contractor and project Archaeologist. This will consist of full time monitoring during all earth moving activities within 50 feet of CA-SMA-341. Archaeological spot check monitoring, consisting of periodic monitoring of the project site during ground disturbing activities, including during demolition of the existing concrete foundations, will take place for the remainder of the project. The timing and frequency of these spot checks will be determined throughout the course of earthmoving activities for the proposed project based upon the construction schedule and the nature of any cultural materials encountered. Per the schedule, the archeologist will inspect the site and will subsequently provide an archaeological monitoring report. This report will document all cultural materials encountered, and will be submitted to project representatives within 40 working days of the completion of earth moving activities for the project.

Considering that cultural resources frequently exist below the surface, their location is often not visible. Field archaeologists therefore monitor earthmoving activities to observe whether artifactual remains, soil changes indicating cultural use, and/or other indicators of human activity are present within a project area. Monitoring consists of a qualified archaeological field technician present and observing ground-disturbing activities in native soil.

Mitigation Measure CUL-3: Unanticipated Findings during Construction

If any individual artifacts (prehistoric or historic), features, potential midden soils, or other indicators of cultural use are noted by the archaeological monitor during the course of earthmoving activities, work within 50 feet of the find will be stopped until appropriate measures are formulated by the Project Archaeologist and accepted by the County and the project representative. If the project archaeologist is not present on the site, the County, Owner and Project Archaeologist shall be notified by telephone and the project archaeologist will examine the materials encountered within 24 hours. Any archaeological materials found at the site will be collected and stored for further analysis.

In the event of the discovery of an intact archaeological deposit during the course of archaeological mitigation/monitoring, construction activities shall be halted within 50 feet of the find for the purpose of identifying and mapping the deposit, and further mitigation recommendations will be formulated by the Project Archaeologist and discussed with the project representative. It these materials are determined to be significant, a preservation plan or recovery program will be prepared, submitted to San Mateo County for approval, then implemented.

For any cultural materials discovered, preservation in place is the preferred treatment of an archeological resource (CEQA Section 21083.2(b); CEQA Guidelines Section 15126.4(b)(3)(a)). If preservation in place of an archeological resource is not feasible, data recovery, in accord with the approved data recovery plan will be implemented, prior to any further soil disturbance within 50 feet of the discovered materials (or other appropriate boundary approved by the Project Archaeologist and the County) (CEQA Guidelines Section 15126.4(b)(3)(C)). The recovery plan shall include controlled excavation of the entirety, or a representative sample, of the cultural materials, analysis of the recovered material, and written documentation. The data recovery program shall specify the methods to be used for curation of scientifically significant data in an appropriate curation facility that is compliant with the OHP's Guidelines for the Curation of Archaeological Collections (1993).

Scientific analysis will be performed on the resources recovered from the archaeological monitoring for this project, following basic laboratory operations. Any artifacts and archaeological features found during construction shall be removed, cleaned, stabilized/conserved, and catalogued in accordance with professional curation and archaeological practice. Native American burials, if discovered, will be analyzed in accordance with recommendations from the MLD designated by the NAHC and Mitigation Measure CUL-4.

Recovered materials will be documented in a written report prepared by the Project Archaeologist. The report and recovered material will be submitted to the Owner for storage, curation, or onsite interpretive display. The final report shall be produced documenting and synthesizing all data collected from the above mentioned measures. The report will include recording and analysis of materials recovered, conclusions, and any additional recommendations. Copies of the archaeological report prepared in conjunction with this project will be filed with the California Historical Resources File System, Northwest Information Center (CHRIS/NWIC) at Sonoma State University, as well as the County of San Mateo.

Mitigation Measure CUL-4: Procedures for Discovery and Treatment of Human Remains

If human remains are found during excavation or construction, work will be halted at a minimum of 50 feet from the find, the area will be staked off, and the Owner and Project Archaeologist notified. The owner shall contact the San Mateo County Coroner, and no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the coroner determines that no investigation of the cause of death is required.

If the coroner determines the remains to be Native American, the coroner shall contact the Native American Heritage Commission within 24 hours of this determination. The Native American Heritage Commission (NAHC) shall identify the person or persons it believes to be the Most Likely Descendent (MLD) of the deceased Native American. The MLD may then make recommendations to the Owner and execute an agreement for the means of treating or disposing of, with appropriate dignity, the human remains and associated grave goods, as provided in Public Resources Code Section 5097.98.

If required, reinternment of human remains will be performed according to California law for Native American burials (Chapter 1492, Statutes of 1982). The intent of the California state law is to protect Native American burials, isolated and disarticulated human remains, and associated cultural materials found during the course of an undertaking. It also serves to insure proper analysis prior to their final disposition. The location and procedures of this undertaking will be recorded by the project archaeologist. Reinternment will take place with all due speed upon completion of all necessary analysis. This information will be included in the final report prepared by the Project Archaeologist, or if necessary, as an addendum to the report.

The Owner shall rebury the Native American human remains and associated grave goods with the appropriate dignity on the property in a location not subject to further disturbance if:

1. The NAHC is unable to identify a MLD or the MLD failed to make a recommendation within 24 hours after being notified by the commission.

2. The descendent identified by the NAHC fails to make a recommendation for burial and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the Owner.

Any associated grave goods and soil samples from the burial site will be analyzed per the agreement between the Owner and the MLD. Dependent upon the nature of this agreement, diagnostic artifacts such as projectile points, shell beads and ground stone artifacts may be studied and illustrated in the final report to be prepared by the Project Archaeologist Radiocarbon dating and obsidian hydration and sourcing may be undertaken in order to provide a chronology for newly identified features.

CONCLUSIONS

This archaeological treatment plan for the Cypress Point project in the County of San Mateo has been designed to meet the requirements of the California Environmental Quality Act (CEQA). The archaeological program presented in this treatment plan will reduce the impact of the proposed project on cultural materials to a less-than-significant level by providing procedures for monitoring ground-disturbing activities during project construction, and for the orderly removal, preservation, evaluation, and storage of any cultural materials that are discovered. A table illustrating appropriate actions by project personnel in the event of unexpected archaeological discoveries is provided below:

Materials Encountered	Stop Work	Radius	Contact
Individual Artifact	Yes	50 feet	Project Archaeologist
Archaeological Deposit	Yes	50 feet	Project Archaeologist
Possible Human Remains	Yes	50 feet	Project Archaeologist; Owner; San Mateo County Coroner's Office

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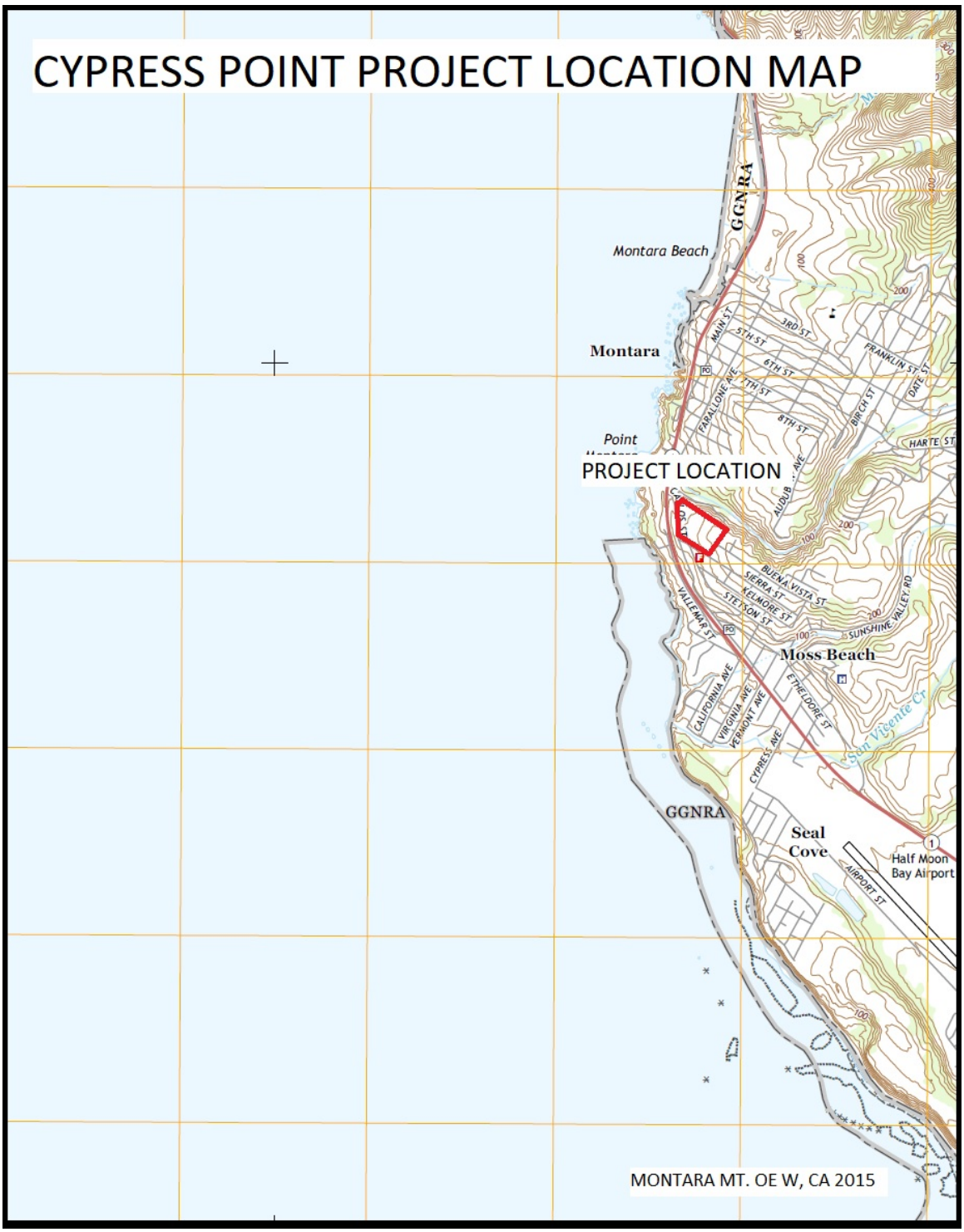
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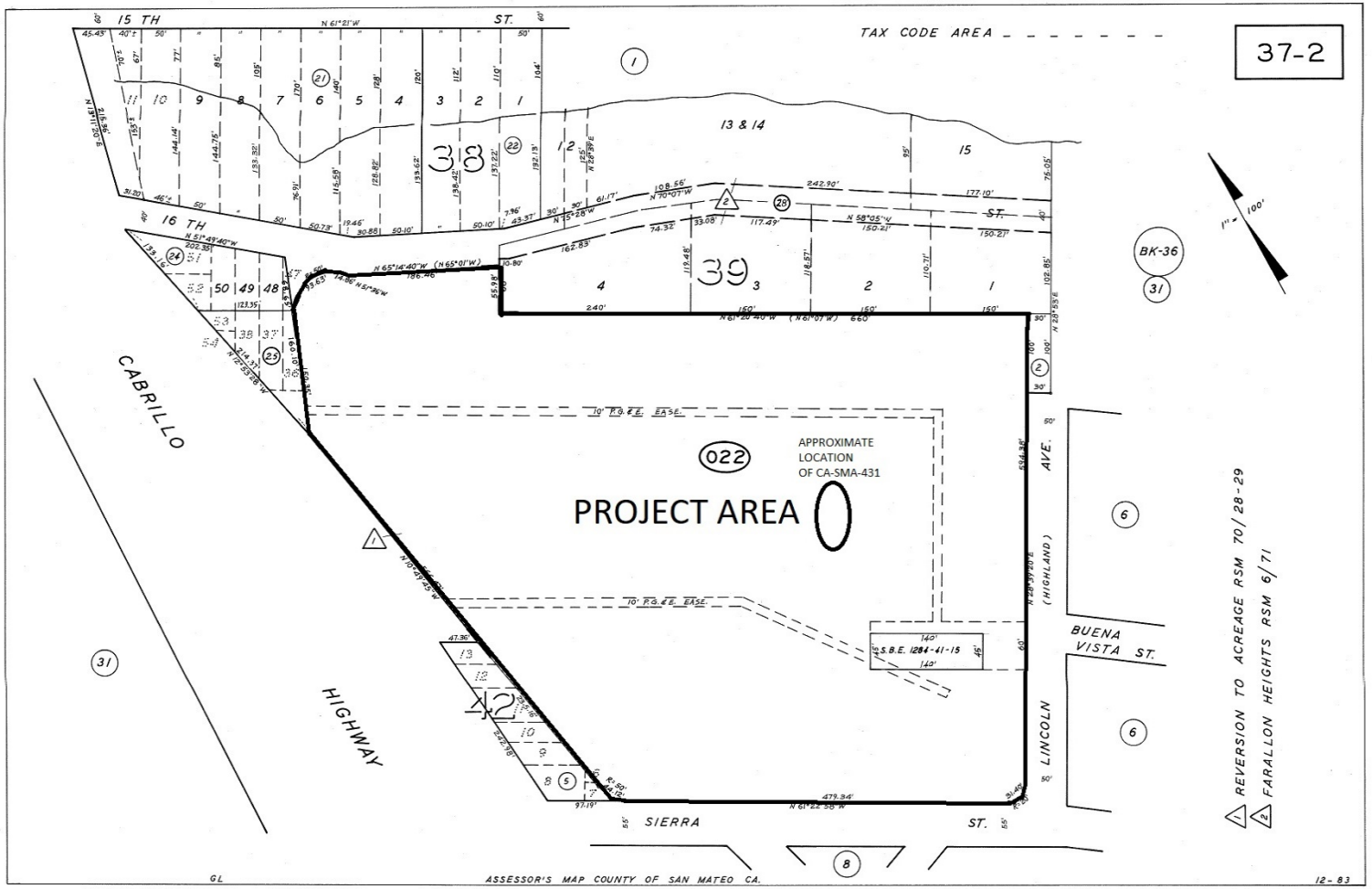
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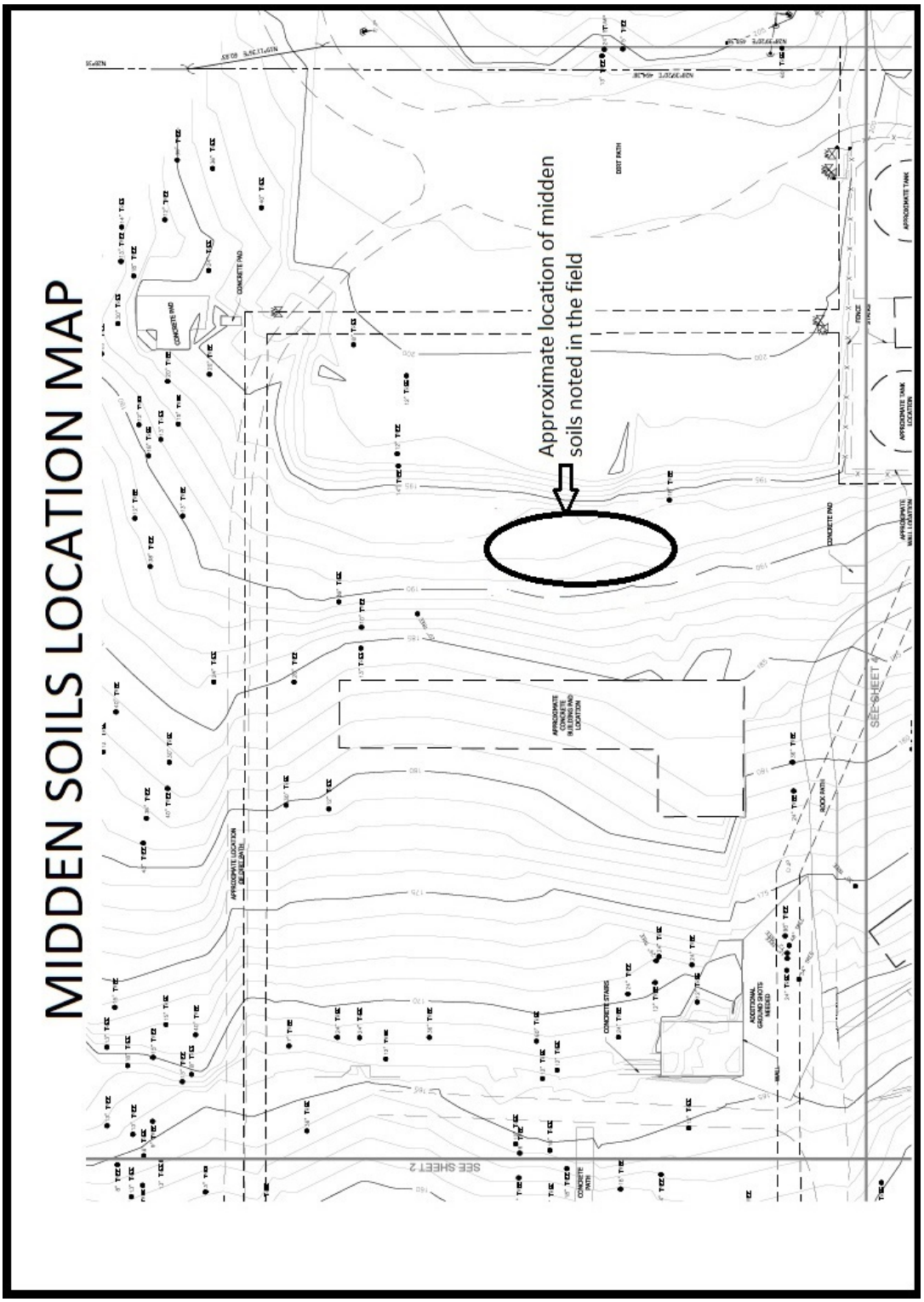
APPENDIX A:
Project Maps


CYPRESS POINT PROJECT LOCATION MAP
PROJECT LOCATION
Montara Beach
Montara
Point
Moss Beach
GGNRA
Seal Cove
Half Moon Bay Airport
MONTARA MT. OE W, CA 2015

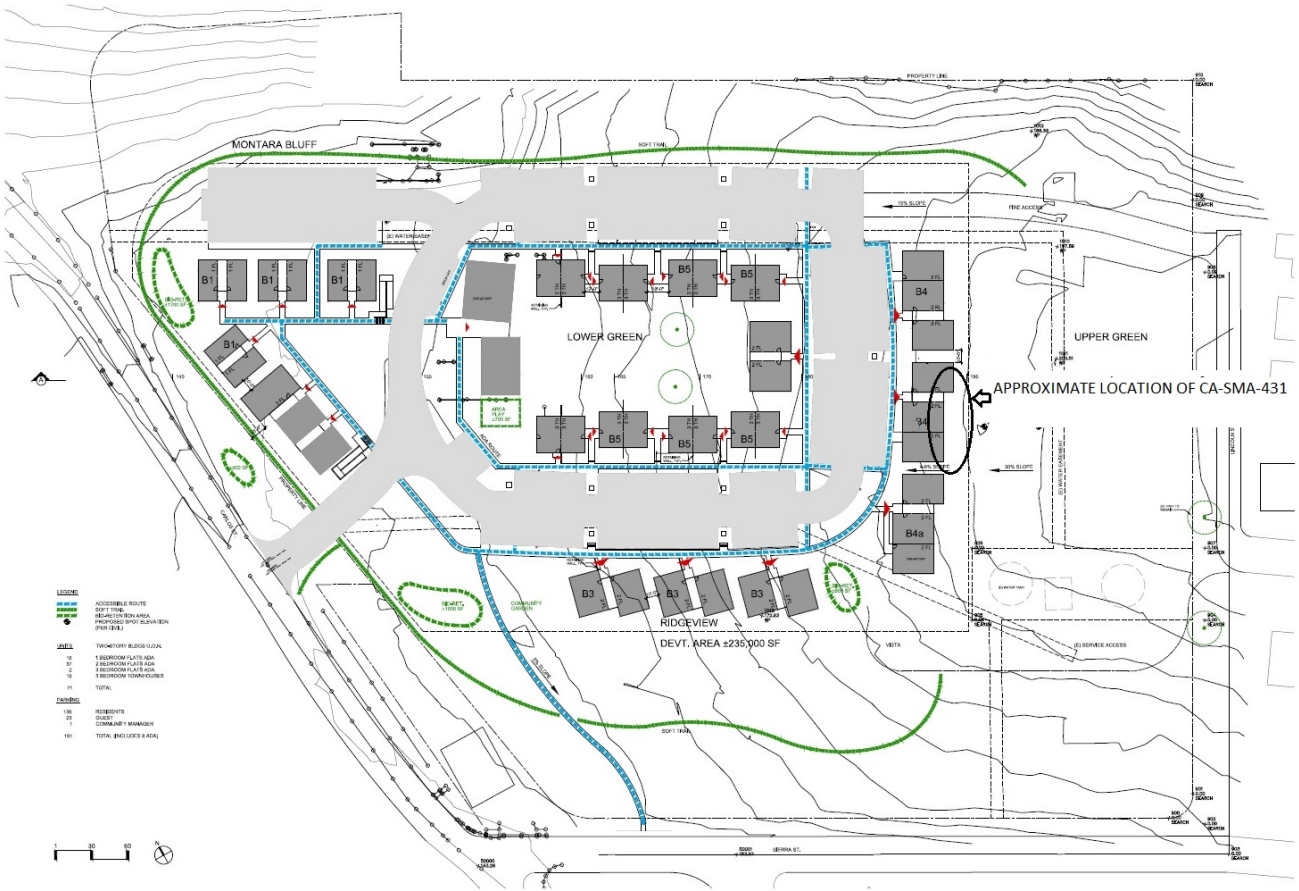
CYPRESS POINT PROJECT AREA MAP



County Review Draft

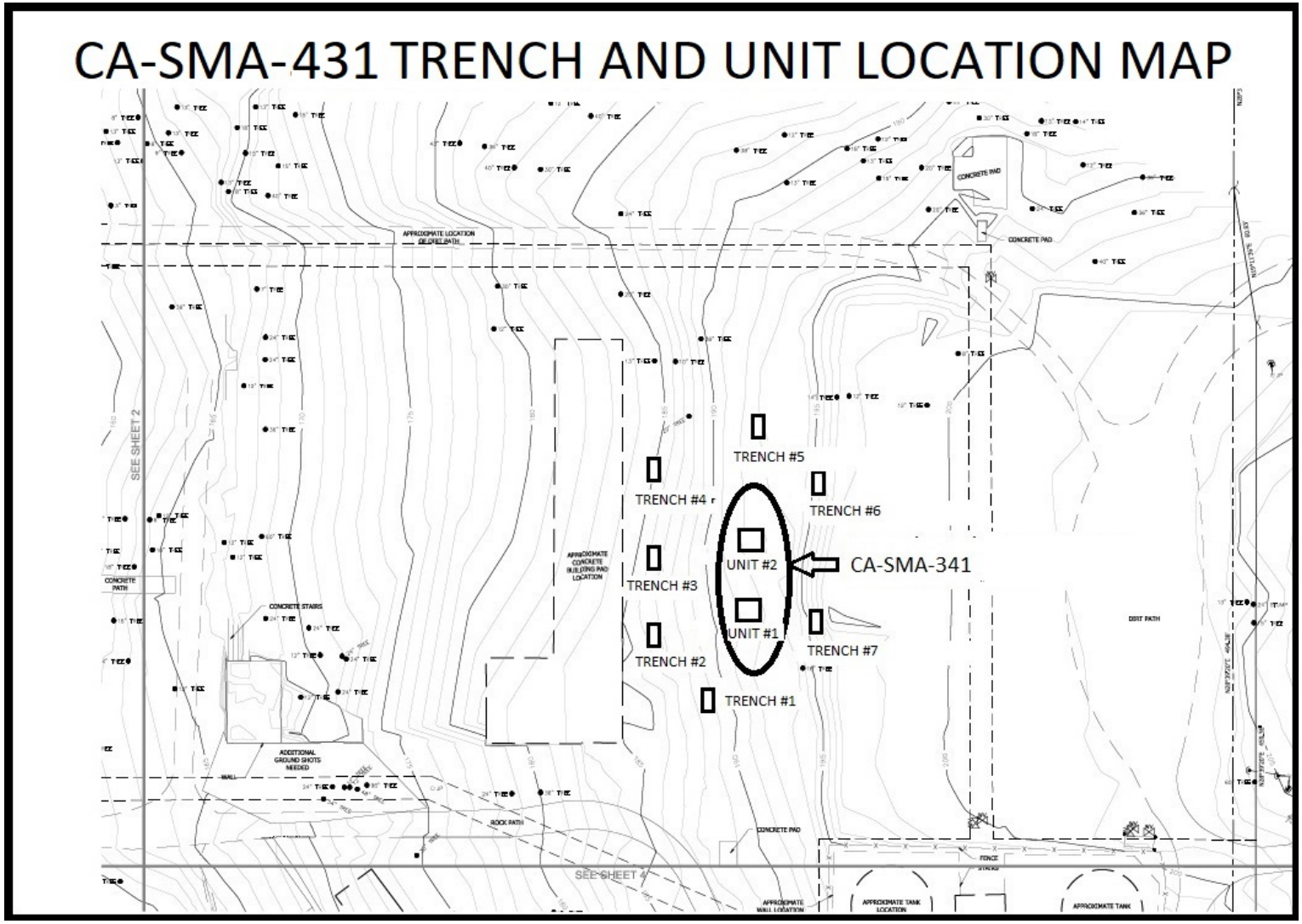

MIDDEN SOILS LOCATION MAP
Approximate location of midden soils noted in the field
SEE SHEET 2
SEE SHEET 4

CA-SMA-431 SITE LOCATION IN RELATION TO PROPOSED DEVELOPMENT



County Review Draft

CA-SMA-431 TRENCH AND UNIT LOCATION MAP



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APPENDIX E

Letters to Native American Tribes

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County Review Draft

COUNTY OF SAN MATEO
PLANNING AND BUILDING

County Government Center
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650-363-4161 T
650-363-4849 F
www.planning.smcgov.org

December 21, 2017

Amah Mutsun Tribal Band of Mission San Juan Bautista
Irenne Zwierlein, Chairperson
789 Canada Road
Woodside, CA 94062

RE: SACRED LANDS ENHANCED CONSULTATION CHECK CONCERNING THE CYPRESS POINT PROJECT IN SAN MATEO COUNTY

Dear Ms. Zwierlein:

We want to provide you with notification that the County of San Mateo intends to issue a public notice for the Cypress Point Project in Moss Beach, San Mateo County. This project is proposed to include 71 units of affordable housing and retain approximately half the project area in its current undeveloped state. Although your tribe has not requested notification under Assembly Bill 52, as part of an enhanced consultation check, we are reaching out to your tribe, as a voluntary measure. We would be pleased to initiate consultation, if appropriate, regarding the proposed project.

We requested a Sacred Lands file check from the Native American Heritage Commission (NAHC) for the project area. **The file check did not indicate the presence of Native American cultural resources within the immediate project area.**

We have also completed surface reconnaissance surveys of the project site, which revealed a surface scatter of faunal shells within a limited area of the proposed project site. A description of the findings was documented on a Department of Parks & Recreation form and given the designation P-41-00259 (see site record attached).

On the recommendation of the NAHC, we are contacting you and other tribes they indicated may have an interest in the project site. We would like to obtain any information you may have regarding sacred lands or Native American prehistoric resources within this area.

Should you determine that you have an interest in this site, we will provide you with a copy of the cultural resources report, including the site record.

We have included a project location map showing the project area for your reference. If you have any questions or would like to initiate consultation, please contact our office at (650) 363-4161 within 30 days of the date of this letter.

Thank you.

Sincerely,

Steve Monowitz
Community Development Director

Attachments: Project Location Map
Project Description
Site Record Forms

SAM:aow – SAMBB0772_WAN.DOCX

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PLANNING AND BUILDING

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December 21, 2017

Coastanoan Rumsen Carmel Tribe
Tony Cera, Chairperson
244 E. 1st Street
Ponoma, CA 91766

RE: SACRED LANDS ENHANCED CONSULTATION CHECK CONCERNING THE CYPRESS POINT PROJECT IN SAN MATEO COUNTY

Dear Mr. Cerda:

We want to provide you with notification that the County of San Mateo intends to issue a public notice for the Cypress Point Project in Moss Beach, San Mateo County. This project is proposed to include 71 units of affordable housing and retain approximately half the project area in its current undeveloped state. Although your tribe has not requested notification under Assembly Bill 52, as part of an enhanced consultation check, we are reaching out to your tribe, as a voluntary measure. We would be pleased to initiate consultation, if appropriate, regarding the proposed project.

We requested a Sacred Lands file check from the Native American Heritage Commission (NAHC) for the project area. **The file check did not indicate the presence of Native American cultural resources within the immediate project area.**

We have also completed surface reconnaissance surveys of the project site, which revealed a surface scatter of faunal shells within a limited area of the proposed project site. A description of the findings was documented on a Department of Parks & Recreation form and given the designation P-41-00259 (see site record attached).

On the recommendation of the NAHC, we are contacting you and other tribes they indicated may have an interest in the project site. We would like to obtain any information you may have regarding sacred lands or Native American prehistoric resources within this area.

Should you determine that you have an interest in this site, we will provide you with a copy of the cultural resources report, including the site record.

We have included a project location map showing the project area for your reference. If you have any questions or would like to initiate consultation, please contact our office at (650) 363-4161 within 30 days of the date of this letter.

Thank you.

Sincerely,

Steve Monowitz
Community Development Director

Attachments: Project Location Map
Project Description
Site Record Forms

SAM:aow – SAMBB0771_WAN.DOCX

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COUNTY OF SAN MATEO
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December 21, 2017

Indian Canvon Mutsun Band of Costanoan
Ann Marie Savers, Chairperson
P.O. Box 28
Hollister, CA 95024

RE: SACRED LANDS ENHANCED CONSULTATION CHECK CONCERNING THE CYPRESS POINT PROJECT IN SAN MATEO COUNTY

Dear Ms. Savers:

We want to provide you with notification that the County of San Mateo intends to issue a public notice for the Cypress Point Project in Moss Beach, San Mateo County. This project is proposed to include 71 units of affordable housing and retain approximately half the project area in its current undeveloped state. Although your tribe has not requested notification under Assembly Bill 52, as part of an enhanced consultation check, we are reaching out to your tribe, as a voluntary measure. We would be pleased to initiate consultation, if appropriate, regarding the proposed project.

We requested a Sacred Lands file check from the Native American Heritage Commission (NAHC) for the project area. **The file check did not indicate the presence of Native American cultural resources within the immediate project area.**

We have also completed surface reconnaissance surveys of the project site, which revealed a surface scatter of faunal shells within a limited area of the proposed project site. A description of the findings was documented on a Department of Parks & Recreation form and given the designation P-41-00259 (see site record attached).

On the recommendation of the NAHC, we are contacting you and other tribes they indicated may have an interest in the project site. We would like to obtain any information you may have regarding sacred lands or Native American prehistoric resources within this area.

Should you determine that you have an interest in this site, we will provide you with a copy of the cultural resources report, including the site record.

We have included a project location map showing the project area for your reference. If you have any questions or would like to initiate consultation, please contact our office at (650) 363-4161 within 30 days of the date of this letter.

Thank you.

Sincerely,

Steve Monowitz
Community Development Director

Attachments: Project Location Map
Project Description
Site Record Forms

SAM:aow – SAMBB0775_WAN.DOCX

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COUNTY OF SAN MATEO
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www.planning.smcgov.org

December 21, 2017

Muwekma Ohlone Indian Tribe of the SF Bay Area
Rosemary Cambra, Chairperson
P.O. Box 360791
Milpitas, CA 95036

RE: SACRED LANDS ENHANCED CONSULTATION CHECK CONCERNING THE CYPRESS POINT PROJECT IN SAN MATEO COUNTY

Dear Ms. Cambra:

We want to provide you with notification that the County of San Mateo intends to issue a public notice for the Cypress Point Project in Moss Beach, San Mateo County. This project is proposed to include 71 units of affordable housing and retain approximately half the project area in its current undeveloped state. Although your tribe has not requested notification under Assembly Bill 52, as part of an enhanced consultation check, we are reaching out to your tribe, as a voluntary measure. We would be pleased to initiate consultation, if appropriate, regarding the proposed project.

We requested a Sacred Lands file check from the Native American Heritage Commission (NAHC) for the project area. **The file check did not indicate the presence of Native American cultural resources within the immediate project area.**

We have also completed surface reconnaissance surveys of the project site, which revealed a surface scatter of faunal shells within a limited area of the proposed project site. A description of the findings was documented on a Department of Parks & Recreation form and given the designation P-41-00259 (see site record attached).

On the recommendation of the NAHC, we are contacting you and other tribes they indicated may have an interest in the project site. We would like to obtain any information you may have regarding sacred lands or Native American prehistoric resources within this area.

Should you determine that you have an interest in this site, we will provide you with a copy of the cultural resources report, including the site record.

We have included a project location map showing the project area for your reference. If you have any questions or would like to initiate consultation, please contact our office at (650) 363-4161 within 30 days of the date of this letter.

Thank you.

Sincerely,

Steve Monowitz
Community Development Director

Attachments: Project Location Map
Project Description
Site Record Forms

SAM:aow – SAMBB0773_WAN.DOCX

County Review Draft

COUNTY OF SAN MATEO
PLANNING AND BUILDING

County Government Center
455 County Center, 2nd Floor
Redwood City, CA 94063
650-363-4161 T
650-363-4849 F
www.planning.smcgov.org

December 21, 2017

The Ohlone Indian Tribe
Andrew Galvan
P.O. Box 3152
Fremont, CA 94539

RE: SACRED LANDS ENHANCED CONSULTATION CHECK CONCERNING THE CYPRESS POINT PROJECT IN SAN MATEO COUNTY

Dear Mr. Galvan:

We want to provide you with notification that the County of San Mateo intends to issue a public notice for the Cypress Point Project in Moss Beach, San Mateo County. This project is proposed to include 71 units of affordable housing and retain approximately half the project area in its current undeveloped state. Although your tribe has not requested notification under Assembly Bill 52, as part of an enhanced consultation check, we are reaching out to your tribe, as a voluntary measure. We would be pleased to initiate consultation, if appropriate, regarding the proposed project.

We requested a Sacred Lands file check from the Native American Heritage Commission (NAHC) for the project area. **The file check did not indicate the presence of Native American cultural resources within the immediate project area.**

We have also completed surface reconnaissance surveys of the project site, which revealed a surface scatter of faunal shells within a limited area of the proposed project site. A description of the findings was documented on a Department of Parks & Recreation form and given the designation P-41-00259 (see site record attached).

On the recommendation of the NAHC, we are contacting you and other tribes they indicated may have an interest in the project site. We would like to obtain any information you may have regarding sacred lands or Native American prehistoric resources within this area.

Should you determine that you have an interest in this site, we will provide you with a copy of the cultural resources report, including the site record.

We have included a project location map showing the project area for your reference. If you have any questions or would like to initiate consultation, please contact our office at (650) 363-4161 within 30 days of the date of this letter.

Thank you.

Sincerely,

Steve Monowitz
Community Development Director

Attachments: Project Location Map
Project Description
Site Record Forms

SAM:aow – SAMBB0774_WAN.DOCX

APPENDIX H

Phase I Environmental Site Assessment

November 10, 2015

PHASE I
ENVIRONMENTAL SITE ASSESSMENT

Property Identification:
Carlos Street at Sierra Street
Moss Beach, San Mateo County, California 94038

AEI Project No. 350428

Prepared for:
MidPen Housing Corporation
303 Vintage Park Drive, Suite 250
Foster City, California 94450

Prepared by:
AEI Consultants
2500 Camino Diablo
Walnut Creek, California 94597
925) 746-6000

Environmental & Engineering Due Diligence

Site Investigation & Remediation

Energy Performance & Benchmarking

Industrial Hygiene

Construction Consulting

Construction, Site Stabilization & Stormwater Services

Zoning Analysis Reports & ALTA Surveys

PROJECT SUMMARY

Carlos Street at Sierra Street
Carlos Street at Sierra Street, Moss Beach, San Mateo County, California

Report Section		No Further Action	REC	CREC	HREC	Other Environmental Considerations	Recommended Action
2.1	Site Location and Description	☒	☐	☐	☐	☐	
2.2	Site and Vicinity Characteristics	☒	☐	☐	☐	☐	
3.1	Historical Summary	☒	☐	☐	☐	☐	
4.0	Regulatory Agency Records Review	☐	☒	☐	☐	☐	**Sampling near historic incinerator, drill field**
5.0	Regulatory Database Records Review	☒	☐	☐	☐	☐	
5.2	Vapor Migration	☒	☐	☐	☐	☐	
6.3	Previous Reports and Other Provided Documentation	☒	☐	☐	☐	☐	
7.0	Site Reconnaissance	☒	☐	☐	☐	☐	
7.2	Adjacent Site Reconnaissance	☒	☐	☐	☐	☐	
8.1	Asbestos-Containing Materials	☒	☐	☐	☐	☐	
8.2	Lead-Based Paint	☐	☒	☐	☐	☐	**Soil sampling near historic former sustenance and other building(s)**
8.3	Radon	☒	☐	☐	☐	☐	
8.4	Lead in Drinking Water	☒	☐	☐	☐	☐	
8.5	Mold	☒	☐	☐	☐	☐	

LIST OF COMMONLY USED ACRONYMS

AST	Aboveground Storage Tank
AUL	Activity and Use Limitation
APCD	Air Pollution Control District
AHERA	Asbestos Hazard Emergency Response Act
AQMD	Air Quality Management District
ACM	Asbestos-Containing Material
APN	Assessor's Parcel Number
ASTM	American Society for Testing and Materials
bgs	Below Ground Surface
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
COC	Contaminant of Concern
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CERCLIS	Comprehensive Environmental Response Compensation and Liability Information System
CREC	Controlled Recognized Environmental Condition
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
HAZNET	Facility and Manifest Data
GPR	Ground-Penetrating Radar
HWS	Hazardous Waste Site
HVAC	Heating, Ventilation and Air Conditioning
HREC	Historical Recognized Environmental Condition
LLP	Landowner Liability Protection
LQG	Large Quantity Generator
LBP	Lead-Based Paint
LCP	Lead Containing Paint
LUST	Leaking Underground Storage Tank
MSDS	Material Safety Data Sheet
MCL	Maximum Contaminant Level
MTBE	Methyl Tertiary Butyl Ether
µg/L	Micrograms per Liter
mg/kg	Milligrams per Kilogram
mg/L	Milligrams per Liter
NESHAP	National Emission Standards for Hazardous Air Pollutants
NPL	National Priorities List
NFA	No Further Action
ND	None Detected
NOV	Notice of Violation
NTC	Notice to Comply
O&M	Operations and Maintenance
OSHA	Occupational Safety and Health Administration
ppb	Parts per Billion
ppm	Parts per Million
PCE	Perchloroethylene, Tetrachloroethylene, Tetrachloroethene, PERC
PTO	Permit to Operate
pCi/L	PicoCuries per Liter
PCB	Polychlorinated Biphenyl
REC	Recognized Environmental Condition
RCRA	Resource Conservation and Recovery Act
RP	Responsible Party
SVOC	Semi-Volatile Organic Compound
SQG	Small Quantity Generator
SLIC	Spills, Leaks, Investigation, and Cleanup
TPH	Total Petroleum Hydrocarbons
TPHd	Total Petroleum Hydrocarbons (diesel range)
TPHg	Total Petroleum Hydrocarbons (gasoline range)
TPHo	Total Petroleum Hydrocarbons (oil range)
TRPH	Total Recoverable Petroleum Hydrocarbons
TCE	Trichloroethylene, Trichloroethene
UST	Underground Storage Tank
USDA	United States Department of Agriculture
USGS	United States Geological Survey
VOC	Volatile Organic Compound

EXECUTIVE SUMMARY

AEI Consultants (AEI) was retained by MidPen Housing Corporation to conduct a Phase I ESA in conformance with our proposal and the scope and limitations of ASTM Standard Practice E1527-13 and the EPA Standards and Practices for All Appropriate Inquiries (40 CFR Part 312) for the property referenced in the table below. Any exceptions to, or deletions from, this practice are described in Sections 1.4, 1.5 and 1.6 of this report.

PROPERTY DESCRIPTION

PROPERTY INFORMATION	
Property Name	Carlos Street at Sierra Street
Street Address(es)	Carlos Street at Sierra Street
City	Moss Beach
State	California
Location	Approximately 100 feet northeastern corner of the intersection of Carlos Street and Sierra Street
Vicinity Characteristics	Residential
Approximate Site Acreage/Source	10.8 Acres / Site-contact provided information
Property Type	Vacant
Subject Property Use(s)	Vacant
Assessor Parcel Number(s)	037-022-070
SITE AND BUILDING INFORMATION	
Number of Buildings	0
Year(s) of Construction	N/A
Number of Floors/Stories	N/A
Basement or Subgrade Area(s)	N/A
Number of Units	N/A
Building Area (SF)/Source	N/A
Building Description(s)	N/A
Building Occupant(s)	N/A
Additional Improvements	Old building foundations (Two water tanks and associated operational building are presumed to not be a part)
Current On-site Operations	None
Current Use of Hazardous Substances	None identified
UTILITY PROVIDER INFORMATION	
Natural Gas Provider	N/A
Electricity Provider	N/A
Heating System Fuel Source	N/A
Cooling System Power Source	N/A
Potable Water Provider or Source	N/A
Sewage Disposal Provider or Treatment System	N/A
REGULATORY INFORMATION	
Regulatory Database Listings	None identified
Institutional Controls	None identified
Engineering Controls	None identified
Environmental Liens	None identified

Based on a review of historical sources, the subject property was identified to exist as part of a larger World War II training area circa 1945. Military buildings on the property included barracks, offices, a mess hall, a library, a garage, a boiler room, an incinerator, a "TDD hanger" and a drill field. After the war was over the mess hall building was converted into a grammar school. However it was abandoned when a new school site was built (date unknown). By the late 1960s the property was used as a training ground for firefighters. Sometime between 1968 and 1970 a controlled burn got out of hand and burned what remained of buildings on the subject property to the ground, leaving only concrete foundations. Since at least 1970, the subject property has been vacant; however the old building foundations remain onsite. The water tanks and associated building are presumed to be off-site for purposes of this report.

The immediately surrounding properties consist of the following:

Direction from Site	Tenant/Use (Address)	Regulatory Database Listing(s)
Northeast	Montara Creek followed by residences (297 and 300 16th Street)	N/A
Southeast	Lincoln Street followed by vacant land and residences (no address and 840-880 Lincoln Street, and 500-501 Buena Vista Street)	N/A
South	Sierra Street followed by residences (400-534 Sierra Street, 495 Stetson Street)	N/A
West	A residence (1993 Carlos Street)	N/A
Northwest	Vacant land (no address)	N/A

Please refer to Section 5.1 for discussion of adjacent sites listed in the regulatory database as noted above.

Based upon topographic map interpretation, the groundwater flow beneath the subject property is inferred to flow to the west-southwest. Based on groundwater monitoring data for a nearby site at 619 Stetson Street (located approximately 0.15 mile southeast of the subject property) obtained from Geotracker, groundwater is presumed to be present at an estimated depth of 10-14 feet below ground surface (bgs).

FINDINGS

Recognized Environmental Condition (REC) is defined by the ASTM Standard Practice E1527-13 as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. AEI's assessment has revealed the following RECs associated with the subject property or nearby properties:

- Mr. David Cresson of the Half Moon Bay History Association was able to provide a map from 1945 detailing the buildings on the subject property at that time. Buildings on site include a "sustenance building" or mess hall, barracks, offices, a garage, a boiler room, a water tower, a water tank, a pump house, loading sheds, a library, a "T.D.D. hangar" and an incinerator. Additionally, the northeastern corner of the subject property is labelled as a "drill field". Mr. Cresson did not provide any documentation regarding any subject property uses prior or subsequent to the military training base.

Historically, the onsite incinerator may have been used to burn refuse or waste, without regard for the chemical composition of the substances being burned. No records were found during the course of this assessment detailing what substances were burned at the incinerator. As such, there may be toxic residues in onsite soils associated with the combustion of military or other wastes. Likewise, no records were found during the course of this assessment regarding the exact use of the historic drill field. Considering that the site was a military training ground, the drill field may have been used for exercises that involved weaponry. There may be lead-containing or other residues onsite from cartridges or munitions related to historic military training activities.

Based on this information, the historical presence of an incinerator and military drill field onsite represent a recognized environmental condition. AEI recommends surface and subsurface sampling in the vicinity of the historic incinerator and drill field.

- Although the subject property is currently vacant and lacks structures, buildings previously present on the subject property (constructed circa 1945) likely included LBP. LBP residues may be present in soils, around buildings that burned as well as others depending on maintenance and painting practices. Interviews and aerial photographs indicate that the military "sustenance building" on the property burned to the ground in 1969. As the property is under consideration for residential development, the potential presence of LBP residues in soils at the subject property represents a recognized environmental condition (REC). AEI recommends sampling in the vicinity of the former buildings.

Controlled Recognized Environmental Condition (CREC) is defined by the ASTM Standard Practice E1527-13 as a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls. AEI's assessment has revealed the following CRECs associated with the subject property or nearby properties:

- AEI did not identify evidence of on-site CRECs during the course of this assessment.

Historical Recognized Environmental Condition (HREC) is defined by the ASTM Standard Practice E1527-13 as a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls. AEI's assessment has revealed the following HRECs associated with the subject property or nearby properties:

- AEI did not identify evidence of on-site HRECs during the course of this assessment.

Other Environmental Considerations warrant discussion, but do not qualify as RECs as defined by the ASTM Standard Practice E1527-13. These include, but are not limited to, de minimis conditions and/or environmental considerations such as the presence of ACMs, LBP, radon, mold, and lead in drinking water, which can affect the liabilities and financial obligations of the client, the health and safety of site occupants, and the value and marketability of the subject property. AEI's assessment has revealed the following environmental considerations associated with the subject property or nearby properties:

- Documentation of two domestic wells located on the property was provided by San Mateo County Environmental Health Department. These wells were not observed at the time of the site visit and have reportedly been "sealed" however it was unclear if they were properly abandoned. Based on the domestic nature of the wells, they are not expected to represent a significant environmental concern. However if they are not intended for use, they should be abandoned in accordance with applicable regulations.

- The subject property was historically utilized for military barracks and training as well as firefighter training. There is potential for undocumented subsurface features, such as underground storage tanks, or storage shelters, as well as undocumented above ground activities such as vehicle maintenance or waste storage that may have impacted the subsurface. As such and since the property is under consideration for residential development, it may be prudent to perform testing to rule out a widespread release. Further, given the potential for yet unidentified features or conditions of environmental concern to be encountered during development, implementation of an environmental Site Management Plan would also be prudent.

CONCLUSIONS, OPINIONS AND RECOMMENDATIONS

We have performed a Phase I ESA in conformance with the scope and limitations of ASTM Standard Practice E1527-13 and the EPA Standards and Practices for All Appropriate Inquiries (40 CFR Part 312) of Carlos Street at Sierra Street In the City of Moss Beach, San Mateo County, California, the *subject property*. Any exceptions to, or deletions from, this practice are described in Sections 1.4, 1.5 and 1.6 of this report.

AEI did not identify evidence of RECs or CRECs in connection with the property except for those previously identified in the Findings section. AEI recommends sampling investigation of the historic incinerator, drill field area, and former building areas to assess potential impacts as discussed above.

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G QUALIFICATIONS

1.0 INTRODUCTION

This report documents the methods and findings of the Phase I ESA performed in conformance with the proposal and scope and limitations of ASTM Standard Practice E1527-13 and the EPA Standards and Practices for All Appropriate Inquiries (40 CFR Part 312) for the property located at Carlos Street at Sierra Street in the City of Moss Beach, San Mateo County, California (Figure 1: Topographic Map, Figure 2: Site Map, and Appendix A: Property Photographs).

1.1 SCOPE OF WORK

The purpose of the Phase I ESA is to assist the client in identifying potential RECs, in accordance with ASTM E1527-13, associated with the presence of any hazardous substances or petroleum products, their use, storage, and disposal at and in the vicinity of the subject property. Property assessment activities focused on: 1) a review of federal, state, tribal and local databases that identify and describe underground fuel tank sites, leaking underground fuel tank sites, hazardous waste generation sites, and hazardous waste storage and disposal facility sites within the ASTM approximate minimum search distance; 2) a property and surrounding site reconnaissance, and interviews with the past and present owners and current occupants and operators to identify potential environmental contamination; and 3) a review of historical sources to help ascertain previous land use at the site and in the surrounding area.

1.2 ADDITIONAL SERVICES

Other environmental considerations such as ACMs, LBP, lead in drinking water, radon, mold, and wetlands can result in business environmental risks for property owners which may disrupt current or planned operations or cash flow and are generally beyond the scope of a Phase I assessment as defined by ASTM E1527-13. Based upon the agreed-on scope of services this ESA did not include subsurface or other invasive assessments, business environmental risks, or other services not specifically identified and discussed herein.

1.3 SIGNIFICANT ASSUMPTIONS

The following assumptions are made by AEI in this report. AEI relied on information derived from secondary sources including governmental agencies, the client, designated representatives of the client, property contact, property owner, property owner representatives, computer databases, and personal interviews. AEI has reviewed and evaluated the thoroughness and reliability of the information derived from secondary sources including government agencies, the client, designated representatives of the client, property contact, property owner, property owner representatives, computer databases, or personal interviews. It appears that all information obtained from outside sources and reviewed for this assessment is thorough and reliable. However, AEI cannot guarantee the thoroughness or reliability of this information.

Groundwater flow, unless otherwise specified by on-site well data or well data from the subject property or nearby sites, is inferred from contour information depicted on the USGS topographic maps. AEI assumes the property has been correctly and accurately identified by the client, designated representative of the client, property contact, property owner, and property owner's representatives.

1.4 LIMITATIONS

Property conditions, as well as local, state, tribal and federal regulations can change significantly over time. Therefore, the recommendations and conclusions presented as a result of this assessment apply strictly to the environmental regulations and property conditions existing at the time the assessment was performed. Available information has been analyzed using currently accepted assessment techniques and it is believed that the inferences made are reasonably representative of the property. AEI makes no warranty, expressed or implied, except that the services have been performed in accordance with generally accepted environmental property assessment practices applicable at the time and location of the assessment.

Considerations identified by ASTM as beyond the scope of a Phase I ESA that may affect business environmental risk at a given property include the following: ACMs, radon, LBP, lead in drinking water, wetlands, regulatory compliance, cultural and historical resources, industrial hygiene, health and safety, ecological resources, endangered species, indoor air quality, mold, and high voltage lines. These environmental issues or conditions may warrant assessment based on the type of the property transaction; however, they are considered non-scope issues under ASTM Standard Practice E1527-13.

If requested by the client, these non-scope issues are discussed herein. Otherwise, the purpose of this assessment is solely to satisfy one of the requirements for qualification of the innocent landowner defense, contiguous property owner or bona fide prospective purchaser under CERCLA. ASTM Standard Practice E1527-13 and the United States EPA Standards and Practices for All Appropriate Inquiries (40 CFR Part 312) constitute the "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" as defined in:

1) 42 U.S.C. § 9601(35) (B), referenced in the ASTM Standard Practice E1527-13.
2) Sections 101(35) (B) (ii) and (iii) of CERCLA and referenced in the EPA Standards and Practices for All Appropriate Inquiries (40 CFR Part 312).
3) 42 U.S.C. § 9601(40) and 42 U.S.C. § 9607(q).

The Phase I ESA is not, and should not be construed as, a warranty or guarantee about the presence or absence of environmental contaminants that may affect the property. Neither is the assessment intended to assure clear title to the property in question. The sole purpose of assessment into property title records is to ascertain a historical basis of prior land use. All findings, conclusions, and recommendations stated in this report are based upon facts, circumstances, and industry-accepted procedures for such services as they existed at the time this report was prepared (i.e., federal, state, and local laws, rules, regulations, market conditions, economic conditions, political climate, and other applicable matters). All findings, conclusions, and recommendations stated in this report are based on the data and information provided, and observations and conditions that existed on the date and time of the property reconnaissance.

Responses received from local, state, or federal agencies or other secondary sources of information after the issuance of this report may change certain facts, findings, conclusions, or circumstances to the report. A change in any fact, circumstance, or industry-accepted procedure upon which this report was based may adversely affect the findings, conclusions, and recommendations expressed in this report.

1.5 LIMITING CONDITIONS/DEVIATIONS

The performance of this Phase I ESA was limited by the following conditions:

- The User did not complete the ASTM User questionnaire or provide the User information to AEI. AEI assumes that qualification for the LLPs is being established by the User in documentation outside of this assessment.

- Due to the size of the subject property, AEI performed a site inspection of the property utilizing a field technique of traversing the site in an attempt to provide an overlapping field of view. Due to the size of the property and the vegetation present on site, isolated areas of the site may have not been accessible for direct observation during AEI's inspection. Based on the vacant nature of the property and the quality of information from other sources, this limitation is not expected to significantly alter the Findings of this assessment.

- No physical address for the subject property has been provided to or identified by AEI during the course of this assessment. A physical address is often utilized in the historical research process in order to identify any address-specific information, such as regulatory and enforcement actions. However, based on the reliability of other data sources, the lack of a physical address is not expected to significantly alter the findings of this assessment.

1.6 DATA GAPS AND DATA FAILURE

According to ASTM E1527-13, data gaps occur when the Environmental Professional is unable to obtain information required by the Standard, despite good faith efforts to gather such information. Pursuant to ASTM E1527-13, only significant data gaps, defined as those that affect the ability of the Environmental Professional to identify RECs, need to be documented.

Data failure is one type of data gap. According to ASTM E1527-13, data failure occurs when all of the standard historical sources that are reasonably ascertainable and likely to be useful have been reviewed and yet the objectives have not been met. Pursuant to ASTM E1527-13, historical sources are required to document property use back to the property's first developed use or back to 1940, whichever is earlier, or periods of five years or greater.

1.6.1 DATA FAILURE

AEI did not identify evidence of data failure during the course of this assessment.

The following data failure was identified during the course of this assessment:

Data Failure	The earliest historical resource obtained during this assessment was a map from 1945. The lack of historical sources for the subject property dating back to first developed use represents historical data source failure. In the 1945 map the subject property appears as part of a military training base. Thus, it is assumed that prior to 1945 the subject property would have been used for military training purposes, if not undeveloped. Therefore, this data failure is not expected to significantly alter the Findings of this assessment.

Information/ Sources Consulted	Half Moon Bay History Association records, aerial photographs

1.6.2 DATA GAPS

AEI did not identify significant data gaps which affected our ability to identify RECs.

1.7 RELIANCE

All reports, both verbal and written, are for the benefit of MidPen Housing Corporation. This report has no other purpose and may not be relied upon by any other person or entity without the written consent of AEI. Either verbally or in writing, third parties may come into possession of this report or all or part of the information generated as a result of this work. In the absence of a written agreement with AEI granting such rights, no third parties shall have rights of recourse or recovery whatsoever under any course of action against AEI, its officers, employees, vendors, successors or assigns. Reliance is provided in accordance with AEI's Proposal and Standard Terms and Conditions executed by MidPen Housing Corporation on October 23, 2015. The limitation of liability defined in the Terms and Conditions is the aggregate limit of AEI's liability to the client and all relying parties.

2.0 SITE AND VICINITY DESCRIPTION

2.1 SITE LOCATION AND DESCRIPTION

PROPERTY INFORMATION	
Property Name	Carlos Street at Sierra Street
Street Address(es)	Carlos Street at Sierra Street
City	Moss Beach
State	California
Location	Approximately 100 feet northeastern corner of the intersection of Carlos Street and Sierra Street
Vicinity Characteristics	Residential
Approximate Site Acreage/Source	10.8 Acres / Site-contact provided information
Property Type	Vacant
Subject Property Use(s)	Vacant
Assessor Parcel Number(s)	037-022-070
SITE AND BUILDING INFORMATION	
Number of Buildings	0
Year(s) of Construction	N/A
Number of Floors/Stories	N/A
Basement or Subgrade Area(s)	N/A
Number of Units	N/A
Building Area (SF)/Source	N/A
Building Description(s)	N/A
Building Occupant(s)	N/A
Additional Improvements	Old building foundations (Two water tanks and associated operational building)
Current On-site Operations	None
Current Use of Hazardous Substances	None identified
UTILITY PROVIDER INFORMATION	
Natural Gas Provider	N/A
Electricity Provider	N/A
Heating System Fuel Source	N/A
Cooling System Power Source	N/A
Potable Water Provider or Source	N/A
Sewage Disposal Provider or Treatment System	N/A
REGULATORY INFORMATION	
Regulatory Database Listings	None identified
Institutional Controls	None identified
Engineering Controls	None identified
Environmental Liens	None identified

Refer to Figure 1: Topographic Map, Figure 2: Site Map and Appendix A: Property Photographs for site location and description.

2.2 SITE AND VICINITY CHARACTERISTICS

The immediately surrounding properties consist of the following:

Direction from Site	Tenant/Use (Address)	Regulatory Database Listing(s)
Northeast	Montara Creek followed by residences (297 and 300 16th Street)	N/A
Southeast	Lincoln Street followed by vacant land and residences (no address and 840-880 Lincoln Street, and 500-501 Buena Vista Street)	N/A
South	Sierra Street followed by residences (400-534 Sierra Street, 495 Stetson Street)	N/A
West	A residence (1993 Carlos Street)	N/A
Northwest	Vacant land (no address)	N/A

Please refer to Section 5.1 for discussion of adjacent sites listed in the regulatory database as noted above.

2.3 PHYSICAL SETTING

Geology: Based on a review of the USDA Soil Survey for the area of the subject property, the soils in the vicinity of the subject property are classified as the Typic Argiustolls, loamy-Urban land association series. Soils from this series are characterized as a sandy clay loam on the toe slope tread of a fluviomarine terrace land formation. These soils have moderate ability to transmit and store water and are composed of coastal alluvium derived from sedimentary rock.	
USGS Topographic Map:	Montara Mountain OE W, California 2015 Quadrangle
Nearest surface water to subject property:	Montara Creek/Adjacent North
Gradient Direction/Source:	west-southwest/topographic map interpretation
Estimated Depth to Groundwater/Source:	10-14 feet bgs/groundwater monitoring data from the site at 619 Stetson Street (located approximately 0.15 mile southeast of the subject property), obtained on Geotracker

Note: Groundwater flow direction can be influenced locally and regionally by the presence of local wetland features, surface topography, recharge and discharge areas, horizontal and vertical inconsistencies in the types and location of subsurface soils, and proximity to water pumping wells. Depth and gradient of the water table can change seasonally in response to variation in precipitation and recharge, and over time, in response to urban development such as storm water controls, impervious surfaces, pumping wells, cleanup activities, dewatering, seawater intrusion barrier projects near the coast, and other factors.

3.0 HISTORICAL REVIEW OF SITE AND VICINITY

3.1 HISTORICAL SUMMARY

Reasonably ascertainable standard historical sources as outlined in ASTM Standard E1527-13 were used to determine previous uses and occupancies of the subject property that are likely to have led to RECs in connection with the subject property. A chronological summary of historical data found, including but not limited to aerial photographs, historical city directories, Sanborn fire insurance maps and agency records is as follows:

Date Range	Subject Property Description/Use	Source(s)
Circa 1945	World War II military training facility	Half Moon Bay History Association records, aerial photographs
late 1940s to unknown time pre 1960s	Grammar School	Interviews with Half Moon Bay History Association, aerial photographs
Unknown time pre 1960s to late 1960s	Firefighter training ground	Interviews with Half Moon Bay History Association, aerial photographs
~1970-present	Vacant land	Interviews with Half Moon Bay History Association, aerial photographs, site observations, interviews with representative of current owner

Based on a review of historical sources, the subject property was identified to exist as part of a larger World War II training area circa 1945. Military buildings on the property included barracks, offices, a mess hall, a library, a garage, a boiler room, an incinerator, a "TDD hanger" and a drill field. After the war was over the mess hall building was converted into a grammar school. However it was abandoned when a new school site was built (date unknown). By the late 1960s the property was used as a training ground for firefighters. Sometime between 1968 and 1970 a controlled burn got out of hand and burned what remained of buildings on the subject property to the ground, leaving only concrete foundations. Since at least 1970, the subject property has been vacant; however the old building foundations remain onsite. The water tanks and associated building are presumed to be off-site for purposes of this report.

Environmental concerns associated with historic military uses of the subject property are discussed in Section 4.1.7.

3.2 AERIAL PHOTOGRAPH REVIEW

AEI reviewed aerial photographs of the subject property and surrounding area. Aerial photographs were reviewed for the following years:

Year(s)	Subject Property Description	Adjacent Site Descriptions
1946	The subject property is developed with military buildings, reflective of the 1945 map provided by the Half Moon Bay History Association (see Section 4.1.7)	**Northeast:** Montara Creek followed by vacant land **Southeast:** Vacant land **South:** Vacant land **West:** Vacant land (part of the military site) **Northwest:** Vacant land **Water Tank Parcel:** and water supply towers pump house, and tank
1956, 1968	Buildings in the northwestern portion of the subject property remain unchanged. It appears that buildings in the central and southeastern portion of the subject property no longer exist.	**Northeast:** Montara Creek followed by vacant land by a residence **Southeast:** No significant changes **South:** No significant changes **West:** No significant changes **Northwest:** No significant changes **Water Tank Parcel:** No significant changes
1970	Roads and building foundations on the subject property are still seen; however all buildings.	**Northeast:** No significant changes **Southeast:** No significant changes **South:** No significant changes **West:** No significant changes **Northwest:** No significant changes **Water Tank Parcel:** Water supply features are gone
1983, 1993, 2005	No significant changes	**Northeast:** No significant changes **Southeast:** Vacant land and several residences **South:** Residences **West:** No significant changes **Northwest:** No significant changes **Water Tank Parcel:** No significant changes
2014	The subject property consists of vacant land	**Northeast:** No significant changes **Southeast:** No significant changes **South:** No significant changes **West:** No significant changes **Northwest:** No significant changes **Water Tank Parcel:** Two water tanks and associated out-building

Environmental concerns associated with historic military uses of the subject property are discussed in Section 4.1.7.

3.3 SANBORN FIRE INSURANCE MAPS

Sanborn Fire Insurance maps were developed in the late 1800s and early 1900s for use as an assessment tool for fire insurance rates in urbanized areas. A search was made of the Environmental Risk Information Services (ERIS) collection of Sanborn Fire Insurance maps.

Sanborn map coverage was not available for the subject property.

If available, copies of historical Sanborn maps are provided in the report appendices.

3.4 CITY DIRECTORIES

A search of historical city directories was conducted for the subject property by ERIS. However, no physical address for the subject property has been provided to or identified by AEI during the course of this assessment. As such, the city directory search did not yield any information regarding historical uses of the subject property.

If available, copies of historical city directories are provided in the report appendices.

3.5 HISTORICAL TOPOGRAPHIC MAPS

On October 28, 2014, AEI searched for historical topographic maps on historicalaerials.com as well as on the USGS topographic map website in attempt to resolve data failure prior to 1945. Unfortunately, no topographic maps dated prior to 1947 were available. As such, historical topographic maps were not reviewed as part of this assessment.

3.6 CHAIN OF TITLE

In accordance with our approved scope of services, a chain of title search was not performed as part of this assessment.

4.0 REGULATORY AGENCY RECORDS REVIEW

4.1 REGULATORY AGENCIES

Local and state agencies, such as environmental health departments, fire prevention bureaus, and building and planning departments are contacted to identify any current or previous reports of hazardous substance use, storage, and/or unauthorized releases that may have impacted the subject property. In addition, information pertaining to AULs, defined as legal or physical restrictions, or limitations on the use of, or access to, a site or facility, is requested.

4.1.1 LOCAL ENVIRONMENTAL HEALTH DEPARTMENT AND/OR STATE ENVIRONMENTAL AGENCY

On October 29, 2015, AEI contacted the San Mateo County Environmental Health Department via online form for information on the subject property. Files at this agency may contain information regarding hazardous substance storage and use, underground storage tanks, unauthorized releases of petroleum hydrocarbons or other contaminants that may affect the soil or groundwater in the area, wells and/or septic systems.

AEI spoke with Ms. Sheila Arkoneel, Office Assistant II who indicated that evidence of current or prior use or storage of hazardous substances or groundwater contamination was not on file for the subject property with the SMCEHD.

Ms. Arkoneel did, however, provided documentation of two domestic wells on the property. These wells were not observed at the time of the site visit and have reportedly been "sealed" however it was unclear if they were properly abandoned. Based on the domestic nature of the wells, they are not expected to represent a significant environmental concern. However if they are not intended for use, they should be abandoned in accordance with applicable regulations.

4.1.2 FIRE DEPARTMENT

On October 28, 2015, AEI contacted the Coast side Fire Protection District via telephone for information on the subject property to identify any evidence of previous or current hazardous substance usage, and/or for any historical information available for the subject property.

AEI spoke with Ms. Michelle Ortiz, Office Technician, who indicated that evidence of current or prior use or storage of hazardous substances was not on file for the subject property with the Fire Department.

4.1.3 BUILDING DEPARTMENT

On October 28, 2015, AEI contacted the San Mateo County Building Department (SMCBD) via telephone for information on the subject property in order to identify historical tenants, features of concern and property use. SMCBD staff stated that permits can be search for using the APN number online. However an online search with the APN number yielded no results.

4.1.4 PLANNING DEPARTMENT

On October 28, 2015, AEI contacted the San Mateo County Planning Department via telephone for information on the subject property in order to identify AULs associated with the subject property.

AEI spoke with Ms. Angela Chavez, Planner, who indicated that evidence indicating the existence of AULs was not on file for the subject property with the department. Additionally Ms. Chavez confirmed that the subject property has no address, and is zoned for residential use.

4.1.5 COUNTY ASSESSOR OFFICE

On October 28, 2015, AEI contacted the San Mateo County assessor's office via website visit for information on the subject property in order to determine the earliest recorded date of development and use.

According to the San Mateo County assessor's website, the subject property APN number is 037-022-070. No further information was provided on the assessor's website.

4.1.6 OIL AND GAS WELLS/PIPELINES

On October 28, 2015, AEI reviewed the California Department of Oil, Gas, and Geothermal Resources (DOGGR) maps concerning the subject property and nearby properties. The maps contain information regarding oil and gas development.

According to the DOGGR map, oil or gas wells are not located within 500 feet of the subject property. AEI did not identify evidence of environmental concerns during the map review.

4.1.7 OTHER AGENCIES SEARCHED

On October 28, 2015, AEI visited the Hazardous Waste Tracking System (HWTS) online database maintained by the **Department of Toxic Substances Control (DTSC)** for information regarding documented hazardous wastes generated at the subject property.

No information indicating the generation of hazardous wastes was on file for the subject property with the DTSC.

On October 28, 2015, AEI visited the **Regional Water Quality Control Board's (RWQCB's)** GeoTracker Website for information on the subject property to identify any evidence of unauthorized releases of hazardous materials to the groundwater. Cases typically handled by the RWQCB include releases from USTs.

No information indicating any release of hazardous materials on the subject property was found on the GeoTracker website.

On October 28, 2015, AEI visited the **Envirostor** online database maintained by the **Department of Toxic Substances Control (DTSC)** for information regarding documented hazardous wastes releases and cleanup sites at the subject property.

No information indicating any release of hazardous materials on the subject property was found on the Envirostor website.

On October 30, 2015, AEI contacted the Half Moon Bay History Association via telephone for historical information on the uses of the subject property.

AEI spoke with Mr. David Cresson, who stated that the subject property was used as a World War II military training site. He stated that after the war, the property was handed over for use as a grammar school. Later, a new school was built off-site, and the subject property was used to conduct training for local firefighters. In the late 1960s a controlled burn got out of hand, and all buildings left on the subject property burned to the ground, leaving only foundations. Since then, the subject property has laid vacant. He stated that he did not know when the site began being used for military training, and stated that before this development the subject property "would not have been used for anything besides farming".

Mr. David Cresson was able to provide a map from 1945 detailing the buildings on the subject property at that time. Buildings on site include a "sustenance building" or mess hall, barracks, offices, a garage, a boiler room, a water tower, a water tank, a pump house, loading sheds, a library, a "T.D.D. hangar" and an incinerator. Additionally, the northeastern corner of the subject property is labelled as a "drill field". Mr. Cresson did not provide any documentation regarding any subject property uses prior or subsequent to the military training base.

Historically, the onsite incinerator may have been used to burn refuse or waste, without regard for the chemical composition of the substances being burned. No records were found during the course of this assessment detailing what substances were burned at the incinerator. As such, there may be toxic residues in onsite soils associated with the combustion of military wastes. Likewise, no records were found during the course of this assessment regarding the exact use of the historic drill field. Considering that the site was a military training ground, the drill field may have been used for exercises that involved weaponry. There may be lead-containing residues onsite from cartridges or gunpowder related to historic military training activities.

Based on this information, the historical presence of an incinerator and military drill field onsite represent a recognized environmental condition. AEI recommends subsurface sampling in the vicinity of the historic incinerator and drill field.

A copy of the military map is provided in the appendices.

4.1.8 STATE ENVIRONMENTAL SUPERLIENS AND PROPERTY TRANSFER LAWS

In accordance with our approved scope of services, AEI did not assess whether the subject property is subject to any state environmental superliens and/or property transfer laws.

5.0 REGULATORY DATABASE RECORDS REVIEW

AEI contracted Environmental Risk Information Service (ERIS) to conduct a search of publicly available information from federal, state, tribal, and local databases containing known and suspected sites of environmental contamination and sites of potential environmental significance. Data gathered during the current regulatory database search is compiled by ERIS into one regulatory database report. Location information for listed sites is designated using geocoded information provided by federal, state or local agencies and commonly used mapping databases with the exception of "Orphan" sites. Due to poor or inadequate address information, Orphan sites are identified but not geocoded/mapped by ERIS, rather, information is provided based upon vicinity zip codes, city name, and state. The number of listed sites identified within the approximate minimum search distance from the federal and state environmental records database listings specified in ASTM Standard E1527-13 is summarized in Section 5.1, along with the total number of Orphan sites. A copy of the regulatory database report is included in Appendix B of this report.

The subject property was not identified in the regulatory databases reviewed.

In determining if a listed site is a potential environmental concern to the subject property, AEI generally applies the following criteria to classify the site as lower potential environmental concern: 1) the site only holds an operating permit (which does not imply a release), 2) the site's distance from, and/or topographic position relative to, the subject property, and/or 3) the site has recently been granted "No Further Action" by the appropriate regulatory agency.

5.1 RECORDS SUMMARY

Database	Search Distance (Miles)	Subject Property Listed	Number of Listings within Search Distance	Recognized Environmental Condition or Other Environmental Consideration (Yes or No)
NPL	1	No	0	
DELISTED NPL	0.5	No	0	
CERCLIS	0.5	No	0	
CERCLIS NFRAP	0.5	No	0	
RCRA CORRACTS	1	No	0	
RCRA-TSDF	0.5	No	0	
RCRA LQG, SQG, CESQGs, VGN, NLR	SP/ADJ	No	0	
US ENG CONTROLS	SP	No	0	
US INST CONTROLS	SP	No	0	
ERNS	SP	No	0	

Database	Search Distance (Miles)	Subject Property Listed	Number of Listings within Search Distance	Recognized Environmental Condition or Other Environmental Consideration (Yes or No)
STATE/TRIBAL HWS	1	No	0	
STATE/TRIBAL SWLF	0.5	No	0	
STATE/TRIBAL REGISTERED STORAGE TANKS	SP/ADJ	No	0	
STATE/TRIBAL LUST	0.5	No	2	No
STATE/TRIBAL EC and IC	SP	No	0	
STATE/TRIBAL VCP	0.5	No	0	
STATE/TRIBAL BROWNFIELD	0.5	No	0	
ORPHAN	N/A	No	19	No; none of the identified orphan sites are located in the immediate vicinity (500-feet) of the subject property, and/or based upon the distance and relative gradient, the sites are not expected to represent a significant environmental concern.
ADDITIONAL ENVIRONMENTAL RECORD SOURCES	SP/ADJ	No	0	

SP: subject property
ADJ: adjacent property

5.2 VAPOR MIGRATION

AEI reviewed reasonably ascertainable information for the subject and nearby properties, including a regulatory database, files for nearby release sites, and/or historical documentation, to determine if potential vapor-phase migration concerns may be present which could impact the subject property.

Based on a review of available resources as documented in this report, AEI did not identify significant on-site concerns and/or regulated listings from nearby sites which suggest that a vapor-phase migration concern currently exists at the subject property.

6.0 INTERVIEWS AND USER PROVIDED INFORMATION

6.1 INTERVIEWS

Pursuant to ASTM E1527-13, the following interviews were performed during this assessment in order to obtain information indicating RECs in connection with the subject property.

6.1.1 INTERVIEW WITH OWNER

The subject property is owned by the California School Employees Association (CSEA). Mr. Roy Ramos, Facilities Director of the CSEA, and acting as representative for the subject property owner, was contacted via telephone on November 3, 2015. Mr. Ramos has been associated with the subject property since 2000. Mr. Ramos stated that the CSEA has owned the property since at least 1969, but has never used it for anything. He stated that although the CSEA has tried to work with outside companies to develop the property for residential use, past attempts have not been successful. He stated that he regularly has vegetation and debris removed from the property, but knows of no other activities onsite.

Mr. Ramos was asked if he was aware of any of the following:

Any knowledge of USTs, clarifiers or oil/water separators, sumps, or other subsurface features.	☐Yes ☒ No
Any knowledge of previous environmental investigations conducted on site.	☐Yes ☒ No
Any knowledge of current or past industrial operations and/or other operations which would involve the use of hazardous substances and/or petroleum products.	☐Yes ☒ No
Any known plans for site redevelopment or change in site use.	☐Yes ☒ No
Any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the property.	☐Yes ☒ No
Any pending, threatened or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property.	☐Yes ☒ No
Any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products.	☐Yes ☒ No
Any incidents of flooding, leaks, or other water intrusion, and/or complaints related to indoor air quality.	N/A

6.1.2 INTERVIEW WITH KEY SITE MANAGER

The key site manager, Mr. Jeff Aguilar, Associate at CBRE Brokerage Services, was contacted via telephone on October 28, 2015. Mr. Aguilar has been associated with the subject property since approximately April 2015. Mr. Aguilar stated that the subject property has been owned by the teachers union since the 1970s but that nothing has ever been done with it. He stated that the property is zoned for residential use due to previous attempts at development, but that no houses have ever been onsite. Mr. Aguilar indicated that the water tanks and building were not part of the subject property. He was not knowledgeable regarding other uses of the subject property and did not know why concrete building pads were onsite.

Mr. Aguilar was asked if he was aware of any of the following:

Any knowledge of USTs, clarifiers or oil/water separators, sumps, or other subsurface features.	☐Yes ☒ No
Any knowledge of previous environmental investigations conducted on site.	☐Yes ☒ No
Any knowledge of current or past industrial operations and/or other operations which would involve the use of hazardous substances and/or petroleum products.	☐Yes ☒ No
Any known plans for site redevelopment or change in site use.	☐Yes ☒ No
Any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the property.	☐Yes ☒ No
Any pending, threatened or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property.	☐Yes ☒ No
Any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products.	☐Yes ☒ No
Any incidents of flooding, leaks, or other water intrusion, and/or complaints related to indoor air quality.	N/A

6.1.3 PAST OWNERS, OPERATORS AND OCCUPANTS

In attempt to interview past owners, operators and occupants regarding historical on-site operations, AEI requested the contact information for these entities from the representative of the current subject property owner, Mr. Roy Ramos. Mr. Ramos was unable to provide the contact information for the past owners, operators and occupants. Other methods of researching the contact information for past owners, operators and occupants are performed by AEI when a data gap is encountered and/or if an item of environmental concern is identified for the subject property, which includes reviewing historical agency records and/or online research, none of which were encountered during the course of this investigation. As such, interviews with past owners, operators and occupants regarding historical on-site operations were not reasonably ascertainable.

6.1.4 INTERVIEW WITH OTHERS

Information obtained during interviews with local government officials is incorporated into the appropriate segments of this section.

Additionally, AEI interviewed two unnamed neighbors during the site visit. The neighbors indicated that the subject property was an "old World War II military training center".

6.2 USER PROVIDED INFORMATION

User provided information is intended to help identify the possibility of RECs in connection with the subject property. According to ASTM E1527-13 and the EPA Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), certain items should be researched by the prospective landowner or grantee, and the results of such inquiries may be provided to the Environmental Professional. The responsibility for qualifying for LLPs by conducting the inquiries ultimately rests with the User, and providing the information to the Environmental Professional would be prudent if such information is available.

The User did not complete the ASTM User Questionnaire or provide the User information to AEI. AEI assumes that qualification for the LLPs is being established by the User in documentation outside of this assessment.

6.2.1 ENVIRONMENTAL LIENS

In accordance with our approved scope of services, AEI contracted AFX Research LLC to perform an environmental lien search for the subject property.

According to AFX Research LLC, environmental liens were not identified during the review of historical ownership documentation. A copy of AFX Research LLC's report is provided in the appendices.

6.3 PREVIOUS REPORTS AND OTHER PROVIDED DOCUMENTATION

No prior reports or other relevant documentation in association with the subject property was made available to AEI during the course of this assessment.

7.0 SITE RECONNAISSANCE

Site Reconnaissance Date	Site Visit Date
AEI Site Assessor(s)	Lena Chervin
Property Escort(s)/Relationship(s) to Property	Jeff Aguilar/ Key Site Manager
Units/Areas Observed	All areas easily visible
Area(s) not accessed and reason(s)	Areas not visible due to vegetation overgrowth
Weather	Sunny

7.1 SUBJECT PROPERTY RECONNAISSANCE FINDINGS

Yes	No	Observation
☐	☒	Regulated Hazardous Substances/Wastes and/or Petroleum Products in Connection with Property Use
☐	☒	Aboveground/Underground Hazardous Substance or Petroleum Product Storage Tanks (ASTs / USTs)
☐	☒	Hazardous Substance and Petroleum Product Containers Not in Connection with Property Use
☐	☒	Unidentified Substance Containers
☒	☐	Electrical or Mechanical Equipment Likely to Contain Fluids
☐	☒	Interior Stains or Corrosion
☐	☒	Strong, Pungent or Noxious Odors
☐	☒	Pools of Liquid
☒	☐	Drains, Sumps and Clarifiers
☐	☒	Pits, Ponds and Lagoons
☐	☒	Stained Soil or Pavement
☐	☒	Stressed Vegetation
☐	☒	Solid Waste Disposal or Evidence of Fill Materials
☐	☒	Waste Water Discharges
☐	☒	Wells
☐	☒	Septic Systems
☐	☒	Biomedical Wastes
☒	☐	Other

The subject property is currently unoccupied. However water supply tanks exist on the subject property.

ELECTRICAL OR MECHANICAL EQUIPMENT LIKELY TO CONTAIN FLUIDS

Toxic PCBs were commonly used historically in electrical equipment such as transformers, fluorescent lamp ballasts, and capacitors. According to United States EPA regulation 40 CFR Part 761, there are three categories for classifying such equipment: <50 ppm of PCBs is considered "Non-PCB"; between 50 and 500 ppm is considered "PCB-Contaminated"; and >500 ppm is considered "PCB-Containing". Pursuant to 15 U.S.C. 2605(e)(2)(A), the manufacture, process, or

distribution in commerce or use of any polychlorinated biphenyl in any manner other than in a totally enclosed manner was prohibited after January 1, 1977.

Transformers

Type	Quantity	Owner	Presumed Date of Installation	Spills or Stains Observed	Non-PCB Label
Pole-Mounted	1	PG&E	Unknown	☐Yes ☒ No	☐Yes ☒ No

The management of potential PCB-containing transformers is the responsibility of the local utility or the transformer owner. Actual material samples need to be collected to determine if transformers are PCB-containing.

Transformers installed prior to 1977 may be PCB containing while transformers installed after 1977 are unlikely to be PCB containing. Federal Regulations (40 CFR 761 Subpart G) require any release of material containing >50 ppm PCB and occurring after May 4, 1987, be cleaned up by the transformer owner following the United States EPA's PCB spill cleanup policy.

AEI did not observe evidence of spills, staining or leaks on or around the transformer. Based on the good condition of the equipment, the transformer is not expected to represent a significant environmental concern.

DRAINS, SUMPS AND CLARIFIERS

Several drains were observed in association with the water tanks on the subject property. AEI did not observe evidence of hazardous substances or petroleum products in the vicinity of the drains. Based on the use of the drains solely for water runoff, the presence of the drains is not expected to represent a significant environmental concern.

OTHER

General debris was observed on various concrete building foundations at the subject property. While no evidence of hazardous materials was observed among this debris, the debris should be removed as a best management practice.

7.2 ADJACENT PROPERTY RECONNAISSANCE FINDINGS

Yes	No	Observation
☐	☒	Hazardous Substances and/or Petroleum Products in Connection with Property Use
☒	☐	Aboveground and Underground Hazardous Substance or Petroleum Product Storage Tanks (ASTs / USTs)
☐	☒	Hazardous Substance and Petroleum Product Containers and Unidentified Containers Not in Connection with Property Use
☐	☒	Unidentified Substance Containers
☐	☒	Electrical or Mechanical Equipment Likely to Contain Fluids
☐	☒	Strong, Pungent or Noxious Odors
☐	☒	Pools of Liquid
☐	☒	Drains, Sumps and Clarifiers
☐	☒	Pits, Ponds and Lagoons

Yes	No	Observation
☐	☒	Stained Soil or Pavement
☐	☒	Stressed Vegetation
☐	☒	Solid Waste Disposal or Evidence of Fill Materials
☐	☒	Waste Water Discharges
☐	☒	Wells
☐	☒	Septic Systems
☐	☒	Other

ABOVEGROUND/UNDERGROUND HAZARDOUS SUBSTANCE OR PETROLEUM PRODUCT STORAGE TANKS (ASTS / USTS)

AST(s):

Size (gallons)/ Contents	Location	Construction/ Secondary Containment	Product Piping (Aboveground/ Underground)
2 x ~100,000 gallons/ water	Near the southeastern corner of the subject property	☐Yes ☒ No	Underground

Two large domestic water supply tanks are located on what appears to be a separate parcel near the southeastern corner of the subject property. Due to the non-hazardous nature of the substance contained within the tanks, the presence of the tanks is not expected to represent a significant environmental concern.

8.0 OTHER ENVIRONMENTAL CONSIDERATIONS

8.1 ASBESTOS-CONTAINING BUILDING MATERIALS

The subject property is currently vacant land or lacks structures. Consequently, AEI did not observe building components likely to contain suspect asbestos containing materials during the site reconnaissance.

8.2 LEAD-BASED PAINT

LBP is defined as any paint, varnish, stain, or other applied coating that has ≥1 mg/cm^2 (5,000 µg/g or 5,000 ppm) of lead by federal guidelines; state and local definitions may differ from the federal definitions in amounts ranging from 0.5 mg/cm^2 to 2.0 mg/cm^2. Section 1017 of the Housing and Urban Development (HUD) Guidelines, Residential Lead-Based Paint Hazard Reduction Act of 1992, otherwise known as "Title X", defines a LBP hazard as "any condition that causes exposure to lead that would result in adverse human health effects" resulting from lead-contaminated dust, bare, lead-contaminated soil, and/or lead-contaminated paint that is deteriorated or present on accessible, friction, or impact surfaces. Therefore, under Title X, intact LBP on most walls and ceilings would not be considered a "hazard", although the paint should be maintained and its condition monitored to ensure that it does not deteriorate and become a hazard. Additionally, Section 1018 of this law directed HUD and EPA to require the disclosure of known information on LBP and LBP hazards before the sale or lease of most housing built before 1978. Most private housing, public housing, federally owned or subsidized housing is affected by this rule.

LCP is defined as any paint with any detectable amount of lead present in it. It is important to note that LCP may create a lead hazard when being removed. The condition of these materials must be monitored when they are being disturbed. In the event LCP is subject to abrading, sanding, torching and/or cutting during demolition or renovation activities, there may be regulatory issues that must be addressed.

The information below is for general informational purposes only and does not constitute a lead hazard evaluation. In addition, the information is not intended to comply with federal, state or local regulations in regards to LCP.

In buildings constructed after 1978, it is unlikely that LBP is present. Structures built prior to 1978 and especially prior to the 1960s should be expected to contain LBP.

Although the subject property is currently vacant and lacks structures, buildings previously present on the subject property (constructed circa 1945) likely included LBP. If these buildings burned onsite, LBP residues may be present in soils. Interviews and aerial photographs indicate that the military "sustenance building" on the property burned to the ground in 1969. Especially in cases of planned residential development, the potential presence of LBP residues in soils at the subject property represents a recognized environmental condition (REC). AEI recommends subsurface sampling in the vicinity of the former sustenance building.

8.3 RADON

Radon is a naturally-occurring, odorless, invisible gas. Natural radon levels vary and are closely related to geologic formations. Radon may enter buildings through basement sumps or other openings.

The United States EPA has prepared a map to assist National, State, and local organizations to target their resources and to implement radon-resistant building codes. The map divides the country into three radon zones, with Zone 1 being those areas with the average predicted indoor radon concentration in residential dwellings exceeding the EPA Action Limit of 4.0 pCi/L. It is important to note that the EPA has found homes with elevated levels of radon in all three zones, and the EPA recommends site specific testing in order to determine radon levels at a specific location. However, the map does give a valuable indication of the propensity of radon gas accumulation in structures.

Radon sampling was not requested as part of this assessment. According to the United States EPA, the radon zone level for the area is Zone 2, which has a predicted average indoor screening level between 2 pCi/L and 4 pCi/L equal to or below the action level of 4 pCi/L set forth by the EPA.

8.4 DRINKING WATER SOURCES AND LEAD IN DRINKING WATER

The Montara Water and Sanitary District supplies potable water to the vicinity of the subject property. The most recent water quality report states that 90th percentile lead level in the area's water supply were 6 ppb and therefore are well within standards established by the USEPA.

8.5 MOLD/INDOOR AIR QUALITY ISSUES

The subject property is currently vacant land or lacks structures. Consequently, mold was not addressed as part of this assessment.

9.0 SIGNATURE OF ENVIRONMENTAL PROFESSIONALS

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in §312.10 of 40 CFR Part 312.

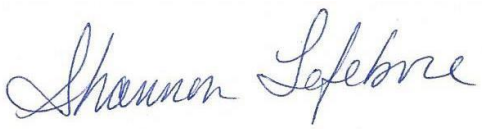
I have the specific qualifications based on education, training, and experience to assess a property of the nature, history and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Prepared By:



Lena Chervin
Associate Consultant

Reviewed By:



Shannon Lefebvre
Senior Author

10.0 REFERENCES

Item	Date(s)	Source
Topographic Map Montara Mountain OE W, California Quadrangle	2015	USGS
Regulatory Database Report	October 2015 (issued)	ERIS
Assessor's Information and Parcel Map	October 2015 (obtained)	San Mateo County Assessor http://www.smcare.org/apps/parcelmaps/default.aspx
Soils Information	October 2015 (obtained)	USDA Web Soil Survey websoilsurvey.nrcs.usda.gov
Radon Zone Information	1993	US EPA Map of Radon Zones epa.gov/radon/zonemap.html
Water Quality Report	2014	Montara Water and Sanitary District http://mwsd.montara.org/documents/links/water-quality
Depth to Groundwater Information	October 2015 (obtained)	Geotracker http://geotracker.waterboards.ca.gov/
Sanborn Map Report	October 2015 (issued)	ERIS
Aerial Photographs	1946, 1956, 1968, 1970, 1983, 1993, 2005, 2014	ERIS
Oil and Gas Wells Information	October 2015 (obtained)	DOGGR http://maps.conservation.ca.gov/doggr/
City Directories	N/A	Haines Criss Cross Directories
Interview	October 30, 2015	Jeff Aguilar/ Key Site Manager
Interview	October 30, 2015	David Cresson/ Representative of the Half Moon Bay History Association
Interview	November	Roy Ramos/ Facilities Director of CSEA and Representative of the Subject Property Owner
Military Map	1945	Half Moon Bay History Association

FIGURES



N

Figure 1: TOPOGRAPHIC MAP

Carlos Street at Sierra Street, Moss Beach, California, 94038
Project Number: 350428

AEI Consultants

County Review Draft



Legend

Estimated Groundwater Flow Direction
Approximate Property Boundary
Approximate Water Tank Parcel
Approximate Drill Field Boundary
Approximate Sustenance Building Boundary
Approximate Incinerator Location

N

Figure 2: SITE MAP

Carlos Street at Sierra Street, Moss Beach, California, 94038
Project Number: 350428

AEI Consultants

APPENDIX A

PROPERTY PHOTOGRAPHS



1. Southern view of the subject property



2. South-southeastern view of the subject property



3. Southern view of the subject property southeastern border



4. Southeastern view of the subject property



5. Eastern view of the subject property



6. View of the northern road on the subject property



7. Northern view of the subject property



8. Northern view of a road that runs from northeast to southwest on the subject property

AEI Consultants



9. Southern view of the northern-most corner of the subject property



10. View of the road on the northeastern portion of the subject property



11. View of the subject property's northwestern border



12. Northern view of the subject property's southwestern border



13. Southwestern view of the subject property



14. View of water supply tanks on the southern corner of the subject property



15. View of the building associated with the water tanks



16. View of water and utility plates near the tank enclosure



17. View of drains associated with the tanks



18. View of pole-mounted transformer and power lines on the subject property



19. View of a concrete building foundation pad on the subject property



20. View of a concrete building pad with various debris on the subject property



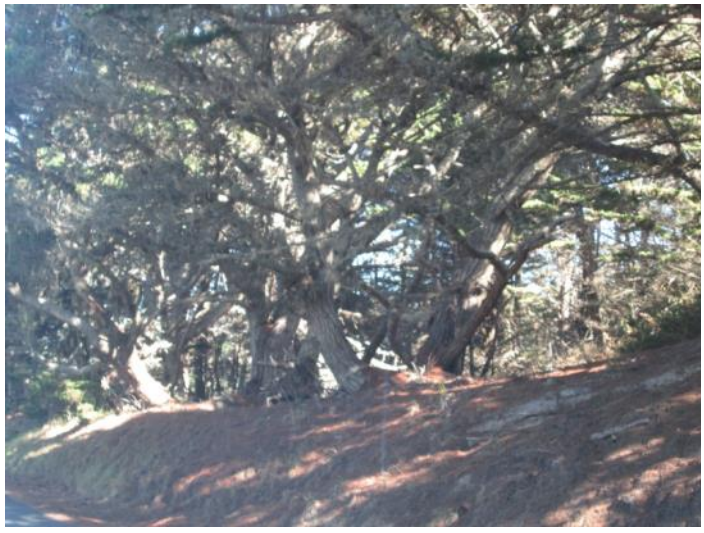
21. View of piles of cut timber on the northwestern corner of the subject property



22. View of a concrete building foundation



23. View of concrete stairs leading up to a concrete building foundation



24. View of large trees on the subject property



25. View of adjacent property to the west: residence (1993 Carlos Street)



26. View of adjacent property to the west: vacant land (no address)



27. Representative view of adjacent properties to the northwest, southeast and south, beyond various streets: residences (pictured: 840-880 Lincoln Street; not pictured: 400-534 Sierra Street, 297-300 16th Street, 500-501 Buena Vista Street, 495 Stetson Street)



28. View of adjacent property to the northeast: vacant land

APPENDIX B

REGULATORY DATABASE

County Review Draft

ENVIRONMENTAL RISK INFORMATION SERVICE

DATABASE REPORT

Project Property:	*350428 AC* *Carlos Street At Sierra Street* *Moss Beacch CA 94038*
P.O. Number:	*96967*
Report Type:	*Database Report + FIMs*
Order #:	*20151028168*
Requested by:	*AEI Consultants*
Date:	*October 29, 2015*

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Executive Summary

Property Information:

Project Property:	*350428 AC* *Carlos Street At Sierra Street Moss Beacch CA 94038*
P.O. Number:	*96967*

Coordinates:

Latitude:	*37.53372*
Longitude:	*-122.515985*
UTM Northing:	*4,154,192.34*
UTM Easting:	*542,763.01*
UTM Zone:	*UTM Zone 10S*

Elevation: *155 FT*

Order Information:

Order No.:	*20151028168*
Date Requested:	*30/10/2015*
Requested by:	*AEI Consultants*
Report Type:	*Database Report + FIMs*

Ancillary Products:

Aerial Photographs	*4-5 Historical Aerials*
City Directory Search	*1 Street Search*
Fire Insurance Maps	*US Fire Insurance Maps*

Executive Summary: Report Summary

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.12mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
Standard Environmental Records								
Federal								
NPL	Y	1.00	0	0	0	0	0	0
PROPOSED NPL	Y	1.00	0	0	0	0	0	0
DELETED NPL	Y	0.50	0	0	0	0	-	0
CERCLIS	Y	0.50	0	0	0	0	-	0
CERCLIS NFRAP	Y	0.50	0	0	0	0	-	0
CERCLIS LIENS	Y	PO	0	-	-	-	-	0
RCRA CORRACTS	Y	1.00	0	0	0	0	0	0
RCRA TSD	Y	0.50	0	0	0	0	-	0
RCRA GEN	Y	0.25	0	0	0	-	-	0
RCRA NON GEN	Y	0.25	0	0	0	-	-	0
FED ENG	Y	0.50	0	0	0	0	-	0
FED INST	Y	0.50	0	0	0	0	-	0
ERNS 1982 TO 1986	Y	PO	0	-	-	-	-	0
ERNS 1987 TO 1989	Y	PO	0	-	-	-	-	0
ERNS	Y	PO	0	-	-	-	-	0
FED BROWNFIELDS	Y	0.50	0	0	0	0	-	0
State								
RESPONSE	Y	1.00	0	0	0	0	0	0
ENVIROSTOR	Y	1.00	0	0	0	0	0	0
SWF/LF	Y	0.50	0	0	0	0	-	0
HWP	Y	1.00	0	0	0	0	0	0
LDS	Y	0.50	0	0	0	0	-	0
LUST	Y	0.50	0	0	1	1	-	2
DLST	Y	0.50	0	0	0	0	-	0
UST	Y	0.25	0	0	0	-	-	0
AST	Y	0.25	0	0	0	-	-	0
HHSS	Y	0.25	0	1	0	-	-	1
LUR	Y	0.50	0	0	0	0	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.12mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
HLUR	Y	0.50	0	0	0	0	-	0
DEED	Y	0.50	0	0	0	0	-	0
VCP	Y	1.00	0	0	0	0	0	0
CLEANUP SITES	Y	0.50	0	0	0	0	-	0
Tribal								
INDIAN LUST	Y	0.50	0	0	0	0	-	0
INDIAN UST	Y	0.25	0	0	0	-	-	0
County								
ALAMEDA LOP	Y	0.50	0	0	0	0	-	0
ALAMEDA UST	Y	0.25	0	0	0	-	-	0
AMADOR CUPA	Y	0.25	0	0	0	-	-	0
BUTTE CUPA	Y	0.25	0	0	0	-	-	0
CALAVERAS CUPA	Y	0.25	0	0	0	-	-	0
CALAVERAS LF	Y	0.50	0	0	0	0	-	0
CALAVERAS LUST	Y	0.50	0	0	0	0	-	0
COLUSA CUPA	Y	0.25	0	0	0	-	-	0
CONTRACO CUPA	Y	0.25	0	0	0	-	-	0
DELNORTE CUPA	Y	0.25	0	0	0	-	-	0
ELDORADO CUPA	Y	0.25	0	0	0	-	-	0
FRESNO CUPA	Y	0.25	0	0	0	-	-	0
HUMBOLDT CUPA	Y	0.25	0	0	0	-	-	0
IMPERIAL CUPA	Y	0.25	0	0	0	-	-	0
INYO CUPA	Y	0.25	0	0	0	-	-	0
KERN CUPA	Y	0.25	0	0	0	-	-	0
KERN UST	Y	0.25	0	0	0	-	-	0
KINGS CUPA	Y	0.25	0	0	0	-	-	0
LAKE CUPA	Y	0.25	0	0	0	-	-	0
ELSEGUNDO UST	Y	0.25	0	0	0	-	-	0
TORRANCE UST	Y	0.25	0	0	0	-	-	0
LA HMS	Y	0.25	0	0	0	-	-	0
LA LONGB UST	Y	0.25	0	0	0	-	-	0
LA SWF	Y	0.50	0	0	0	0	-	0
MADERA CUPA	Y	0.25	0	0	0	-	-	0
MARIN CUPA	Y	0.25	0	0	0	-	-	0
MERCED CUPA	Y	0.25	0	0	0	-	-	0
MONO CUPA	Y	0.25	0	0	0	-	-	0
MONTEREY CUPA	Y	0.25	0	0	0	-	-	0
NAPA UST	Y	0.25	0	0	0	-	-	0
NEVADA CUPA	Y	0.25	0	0	0	-	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.12mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
ORANGE AST	Y	0.25	0	0	0	-	-	0
ORANGE UST	Y	0.25	0	0	0	-	-	0
PLACER CUPA	Y	0.25	0	0	0	-	-	0
RIVERSIDE LOP	Y	0.50	0	0	0	0	-	0
RIVERSIDE UST	Y	0.25	0	0	0	-	-	0
SACRAMENTO HAZ	Y	0.50	0	0	0	0	-	0
SACRAMENTO TOX	Y	0.50	0	0	0	0	-	0
SANBERN CUPA	Y	0.25	0	0	0	-	-	0
SANDIEGO HAZ	Y	0.25	0	0	0	-	-	0
SANDIEGO SAM	Y	0.50	0	0	0	0	-	0
SANDIEGO SWF	Y	0.50	0	0	0	0	-	0
SANFRAN AST	Y	0.25	0	0	0	-	-	0
SANFRAN CUPA	Y	0.25	0	0	0	-	-	0
SANFRAN LOP	Y	0.50	0	0	0	0	-	0
SANFRAN UST	Y	0.25	0	0	0	-	-	0
SANJOAQUIN AST	Y	0.25	0	0	0	-	-	0
SANJOAQUIN UST	Y	0.25	0	0	0	-	-	0
SANJOAQUIN HW	Y	0.50	0	0	0	0	-	0
SANMATEO CUPA	Y	0.25	0	1	0	-	-	1
SANMATEO LOP	Y	0.50	0	0	1	1	-	2
SANTACLARA CUPA	Y	0.25	0	0	0	-	-	0
SANTACLARA LO	Y	0.50	0	0	0	0	-	0
SANTACRUZ CUPA	Y	0.25	0	0	0	-	-	0
SANLUISOB CUPA	Y	0.25	0	0	0	-	-	0
SHASTA CUPA	Y	0.25	0	0	0	-	-	0
SOLANO CUPA	Y	0.25	0	0	0	-	-	0
SOLANO LOP	Y	0.50	0	0	0	0	-	0
SOLANO UST	Y	0.25	0	0	0	-	-	0
SONOMA CUPA	Y	0.25	0	0	0	-	-	0
SONOMA LOP	Y	0.50	0	0	0	0	-	0
SONOMA PETAL	Y	0.25	0	0	0	-	-	0
SUTTER CUPA	Y	0.25	0	0	0	-	-	0
TUOLUMNE CUPA	Y	0.25	0	0	0	-	-	0
VENTURA CUPA	Y	0.25	0	0	0	-	-	0
OXNARD CUPA	Y	0.25	0	0	0	-	-	0
VENTURA INUST	Y	0.25	0	0	0	-	-	0
VENTURA HLUFT	Y	0.50	0	0	0	0	-	0
YOLO UST	Y	0.25	0	0	0	-	-	0
YUBA CUPA	Y	0.25	0	0	0	-	-	0
BKRSFIELD CUPA	Y	0.25	0	0	0	-	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.12mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
SANTACLARA GIL	Y	0.25	0	0	0	-	-	0
GLENN CUPA	Y	0.25	0	0	0	-	-	0
LASSEN CUPA	Y	0.25	0	0	0	-	-	0
STANISLAUS CUPA	Y	0.25	0	0	0	-	-	0
TRINITY CUPA	Y	0.25	0	0	0	-	-	0

Additional Environmental Records

Federal

FINDS/FRS	Y	PO	0	-	-	-	-	0
TRIS	Y	PO	0	-	-	-	-	0
HMIRS	Y	0.12	0	0	-	-	-	0
NCDL	Y	PO	0	-	-	-	-	0
ODI	Y	0.50	0	0	0	0	-	0
IODI	Y	0.50	0	0	0	0	-	0
TSCA	Y	0.12	0	0	-	-	-	0
HIST TSCA	Y	0.12	0	0	-	-	-	0

State

INSP COMP ENF	Y	1.00	0	0	0	0	0	0
CDL	Y	0.12	0	0	-	-	-	0
SCH	Y	1.00	0	0	0	0	0	0
CHMIRS	Y	PO	0	-	-	-	-	0
SWAT	Y	0.50	0	0	0	0	-	0

Tribal — ***No Tribal additional environmental record sources available for this State.***

County

LA SML	Y	0.50	0	0	0	0	-	0
RIVERSIDE HZH	Y	0.12	0	0	-	-	-	0
RIVERSIDE HWG	Y	0.12	0	0	-	-	-	0
SANJOAQUIN HM	Y	0.12	0	0	-	-	-	0
HW INACTIVE	Y	0.50	0	0	0	0	-	0
DELISTED COUNTY	Y	0.25	0	0	0	-	-	0

Total:	0	2	2	2	0	6

**** PO – Property Only***
**** 'Property and adjoining properties' database search radii are set at 0.25 miles.***

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Dir/Dist mi	Elev diff ft	Page Number

No records found in the selected databases for the project property.

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Dir/Dist mi	Elev Diff ft	Page Number
1	SANMATEO CUPA	COASTSIDE FIRE DISTRICT, EL GRANADA	501 STETSON MOSS BEACH CA 94038	S/0.03	-26	15
1	HHSS	POINT MONTARA FIRE PROTECTION	501 STETSON STREET MOSS BEACH CA 94038	S/0.03	-26	15
2	LUST	PRIVATE RESIDENCE	PRIVATE RESIDENCE MOSS BEACH CA 94038 ***Global ID / Status**:* T0608170114 / Open - Remediation	SSE/0.14	-12	15
3	SANMATEO LOP	MANNON PROPERTY	619 STETSON ST MOSS BEACH CA ***Case ID**:* 018041 ***Status**:* 5C- Pollution Characterization	SSE/0.15	-24	20
4	SANMATEO LOP	NEIGHBORHOOD GAS MART	8445 HWY 1 MONTARA CA ***Case ID**:* 010036 ***Status**:* 3B- Preliminary Assessment Underway	N/0.47	-54	20
4	LUST	NEIGHBORHOOD GAS MART	8445 HIGHWAY 1 MONTARA CA 94037 ***Global ID / Status**:* T0608192710 / Open - Site Assessment	N/0.47	-54	20

Executive Summary: Summary by Data Source

Standard

State

LUST - Leaking Underground Fuel Tank Reports

A search of the LUST database, dated Aug 31, 2015 has found that there are 2 LUST site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance mi	Map Key

Lower Elevation	Address	Direction	Distance mi	Map Key
PRIVATE RESIDENCE	PRIVATE RESIDENCE MOSS BEACH CA 94038	SSE	0.14	2
	***Global ID / Status**: T0608170114 / Open - Remediation*			
NEIGHBORHOOD GAS MART	8445 HIGHWAY 1 MONTARA CA 94037	N	0.47	4
	***Global ID / Status**: T0608192710 / Open - Site Assessment*			

HHSS - Historical Hazardous Substance Storage Information Database

A search of the HHSS database, dated Aug 27, 2015 has found that there are 1 HHSS site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance mi	Map Key

Lower Elevation	Address	Direction	Distance mi	Map Key
POINT MONTARA FIRE PROTECTION	501 STETSON STREET MOSS BEACH CA 94038	S	0.03	1

County

SANMATEO CUPA - San Mateo County CUPA Facilities List

A search of the SANMATEO CUPA database, dated May 28, 2015 has found that there are 1 SANMATEO CUPA site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance mi	Map Key

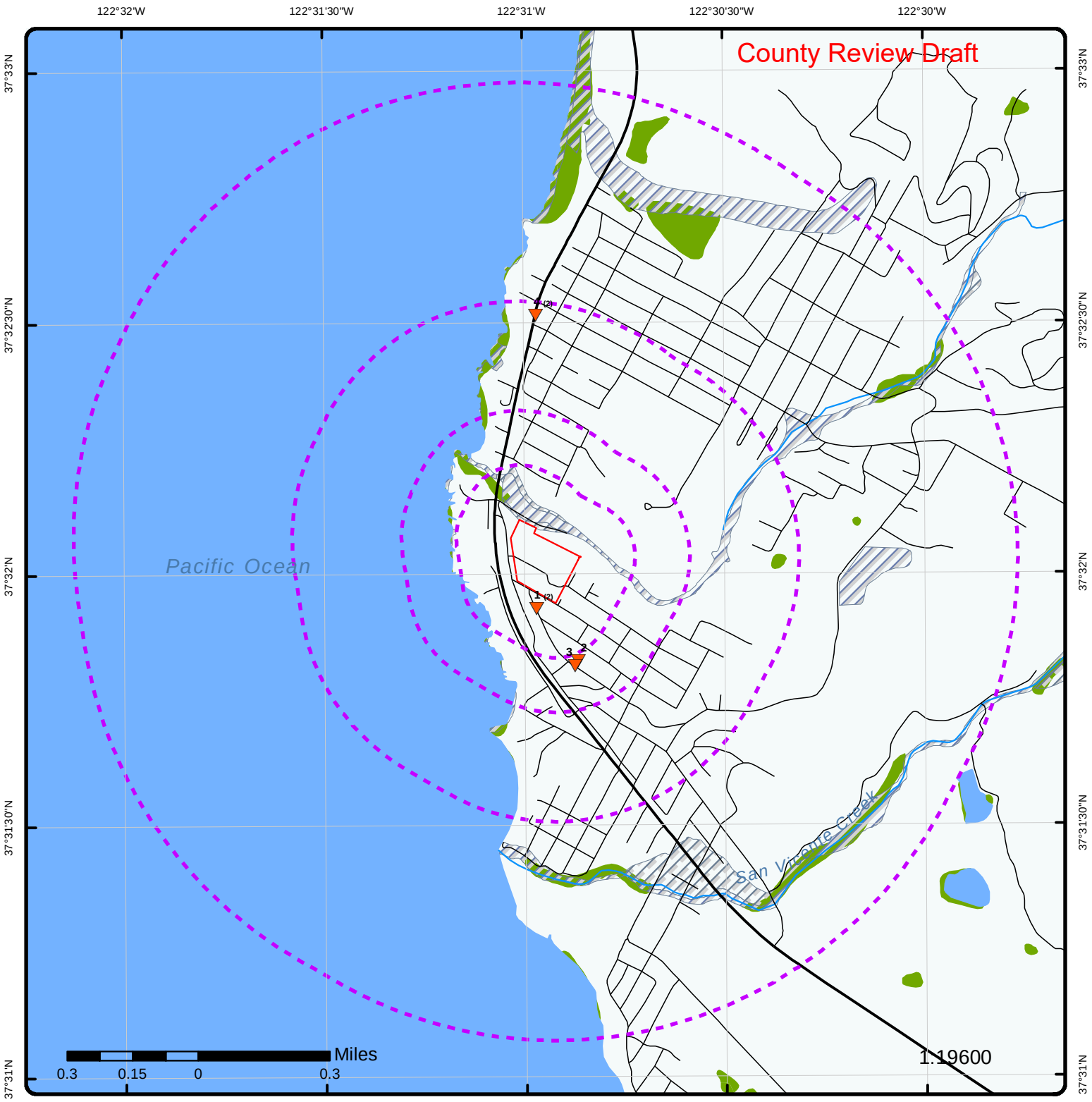
Lower Elevation	Address	Direction	Distance mi	Map Key
COASTSIDE FIRE DISTRICT, EL GRANADA	501 STETSON MOSS BEACH CA 94038	S	0.03	1

SANMATEO LOP - San Mateo County LOP List

A search of the SANMATEO LOP database, dated May 27, 2015 has found that there are 2 SANMATEO LOP site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance mi	Map Key

Lower Elevation	Address	Direction	Distance mi	Map Key
MANNON PROPERTY	619 STETSON ST MOSS BEACH CA	SSE	0.15	3
	***Case ID**: 018041* ***Status**: 5C- Pollution Characterization*			
NEIGHBORHOOD GAS MART	8445 HWY 1 MONTARA CA	N	0.47	4
	***Case ID**: 010036* ***Status**: 3B- Preliminary Assessment Underway*			



Map : 1 Mile Radius

Order No: 20151028168

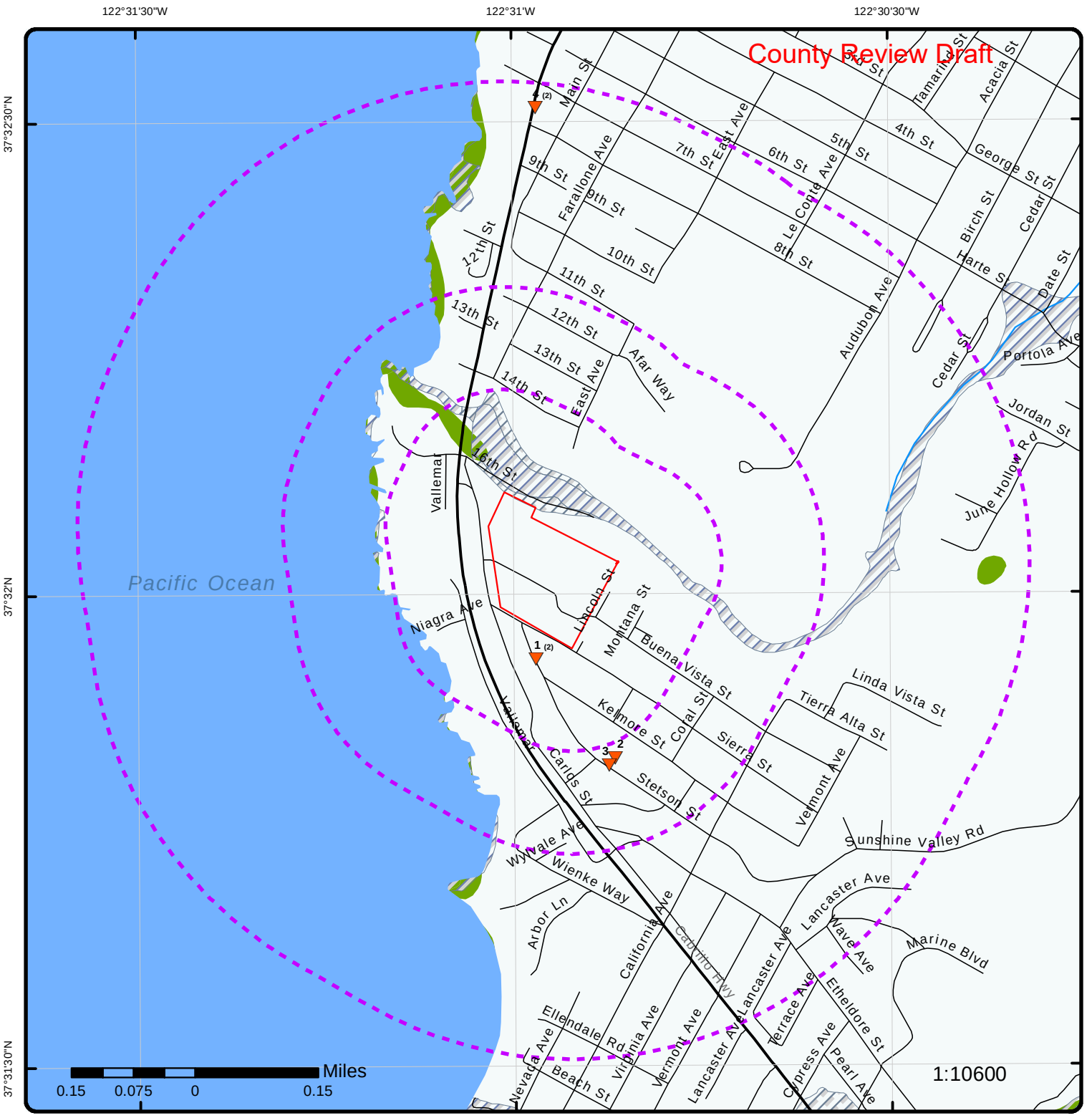
Address: Carlos Street At Sierra Street, Moss Beacch, CA, 94038

ENVIRONMENTAL RISK INFORMATION SERVICE

Project Property	Major Highways	County Boundary	Indian Reserve Land
Buffer Outline	Major Highways Ramps	State Boundary	Historic Fill
Eris Sites with Higher Elevation	Major Roads	500 Year Flood Zone	State Brownfield Sites
Eris Sites with Same Elevation	Major Roads Ramps	100 Year Flood Zone	State Brownfield Areas
Eris Sites with Lower Elevation	Secondary Roads	National Priority List Sites	State Superfund Areas:Dept. of Defense
Eris Sites with Unknown Elevation	Secondary Roads Ramps	National Wetland	State Superfund Areas:NPL
Rails	Local Roads and Ramps	FWS Special Designation Areas	WQARF Areas

Source: © 2012 ESRI

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Map : 0.5 Mile Radius

Order No: 20151028168

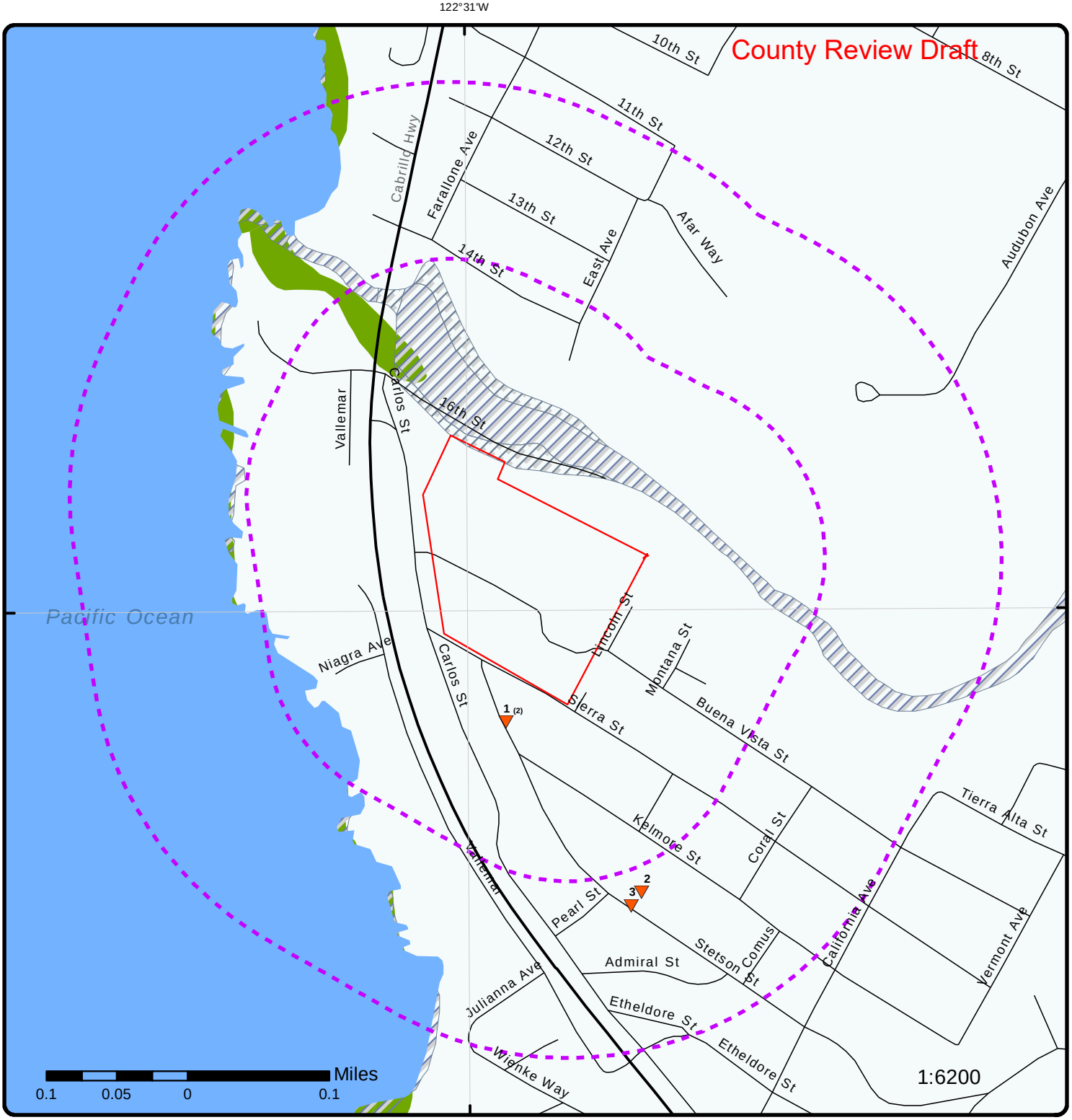
Address: Carlos Street At Sierra Street, Moss Beacch, CA, 94038

ENVIRONMENTAL RISK INFORMATION SERVICE

Project Property	Major Highways	County Boundary	Indian Reserve Land
Buffer Outline	Major Highways Ramps	State Boundary	Historic Fill
Eris Sites with Higher Elevation	Major Roads	500 Year Flood Zone	State Brownfield Sites
Eris Sites with Same Elevation	Major Roads Ramps	100 Year Flood Zone	State Brownfield Areas
Eris Sites with Lower Elevation	Secondary Roads	National Priority List Sites	State Superfund Areas:Dept. of Defense
Eris Sites with Unknown Elevation	Secondary Roads Ramps	National Wetland	State Superfund Areas:NPL
Rails	Local Roads and Ramps	FWS Special Designation Areas	WQARF Areas

Source: © 2012 ESRI

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Map : 0.25 Mile Radius

Order No: 20151028168

Address: Carlos Street At Sierra Street, Moss Beacch, CA, 94038

ERIS
ENVIRONMENTAL RISK INFORMATION SERVICE

Project Property	Major Highways	County Boundary	Indian Reserve Land
Buffer Outline	Major Highways Ramps	State Boundary	Historic Fill
Eris Sites with Higher Elevation	Major Roads	500 Year Flood Zone	State Brownfield Sites
Eris Sites with Same Elevation	Major Roads Ramps	100 Year Flood Zone	State Brownfield Areas
Eris Sites with Lower Elevation	Secondary Roads	National Priority List Sites	State Superfund Areas:Dept. of Defense
Eris Sites with Unknown Elevation	Secondary Roads Ramps	National Wetland	State Superfund Areas:NPL
Rails	Local Roads and Ramps	FWS Special Designation Areas	WQARF Areas

Source: © 2012 ESRI

© Ecolog ERIS Ltd

122°31'W



37°32'N

37°32'N

Aerial

Order No: 20151028168

Address: Carlos Street At Sierra Street, Moss Beacch, CA, 94038

Source: ESRI World Imagery, Updated October 2014

© Ecolog ERIS Ltd

Detail Report

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
1	1 of 2	S/0.03	128.79	COASTSIDE FIRE DISTRICT, EL GRANADA 501 STETSON MOSS BEACH CA 94038	SANMATEO CUPA

Facility ID: FA0022360

--- Details ---
Record ID: PR0034529
Program Element Code: 2160
Program Element: STORES MV FUELS OR WASTE ONLY

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
1	2 of 2	S/0.03	128.79	POINT MONTARA FIRE PROTECTION 501 STETSON STREET MOSS BEACH CA 94038	HHSS

County:
Pdf File Url: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002c189.pdf

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
2	1 of 1	SSE/0.14	143.15	PRIVATE RESIDENCE PRIVATE RESIDENCE MOSS BEACH CA 94038	LUST

Global ID: T0608170114
Case Type: LUST Cleanup Site
Status: Open - Remediation
Status Date: 2007-01-02 00:00:00
RB Case Number:
LOC Case Number: 018041
CUF Case: YES
Potential Cntm of Concrn: Heating Oil / Fuel Oil
Potential Media Affected: Under Investigation
County: San Mateo
Latitude: 37.530436
Longitude: -122.514449
Lead Agency: SAN MATEO COUNTY LOP
Case Worker: CLI
Local Agency: SAN MATEO COUNTY LOP
File Location: Local Agency

SITE HISTORY:

Extracted from TEC Accutite's March 31, 2010 First Quarter 2010 Groundwater Monitoring Report, San Mateo County does not take responsibility for the accuracy of the statements made or any professional interpretations made in the referenced report. The site is a private home located on Stetson Street, near the intersection with California Avenue in Moss Beach, California. The nearest surface water is the Pacific Ocean, located approximately 1,000 feet west of the site. A portion of the Fitzgerald State Marine Reserve, which the California Regional Water Quality Control Board (RWQCB) has designated as an area of special biological significance, is directly west of the subject site. Site topography is moderately sloping to the west/southwest, and site elevation is approximately 130 feet

above mean sea level (ft msl). November 2002 One 500-gallon heating oil underground storage tank (UST) removed from the subject site; significant concentrations of petroleum hydrocarbons present in groundwater. September 2003 Five soil borings advanced (B-1 through B-5); Total Petroleum Hydrocarbons as diesel (TPHd) detected in grab groundwater sample. November 2005 Impacted soil at the former UST location was over-excavated (approximately 60 tons of soil removed); significant TPHd concentration detected in western wall of the excavation; monitoring well MW-1 installed downgradient of the former UST; free-phase hydrocarbon encountered in well MW-1. August 2008 to October 2008 Offsite investigation; slug test; groundwater monitoring wells MW-2 and MW-3 installed; free product extent defined to the southwest of the former UST. February 2007 Initiation of ongoing quarterly groundwater monitoring and free product removal. April 6, 2009 Passive skimmer installed in well MW-1 to facilitate product removal.

Status History

Status: Open - Case Begin Date
Status Date: 2002-11-07 00:00:00

Status: Open - Remediation
Status Date: 2007-01-02 00:00:00

Status: Open - Site Assessment
Status Date: 2003-06-19 00:00:00

Status: Open - Site Assessment
Status Date: 2003-07-23 00:00:00

Status: Open - Site Assessment
Status Date: 2003-11-04 00:00:00

Status: Open - Site Assessment
Status Date: 2007-01-02 00:00:00

Activities

Action Type: ENFORCEMENT
Date: 2003-06-19 00:00:00
Action: Notice of Responsibility - #1

Action Type: ENFORCEMENT
Date: 2007-01-02 00:00:00
Action: Staff Letter - #20070102

Action Type: ENFORCEMENT
Date: 2003-11-12 00:00:00
Action: Staff Letter - #20031112

Action Type: ENFORCEMENT
Date: 2007-04-25 00:00:00
Action: Staff Letter - #20070425

Action Type: ENFORCEMENT
Date: 2003-07-30 00:00:00
Action: Staff Letter - #20030730

Action Type: ENFORCEMENT
Date: 2008-08-06 00:00:00
Action: Staff Letter - #20080806

Action Type: ENFORCEMENT
Date: 2003-12-03 00:00:00
Action: Staff Letter - #20031203

Action Type: ENFORCEMENT

Date: 2003-06-11 00:00:00
Action: Staff Letter - #20030611

Action Type: ENFORCEMENT
Date: 2009-07-07 00:00:00
Action: Staff Letter - #20090707

Action Type: ENFORCEMENT
Date: 2009-05-13 00:00:00
Action: Staff Letter - #20090513

Action Type: ENFORCEMENT
Date: 2009-08-18 00:00:00
Action: Staff Letter - #20090818

Action Type: ENFORCEMENT
Date: 2010-05-19 00:00:00
Action: Staff Letter - #20100519

Action Type: ENFORCEMENT
Date: 2011-09-29 00:00:00
Action: Staff Letter - #20110929

Action Type: ENFORCEMENT
Date: 2010-12-22 00:00:00
Action: Staff Letter - #20101222

Action Type: ENFORCEMENT
Date: 2012-07-12 00:00:00
Action: Staff Letter - #20120712

Action Type: ENFORCEMENT
Date: 2013-03-08 00:00:00
Action: Staff Letter - #20130308

Action Type: ENFORCEMENT
Date: 2015-06-30 00:00:00
Action: Notice of Violation - #20150630

Action Type: Other
Date: 2002-11-07 00:00:00
Action: Leak Discovery

Action Type: Other
Date: 2002-12-19 00:00:00
Action: Leak Reported

Action Type: RESPONSE
Date: 2008-12-03 00:00:00
Action: Soil and Water Investigation Report

Action Type: RESPONSE
Date: 2009-09-09 00:00:00
Action: Soil and Water Investigation Workplan

Action Type: RESPONSE
Date: 2007-10-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE

Date: 2008-04-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2009-01-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2008-06-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2008-06-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2009-12-15 00:00:00
Action: Soil and Water Investigation Report

Action Type: RESPONSE
Date: 2008-01-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2009-04-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2003-08-11 00:00:00
Action: Preliminary Site Assessment Workplan

Action Type: RESPONSE
Date: 2003-11-28 00:00:00
Action: Preliminary Site Assessment Report

Action Type: RESPONSE
Date: 2005-09-06 00:00:00
Action: Soil and Water Investigation Workplan

Action Type: RESPONSE
Date: 2004-02-13 00:00:00
Action: Electronic Reporting Submittal Due

Action Type: RESPONSE
Date: 2007-02-16 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2007-05-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2007-06-26 00:00:00
Action: Interim Remedial Action Plan

Action Type: RESPONSE
Date: 2010-09-15 00:00:00
Action: Other Report / Document

Action Type: RESPONSE

Date: 2011-07-08 00:00:00
Action: Other Report / Document

Action Type: RESPONSE
Date: 2009-07-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2010-01-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2010-07-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2010-10-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2011-01-15 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date: 2010-04-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2009-10-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2011-03-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2012-07-15 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date: 2011-12-19 00:00:00
Action: Pilot Study / Treatability Workplan

Action Type: RESPONSE
Date: 2011-06-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2011-10-15 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date: 2012-10-31 00:00:00
Action: Pilot Study/ Treatability Report

Action Type: RESPONSE
Date: 2013-01-15 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE

Date: 2013-04-29 00:00:00
Action: CAP/RAP - Other Report

Action Type: REMEDIATION
Date: 2007-02-01 00:00:00
Action: Free Product Removal

Contact Information

Contact Type: Local Agency Caseworker
Contact Name: CHARLES ICE
Organization Name: SAN MATEO COUNTY LOP
Address: 2000 ALAMEDA DE LAS PULGAS
City: SAN MATEO
Email: cice@smcgov.org
Phone Number: 6503726295

Contact Type: Regional Board Caseworker
Contact Name: JOLANTA UCHMAN
Organization Name: SAN FRANCISCO BAY RWQCB (REGION 2)
Address: 1515 CLAY ST SUITE 1400
City: OAKLAND
Email: juchman@waterboards.ca.gov
Phone Number:

3	1 of 1	SSE/0.15	130.66	MANNON PROPERTY 619 STETSON ST MOSS BEACH CA	SANMATEO LOP

Case ID: 018041
Assessors Parcel NO: 037091290
Global ID: T0608170114
Case Type: Undetermined affected

--- Details ---
Status: 5C- Pollution Characterization

4	1 of 2	N/0.47	101.21	NEIGHBORHOOD GAS MART 8445 HWY 1 MONTARA CA	SANMATEO LOP

Case ID: 010036
Assessors Parcel NO: 036054080
Global ID: T0608192710
Case Type: Aquifer used for drinking water supply affected

--- Details ---
Status: 3B- Preliminary Assessment Underway

4	2 of 2	N/0.47	101.21	NEIGHBORHOOD GAS MART 8445 HIGHWAY 1 MONTARA CA 94037	LUST

Global ID: T0608192710
Case Type: LUST Cleanup Site
Status: Open - Site Assessment
Status Date: 2008-09-04 00:00:00

RB Case Number: 41-1260
LOC Case Number: 010036
CUF Case: YES
Potential Cntm of Concrn: Gasoline
Potential Media Affected: Aquifer used for drinking water supply
County: San Mateo
Latitude: 37.5416679816289
Longitude: -122.516065835953
Lead Agency: SAN MATEO COUNTY LOP
Case Worker: MM
Local Agency: SAN MATEO COUNTY LOP
File Location: Local Agency

SITE HISTORY:

Can be extracted from most recent report in Geotracker or at San Mateo County offices if submitted prior to 2005, San Mateo County does not take responsibility for the accuracy of the statements made or any professional interpretations made in the referenced report.

Status History

Status: Open - Case Begin Date
Status Date: 2000-09-12 00:00:00

Status: Open - Remediation
Status Date: 2007-11-27 00:00:00

Status: Open - Site Assessment
Status Date: 2000-09-12 00:00:00

Status: Open - Site Assessment
Status Date: 2008-09-04 00:00:00

Activities

Action Type: ENFORCEMENT
Date: 2005-09-07 00:00:00
Action: Staff Letter - #20050907

Action Type: ENFORCEMENT
Date: 2006-02-02 00:00:00
Action: Staff Letter - #20060202

Action Type: ENFORCEMENT
Date: 2000-09-22 00:00:00
Action: Notice of Responsibility - #1

Action Type: ENFORCEMENT
Date: 2004-01-28 00:00:00
Action: Staff Letter - #20040128

Action Type: ENFORCEMENT
Date: 2003-06-04 00:00:00
Action: Staff Letter - #20030604

Action Type: ENFORCEMENT
Date: 2003-11-19 00:00:00
Action: Staff Letter - #20031119B

Action Type: ENFORCEMENT
Date: 2006-08-09 00:00:00

Action: Staff Letter - #20060809

Action Type: ENFORCEMENT
Date: 2003-11-19 00:00:00
Action: Staff Letter - #20031119

Action Type: ENFORCEMENT
Date: 2007-09-27 00:00:00
Action: Staff Letter - #20070927

Action Type: ENFORCEMENT
Date: 2007-04-24 00:00:00
Action: Staff Letter - #20070424

Action Type: ENFORCEMENT
Date: 2009-09-30 00:00:00
Action: Staff Letter - #20090930

Action Type: ENFORCEMENT
Date: 2009-01-05 00:00:00
Action: Staff Letter - #20090105

Action Type: ENFORCEMENT
Date: 2009-07-30 00:00:00
Action: Staff Letter - #20090730

Action Type: ENFORCEMENT
Date: 2009-07-07 00:00:00
Action: Staff Letter - #20090707

Action Type: ENFORCEMENT
Date: 2010-11-17 00:00:00
Action: Staff Letter - #20101117

Action Type: ENFORCEMENT
Date: 2011-06-15 00:00:00
Action: Staff Letter - #20110615

Action Type: ENFORCEMENT
Date: 2012-08-29 00:00:00
Action: Staff Letter - #20120829

Action Type: ENFORCEMENT
Date: 2013-01-11 00:00:00
Action: Staff Letter - #20130111

Action Type: ENFORCEMENT
Date: 2013-04-19 00:00:00
Action: Staff Letter - #20130419

Action Type: ENFORCEMENT
Date: 2014-02-11 00:00:00
Action: Staff Letter - #20140214

Action Type: ENFORCEMENT
Date: 2014-07-02 00:00:00
Action: Staff Letter - #20140702

Action Type: ENFORCEMENT
Date: 2015-03-17 00:00:00

Action: Staff Letter - #20150317

Action Type: Other
Date: 2000-09-12 00:00:00
Action: Leak Discovery

Action Type: Other
Date: 2000-09-12 00:00:00
Action: Leak Reported

Action Type: RESPONSE
Date: 2009-02-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2009-05-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2008-11-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2009-08-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2010-03-15 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date: 2007-11-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2009-04-30 00:00:00
Action: Pilot Study/ Treatability Report

Action Type: RESPONSE
Date: 2008-05-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2008-02-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2008-08-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2009-04-30 00:00:00
Action: Soil and Water Investigation Workplan

Action Type: RESPONSE
Date: 2009-04-30 00:00:00
Action: Other Workplan

Action Type: RESPONSE
Date: 2009-12-14 00:00:00

Action: Site Assessment Report

Action Type: RESPONSE
Date: 2010-09-15 00:00:00
Action: Soil and Water Investigation Report

Action Type: RESPONSE
Date: 2003-08-11 00:00:00
Action: Preliminary Site Assessment Report

Action Type: RESPONSE
Date: 2004-01-19 00:00:00
Action: Preliminary Site Assessment Workplan

Action Type: RESPONSE
Date: 2005-08-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2006-05-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2007-05-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2006-08-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2007-08-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2006-11-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2007-11-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2006-02-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2007-02-15 00:00:00
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date: 2005-01-26 00:00:00
Action: Preliminary Site Assessment Report

Action Type: RESPONSE
Date: 2005-11-02 00:00:00
Action: Soil and Water Investigation Report

Action Type: RESPONSE
Date: 2006-05-25 00:00:00

Action: Soil and Water Investigation Report

Action Type: RESPONSE
Date: 2006-09-27 00:00:00
Action: CAP/RAP - Feasibility Study Report

Action Type: RESPONSE
Date: 2007-06-25 00:00:00
Action: CAP/RAP - Feasibility Study Report

Action Type: RESPONSE
Date: 2008-02-25 00:00:00
Action: CAP/RAP - Other Report

Action Type: RESPONSE
Date: 2011-03-28 00:00:00
Action: Other Workplan

Action Type: RESPONSE
Date: 2010-09-15 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date: 2010-01-15 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date: 2011-09-26 00:00:00
Action: Soil and Water Investigation Report

Action Type: RESPONSE
Date: 2011-03-15 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date: 2011-09-15 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date: 2012-09-15 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date: 2012-03-15 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date: 2015-06-01 00:00:00
Action: CAP/RAP - Feasibility Study Report

Action Type: RESPONSE
Date: 2013-06-21 00:00:00
Action: Soil Vapor Intrusion Investigation Report - Regulator Responded

Action Type: RESPONSE
Date: 2013-02-26 00:00:00
Action: Other Workplan - Regulator Responded

Action Type: RESPONSE
Date: 2014-05-12 00:00:00

Action:	Pilot Study / Treatability Workplan - Regulator Responded
Action Type:	RESPONSE
Date:	2014-10-10 00:00:00
Action:	Soil and Water Investigation Report - Regulator Responded
Action Type:	REMEDIATION
Date:	2007-11-01 00:00:00
Action:	Ex Situ Physical/Chemical Treatment (other than P&T, SVE, or Excavation)

Contact Information

Contact Type:	Local Agency Caseworker
Contact Name:	MARC MULLANEY
Organization Name:	SAN MATEO COUNTY LOP
Address:	2000 ALAMEDA DE LAS PULGAS
City:	SAN MATEO
Email:	mmullaney@smcgov.org
Phone Number:	6503726289

Unplottable Summary

Total: 19 Unplottable sites

DB	Company Name/Site Name	Address	City	Zip
CHMIRS	Sewer Auth. Mid Coast Side	Hwy. 1 at 16th St.	Montara CA	94019
CHMIRS	Sewer Authority Mid Coastside	Hwy 1 at 16th Street	Montara CA	94019
CHMIRS	Sewer Authority, Half Moon Bay	Hwy 1 at 16th St.	Montara CA	94019
CHMIRS	Sewer Authority Mid Coast Side	16th Street at the Point Montara Light House	Montara CA	94019
CLEANUP SITES	MAIN STREET & ARNOLD WAY	0 MAIN STREET & ARNOLD	HALF MOON BAY CA	94019
ENVIROSTOR	BROWNING-FERRIS IND (SAN MATEO LANDFILL)	EAST 3RD AVENUE	SAN MATEO CA	94401
FINDS/FRS	SEWER AUTHORITY MID-COASTSIDE	16TH ST & CABRILLO HWY	MONTARA CA	94037-0000
HHSS	MONTARA HOSTEL - POINT MONTARA	16TH ST & CABRILLO HWY	MONTARA CA	94037
HHSS	UNION OIL SS 3869	3869 EAST THIRD STREET	SAN MATEO CA	94400
HHSS	MONTARA PUMPING STATION	CABRILLO HIGHWAY	MONTARA CA	94037
LUST	USCG (MONTARA LIGHTHOUSE)	0 COAST HIGHWAY	MONTARA CA	94037
LUST	MOOSEHEAD INC	818 ETHELDORE	MONTARA CA	94037
RCRA GEN	PACIFIC BELL	ETHELDORE STREET	MOSS BEACH CA	94038
SANMATEO CUPA	Verizon Wireless: Hwy 1 & Montara	8888 Cabrillo	MONTARA CA	94037
SANMATEO CUPA	Caltrans-Devil's Slide Tunnel (Maintenance & Operations)	6000 Coast	MONTARA CA	94037
SANMATEO LOP	MOOSEHEAD INC	818 ETHELDORE ST	MONTARA CA	
SANMATEO LOP	USCG (MONTARA	0 COAST HWY	MONTARA CA	

	LIGHTHOUSE)		
SWAT	SAN MATEO COUNTY SCAVENGER-OX MOUNTAIN LANDFI	TWO MI EAST HALF MOON BAY OFF HWY 92 HALF MOON BAY, CA 9409	CA
SWF/LF	3rd Ave LF/San Mateo Composting Site	East Third Ave; Along The Sf Bay	San Mateo CA

Unplottable Report

Site: ***Sewer Auth. Mid Coast Side***
Hwy. 1 at 16th St. Montara CA 94019

CHMIRS

Control NO:	01-6954
Notified Date:	12/1/200107:36:02 PM
Year:	2001
Agency:	Sewer Auth. Mid Coast Side
County:	San Mateo County
California Hazardous Material Incident Report System	
--	--
Contained:	Yes
Water Involved:	Yes
Water Way:	Pacific Ocean
Incident Date:	12/1/200112:00:00 AM
Incident Time:	
Spill Site:	
Injuries?:	
Injuries Number:	0
Fatals?:	
Fatals Number:	0
Evacs?:	
Evacs Number:	0
Clean Up:	N\A
Admin Agency:	San Mateo County Environmental Health
Site:	Road
Cause:	
DOG Number:	
1 Substance:	
1 Quantity:	
1 Measure:	
1 Type:	
1 Other:	
1 Pipeline:	
1 Vessel 300 Tons:	
2 Substance:	
2 Quantity::	
2 Measure:	
2 Type:	
2 Other:	
2 Pipeline:	
2 Vessel 300 Tons:	
3 Substance:	
3 Quantity:	
3 Measure:	
3 Type:	
3 Other:	
3 Pipeline:	
3 Vessel 300 Tons:	
Barrels:	0
Cups:	0
Cubic Ft:	0
Gallons:	0

Grams: 0
Lbs: 0
Liters: 0
Ozs: 0
Pts: 0
Qts: 0
Sheen: 0
Tons: 0
Unknown: Unknown
Cause Other:
Notification Area:
Description:

Site: ***Sewer Authority Mid Coastside***
Hwy 1 at 16th Street Montara CA 94019

CHMIRS

Control NO: 04-6811
Notified Date: 12/27/200404:49:07 PM
Year: 2004
Agency: Sewer Authority Mid Coastside
County: San Mateo County

California Hazardous Material
Incident Report System
-- --
Contained: Yes
Water Involved:
Water Way: Pacific Ocean
Incident Date: 12/27/200412:00:00 AM
Incident Time:
Spill Site:
Injuries?:
Injuries Number: 0
Fatals?:
Fatals Number: 0
Evacs?:
Evacs Number: 0
Clean Up: none
Admin Agency: San Mateo County Environmental Health
Site: Other
Cause:
DOG Number:
1 Substance:
1 Quantity:
1 Measure:
1 Type:
1 Other:
1 Pipeline:
1 Vessel 300 Tons:
2 Substance:
2 Quantity::
2 Measure:
2 Type:
2 Other:
2 Pipeline:
2 Vessel 300 Tons:
3 Substance:
3 Quantity:
3 Measure:
3 Type:
3 Other:
3 Pipeline:

3 Vessel 300 Tons:
Barrels: 0
Cups: 0
Cubic Ft: 0
Gallons: 0.000000
Grams: 0
Lbs: 0
Liters: 0
Ozs: 0
Pts: 0
Qts: 0
Sheen: 0
Tons: 0
Unknown: 0
Cause Other:
Notification Area:
Description:

Site: ***Sewer Authority, Half Moon Bay***
Hwy 1 at 16th St. Montara CA 94019

CHMIRS

Control NO: 01-6974
Notified Date: 12/2/200104:11:40 PM
Year: 2001
Agency: Sewer Authority, Half Moon Bay
County: San Mateo County

California Hazardous Material Incident Report System
-- --
Contained: Yes
Water Involved: Yes
Water Way: Pacific Ocean
Incident Date: 12/2/200112:00:00 AM
Incident Time:
Spill Site:
Injuries?:
Injuries Number: 0
Fatals?:
Fatals Number: 0
Evacs?:
Evacs Number: 0
Clean Up: Unknown
Admin Agency: San Mateo County Environmental Health
Site: Treatment/Sewage Facility
Cause:
DOG Number:
1 Substance:
1 Quantity:
1 Measure:
1 Type:
1 Other:
1 Pipeline:
1 Vessel 300 Tons:
2 Substance:
2 Quantity::
2 Measure:
2 Type:
2 Other:
2 Pipeline:
2 Vessel 300 Tons:
3 Substance:

3 Quantity:
3 Measure:
3 Type:
3 Other:
3 Pipeline:
3 Vessel 300 Tons:
Barrels: 0
Cups: 0
Cubic Ft: 0
Gallons: 0
Grams: 0
Lbs: 0
Liters: 0
Ozs: 0
Pts: 0
Qts: 0
Sheen: 0
Tons: 0
Unknown: unk
Cause Other:
Notification Area:
Description:

Site: ***Sewer Authority Mid Coast Side***
16th Street at the Point Montara Light House Montara CA 94019

CHMIRS

Control NO: 00-2030
Notified Date: 5/7/200006:33:37 PM
Year: 2000
Agency: Sewer Authority Mid Coast Side
County: San Mateo County

California Hazardous Material Incident Report System
-- --
Contained: No
Water Involved: Yes
Water Way: Pacific Ocean
Incident Date: 5/7/200012:00:00 AM
Incident Time:
Spill Site:
Injuries?:
Injuries Number: 0
Fatals?:
Fatals Number: 0
Evacs?:
Evacs Number: 0
Clean Up: none
Admin Agency: San Mateo County Environmental Health
Site: Other
Cause:
DOG Number:
1 Substance:
1 Quantity:
1 Measure:
1 Type:
1 Other:
1 Pipeline:
1 Vessel 300 Tons:
2 Substance:
2 Quantity::
2 Measure:

2 Type:
2 Other:
2 Pipeline:
2 Vessel 300 Tons:
3 Substance:
3 Quantity:
3 Measure:
3 Type:
3 Other:
3 Pipeline:
3 Vessel 300 Tons:
Barrels: 0
Cups: 0
Cubic Ft: 0
Gallons: 30,000
Grams: 0
Lbs: 0
Liters: 0
Ozs: 0
Pts: 0
Qts: 0
Sheen: 0
Tons: 0
Unknown: 0
Cause Other:
Notification Area:
Description:

Site: ***MAIN STREET & ARNOLD WAY***
0 MAIN STREET & ARNOLD HALF MOON BAY CA 94019

CLEANUP SITES

Global ID: T0608113542
Case Type: Cleanup Program Site
Status: Completed - Case Closed
Status Date: 2013-02-08 00:00:00
RB Case Number:
LOC Case Number: 239039
CUF Case: NO
County: San Mateo
Latitude: 37.4567367707577
Longitude: -122.428507804871
Lead Agency: SAN MATEO COUNTY LOP
Case Worker: CLI
Local Agency: SAN MATEO COUNTY LOP
File Location: Archived
Potential Cntm of Concrn:
Potential Media Affected: Soil

SITE HISTORY:

Extracted from SVC Environmental's September 17, 2009 Work Plan to Assess Near-Surface Soils for Pesticide Residuals, San Mateo County does not take responsibility for the accuracy of the statements made or any professional interpretations made in the referenced report. In 1999 a Phase I/II Environmental Assessment was performed on the original 9.23-acre property (Parcels 28, 34, 35 and 36 on Figure 1) by BAGG Engineers. This site history narrative is derived from information presented in their corresponding report (BAGG, 1999), plus supplemental information acquired by SVC directly. Specifically, SVC reviewed a series of historic aerial photographs dating from 1943 to 2009, spoke with Bob Williamson (the property owner in the 1990s), visited the City Building Department, and spoke with the San Mateo Farm Bureau and the San Mateo County Agricultural Commission. The subject lot, along with adjoining land to the east, was farmed at least as early as the 1943 and extending up to the mid to late 1990s. Personal recollections indicate that only food crops, such as beans and peas, were grown here. According to the Farm Bureau trucked vegetables have historically been grown within Half Moon Bay and primarily brussel sprouts and artichokes. SVC found no indications of any prior structures having been present on the subject lot (with the exception of the public bus shelter along Main Street); all of the farm-related buildings and storage yards were located on parcels to the east. No site-specific chemical use records have been found to date, but Mr. Martin told BAGG

staff that he was not aware of DDT having ever been applied here. SVC has no reason to suspect that farming operations encompassing the subject lot deviated significantly from the past practices of the general area. In the before-mentioned Phase I/II Environmental Assessment Report (BAGG, 1999) the results of 10 soil tests for chlorinated pesticides were presented. Two of the sampling locations (E-1 and E-6) fall on the subject 1.4 +/- acre lot (see Figure 2). The EPA Test Method 8081A/8082 used encompasses 21 recognized Priority Pollutant pesticides, plus the chemically similar group of seven PCB compounds. Only DDT and one of its degradation products, DDE, were found, with the E-1 and E-6 concentrations being roughly an order of magnitude lower than the land to the east.

Status History

--	--
Status:	Completed - Case Closed
Status Date:	2013-02-08 00:00:00
--	--
Status:	Open - Case Begin Date
Status Date:	1999-04-28 00:00:00
--	--
Status:	Open - Remediation
Status Date:	2003-05-23 00:00:00
--	--
Status:	Open - Site Assessment
Status Date:	1999-04-28 00:00:00
--	--
Status:	Open - Site Assessment
Status Date:	2009-11-06 00:00:00
--	--
Status:	Open - Verification Monitoring
Status Date:	2003-11-14 00:00:00
--	--
Status:	Open - Verification Monitoring
Status Date:	2009-09-22 00:00:00
--	--

Activities

--	--
Action Type:	ENFORCEMENT
Date:	1999-08-12 00:00:00
Action:	* Historical Enforcement - #1
--	--
Action Type:	ENFORCEMENT
Date:	2005-03-02 00:00:00
Action:	Staff Letter - #20050302
--	--
Action Type:	ENFORCEMENT
Date:	2004-02-27 00:00:00
Action:	Staff Letter - #20040227
--	--
Action Type:	ENFORCEMENT
Date:	2005-03-23 00:00:00
Action:	* Historical Enforcement - #20050323
--	--
Action Type:	ENFORCEMENT
Date:	2003-10-02 00:00:00
Action:	Staff Letter - #20031002
--	--
Action Type:	ENFORCEMENT
Date:	2003-05-23 00:00:00
Action:	Staff Letter - #20030523
--	--
Action Type:	ENFORCEMENT
Date:	2009-09-22 00:00:00
Action:	Staff Letter - #20090922
--	--
Action Type:	ENFORCEMENT
Date:	2010-01-14 00:00:00

Action:	Staff Letter - #20100114
--	--
Action Type:	ENFORCEMENT
Date:	2011-08-30 00:00:00
Action:	Staff Letter - #20110830
--	--
Action Type:	ENFORCEMENT
Date:	2011-07-15 00:00:00
Action:	Staff Letter - #20110715
--	--
Action Type:	ENFORCEMENT
Date:	2011-05-24 00:00:00
Action:	Staff Letter - #20110524
--	--
Action Type:	ENFORCEMENT
Date:	2013-02-08 00:00:00
Action:	Closure/No Further Action Letter - #20130208
--	--
Action Type:	Other
Date:	1999-04-28 00:00:00
Action:	Leak Reported
--	--
Action Type:	RESPONSE
Date:	2009-11-09 00:00:00
Action:	Site Assessment Report
--	--
Action Type:	RESPONSE
Date:	2005-03-23 00:00:00
Action:	Unknown
--	--
Action Type:	RESPONSE
Date:	2003-11-14 00:00:00
Action:	Other Report / Document
--	--
Action Type:	RESPONSE
Date:	2004-03-26 00:00:00
Action:	Request for Closure
--	--
Action Type:	RESPONSE
Date:	2005-04-20 00:00:00
Action:	Request for Closure
--	--
Action Type:	RESPONSE
Date:	2003-10-10 00:00:00
Action:	Other Report / Document
--	--
Action Type:	RESPONSE
Date:	2011-06-20 00:00:00
Action:	Other Report / Document
--	--
Action Type:	RESPONSE
Date:	2011-10-10 00:00:00
Action:	Other Report / Document
--	--
Action Type:	REMEDIATION
Date:	2003-04-01 00:00:00
Action:	
--	--
Contact Information	
--	--
Contact Type:	Regional Board Caseworker
Contact Name:	Cheryl L. Prowell

Organization Name:	SAN FRANCISCO BAY RWQCB (REGION 2)
Address:	1515 Clay Street, Suite 1400
City:	Oakland
Email:	cprowell@waterboards.ca.gov
Phone Number:	5106222408
--	--
Contact Type:	Local Agency Caseworker
Contact Name:	CHARLES ICE
Organization Name:	SAN MATEO COUNTY LOP
Address:	2000 ALAMEDA DE LAS PULGAS
City:	SAN MATEO
Email:	cice@smcgov.org
Phone Number:	6503726295
--	--

Site: ***BROWNING-FERRIS IND (SAN MATEO LANDFILL)***
EAST 3RD AVENUE SAN MATEO CA 94401

ENVIROSTOR

Estor/EPA ID:	41490049
Site Code:	
Cleanup Status:	REFER: RWQCB AS OF 8/28/2002
Site Type:	EVALUATION
Potential Media Affected:	SOIL
Past Uses Caused Contam:	LANDFILL - DOMESTIC
APN:	NONE SPECIFIED
National Priorities List:	NO
Cleab up Oversight Agenci:	RWQCB 2 - SAN FRANCISCO BAY - LEAD
Special Program:	* SITE CHAR & ASSESS GRANT (CERCLA 104)
Funding:	
Acres:	31 ACRES
School District:	
Assembly District:	19
Senate District:	
Zip:	94401

POTENTIAL COMTAMI:

HOUSEHOLD WASTES

SITE HISTORY:

The 31-acre site has operated as a landfill since 1935. Browning Ferris Industries operated the landfill under contract with the City of San Mateo from 1960-1982. The site was also opened to th public in 1982. The site has been restricted to the disposal of municipal waste and to composting of plant material in June 1996 closed the landfill. Post closure activities are overseen by the San Francisco Regional Water Quality Control Board and the Intergrated Waste Management Board.

Facility Information

--	--
Program Type:	EVALUATION
Status:	REFER: RWQCB
Summary Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=41490049
--	--
Completed Activities	
--	--
Doc Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2.asp?global_id=41490049&doc_id=6011873
Area Name:	
Sub Area:	
Document Type:	Site Screening
Date Completed:	8/28/2002
Comments:	Site screening completed. Site referred to the RWQCB.
Activity Type:	Completed Activities

--	--
Doc Link:	
Area Name:	
Sub Area:	
Document Type:	Preliminary Assessment Report
Date Completed:	6/30/1985
Comments:	
Activity Type:	Completed Activities
--	--

Site: ***SEWER AUTHORITY MID-COASTSIDE***
16TH ST & CABRILLO HWY MONTARA CA 94037-0000

FINDS/FRS

Registry ID:	110037987550
FIPS Code:	06081
Program Acronyms:	
HUC Code:	18050006
Site Type Name:	STATIONARY
EPA Region Code:	09
Conveyor:	EIS
County Name:	SAN MATEO
Source:	
SIC Codes:	
SIC Code Descriptions:	
Federal Facility Code:	
NAICS Codes:	221320
NAICS Code Descriptions:	SEWAGE TREATMENT FACILITIES.
Federal Agency Name:	
US/Mexico Border Ind:	
Congressional Dist No:	12
Census Block Code:	060816136003000
Create Date:	13-FEB-2009 16:57:53
Update Date:	14-APR-2015 17:47:22
Location Description:	
Supplemental Location:	
Tribal Land Code:	
Tribal Land Name:	
Latitude:	37.5333
Longitude:	-122.5181
Coord Collection Method:	
Accuracy Value:	
Datum:	NAD83
Reference Point:	FACILITY CENTROID
Interest Types:	AIR EMISSIONS CLASSIFICATION UNKNOWN
Facility Detail Rprt URL:	http://iaspub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110037987550

Site: ***MONTARA HOSTEL - POINT MONTARA***
16TH ST & CABRILLO HWY MONTARA CA 94037

HHSS

County:	
Pdf File Url:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002be19.pdf

Site: ***UNION OIL SS 3869***
3869 EAST THIRD STREET SAN MATEO CA 94400

HHSS

County:	
Pdf File Url:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00020a50.pdf

Site: ***MONTARA PUMPING STATION***
CABRILLO HIGHWAY MONTARA CA 94037

HHSS

County:
Pdf File Url: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002c279.pdf

Site: ***USCG (MONTARA LIGHTHOUSE)***
0 COAST HIGHWAY MONTARA CA 94037

LUST

Global ID:	T0608100670
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	1996-02-26 00:00:00
RB Case Number:	41-0704
LOC Case Number:	010006
CUF Case:	NO
Potential Cntm of Concrn:	Diesel
Potential Media Affected:	Soil
County:	San Mateo
Latitude:	37.542068
Longitude:	-122.513626
Lead Agency:	SAN MATEO COUNTY LOP
Case Worker:	MM
Local Agency:	SAN MATEO COUNTY LOP
File Location:	Local Agency

Status History

--	--
Status:	Completed - Case Closed
Status Date:	1996-02-26 00:00:00
--	--
Status:	Open - Case Begin Date
Status Date:	1992-04-01 00:00:00
--	--

Activities

--	--
Action Type:	ENFORCEMENT
Date:	1992-04-01 00:00:00
Action:	Notice of Responsibility - #1
--	--
Action Type:	Other
Date:	1992-04-01 00:00:00
Action:	Leak Discovery
--	--
Action Type:	Other
Date:	1992-04-01 00:00:00
Action:	Leak Reported
--	--

Contact Information

--	--
Contact Type:	Regional Board Caseworker
Contact Name:	UUU
Organization Name:	SAN FRANCISCO BAY RWQCB (REGION 2)
Address:	1515 CLAY ST SUITE 1400
City:	OAKLAND
Email:	
Phone Number:	
--	--
Contact Type:	Local Agency Caseworker
Contact Name:	MARC MULLANEY

Organization Name:	SAN MATEO COUNTY LOP
Address:	2000 ALAMEDA DE LAS PULGAS
City:	SAN MATEO
Email:	mmullaney@smcgov.org
Phone Number:	6503726289
--	--

Site: ***MOOSEHEAD INC***
818 ETHELDORE MONTARA CA 94037

LUST

Global ID:	T0608101063
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	1998-10-30 00:00:00
RB Case Number:	41-1162
LOC Case Number:	010027
CUF Case:	NO
Potential Cntm of Concrn:	Gasoline
Potential Media Affected:	Soil
County:	San Mateo
Latitude:	37.5991
Longitude:	-122.400995
Lead Agency:	SAN MATEO COUNTY LOP
Case Worker:	MM
Local Agency:	SAN MATEO COUNTY LOP
File Location:	Local Agency

Status History

--	--
Status:	Completed - Case Closed
Status Date:	1998-10-30 00:00:00
--	--
Status:	Open - Case Begin Date
Status Date:	1998-07-10 00:00:00
--	--

Activities

--	--
Action Type:	ENFORCEMENT
Date:	1998-08-19 00:00:00
Action:	Notice of Responsibility - #1
--	--
Action Type:	Other
Date:	1998-07-10 00:00:00
Action:	Leak Reported
--	--

Contact Information

--	--
Contact Type:	Regional Board Caseworker
Contact Name:	UUU
Organization Name:	SAN FRANCISCO BAY RWQCB (REGION 2)
Address:	1515 CLAY ST SUITE 1400
City:	OAKLAND
Email:	
Phone Number:	
--	--
Contact Type:	Local Agency Caseworker
Contact Name:	MARC MULLANEY
Organization Name:	SAN MATEO COUNTY LOP
Address:	2000 ALAMEDA DE LAS PULGAS
City:	SAN MATEO
Email:	mmullaney@smcgov.org
Phone Number:	6503726289

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Site: ***PACIFIC BELL***
ETHELDORE STREET MOSS BEACH CA 94038

RCRA GEN

EPA Handler ID:	CAT080022999
Current Site Name:	PACIFIC BELL
Generator Status Universe:	Small Quantity Generator
Land Type:	
Activity Location:	CA
TSD Activity:	N
Mixed Waste Generator:	N
Importer Activity:	N
Transporter Activity:	N
Transfer Facility:	N
Recycler Activity:	N
Onsite Burner Exemption:	N
Furnace Exemption:	N
Underground Inject Activity:	N
Rece Waste From Off Site:	N
Used Oil Transporter:	
Used Oil Transfer Facility:	
Used Oil Processor:	
Used Oil Refiner:	
Used Oil Burner:	
Used Oil Market Burner:	
Used Oil Spec Marketer:	
Mailing Address:	2 NORTH SECOND ST ROOM 1125, , SAN JOSE, CA, 95113,
Contact Name:	
Contact Address:	
Contact Email:	
Location Street 2:	
--	--
Owner/Operator Information	
Owner/Operator Indicator:	CP
Owner/Operator Name:	NOT REQUIRED
Owner/Operator Address:	NOT REQUIRED NOT REQUIRED ME 99999
Owner/Operator Phone:	4155551212
Owner/Operator Type:	P
Date Became Current:	
Date Ended Current:	
--	--
Owner/Operator Indicator:	CO
Owner/Operator Name:	THE PACIFIC TELEPHONE AND TELEGRAPH CO
Owner/Operator Address:	NOT REQUIRED NOT REQUIRED ME 99999
Owner/Operator Phone:	4155551212
Owner/Operator Type:	P
Date Became Current:	
Date Ended Current:	
--	--
NAICS Information	
--	--
Handler Information	
--	--
Date Received:	19960901
Facility Name:	PACIFIC BELL
Classification:	Small Quantity Generator
--	--
Date Received:	19810119
Facility Name:	PACIFIC BELL

Classification: Large Quantity Generator
-- --
Hazardous Waste Information
-- --
Violation/Evaluation Information
-- --

Site: ***Verizon Wireless: Hwy 1 & Montara***
8888 Cabrillo MONTARA CA 94037 SANMATEO CUPA

Facility ID: FA0046224

--- Details ---
Record ID: PR0062545
Program Element Code: 2161
Program Element: STORES HAZ MAT <219GAL,1,999LB, 879CF

Site: ***Caltrans-Devil's Slide Tunnel (Maintenance & Operations)***
6000 Coast MONTARA CA 94037 SANMATEO CUPA

Facility ID: FA0053372

--- Details ---
Record ID: PR0073787
Program Element Code: 2161
Program Element: STORES HAZ MAT <219GAL,1,999LB, 879CF

Site: ***MOOSEHEAD INC***
818 ETHELDORE ST MONTARA CA SANMATEO LOP

Case ID: 010027
Assessors Parcel NO: 037141040
Global ID: T0608101063
Case Type: Soil only affected

--- Details ---
Status: 9- Case Closed

Site: ***USCG (MONTARA LIGHTHOUSE)***
0 COAST HWY MONTARA CA SANMATEO LOP

Case ID: 010006
Assessors Parcel NO:
Global ID: T0608100670
Case Type: Soil only affected

--- Details ---
Status: 9- Case Closed

Site: ***SAN MATEO COUNTY SCAVENGER-OX MOUNTAIN LANDFI***
TWO MI EAST HALF MOON BAY OFF HWY 92 HALF MOON BAY, CA 9409 CA SWAT

Rank: 3
SWIS Number: 41-AA-0002
Report Status Code: A
Report Status: FOUND TO PROVIDE "A RELIABLE INDICATION OF WHETHER OR NOT THERE IS HAZARDOUS WASTE LEAKAGE"
Transcribe Source: Solid Waste Assessment Test (SWAT) Program Report to the Legislature 1989-1990
Site Classification Code:

Site Classification:
Activity Status Code:
Activity Description:
Character of Site Code:
Character of Site:
Size of Site Code:
Size of Site:
Proposal Status:
Site Leak:
Site Leak Desc:
Type of Leak:
Enforce Action:
Enforce Action Desc:
Waste Management Unit:
Waste Discharger Sys NO: 2 417053001
Initial Notif Date:
Proposal Due Date:
Report Due Date: 07/01/89
Anticipated Rprt Submit Dt:
Report Received Date: 07/05/89
Report Target Review Date: 05/01/90
Report Resubmitted Due Date: 12/01/89
Report Resubmitted Rcvd Dt: 12/29/89
Report Approval Date: 05/10/90
Anticip Proposal Submit Dt:
Proposal Received Date:
Proposal Target Review Date:
Proposal Status Code:
Proposal Resubmitted Due Dt:
Proposal Resubmitted Received Due Date:
Proposal Accepted Date:
Exemption Questionnaire Approved Date:
Waiver Approved Date:
Type of Leak Code:
DHS & CWMB Notif Date:
Report Summ Sent Date:
Monitor Program Revise Date:
Revise WDR Target Date:
Hazardous Waste Surface:
Above Reg Level Surface:
Below Reg Level Surface:
Hazardous Waste Ground:
Above Reg Level Ground:
Below Reg Level Ground:
Hazardous Waste Vadose:
Above Reg Level Vadose:
Below Reg Level Vadose:
Surface:
Ground:
Vadose:
Operator Name: SAN MATEO COUNTY DISTRICTBROWNING-F
Agency Name:
County Number:
County Name: SAN MATEO
Regional Board Contact:
Region: SAN FRANCISCO BAY REGION 2
Remarks:

Site: ***3rd Ave LF/San Mateo Composting Site***

East Third Ave; Along The Sf Bay San Mateo CA

SWIS NO:	41-AA-0010	***Operator Phone:***	6505227300
Permit Status:	Expired	***Operator Addr 1:***	
Permit Date:	1/17/1983	***Operator Addr 2:***	330 West 20th Avenue
Landuse Name:		***Operator City:***	San Mateo
County:	San Mateo	***Operator State:***	CA
Latitude:	37.5708	***Operator Zip:***	94403-1388
Longitude:	-122.2766	***Operator:***	City Of San Mateo Public Works
GIS Source:	Map		

Owner

--	--
Owner:	City Of San Mateo Public Works
Phone:	6505227300
Address1:	
Address2:	330 West 20th Avenue
City:	San Mateo
State:	CA
Zip:	94403-1388
Unit	
--	--
Category:	Disposal
Unit No.:	01
Activity:	Solid Waste Landfill
Regulatory Status:	Permitted
Operational Status:	Closed
Inspection Frequency:	Quarterly
Accepted Waste:	Green Materials
Program Type:	Financial Assurance Responsibilities
Closure Date:	3/31/1989
Closure Type:	Actual
Thorough Put:	15
Thorough Put Units:	Tons/day
Capacity:	
Acreage:	$31.00
Disposal Acreage:	$0.00
Remaining Capacity:	
WDRNO:	III

Appendix: Database Descriptions

Ecolog Environmental Risk Information Services Ltd (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ERIS updates databases as set out in ASTM Standard E1527-13, Section 8.1.8 Sources of Standard Source Information:

"Government information from nongovernmental sources may be considered current if the source updates the information at least every 90 days, or, for information that is updated less frequently than quarterly by the government agency, within 90 days of the date the government agency makes the information available to the public."

Standard Environmental Record Sources

Federal

National Priority List: NPL

National Priorities List (Superfund)-NPL: EPA's (United States Environmental Protection Agency) list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. The NPL, which EPA is required to update at least once a year, is based primarily on the score a site receives from EPA's Hazard Ranking System. A site must be on the NPL to receive money from the Superfund Trust Fund for remedial action.

Government Publication Date: Oct 8, 2015

National Priority List - Proposed: PROPOSED NPL

Includes sites proposed (by the EPA, the state, or concerned citizens) for addition to the NPL due to contamination by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.

Government Publication Date: Oct 8, 2015

Deleted NPL: DELETED NPL

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Government Publication Date: Oct 8, 2015

Comprehensive Environmental Response, Compensation and Liability Information System - CERCLIS: CERCLIS

Superfund is a program administered by the United States Environmental Protection Agency (EPA) to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The EPA administers the Superfund program in cooperation with individual states and tribal governments; this database is made available by the EPA.

Government Publication Date: Oct 25, 2013

CERCLIS - No Further Remedial Action Planned: CERCLIS NFRAP

An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. The Archive designation means that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Government Publication Date: Oct 25, 2013

CERCLIS Liens: CERCLIS LIENS

A Federal Superfund lien exists at any property where EPA has incurred Superfund costs to address contamination ("Superfund site") and has provided notice of liability to the property owner. A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Jan 30, 2014

RCRA CORRACTS- Corrective Action: RCRA CORRACTS

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. At these sites, the Corrective Action Program ensures that cleanups occur. EPA and state regulators work with facilities and communities to design remedies based on the contamination, geology, and anticipated use unique to each site.

Government Publication Date: Mar 10, 2015

RCRA non-CORRACTS TSD Facilities: RCRA TSD

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. This database includes Non-Corrective Action sites listed as treatment, storage and/or disposal facilities of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Government Publication Date: Mar 10, 2015

RCRA Generator List: RCRA GEN

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10).

Government Publication Date: Mar 10, 2015

RCRA Non-Generators: RCRA NON GEN

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Non-Generators do not presently generate hazardous waste.

Government Publication Date: Mar 10, 2015

Federal Engineering Controls-ECs: FED ENG

Engineering controls (ECs) encompass a variety of engineered and constructed physical barriers (e.g., soil capping, sub-surface venting systems, mitigation barriers, fences) to contain and/or prevent exposure to contamination on a property. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Jul 30, 2014

Federal Institutional Controls- ICs: FED INST

Institutional controls are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Although it is EPA's (United States Environmental Protection Agency) expectation that treatment or engineering controls will be used to address principal threat wastes and that groundwater will be returned to its beneficial use whenever practicable, ICs play an important role in site remedies because they reduce exposure to contamination by limiting land or resource use and guide human behavior at a site.

Government Publication Date: Jul 30, 2014

Emergency Response Notification System: ERNS 1982 TO 1986

Database of oil and hazardous substances spill reports controlled by the The National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting all oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1982-1986

Emergency Response Notification System: ERNS 1987 TO 1989

Database of oil and hazardous substances spill reports controlled by the The National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting all oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1987-1989

Emergency Response Notification System: ERNS

Database of oil and hazardous substances spill reports controlled by the The National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting all oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Oct 7, 2015

The Assessment, Cleanup and Redevelopment Exchange System (ACRES) Brownfield Database: FED BROWNFIELDS

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Jul 20, 2015

State

State Response Sites: RESPONSE

A list of identified confirmed release sites where the Department of Toxic Substances Control (DTSC) is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk. This database is state equivalent NPL.

Government Publication Date: Aug 24, 2015

EnviroStor Database: ENVIROSTOR

The EnviroStor Data Management System is made available by the Department of Toxic Substances Control (DTSC). Includes Corrective Action sites, Tiered Permit sites, Historical Sites and Evaluation/Investigation sites. This database is state equivalent CERCLIS.

Government Publication Date: Aug 14, 2015

Solid Waste Information System (SWIS): SWF/LF

The Solid Waste Information System (SWIS) database made available by the Department of Resources Recycling and Recovery (CalRecycle) contains information on solid waste facilities, operations, and disposal sites throughout the State of California. The types of facilities found in this database include landfills, transfer stations, material recovery facilities, composting sites, transformation facilities, waste tire sites, and closed disposal sites.

Government Publication Date: Sep 02, 2015

EnviroStor Hazardous Waste Facilities: HWP

A list of hazardous waste facilities including permitted, post-closure and historical facilities found in the Department of Toxic Substances Control (DTSC) EnviroStor database.

Government Publication Date: Sep 8, 2015

Land Disposal Sites: LDS

Land Disposal Sites in GeoTracker, the State Water Resources Control Board (SWRCB)'s data management system. The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units. Waste management units include waste piles, surface impoundments, and landfills.

Government Publication Date: Jul 16, 2015

Leaking Underground Fuel Tank Reports: LUST

List of Leaking Underground Storage Tanks within the Cleanup Sites data in GeoTracker database. GeoTracker is the State Water Resources Control Board's (SWRCB) data management system for managing sites that impact groundwater, especially those that require groundwater cleanup (Underground Storage Tanks, Department of Defense and Site Cleanup Program) as well as permitted facilities such as operating Underground Storage Tanks. The Leak Prevention Program that overlooks LUST sites is the SWRCB in California's Environmental Protection Agency.

Government Publication Date: Aug 31, 2015

Delisted Leaking Storage Tanks: DLST

This database contains a list of leaking storage tank sites that were removed from the GeoTracker is the State Water Resources Control Board's (SWRCB) data management system.

Government Publication Date: Aug 31,2015

Permitted Underground Storage Tank (UST) in GeoTracker: UST

List of Permitted Underground Storage Tank (UST) sites made available by the State Water Resources Control Board (SWRCB) in California's Environmental Protection Agency (EPA).

Government Publication Date: Sep 8, 2015

Aboveground Storage Tanks: AST

A statewide list from 2009 of aboveground storage tanks (ASTs) made available by the Cal FIRE Office of the State Fire Marshal (OSFM). This list is no longer maintained or updated by the Cal FIRE OSFM.

Government Publication Date: Aug 31, 2009

Historical Hazardous Substance Storage Information Database: HHSS

The Historical Hazardous Substance Storage database contains information collected in the 1980s from facilities that stored hazardous substances. The information was originally collected on paper forms, was later transferred to microfiche, and recently indexed as a searchable database. When using this database, please be aware that it is based upon self-reported information submitted by facilities which has not been independently verified. It is unlikely that every facility responded to the survey and the database should not be expected to be a complete inventory of all facilities that were operating at that time. This database is maintained by the California State Water Resources Control Board's (SWRCB) Geotracker.

Government Publication Date: Aug 27, 2015

Site Mitigation and Brownfields Reuse Program Facility Sites with Land Use Restrictions: LUR

The Department of Toxic Substances Control (DTSC) Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents land use restrictions that are active. Some sites have multiple land use restrictions.

Government Publication Date: Aug 6, 2014

Hazardous Waste Management Program Facility Sites with Deed / Land Use Restrictions: HLUR

The Department of Toxic Substances Control (DTSC) Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Government Publication Date: Jul 16, 2015

Deed Restrictions and Land Use Restrictions: DEED

List of Deed Restrictions, Land Use Restrictions and Covenants in GeoTracker made available by the State Water Resources Control Board (SWRCB) in California's Environmental Protection Agency. A deed restriction (land use covenant) may be required to facilitate the remediation of past environmental contamination and to protect human health and the environment by reducing the risk of exposure to residual hazardous materials.

Government Publication Date: Jul 20, 2015

Voluntary Cleanup Program: VCP

List of sites in the Voluntary Cleanup Program made available by the Department of Toxic Substances and Control (DTSC). The Voluntary Cleanup Program was designed to respond to lower priority sites. Under the Voluntary Cleanup Program, DTSC enters site-specific agreements with project proponents for DTSC oversight of site assessment, investigation, and/or removal or remediation activities, and the project proponents agree to pay DTSC's reasonable costs for those services.

Government Publication Date: Aug 24, 2015

GeoTracker Cleanup Sites Data: CLEANUP SITES

A list of cleanup sites in the state of California made available by The State Water Resources Control Board (SWRCB) of the California Environmental Protection Agency (EPA). SWRCB tracks leaking underground storage tank cleanups as well as other water board cleanups.

Government Publication Date: Aug 31, 2015

Tribal

Leaking Underground Storage Tanks (LUSTs) on Indian Lands: INDIAN LUST

LUSTs on Tribal/Indian Lands in Region 9, which includes California.

Government Publication Date: Aug 28, 2014

Underground Storage Tanks (USTs) on Indian Lands: INDIAN UST

USTs on Tribal/Indian Lands in Region 9, which includes California.

Government Publication Date: Aug 28, 2014

County

Alameda County LOP Sites List: ALAMEDA LOP

A list of Leaking Underground Storage Tanks (LUST) facilities in Alameda County. This list is made available by Alameda County Department of Environmental Health (ACEH). ACEH implements a Local Oversight Program (LOP) under contract with the State Water Resources Control Board to provide regulatory oversight of the investigation and cleanup of soil and groundwater contamination from leaking petroleum USTs.

Government Publication Date: Aug 12, 2014

Alameda County UST List: ALAMEDA UST

A list of all registered Underground Storage Tanks (USTs) in the County of Alameda. The list is made available by Alameda County Department of Environmental Health.

Government Publication Date: Aug 12, 2014

Amador County CUPA List: AMADOR CUPA

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Amador County. This list is made available by Amador County Environmental Health Department which is the CUPA for Amador County and administers a consolidated hazardous materials program.

Government Publication Date: Mar 9, 2015

Butte County CUPA List: BUTTE CUPA

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Butte County. This list is made available by Butte County Public Health Department, Environmental Health Division which was certified by the California Environmental Protection Agency as the CUPA for Butte County.

Government Publication Date: May 28, 2015

Calaveras County CUPA Facilities List: CALAVERAS CUPA

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the County of Calaveras. This list is made available by Calaveras County Environmental Health Department which has been certified by CalEPA to implement the Unified program as a CUPA.

Government Publication Date: Jun 19, 2015

Calaveras County Landfills List: CALAVERAS LF

A list of landfills in Calaveras County. This list is made available by Calaveras County Environmental Health Department which has been designated as the CUPA for the County.

Government Publication Date: Jul 21, 2014

Calaveras County UST Remediation Sites: CALAVERAS LUST

A list of Leaking Underground Storage Tank (LUST) facilities in Calaveras County. This list is made available by Calaveras County Environmental Health Department. Local Implementing Agency (LIA) provides oversight of site remediation with soil contamination while CalEPA - California Regional Water Quality Control Board - Central Valley Region oversees remediation of sites with groundwater contamination.

Government Publication Date: Aug 13, 2014

Colusa County CUPA List: COLUSA CUPA

A list of facilities associated with Business Plan and Hazardous Generator programs in the County of Colusa. This list is made available by Colusa County Environmental Health which was certified by the California Environmental Protection Agency as Certified Unified Program Agency for Colusa County.

Government Publication Date: Sep 12, 2014

Contra Costa County CUPA List: CONTRACO CUPA

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the County of Contra Costa. This list is made available by Contra Costa County which has been certified by CalEPA to implement the Unified program as a CUPA.

Government Publication Date: Jun 15, 2015

Del Norte County CUPA Facility List: DELNORTE CUPA

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Del Norte County. This list is made available by Del Norte County Environmental Health Division which is the designated CUPA for the county.

Government Publication Date: May 19, 2015

El Dorado County CUPA Facility List: ELDORADO CUPA

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in El Dorado County. This list is made available by El Dorado County Department of Environmental Management - Hazardous Waste Division which is approved by CalEPA as CUPA for El Dorado County.

Government Publication Date: Aug 20, 2014

Fresno County CUPA/Solid Waste Programs Resource List: FRESNO CUPA

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Fresno County. This list is made available by Fresno County Department of Environmental Health Division which is approved by Cal-EPA as CUPA for the County.

Government Publication Date: Apr 30, 2015

Humboldt County CUPA Facility List: HUMBOLDT CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Humboldt County. This list is made available by Humboldt County Division of Environmental Health which is approved by the State Secretary for Environmental Protection as CUPA for the County.
Government Publication Date: May 28, 2015

Imperial County CUPA Facility List: IMPERIAL CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Imperial County. This list is made available by the California Department of Toxic Substances Control (DTSC) which is appointed as CUPA for Imperial County.
Government Publication Date: May 19, 2015

Inyo County CUPA Facility List: INYO CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the County of Inyo. This list is made available by the Inyo County Environmental Health Services Department which has been certified by CalEPA to implement the Unified program as a CUPA.
Government Publication Date: Jul 16, 2014

Kern County CUPA List: KERN CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the County of Kern. This list is made available by Kern County Environmental Health Services Department which has been certified by CalEPA to implement the Unified program as a CUPA for Kern County.
Government Publication Date: May 19, 2015

Kern County UST List: KERN UST
A list of all registered and inactive Underground Storage Tanks in the County of Kern. The list is made available by Kern County Environmental Health Division.
Government Publication Date: May 19, 2015

Kings County CUPA Facility List: KINGS CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Kings County. This list is made available by Kings County Department of Public Health which is appointed as CUPA for the county.
Government Publication Date: May 26, 2015

Lake County CUPA Facility List: LAKE CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Lake County. This list is made available by Lake County Division of Environmental Health which is CUPA for the entire county.
Government Publication Date: Jun 9, 2015

Los Angeles County - El Segundo City Underground Storage Tanks List: ELSEGUNDO UST
A list of all registered Underground Storage Tanks (USTs) in the City of El Segundo of Los Angeles County. The list is made available by El Segundo City Fire Department.
Government Publication Date: Jul 24, 2014

Los Angeles County - Torrance City Underground Storage Tanks: TORRANCE UST
A list of registered Underground Storage Tank (UST) sites in Torrance City of Los Angeles County. This list is made available by Torrance City Office of Clerk.
Government Publication Date: May 07, 2015

Los Angeles County HMS List: LA HMS
This list contains sites that have or had permits for Industrial Waste, Underground Storage Tanks, or Strom water in the County of Los Angeles. This list is made available by the County of Los Angeles Department of Public Works.
Government Publication Date: Jun 22, 2015

Los Angeles County Long Beach UST List: LA LONGB UST
A list of all registered active Underground Storage Tanks in the City of Long Beach of Los Angeles County. The list is made available by Long Beach Certified Unified Program Agency.
Government Publication Date: Jun 18, 2015

Los Angeles County Solid Waste Sites: LA SWF
List of permitted solid waste facilities, closed landfills, historical dumpsites and other solid waste sites in Los Angeles County, made available by the Department of Public Works in Los Angeles County.
Government Publication Date: May 19, 2014

Madera County CUPA Facility List: MADERA CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Madera County. This list is made available by Madera County Environmental Health Department which is CUPA for the entire county.
Government Publication Date: Sep 16, 2015

Marin County CUPA List: MARIN CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the County of Marin. This list is made available by Marin County which has been certified by CalEPA to implement the Unified program as a CUPA.
Government Publication Date: May 26, 2015

Merced County CUPA Facilities List: MERCED CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the County of Merced. This list is made available by Merced County which has been certified by CalEPA to implement the Unified program as a CUPA for the entire county.
Government Publication Date: May 19, 2015

Mono County CUPA Facility List: MONO CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Mono County. This list is made available by Mono County Environmental Health Department which has been certified by CalEPA to implement the Unified program as a CUPA for the entire county.
Government Publication Date: Jul 15, 2014

Monterey County CUPA Facility List: MONTEREY CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Monterey County. This list is made available by Monterey County Hazardous Materials Management Services which is designated as the CUPA in Monterey County.
Government Publication Date: Jun 17, 2015

Napa County UST List: NAPA UST
A list of all registered active Underground Storage Tanks (USTs) in the County of Napa. This list is made available by Napa County Environmental Health Division.
Government Publication Date: Sep 10, 2015

Nevada County CUPA Facility List: NEVADA CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Nevada County. This list is made available by Nevada County Department of Environmental Health which is the CUPA for all cities and unincorporated areas within Nevada County.
Government Publication Date: Jul 17, 2014

Orange County Aboveground Petroleum Storage Tank Listing: ORANGE AST
A list of Aboveground Petroleum Storage Tank (APST) facilities inspected by Orange County Certified Unified Program Agency (CUPA) Under the Aboveground Petroleum Storage Act (APSA). This list is made available by the Environmental Health Division of Orange County Health Care Agency.
Government Publication Date: May 1, 2015

Orange County Underground Storage Tanks Listing: ORANGE UST
A list of registered Underground Storage Tank (UST) sites in Orange County. This list is made available by Orange County Health Care Agency (OCHCA), Environmental Health Division which oversees the underground storage tank inspection program in most of the cities of Orange County, with the exception of Anaheim, Fullerton, and Orange.
Government Publication Date: May 1, 2015

Placer County CUPA Facilities List: PLACER CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Placer County. This list is made available by Placer County Environmental Health which is designated CUPA for all areas of the county except for the City of Roseville.
Government Publication Date: Aug 13, 2015

Riverside County Local Oversight Program List: RIVERSIDE LOP
A list of Leaking Underground Storage Tank (LUST) facilities in Riverside County. This list is made available by Riverside County Department of Environmental Health. Environmental Cleanup Program provides oversight of assessments and cleanups at properties that have been, or may have been, contaminated with hazardous substances from LUSTs or releases associated with other commercial/industrial use.
Government Publication Date: Jun 10, 2015

Riverside County Underground Storage Tanks List: RIVERSIDE UST
A list of registered Underground Storage Tank (UST) sites in Riverside County. This list is made available by Riverside County Department of Environmental Health. The Hazardous Materials Management Branch (HMMB) regulates and oversees the inspections of constructions, repairs, upgrades, system operation and removal of UST systems.
Government Publication Date: Jun 10, 2015

Sacramento County Master Hazardous Materials Facility List: SACRAMENTO HAZ
A list of Hazardous Materials Facilities in Sacramento County. This list is made available by Sacramento County Environmental Management Department which has been designated as the Certified Unified Program Agency (CUPA) for the County.
Government Publication Date: Feb 2, 2015

Sacramento Toxic Site Cleanup List: SACRAMENTO TOX
Sacramento County Environmental Management Department (EMD)'s Toxic Site Cleanup List includes sites where unauthorized releases of potentially hazardous materials have occurred. The EMD's Site Assessment & Mitigation Program, also referred to as Toxic Site Cleanup Program, provides mandated regulatory oversight of the assessment and remediation of properties on which there has been a release of hazardous materials to soil and/or groundwater.
Government Publication Date: Feb 2, 2015

San Bernardino County CUPA List: SANBERN CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in San Bernardino County. This list is made available by San Bernardino County Fire Department which is the CUPA for all areas of the County except the city of Victorville.
Government Publication Date: Jun 30, 2015

San Diego County Hazardous Materials Management Division Database: SANDIEGO HAZ
A list of facilities with Unified Program Facility Permit in San Diego County. This list has been made available by County of San Diego Environmental Health.
Government Publication Date: May 25, 2015

San Diego County Site Assessment and Mitigation Investigation Sites: SANDIEGO SAM
List of sites which have undergone a Site Assessment and Mitigation investigation. This list is made available by the County of San Diego Department of Environmental Health.
Government Publication Date: Jul 25, 2015

San Diego County Solid Waste Facility List: SANDIEGO SWF
A list of open and closed Solid Waste Facilities in the County of San Diego. The list is made available by San Diego County Department of Environmental Health.
Government Publication Date: Feb 18, 2015

San Francisco County Aboveground Storage Tanks List: SANFRAN AST
A list of Aboveground Storage Tanks (ASTs) facilities inspected by San Francisco Department of Public Health's (SFDPH) Hazardous Materials and Waste Program. Aboveground storage containers or tanks include oil-filled equipment (such as hydraulic systems/reservoirs and heat transfer systems) which have a petroleum storage capacity of 55 gallons or greater.
Government Publication Date: Sep 11, 2015

San Francisco County CUPA Facilities List: SANFRAN CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in San Francisco County. This list is made available by San Francisco County Hazardous Materials and Waste Program which is the CUPA for all areas of the County.
Government Publication Date: Sep 11, 2015

San Francisco County LOP Sites: SANFRAN LOP
A list of Underground Storage Tank (UST) release sites in the County of San Francisco. This list is made available by San Francisco County Department of Public Health Environmental Health Protection Branch.
Government Publication Date: Aug 12, 2014

San Francisco County UST List: SANFRAN UST
A list of all registered Underground Storage Tanks (USTs) in the County of San Francisco. This ist is made available by San Francisco County Environmental Health Division. The Hazardous Materials and Waste Program provides regulatory oversight for the construction, operation, repair and removal of USTs in San Francisco.
Government Publication Date: Sep 11, 2015

San Joaquin County Aboveground Tank List: SANJOAQUIN AST
A list of Aboveground Storage Tanks (ASTs) inspected by San Joaquin County Environmental Health Department (SJCEHD) under Aboveground Petroleum Storage Act (APSA).
Government Publication Date: Jun 5, 2015

San Joaquin County UST List: SANJOAQUIN UST
A list of all registered Underground Storage Tanks in the County of San Joaquin. The list is made available by San Joaquin County Environmental Health Division.
Government Publication Date: Jun 05, 2015

San Joaquin Hazardous Waste Facilities: SANJOAQUIN HW
A list of Hazardous Waste Facilities in San Joaquin County. This list is made available by San Joaquin County Environmental Health Department which has been designated as the CUPA for the County.
Government Publication Date: Jun 5, 2015

San Mateo County CUPA Facilities List: SANMATEO CUPA
A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in San Mateo County. This list is made available by San Mateo County Environmental Health Department which has been designated as the CUPA for the County.
Government Publication Date: May 28, 2015

San Mateo County LOP List: SANMATEO LOP
A list of Leaking Underground Storage Tank (LUST) facilities in San Mateo County. This list is made available by San Mateo County Environmental Health Services Division.
Government Publication Date: May 27, 2015

Santa Clara County CUPA Facilities List: SANTACLARA CUPA

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Santa Clara County. This list is made available by Santa Clara County Department of Environmental health (DEH). DEH's Hazardous Materials Compliance Division (HMCD) is CUPA for the county with jurisdiction within the Cities of Los Altos Hills, Monte Sereno, and Saratoga; and in all unincorporated areas of Santa Clara County, including Moffett Field, San Martin, and Stanford.

Government Publication Date: May 26, 2015

Santa Clara Local Oversight Program Listing: SANTACLARA LO

A list of Leaking Underground Storage Tanks (LUST) facilities in Santa Clara County Provided by Santa Clara Department of Environmental Health (DEH). Since July 1, 2004 the DEH has served as the oversight agency for investigations and clean-up of petroleum releases from underground storage tanks through implementation of the Local Oversight Program (LOP) contract with the State Water Resources Control Board.

Government Publication Date: Jul 22, 2014

Santa Cruz County CUPA Facility List: SANTACRUZ CUPA

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Santa Cruz County. This list is made available by Santa Cruz County Environmental Health Services (EHS) Division which has been designated as the CUPA for the County.

Government Publication Date: May 27, 2015

San Luis Obispo County CUPA Facilities List: SANLUISOB CUPA

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in San Luis Obispo County. This list is made available by County of San Luis Obispo Environmental Health Services Division which has been designated as the CUPA for the County.

Government Publication Date: May 27, 2015

Shasta County CUPA Facility List: SHASTA CUPA

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Shasta County. This list is made available by Shasta County Environmental Health Division which has been designated as the CUPA for Shasta County by CalEPA.

Government Publication Date: Jun 12, 2015

Solano County CUPA List: SOLANO CUPA

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the County of Solano. This list is made available by Solano County Environmental Health Division which has been certified by CalEPA to implement the Unified program as a CUPA.

Government Publication Date: Aug 5, 2014

Solano County Local Oversight Program List: SOLANO LOP

A list of Leaking Underground Storage Tank (LUST) facilities in the Solano County. This list is made available by the Solano County Environmental Health Services. Since April 1993, the State Water Resources Control Board has contracted with the County of Solano to provide regulatory oversight for the cleanup of LUSTs under Local Oversight Program (LOP) contract.

Government Publication Date: Jun 19, 2014

Solano County Underground Storage Tanks List: SOLANO UST

A list of all registered Underground Storage Tanks (USTs) in the County of Solano. The list is made available by Solano County Environmental Health Services Division. There are an estimated 190 facilities throughout the county that are subject to the regulatory requirements of the UST program.

Government Publication Date: Aug 5, 2014

Sonoma County CUPA Facilities List: SONOMA CUPA

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Sonoma County. This list is made available by Sonoma County Hazardous Materials (HazMat) Division which has been designated as the CUPA for the County.

Government Publication Date: May 28, 2015

Sonoma County LOP Site List: SONOMA LOP

A list of Leaking Underground Storage Tank (LUST) facilities in Sonoma County. This list is made available by Sonoma County Department of Health Services. Sonoma County Local Oversight Program (LOP) oversees the investigation and cleanup of fuel releases from underground storage tanks in all areas of the County with the exception of the Cities of Santa Rosa and Healdsburg.

Government Publication Date: Apr 1, 2015

Sonoma County Petaluma City CUPA Facilities: SONOMA PETAL

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Petaluma City. This list is made available by Petaluma Fire Prevention Bureau which is the CUPA for Petaluma City in Sonoma County.

Government Publication Date: May 21, 2015

Sutter County CUPA List: SUTTER CUPA

A list of facilities associated with Aboveground Petroleum Storage Tank (APSA) regulation, Hazardous Materials Business Plan (HMBP) Program and Underground Storage Tank (UST) regulation of Certified Unified Program Agency (CUPA) programs in Sutter County. This list is made available by Sutter County Enviornmental Health Division which has been designated as the CUPA for the County.

Government Publication Date: May 06, 2015

Tuolumne County CUPA Facility List: TUOLUMNE CUPA

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Tuolumne County. This list is made available by Tuolumne County Environmental Health which is the CUPA for all areas of the County.

Government Publication Date: June 3, 2015

Ventura County CUPA Facilities List: VENTURA CUPA

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Ventura County. This list is made available by Ventura County Environmental health Division.

Government Publication Date: Apr 27, 2015

Ventura County City of Oxnard CUPA Facility List: OXNARD CUPA

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Oxnard City. This list is made available by Oxnard City Fire Department which is the CUPA for Oxnard City in Ventura County.

Government Publication Date: Jul 24, 2014

Ventura County Inactive Underground Storage Tanks Sites: VENTURA INUST

A list of inactive Underground Storage Tank (UST) sites in Ventura County. This list is made available by Ventura County Environmental Health Division.

Government Publication Date: Apr 27, 2015

Ventura County Leaking Underground Fuel Tanks - Historic: VENTURA HLUFT

A historical list of cleanup oversight of the Leaking Underground Fuel Tank (LUFT) program provided by Ventura County Environmental Health Division. All new and existing underground fuel storage tank releases are now referred to the Los Angeles Regional Water Quality Control Board.

Government Publication Date: May 31, 2008

Yolo County UST List: YOLO UST

A list of registered Underground Storage Tank (UST) sites in Yolo County. This list is made available by Yolo County Environmental Health Department which regulates the construction, operation, repair and removal of USTs throughout Yolo County.

Government Publication Date: May 25, 2015

Yuba County CUPA Facilities List: YUBA CUPA

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Yuba County. This list is made available by Yuba County Environmental Health Division which is the CUPA for all areas of the County.

Government Publication Date: May 27, 2015

City of Bakersfield CUPA List: BKRSFIELD CUPA

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the City of Bakersfield. This list is made available by the City of Bakersfield Fire Department.

Government Publication Date: Jun 19, 2015

Gilroy City CUPA Facilities List: SANTACLARA GIL

The Gilroy City Fire Marshal's office maintains a list of CUPA Facilities located in Gilroy City.

Government Publication Date: Jul 17, 2015

Glenn County CUPA List: GLENN CUPA

The Glenn County Air Pollution Control District is the Administering Agency and the Certified Unified Program Agency (CUPA) for Glenn County with responsibility for regulating hazardous materials handlers, hazardous waste generators, underground storage tank facilities, above ground storage tanks, and stationary sources handling regulated substances.

Government Publication Date: Sep 21,2015

Lassen County CUPA List: LASSEN CUPA

The Environmental Health Program of Lassen County tracks Certified Unified Program Agencies (CUPA) facilities.

Government Publication Date: Sep 18,2015

Stanislaus County CUPA List: STANISLAUS CUPA

The Environmental Resources Department of Stanislaus County maintains a list of Certified Unified Program Agency (CUPA) facilities.

Government Publication Date: Sep 21,2015

Trinity County CUPA List: TRINITY CUPA

On January 1, 2005, the Department of Toxic Substances Control (DTSC) was authorized by the California Environmental Protection Agency (Cal/EPA) as the Trinity County Certified Unified Program Agency (CUPA). This CUPA list was made available by the DTSC.

Government Publication Date: Sep 22,2015

Additional Environmental Record Sources

Federal

Facility Registry Service/Facility Index: FINDS/FRS

The US Environmental Protection Agency (EPA)'s Facility Registry System (FRS) is a centrally managed database that identifies facilities, sites or places subject to environmental regulations or of environmental interest. FRS creates high-quality, accurate, and authoritative facility identification records through rigorous verification and management procedures that incorporate information from program national systems, state master facility records, data collected from EPA's Central Data Exchange registrations and data management personnel.

Government Publication Date: Sep 24, 2015

Toxics Release Inventory (TRI) Program: TRIS

The EPA's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of over 650 toxic chemicals from thousands of U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment. One of TRI's primary purposes is to inform communities about toxic chemical releases to the environment.

Government Publication Date: 1987-2013

Hazardous Materials Information Reporting System: HMIRS

US DOT - Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) Incidents Reports Database taken from Hazmat Intelligence Portal, U.S. Department of Transportation.

Government Publication Date: Feb 24, 2015

National Clandestine Drug Labs: NCDL

The U.S. Department of Justice ("the Department") provides this data as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy.

Government Publication Date: Sep 5, 2015

Inventory of Open Dumps, June 1985: ODI

The Resource Conservation and Recovery Act (RCRA of the Act) provides for publication of an inventory of open dumps. The Act defines "open dumps" as facilities which do not comply with EPA's "Criteria for Classification of Solid Waste Disposal Facilities and Practices" (40 CFR 257).

Government Publication Date: Jun 1985

EPA Report on the Status of Open Dumps on Indian Lands: IODI

Public Law 103-399, The Indian Lands Open Dump Cleanup Act of 1994, enacted October 22, 1994, identified ongressional concerns that solid waste open dump sites located on American Indian or Alaska Native (AI/AN) lands threaten the health and safety of residents of those lands and contiguous areas. The purpose of the Act is to identify the location of open dumps on Indian lands, assess the relative health and environment hazards posed by those sites, and provide financial and technical assistance to Indian tribal governments to close such dumps in compliance with Federal standards and regulations or standards promulgated by Indian Tribal governments or Alaska Native entities.

Government Publication Date: Dec 31, 1998

Toxic Substances Control Act: TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.
The CDR enables EPA to collect and publish information on the manufacturing, processing, and use of commercial chemical substances and mixtures (referred to hereafter as chemical substances) on the TSCA Chemical Substance Inventory (TSCA Inventory). This includes current information on chemical substance production volumes, manufacturing sites, and how the chemical substances are used. This information helps the Agency determine whether people or the environment are potentially exposed to reported chemical substances. EPA publishes submitted CDR data that is not Confidential Business Information (CBI).

Government Publication Date: Jun 30, 2014

Hist TSCA: HIST TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.
The 2006 IUR data summary report includes information about chemicals manufactured or imported in quantities of 25,000 pounds or more at a single site during calendar year 2005. In addition to the basic manufacturing information collected in previous reporting cycles, the 2006 cycle is the first time EPA collected information to characterize exposure during manufacturing, processing and use of organic chemicals. The 2006 cycle also is the first time manufacturers of inorganic chemicals were required to report basic manufacturing information.

Government Publication Date: 2006

State

EnviroStor Inspection, Compliance, and Enforcement: INSP COMP ENF

A list of permitted facilities with inspections and enforcements tracked in the Department of Toxic Substance Control (DTSC) EnviroStor.

Government Publication Date: Aug 24, 2015

Clandestine Drug Lab Sites: CDL

The Department of Toxic Substances Control (DTSC) maintains a listing of drug lab sites. DTSC is responsible for removal and disposal of hazardous substances discovered by law enforcement officials while investigating illegal/clandestine drug laboratories.

Government Publication Date: Feb 27, 2015

School Property Evaluation Program Sites: SCH

A list of sites registered with The Department of Toxic Substances Control (DTSC) School Property Evaluation and Cleanup (SPEC) Division. SPEC is responsible for assessing, investigating and cleaning up proposed school sites. The Division ensures that selected properties are free of contamination or, if the properties were previously contaminated, that they have been cleaned up to a level that protects the students and staff who will occupy the new school.

Government Publication Date: Sep 10, 2015

California Hazardous Material Incident Report System (CHMIRS): CHMIRS

A list of reported hazardous material incidents, spills, and releases from the California Hazardous Material Incident Report System (CHMIRS). This list has been made available by the California Office of Emergency Services (OES).

Government Publication Date: Sept 18, 2015

Sites Listed in the Solid Waste Assessment Test (SWAT) Program Report: SWAT

In a 1993 Memorandum of Understanding, the State Water Resources Control Board (SWRCB) agreed to submit a comprehensive report on the Solid Waste Assessment Test (SWAT) Program to the California Integrated Waste Management Board (CIWMB). This report summarizes the work completed to date on the SWAT Program, and addresses both the impacts that leakage from solid waste disposal sites (SWDS) may have upon waters of the State and the actions taken to address such leakage.

Government Publication Date: Dec 31, 1995

Tribal

No Tribal additional environmental record sources available for this State.

County

Los Angeles County Site Mitigation List: LA SML

A Site Mitigation List in the County of Los Angeles. The list is made available by Los Angeles County Fire Department. Site mitigation is handled by the Site Mitigation Unit (SMU) which facilitates completion of site clean-up projects of contaminated sites in an expeditious manner in all cities of the Los Angeles County except El Segundo, Glendale, Long Beach, Santa Fe Springs, and Vernon.

Government Publication Date: Jun 23, 2015

Riverside County Disclosure Facility List: RIVERSIDE HZH

A list of facilities disclosed to Riverside County Department of Environmental Health (DEH). This list is made available by Riverside County DEH which has been designated as the CUPA for the County. A business is required to establish and submit a Business Plan if the facility handles hazardous material equal to or greater than 55 gallons, 500 pounds or 200 cubic feet at any time during the year.

Government Publication Date: Jun 10, 2015

Riverside County Hazardous Waste Generator Sites List: RIVERSIDE HWG

A list of Hazardous Waste Generator Sites in the County of Riverside. This list is made available by Riverside County Department of Environmental Health which has been designated as the CUPA for the County.

Government Publication Date: Jun 10, 2015

San Joaquin County Hazardous Materials Facilities List: SANJOAQUIN HM

A list of Hazardous Materials Facilities in San Joaquin County. This list is made available by San Joaquin County Environmental Health Department which has been designated as the CUPA for the County.

Government Publication Date: Jun 05, 2015

Ventura County Inactive Hazardous Waste Sites: HW INACTIVE

A list of Inactive Hazardous Waste Sites in Ventura County collected by Ventura County's Environmental Health Division.

Government Publication Date: Jun 26, 2015

Delisted County Records: DELISTED COUNTY

Records removed from county or CUPA databases. Records may be removed from the county lists made available by the respective county departments because they are inactive, or because they have been deemed to be below reportable thresholds.

Government Publication Date: June, 2015

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries". All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and were included as reference.

APPENDIX C

HISTORICAL SOURCES

County Review Draft



Legend

Approximate Property Boundary

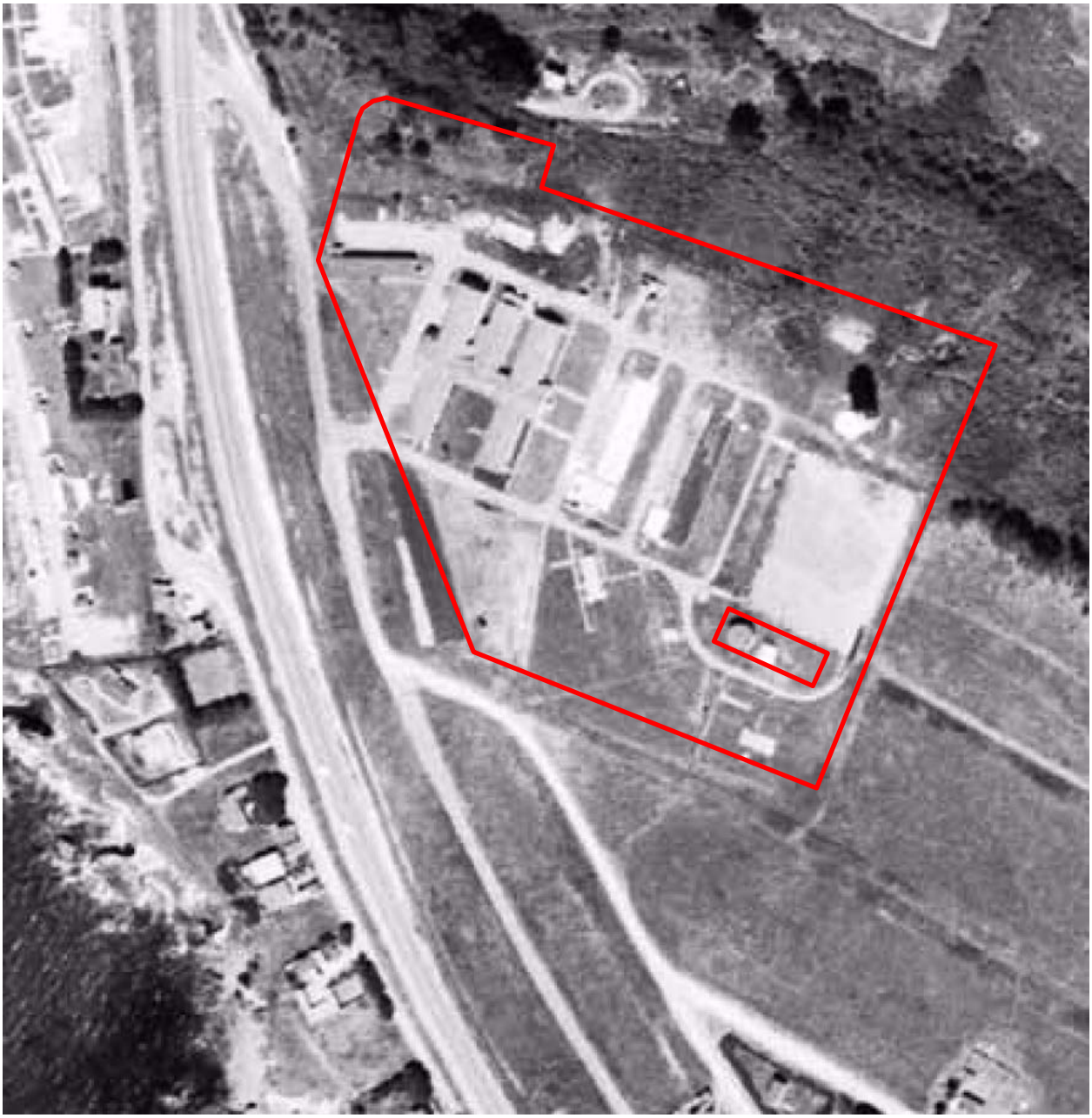
N

AERIAL PHOTOGRAPH - 1946

Carlos Street at Sierra Street, Moss Beach, California, 94038

Project Number: 350428

AEI Consultants



Legend

Approximate Property Boundary

N

AERIAL PHOTOGRAPH – 1956

Carlos Street at Sierra Street, Moss Beach, California, 94038

Project Number: 350428

AEI Consultants

County Review Draft



Legend
Approximate Property Boundary

N

AERIAL PHOTOGRAPH - 1968

Carlos Street at Sierra Street, Moss Beach, California, 94038
Project Number: 350428

AEI Consultants



Legend

Approximate Property Boundary

N

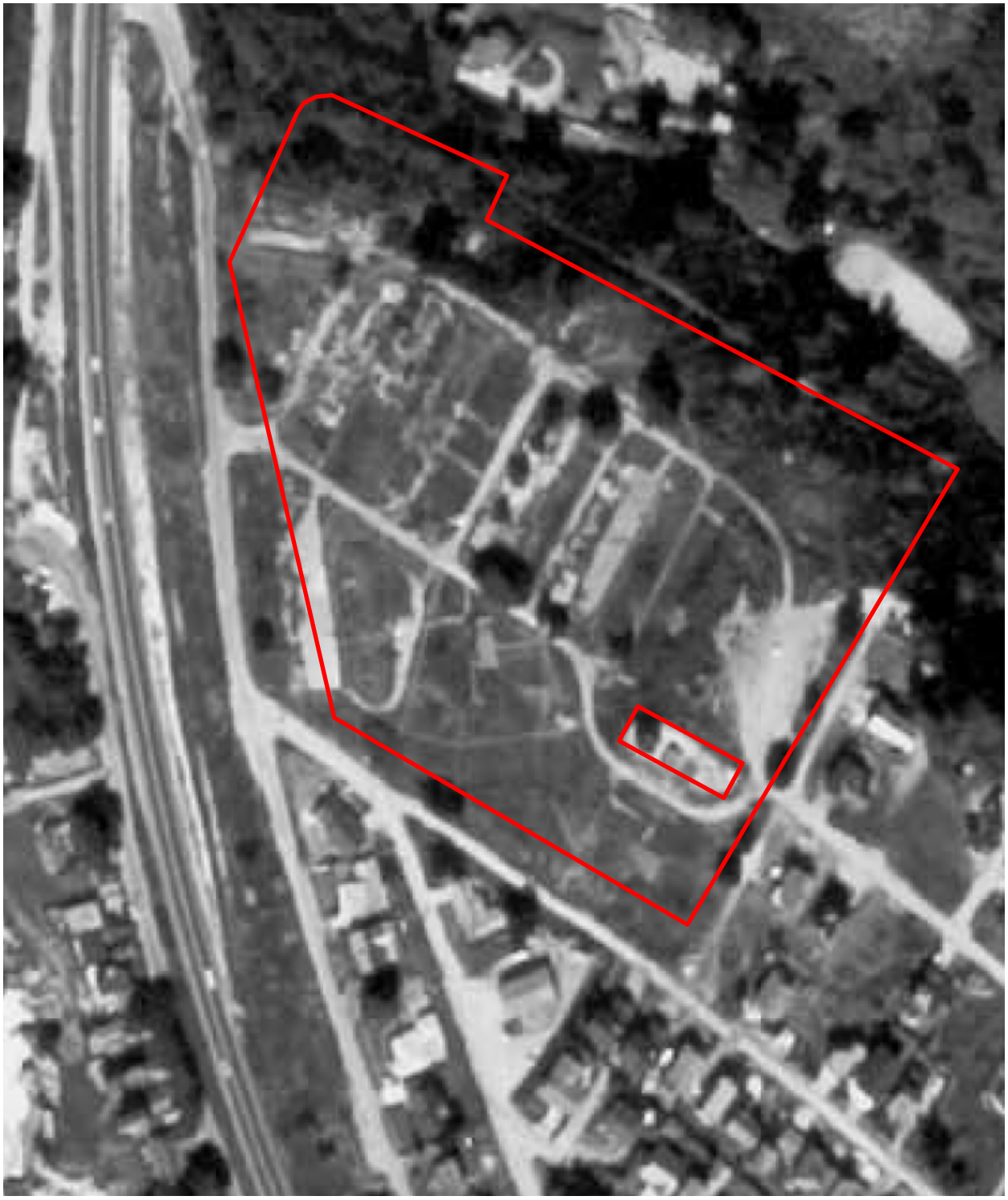
AERIAL PHOTOGRAPH - 1970

Carlos Street at Sierra Street, Moss Beach, California, 94038

Project Number: 350428

AEI Consultants

County Review Draft



Legend

Approximate Property Boundary

N

AERIAL PHOTOGRAPH - 1983

Carlos Street at Sierra Street, Moss Beach, California, 94038

Project Number: 350428

AEI Consultants

County Review Draft



Legend

Approximate Property Boundary

N

AERIAL PHOTOGRAPH - 1993

Carlos Street at Sierra Street, Moss Beach, California, 94038

Project Number: 350428

AEI Consultants

County Review Draft



Legend

Approximate Property Boundary

N

AERIAL PHOTOGRAPH - 2005

Carlos Street at Sierra Street, Moss Beach, California, 94038

Project Number: 350428

AEI Consultants

County Review Draft



Legend

Approximate Property Boundary

N

AERIAL PHOTOGRAPH - 2014

Carlos Street at Sierra Street, Moss Beach, California, 94038

Project Number: 350428

AEI Consultants

County Review Draft

HIG Research Summary

Site Location
350428 AC
Carlos Street At Sierra Street
Moss Beacch, CA

Conducted For
ERIS
80 Valleybrook Drive
Toronto, ON

HIG Project #
1523492
Date Created
11/02/2015

Historical Information Gatherers

This Research Summary identifies the products and services provided by Historical Information Gatherers, Inc. (HIG) for the above referenced site location. All products are provided as PDFs unless otherwise noted.

City Directory Pages/Abstracts

Research Methodology: A search was conducted for city directories that include coverage of the site area using HIG's City Directory Collection and other sources, if needed. Directories for the following years were identified for the site area. A comma between date ranges indicates a gap of 10 years or more in available city directories:

San Mateo County 1976-2011

The above listed directories were reviewed at approximate 5 year intervals to determine if the street(s) specified in the order were included in the directories and had listings for the site area. HIG attempted to identify former street names and aliases and if identified, these were also included in the review.

Research Results: When City Directory Pages are provided, the publication name and date are shown at the top of each page. When a City Directory abstract is provided, the first page of the abstract includes the relevant publication information. The years of coverage identified for each street and any identified historical street names are as follows:

Sierra Street (1976-2011)

Disclaimer & Waiver of Liability

This Research Summary and the related documents and images provided by Historical Information Gatherers (hereafter referred to as the "Site Specific HIG Data") contain information obtained from a variety of public and private sources. Additional information for the site and surrounding properties may exist. Accordingly, there can be no guaranty that the information provided is complete for its intended purpose. No warranty expressed or implied, is made whatsoever in connection with the Site Specific HIG Data. Historical Information Gatherers specifically disclaims the making of any such warranties, including without limitation, merchantability or fitness for a particular purpose. Historical Information Gatherers, its officers, employees and independent contractors cannot be held liable to anyone for any loss or damage, whether arising out of errors or omissions, negligence, accident or any other cause, resulting directly or indirectly from any information provided or any information not provided in the Site Specific HIG Data. Any liability on the part of Historical Information Gatherers is strictly limited to a refund equal to the amount paid for the Site Specific HIG Data.

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infogroup

Research Summary for City Directory Abstract

County Review Draft

Site Location:
350428 AC
Carlos Street At Sierra Street
Moss Beacch, CA

HIG Project #:
1523492

Date Completed:
11/2/2015

Conducted For:
EcoLog ERIS
Toronto, ON

HIG has produced a city directory abstract for one or more streets associated with the site location indicated above. The publications used to create the CD Abstract are listed below.

The information below is taken directly from the city directory books. The following are definitions as they are found in the Haines books:

XXXX = is no phone, no people or non-published phone.
600 XXXX = Correct address only. No other information.
X Streetname = intersecting cross street

Publication year, publisher and title.

2011 Haines San Mateo County

2006 Haines San Mateo County

2001 Haines San Mateo County

1996 Haines San Mateo County

1991 Haines San Mateo County

1986 Haines San Mateo County

1981 Haines San Mateo County

1976 Haines San Mateo County

County Review Draft

400 Sierra Street	
2011	BORME Victor
2006	BORME Victor
1991	BARMORE Ann R
1991	BARMORE Cynl Scott
1991	BARMORE Donald R
1986	BARMORE DONALD R
1986	BARMORE ANN R
1981	BARMORE D W
1976	BARMORE DONALD
506 Sierra Street	
2006	XXXX
2001	WIKLE George
1996	FINDLAY Scoot
1986	BAUMANN LEONARD C
1986	BAUMANN CAROLYN
514 Sierra Street	
2006	OESWEIN James
2001	OESWEIN James
1986	MURRAY JOANIE
515 Sierra Street	
2011	MURTHA Peter
2006	MURTHA Peter
2001	MURTHA Peter
1991	KOONS C
1986	WILLIAMSON ROBERT
1986	WILLIAMSON JOANIE
522 Sierra Street	
2011	ROBERTS Ross
2006	ROBERTS Ross
2001	ROBERTS Ross
1986	FREESE KENNETH J
1981	FREESE KENNETH J
531 Sierra Street	
2011	WEGEHAUPT Mark
2006	WEGEHAUPT Trudy
2006	WEGEHAUPT Mark
2001	WEGEHAUPT Trudy
2001	WEGEHAUPT Mark
1996	WEGEHAUPT Trudy
1996	WEGEHAUPT Mark
1991	WEGEHAUPT Trudy
1991	WEGEHAUPT Mark
534 Sierra Street	
2011	SOUZA David
2006	SOUZA Dave

County Review Draft

2006	SOUZA David
2001	SOUZA David
1996	SOUZA David
1991	SOUZA David
1986	SOUZA DAVID
1981	SAMAS EUGENE

542 Sierra Street

2011	PETINO John
2006	PETINO John
2001	PETINO John
1996	PETINO John
1991	PETINO J
1991	PETINO B
1986	PETINO J
1981	PETRINO J

554 Sierra Street

2011	LARKIN Brian
2006	LARKIN Brian
2001	LARKIN Brian
1996	LARKIN Patricia
1996	LARKIN Brian S
1991	LARKIN Patricia
1991	LARKIN Brian S
1986	LARKIN BRIAN S
1986	LARKIN PATRICIA
1981	LARKIN BRIAN S
1976	WORTHLY VERA

555 Sierra Street

2011	CHURCH Janette
2006	CHURCH Frederick
2001	CHRUCH Fredercik
1996	ZIPKIN Richard D
1996	BRICE Steve
1991	BRICE Steve
1986	SEMANCIK TOM
1981	ADAMS DENNIS B

558 Sierra Street

2011	HASS Philip
2006	HASS Philip
2001	HASS Philip
1996	XXXX
1991	XXXX
1986	XXXX

567 Sierra Street

2011	KRAAL Richard J
2006	KRAAL Richard J
2001	KRAAL Richard J

1996	KRAAL Richard J
1991	KRAAL Richard J
1986	KRAAL RICHARD J
1981	KRAAL RICHARD J

570 Sierra Street

2011	ERIC J POOS FNCL & INS SERV
2011	POOS Eric
2006	MARCIL Michael
2006	HYLDIG-NIELSEN Jens
2001	MARCIL Michael
1996	SABOUNI Akram
1996	SABOUNI Joya
1986	XXXX

574 Sierra Street

2011	ROCHA Mark
2006	ROCHA Mark
2001	ROCHA Mark
1996	JOHNSTON Juliann C
1996	JOHNSTON Wm
1991	JOHNSTON Juliann C
1991	JOHNSTON Wm
1986	JOHNSTON JULIANN C
1986	JOHNSTON WM
1981	WINTLE TOM
1976	TIMOTHY LAURA

575 Sierra Street

2011	BRASFIELD Mark
2006	BRASFIELD Mark
2001	BRASFIELD Mark
1996	BRASFIELD Mark
1986	SELANTEK C
1981	DOWNING DEL

582 Sierra Street

2006	WYMAN Matthew E
2001	REID Donald
1996	REID Donald
1991	XXXX
1986	XXXX
1981	WILLIAMS L R

583 Sierra Street

2011	CARRINGTON Judith B
2006	CARRINGTON William
2001	CARRINGTON William
1996	XXXX
1991	XXXX
1986	CARRINGTON WM DDS

587 Sierra Street

2011	PIERCEALL Richard
2011	CIARI Veronica
2006	CIARI Veronica
2006	PIERCEALL Richard
2001	PIERCEALL Richard
2001	CIARI Veronica
1996	XXXX
1991	XXXX
1986	GUNTREN CONSTR

682 Sierra Street

1981	MARTNEZ REGINALD

Abstract Section 2: This section includes the city directory data sorted by the year the city directory was published.

2011

	X CARLOS ST
400 Sierra Street	BORME Victor
	X STETSON ST
515 Sierra Street	MURTHA Peter
522 Sierra Street	ROBERTS Ross
531 Sierra Street	WEGEHAUPT Mark
534 Sierra Street	SOUZA David
542 Sierra Street	PETINO John
554 Sierra Street	LARKIN Brian
555 Sierra Street	CHURCH Janette
558 Sierra Street	HASS Philip
567 Sierra Street	KRAAL Richard J
570 Sierra Street	ERIC J POOS FNCL & INS SERV
570 Sierra Street	POOS Eric
574 Sierra Street	ROCHA Mark
575 Sierra Street	BRASFIELD Mark
583 Sierra Street	CARRINGTON Judith B
	X PEARL ST
587 Sierra Street	CIARI Veronica
587 Sierra Street	PIERCEALL Richard

2006

	X CARLOS ST
400 Sierra Street	BORME Victor
	X STETSON ST
506 Sierra Street	XXXX
514 Sierra Street	OESWEIN James
515 Sierra Street	MURTHA Peter
522 Sierra Street	ROBERTS Ross
531 Sierra Street	WEGEHAUPT Mark
531 Sierra Street	WEGEHAUPT Trudy
534 Sierra Street	SOUZA Dave
534 Sierra Street	SOUZA David

County Review Draft

542 Sierra Street	PETINO John
554 Sierra Street	LARKIN Brian
555 Sierra Street	CHURCH Frederick
558 Sierra Street	HASS Philip
567 Sierra Street	KRAAL Richard J
570 Sierra Street	HYLDIG-NIELSEN Jens
570 Sierra Street	MARCIL Michael
574 Sierra Street	ROCHA Mark
575 Sierra Street	BRASFIELD Mark
582 Sierra Street	WYMAN Matthew E
583 Sierra Street	CARRINGTON William
	X PEARL ST
587 Sierra Street	PIERCEALL Richard
587 Sierra Street	CIARI Veronica

2001

506 Sierra Street	WIKLE George
514 Sierra Street	OESWEIN James
515 Sierra Street	MURTHA Peter
522 Sierra Street	ROBERTS Ross
531 Sierra Street	WEGEHAUPT Trudy
531 Sierra Street	WEGEHAUPT Mark
534 Sierra Street	SOUZA David
542 Sierra Street	PETINO John
554 Sierra Street	LARKIN Brian
555 Sierra Street	CHRUCH Fredercik
558 Sierra Street	HASS Philip
567 Sierra Street	KRAAL Richard J
570 Sierra Street	MARCIL Michael
574 Sierra Street	ROCHA Mark
575 Sierra Street	BRASFIELD Mark
582 Sierra Street	REID Donald
583 Sierra Street	CARRINGTON William
587 Sierra Street	CIARI Veronica
587 Sierra Street	PIERCEALL Richard
	X PEARL

1996

506 Sierra Street	FINDLAY Scoot
531 Sierra Street	WEGEHAUPT Mark
531 Sierra Street	WEGEHAUPT Trudy
534 Sierra Street	SOUZA David
542 Sierra Street	PETINO John
554 Sierra Street	LARKIN Brian S
554 Sierra Street	LARKIN Patricia
555 Sierra Street	BRICE Steve
555 Sierra Street	ZIPKIN Richard D
558 Sierra Street	XXXX
567 Sierra Street	KRAAL Richard J
570 Sierra Street	SABOUNI Akram

County Review Draft

570 Sierra Street	SABOUNI Joya
574 Sierra Street	JOHNSTON Wm
574 Sierra Street	JOHNSTON Juliann C
575 Sierra Street	BRASFIELD Mark
582 Sierra Street	REID Donald
583 Sierra Street	XXXX
587 Sierra Street	XXXX
1991	
400 Sierra Street	BARMORE Donald R
400 Sierra Street	BARMORE Cynl Scott
400 Sierra Street	BARMORE Ann R
515 Sierra Street	KOONS C
531 Sierra Street	WEGEHAUPT Mark
531 Sierra Street	WEGEHAUPT Trudy
534 Sierra Street	SOUZA David
542 Sierra Street	PETINO B
542 Sierra Street	PETINO J
554 Sierra Street	LARKIN Patricia
554 Sierra Street	LARKIN Brian S
555 Sierra Street	BRICE Steve
558 Sierra Street	XXXX
567 Sierra Street	KRAAL Richard J
574 Sierra Street	JOHNSTON Juliann C
574 Sierra Street	JOHNSTON Wm
582 Sierra Street	XXXX
583 Sierra Street	XXXX
587 Sierra Street	XXXX
1986	
400 Sierra Street	BARMORE ANN R
400 Sierra Street	BARMORE DONALD R
506 Sierra Street	BAUMANN CAROLYN
506 Sierra Street	BAUMANN LEONARD C
514 Sierra Street	MURRAY JOANIE
515 Sierra Street	WILLIAMSON JOANIE
515 Sierra Street	WILLIAMSON ROBERT
522 Sierra Street	FREESE KENNETH J
534 Sierra Street	SOUZA DAVID
542 Sierra Street	PETINO J
554 Sierra Street	LARKIN PATRICIA
554 Sierra Street	LARKIN BRIAN S
555 Sierra Street	SEMANCIK TOM
558 Sierra Street	XXXX
567 Sierra Street	KRAAL RICHARD J
570 Sierra Street	XXXX
574 Sierra Street	JOHNSTON WM
574 Sierra Street	JOHNSTON JULIANN C
575 Sierra Street	SELANTEK C
582 Sierra Street	XXXX

County Review Draft

583 Sierra Street	CARRINGTON WM DDS
587 Sierra Street	GUNTREN CONSTR
1981	
400 Sierra Street	BARMORE D W
522 Sierra Street	FREESE KENNETH J
534 Sierra Street	SAMAS EUGENE
542 Sierra Street	PETRINO J
554 Sierra Street	LARKIN BRIAN S
555 Sierra Street	ADAMS DENNIS B
567 Sierra Street	KRAAL RICHARD J
574 Sierra Street	WINTLE TOM
575 Sierra Street	DOWNING DEL
582 Sierra Street	WILLIAMS L R
682 Sierra Street	MARTNEZ REGINALD
1976	
400 Sierra Street	BARMORE DONALD
554 Sierra Street	WORTHLY VERA
574 Sierra Street	TIMOTHY LAURA

ENVIRONMENTAL RISK INFORMATION SERVICE

FIRE INSURANCE MAP RESEARCH RESULTS

Date: 2015-10-29

Order Number:20151028168

Carlos Street At Sierra Street, Moss Beacch, CA, 94038

ERIS has searched our in-house collection of close to 1 million Fire Insurance Maps for the address at Carlos Street At Sierra Street, Moss Beacch, CA, 94038.

Please note that no information was found for your site or adjacent properties.

If you have any questions regarding the enclosed information, please do not hesitate to contact us.

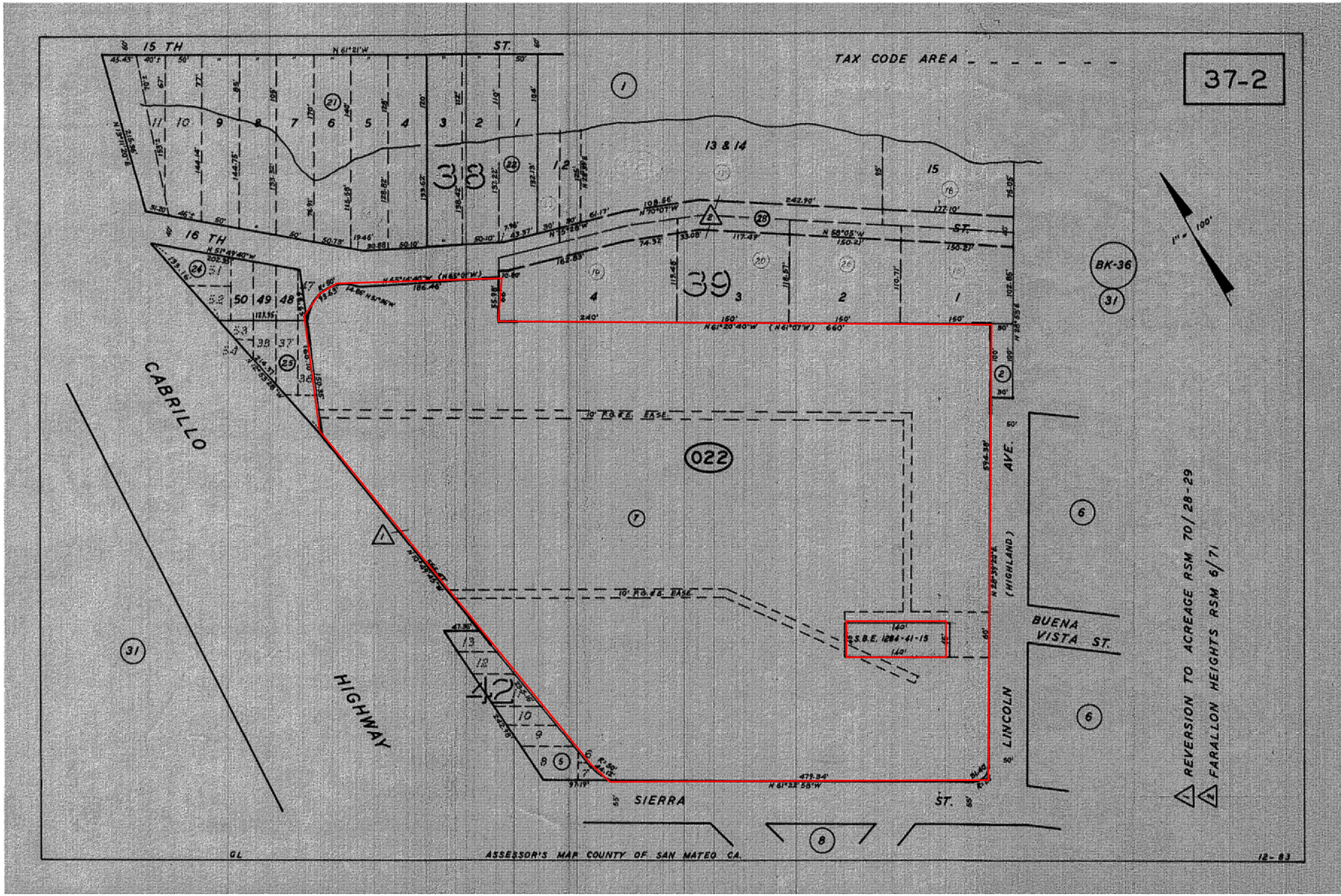
Individual Fire Insurance Maps for the subject property and/or adjacent sites are included with the ERIS environmental database report to be used for research purposes only and cannot be resold for any other commercial uses other than for use in a Phase I environmental assessment.

Address: 38 Lesmill Road Unit 2, Toronto, ON M3B 2T5
Phone: 416-510-5204 Fax: 416-510-5133
info@erisinfo.com www.erisinfo.com

APPENDIX D

REGULATORY AGENCY RECORDS

County Review Draft



County Review Draft

Lena

Gmail More

COMPOSE

Inbox
Starred
Important
Chats
Sent Mail
Drafts (23)
Trash
[Imap]/Drafts
[Imap]/Sent
[Imap]/Trash (97)
337029
342175

Lena

No Hangouts Contacts
Find someone

File Review

Inbox x

EnvHealth EnvHealth <EnvHealth@ Nov 2 (3 days ago)
to me

Ms. Chervin:

The records request you submitted is complete. We have Well files for APN: 037-022-070 which is attached in pdf format.

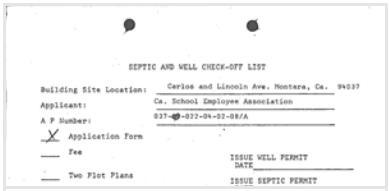
We have no Hazardous Waste, Groundwater and Solid Waste files.

If you have any questions regarding the records/ files contact the Land Use Specialist Inspector,
Ed Diaz at 650-372-6202.

Please confirm receipt of this email. Thank you.

Sheila Arkoncel

Office Assistant II
San Mateo County Environmental Health


SEPTIC AND WELL CHECK-OFF LIST

Building Site Location: Carlos and Lincoln Ave. Montara, Ca. 94037
Applicant: Ca. School Employee Association
A P Number: 037-022-070-04-02-08/A
X Application Form
___ Fee
___ Two Plot Plans
ISSUE WELL PERMIT DATE
ISSUE SEPTIC PERMIT

PDF 037022070.PDF

County Review Draft

SEPTIC AND WELL CHECK-OFF LIST

Building Site Location: Carlos and Lincoln Ave. Montara, Ca. 94037

Applicant: Ca. School Employee Association

A P Number: 037-~~02~~-022-04-02-08/A

X Application Form

____ Fee

____ Two Plot Plans

____ Water Company Letter

____ Well Report

____ Chem. Analysis

____ Bact. Analysis

____ Pump Test

____ Special Conditions

ISSUE WELL PERMIT
DATE _____

ISSUE SEPTIC PERMIT
DATE _____

ISSUE CCR 15
DATE _____

ISSUE CCR 16 a
DATE _____

DATE	STATUS
12/19/90	Spoke @ Jack Foster of Farrallon Vista Assoc. who drilled both (2) wells on the one permit. His phone # is 349-1244. He stated that both wells would be repaired so that the aquifers) were adequately protected.
1-3-91	Upper Well has been sealed by welded steel Lower well has been sealed & lush with pad with bolted steel plate. P.J.P.

County Review Draft

McCracken, Byers & Haesloop LLP
a Multi-Disciplinary Practice
1528 So. El Camino Real, Suite 306
San Mateo, CA 94402
Tel: 650-377-4890
Fax: 650-377-4895
dbyers@landuselaw.com

SAN MATEO COUNTY
ENVIRONMENTAL HEALTH
MAR 2 2005
RECEIVED

Michael D. McCracken
David J. Byers
Mark Haesloop, P.C.
James M. Brennan

Of Counsel
Patrick M. K. Richardson
Paralegals
Jill Briggs

March 1, 2005

Mr. Stanley Low
Department of Environmental Health
County of San Mateo
455 Counter Center, Fourth Floor
Redwood City, CA 94063

Re: Well Logs For Farallon Vista Associates

Dear Stan:

As you will recall quite sometime ago, I asked you to locate the well logs for the Farralon Vista Associates' parcel. I represent the California School Employees Association, who is the owner of the land. I believe the APN number is 037-022-040.

Please contact me with this information.

If you any questions, do not hesitate to call.

message w/ Dave on 3/7/05 for file review appointment
W-43-86

Sincerely,

McCRACKEN, BYERS & HAESLOOP LLP

David J. Byers

DAVID J. BYERS

County Review Draft

San Mate[illegible] County Department of Public He[illegible] & Welfare

590 Hamilton Street, Redwood City, California 94063

No. W-4[illegible]

DOMESTIC WELL PERMIT

Permit to construct or install WELL

s

At Carlos and Lincoln Ave. Montara, Ca. 94037

Parcel No. 037-02-022-04-02-08/A

This certifies that approval has been granted to:

California School Employee Association
P.O. Box 640
San Jose, Ca. 95106

Contractor A.A.M. Drilling

A.A.M. Drilling
3338 Willow Pass Road
Pittsburg, Ca. 94565

Date	5/20/83
Fee paid	135.00
	5/10/83
Lot No.	
Block No.	
Ordinance No.	
Environmental Health San Mateo County	

For the Director
Department of Public Health and Welfare

PERMIT ISSUED BY RICHARD WILSON

Public Health Engineer

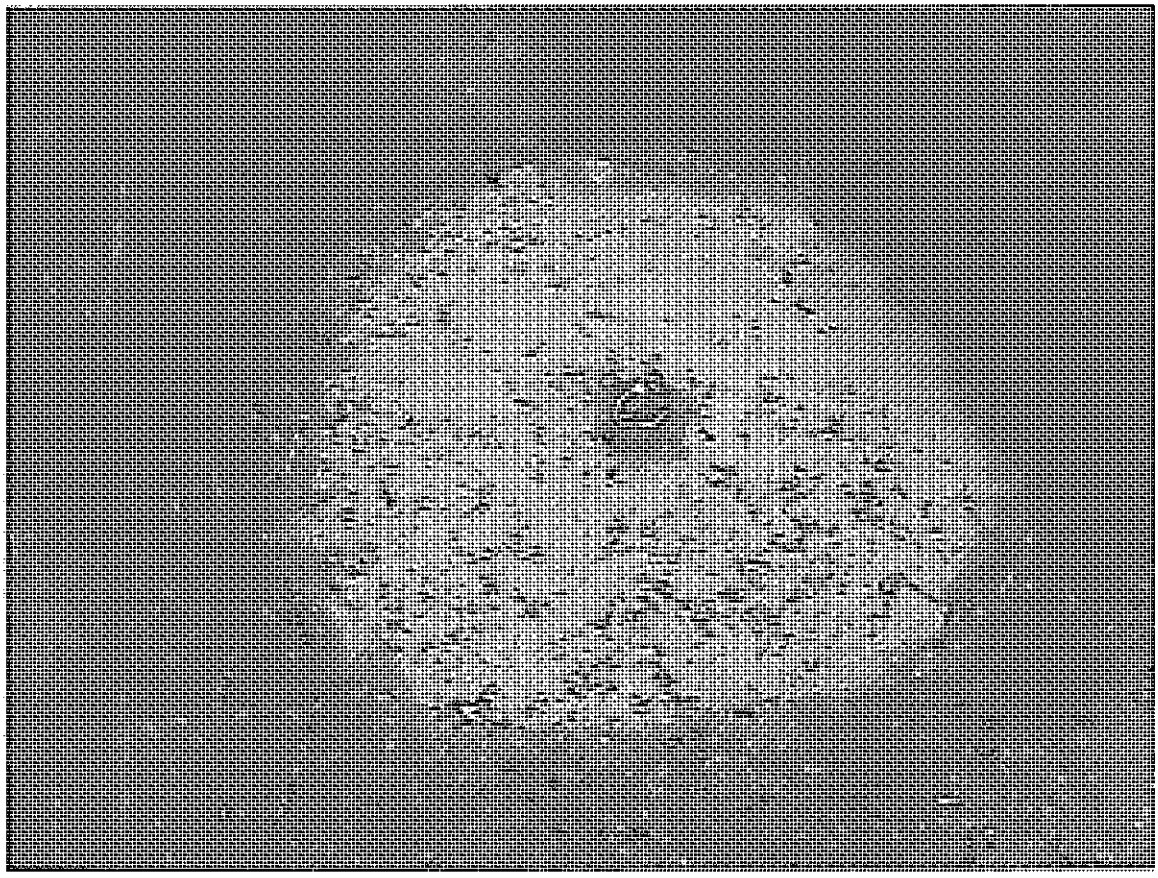
5720-21

THIS PERMIT IS NON-TRANSFERABLE

Permit shall be void if construction is not started within 90 days of date of this permit.

County Review Draft

Picture taken on 02-28-03 by Greti Wolf



S&W
138-3053

SOIL AND WATER LABORATORY
14072 W. PARK AVENUE
BOULDER CREEK, CA 95006

From

Darrell Weddell
20 Marie Ct.
Half Moon Bay, Ca. 94019

TIME

DATE 7/15/8

REPORT NO. 190 8

County Review Draft

TYPE OF SAMPLE

Well Farallone Vista #1

ANALYSES DESIRED AND REMARKS

Water Quality 7/9/86

Bacteriology	MPN	per 100 ml	
	M F	per 100 ml	
Chemistry	Iron	ppm	.125
	Manganese	ppm	.06
	Chloride	ppm	241
	Nitrate	ppm	20
	Total Dissolved Solids	ppm	
	Conductivity	µ mhos/cm	880

Initial

30 gpm?

415-343-5795

JAMES S. MARSH
CONSULTING CIVIL ENGINEER

20 WEST THIRD AVE., #302 SAN MATEO, CA 94402

1-11-89 Gave Marsh name + #
Gen. from 056-104-30 2
60 gpm.

County Review Draft

H.A.M. Drilling Inc.

2160 Ann Street
Concord, CA 94520
Lic. #426664

(415) 689-4004
(707) 448-4645

(415) 685-1082
(415) 432-9331

WELL YIELD REPORT INFORMATION

OWNERS NAME	Farrallon Vista Assn.
PERMIT NUMBER IF KNOWN	DRW #149554
DATE OF TEST	June 18, 1986
TOTAL DEPTH OF WELL	400 ft.
STANDING WATER LEVEL	35 ft.
STATIC WATER LEVEL	168 ft.
PUMP SET AT	390 ft.
TIME TEST BEGAN	2:30p.m.

TIME	DRAWDOWN	G.P.M.	TIME	DRAWDOWN	G.P.M.
2:30p	35'	5			
3:30	100'	5			
4:00	93'	5			
4:58	160'	3			
5:05	165'	3			
5:30	168'	2			

Recovery time 7:00p.m. 165' 7:17p.m. 160'

I CERTIFY THAT THE ABOVE RESULTS ARE CORRECT FOR THE PUMP TEST AS PREFORMED ON June 18, 1986.

Joyce M. Perry
H.A.M. DRILLING, INC. REPRESENTATIVE

June 19, 1986
DATE REPORT COMPLETED

"YOU'VE TRIED THE REST, NOW TRY THE BEST"

County Review Draft

OFFICE OF ENVIRONMENTAL HEALTH
SAN MATEO COUNTY DEPARTMENT OF HEALTH SERVICES

WELL CONSTRUCTION APPLICATION

COUNTY GOVERNMENT CENTER
590 HAMILTON STREET
REDWOOD CITY, CALIF. 94063
(415) 363-4305

DATE
PERMIT ISSUED: _____
PERMIT NO.: _____
FEE: 135.00
RECEIPT NO.: 41342
ASSIGNED TO: R.W
ck# 1042

TO BE COMPLETED BY OWNER AND DRILLER

Property Owner:	Well Owner (if different):	Drilling Co.:
California School Employee Association	Farallon Vista Associates	H.A.M. Drilling
Address:	Address of Well Site:	Driller's Contractor's License Number:
P.O. Box 640	Carlos and Lincoln Ave.	#426664
City, State, Zip:	City, State, Zip:	Address:
San Jose, CA. 95106	Montara, CA.	1538 Willow Pass Road
Telephone No.:	Telephone No.:	City, State, Zip:
(408) 263-8000	(415) 941-6548	Pittsburg, CA. 94565
Assessor's Parcel No. of Well Site:	Owner's /Consultant's Well No.:	Telephone No.:
037-02-022-04-02-08/A	—	(415) 432-9385

Estimate depth of completed well: ☐ Less than 50 feet ☑ 50 to 300 feet ☐ Over 300 feet

Purpose of Well: ☑ Domestic ☐ Municipal/Industrial ☐ Agricultural * ☐ Monitoring ☐ Cathodic Protection

* Monitoring wells are those constructed for the purpose of obtaining repetitive water level measurements and/or repetitive water samples for analyses. This includes wells constructed for general exploration and investigation purposes as well as those to be constructed in conformance with the Hazardous Materials Storage Permit Ordinance for site-specific groundwater monitoring of existing underground hazardous materials storage tanks.

THIS SECTION TO BE COMPLETED IF THIS APPLICATION IS FOR A MONITORING WELL

Purpose of Monitoring Well: ☐ To comply with City or County Hazardous Materials Ordinance ☐ Exploration studies

☐ Other (specify): _____

Name of Business: _____ Business License No.: _____

If proposed well is to meet compliance with a Hazardous Materials Storage Permit Ordinance has the City or County been contacted? ☐ Yes ☐ No

_____
If yes, give name of City or County

_____
Consultant's Name (company)

_____
Address

_____
City, State, Zip

(_____) _____
Area Code Telephone No.

Type of monitoring device: ☐ Groundwater ☐ Vadose
Monitoring well use: ☐ Depth ☐ Quality ☐ Depth and Quality
Vadose device installation: ☐ Vapor ☐ Interface ☐ Suction Lysimeter

_____
SIGNATURE OF RESPONSIBLE PROFESSIONAL

REGISTRATION NO. CIVIL ENGINEER — OR — CERTIFICATE NO. ENGINEERING GEOLOGIST

TOPOGRAPHIC FEATURES

Is well to be constructed: ☐ In a public sidewalk ☐ In a public road ☐ On public property ☑ On private property

Within 50 feet of the top of a creek bank	☐ Yes	☑ No	Within 50 feet of any existing well	☐ Yes	☑ No
Within 50 feet of a sanitary sewer	☐ Yes	☑ No	Within 150 feet of a cesspool or seepage pit	☐ Yes	☑ No
Within 100 feet of a pit privy, septic tank, leachfield	☐ Yes	☑ No			

CERTIFICATION BY WELL OWNER/AGENT AND DRILLER/AGENT:

I certify that the information given above is correct to the best of my knowledge. I certify that the well will be constructed in compliance with the conditions of this permit, the San Mateo Co. Ordinance, and, if applicable, the Hazardous Materials Storage Permit Ordinance of the County of San Mateo. It is my responsibility as the well owner to notify the County of any changes in the purpose of this well from that which is indicated on this application form.

Partner
WELL OWNER/AGENT DATE

SIGNATURE OF DRILLER/AGENT DATE

☑ I certify that in the performance of the work for which this permit is being issued I shall not employ any person in any manner so as to become subject to the Workmen's Compensation laws of California.

☑ I certify that I have a valid Workmen's Compensation Coverage.

IMPORTANT: A minimum 24-hour notice must be given to Environmental Health prior to drilling.

OVER

 WELL PERMIT NO.: _____

County Review Draft

WELL CONSTRUCTION APPLICATION

Based on information on the application and attachment(s) hereto (if any) and subject to approval noted below, permission is hereby granted to construct (drill) the described well. Permission to start may be withheld until a field check verifies all statements made on application by Permittee and is also subject to the "General" and "Special" Conditions stated below.

WELL LOCATION (Draw Accurately)
Recommend using Assessor's Map

1. Sketch well location to scale, show dimension to nearest foot.
2. Show a minimum of two dimensions at right angles. Dimensions shall be from the centerline of the closest named streets, roads or highways.

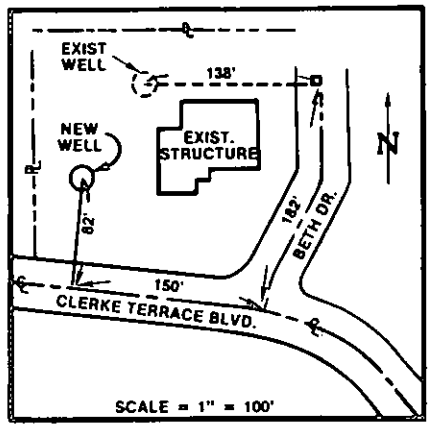
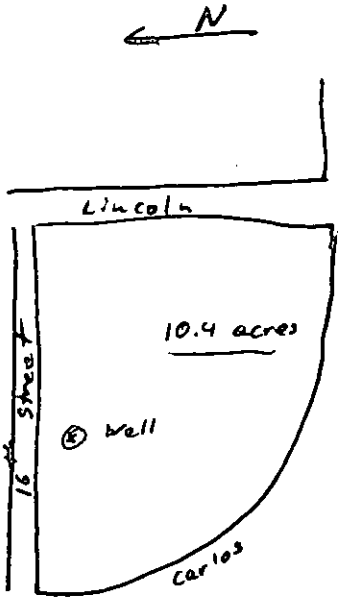


FIGURE 1





Scale: 1" = _____

GENERAL CONDITIONS:

A. Construction under this Permit is subject to any instructions by Health Department representative relative to the "Standards for the Construction of Wells in San Mateo County".

B. Permit may be voided before work begins if field check reveals any misrepresentation under "well location" or "Topographic Features" on application.

C. This Permit is valid only for the purpose specified herein. No change in construction procedure as prescribed on attached Standards and in Special Conditions below will be allowed except upon written permission of the County.

D. Permittee shall assume entire responsibility for all activities and uses under this Permit and shall indemnify, defend and save the County of San Mateo, its officers, agents and employees free and harmless from any and all expense, cost or liability in connection with or resulting from the exercise of this Permit including, but not limited to property damage, personal injury and wrongful death.

E. Compliance with "CAL/OSHA" California Labor Code Section 6300 (and following) is required.

F. Water quality and production from all wells to be used for domestic water supply must be approved by the Office of Environment Health.

G. Permit will be automatically cancelled if not exercised or if extension is not requested by Permittee within 90 calendar days of above date.

H. Driller is to complete State DWR Form 188 and mail original to San Mateo County Health Services within 30 days of completion of well construction.

I. For the construction of water producing wells, a Permittee must be a licensed water well drilling contractor unless the work is to be done by the landowner or employees of the landowner. (See Business & Professions Code § 7026.3, 7028).

J. For monitoring wells refer to State Water Well Standards 74-81. Dry holes shall be backfilled within one week of drilling. Well destruction shall be done in accordance with State and County Standards.

K. Each well site requires a separate Well Construction Application, and permit.

SPECIAL CONDITIONS:

APPROVED: _____ DATE: 8/14/86

APPENDIX E

ENVIRONMENTAL LIEN SEARCH AND/OR CHAIN OF TITLE

County Review Draft

ENVIRONMENTAL LIENS / AUL REPORT

AFX Corp., Inc. TitleSearch.com - EnvironmentalLiens.com

Order Number	350428	**Effective Date**	10/28/2015		
Last name	CALIFORNIA SCHOOL EM ASSN				
First name		**County**	SAN MATEO		
Street address		**City**	MOSS BEACH	**State**	CALIFORNIA
Mailing address	2045 LUNDY AVE, SAN JOSE CA 95131-1825				
Parcel Number	037-022-070	**Alternate parcel number**			
Legal Desc.	10.875 AC MOL BND WLY BY CABRILLO HWY SLY BY SIERRA ST ACREAGE CABRILLO UNIFIED SCHOOL DISTRICT				

Federal, state, and local environmental records have been researched, resulting in the following list of recorded environmental liens and AUL's (activity and usage limitations) for the subject property having been found:

ENVIRONMENTAL LIENS, IC s, LUC s, AUL s, & DEUR s

1 NONE FOUND WITH UNITED STATES EPA
2 NONE FOUND WITH CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
3 NONE FOUND IN THE SAN MATEO COUNTY OFFICIAL LAND RECORDS
4

JUDGMENTS, LIENS

1 NONE FOUND WITH CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
2 NO PENDING ENFORCEMENT ACTION LOCATED
3
4

OTHER INFORMATION:

This search is subject to the terms and conditions at TitleSearch.com.

APPENDIX F

OTHER SUPPORTING DOCUMENTATION

AEI Consultants

Environmental & Engineering Services

County Review Draft

Instructions: Please complete the following questionnaire to the best of your knowledge.

ENVIRONMENTAL SITE ASSESSMENT QUESTIONNAIRE			
PROJECT/SITE INFORMATION			
Project Street Address(es): Cabrillo Hwy & Sierra St			
City: Montara	County: San Mateo	State: Ca	Zip:
Parcel Number(s): # 037-022-070			
CONTACT INFORMATION			
Contact	*Name*	*Telephone Number*	*Years Associated w/Site*
Owner:	California School Employees Association	800-632-2128	Since 1969 – (46years)
Site Contact:	Roy Ramos	408-433-1269	15years
Key Site Mgr:	Roy Ramos		
Previous Owner(s), Operators and/or Occupants:			
PROPERTY USE AND SPECIFICATIONS			
☐ Single-Family Residential		x Vacant or undeveloped	
☐ Multi-Family Residential		☐ Agricultural *specify type:*	
☐ Commercial Office		☐ Industrial *specify type:*	
☐ Commercial Retail		☐ Other *specify type:*	
Provide a general site description:			
Provide all known current/former addresses and/or parcel numbers:			
Total Property Size: 10.875 Acers		Original Construction Date:	
Total Number of Buildings: NA		Was Construction Phased? ☐Yes ☐No ☐Unk	
Total Sq. Ft. of Buildings: NA		Dates of Renovations/Phases:	
Are there any plans for site redevelopment or change in use? ☐Yes x No If yes, please describe:			
Are there any bodies of water on or immediately adjacent to the site? xYes ☐No If yes, please describe: The Pacific Ocean is near			
Electricity Provider: NA		Gas Provider: NA	
Heating System Fuel Source(s): NA		Cooling System Power Source: NA	
Potable Water Source/Provider:			
Any waste water discharge at the site? ☐ Septic Tank/Leachfield ☐ Sanitary Sewer ☐ Other		Sanitary Sewer Provider (if applicable):	
OCCUPANTS/TENANTS			
Current Occupant(s)/Tenant(s)	*Length of occupancy*	*Brief description of on-site operations*	
NA			

Project Number: 350428
Project Manager: Lena Chervin

Please return via email (lenachervin@gmail.com)

Previous Occupant(s)/Tenant(s)	*Length of occupancy*	*Brief description of on-site operations*

Has the subject site ever been occupied by the following: NONE-
☐ Dry Cleaner ☐ Gas Station ☐ Printing Facility ☐ Manufacturing Facility
If yes, provide length of occupancy:

Have any previous investigations been performed at the subject property? ☐Yes ☐No If Yes, are copies available?

If Yes, note type and describe: ☐ Phase I ESA ☐ Phase II ☐ Asbestos ☐ Lead Paint ☐ Radon

ON-SITE ENVIRONMENTAL CONDITIONS

Are you aware of any of the following environmental conditions, **either current or former**, on the subject site? **NOTE:** If applicable, please provide inventory records, inspection records and material safety data sheets to site inspector during site inspection.

Environmental Condition/Issue	*Response*	*Notes on Yes Responses*
Aboveground Storage Tanks	☐ Yes X No	
Underground Storage Tanks	☐ Yes ☐ No	Unaware
Hazardous/Toxic Substances	☐ Yes x No	
Stored Chemicals	☐ Yes x No	
Chemical Spills/Releases	☐ Yes x No	
Dump Areas/Landfills	x Yes ☐ No	Some of the local landscape contractors have dumped their waste on the property
Waste Treatment Systems	☐ Yes x No	
Wastewater Discharges	☐ Yes x No	
Floor Drains/Sumps/Clarifiers	☐ Yes X No	
Pits, Ponds, Lagoons	☐ Yes X No	
Stained Soil/Vegetation	☐ Yes X No	
Pesticide/Herbicide Use	☐ Yes X No	
Polychlorinated Biphenyls (PCBs)	☐ Yes X No	
Electrical Transformers	☐ Yes X No	
Hydraulic Lifts	☐ Yes X No	

Elevators	☐ Yes X No	
Asbestos	☐ Yes X No	
Environmental Condition/Issue	*Response*	*Notes on Yes Responses*
Lead-based paint	☐ Yes X No	
Oil/Gas Wells	☐ Yes X No	
Environmental Clean-ups	☐ Yes X No	
Environmental Permits	☐ Yes X No	

OTHER ENVIRONMENTAL CONDITIONS

Are you aware of any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the property?
☐ Yes X No
If yes, provide brief explanation.

Are you aware of any pending, threatened or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property?
☐ Yes X No
If yes, provide brief explanation.

Are you aware of any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products?
☐ Yes X No
If yes, provide brief explanation.

Are you aware of any incidents of flooding, leaks, or other water intrusion, and/or complaints related to indoor air quality?
☐ Yes X No
If yes, provide brief explanation.

Are you aware of any cases of extreme water damage or mold throughout the building(s)?
☐ Yes X No
If yes, provide brief explanation.

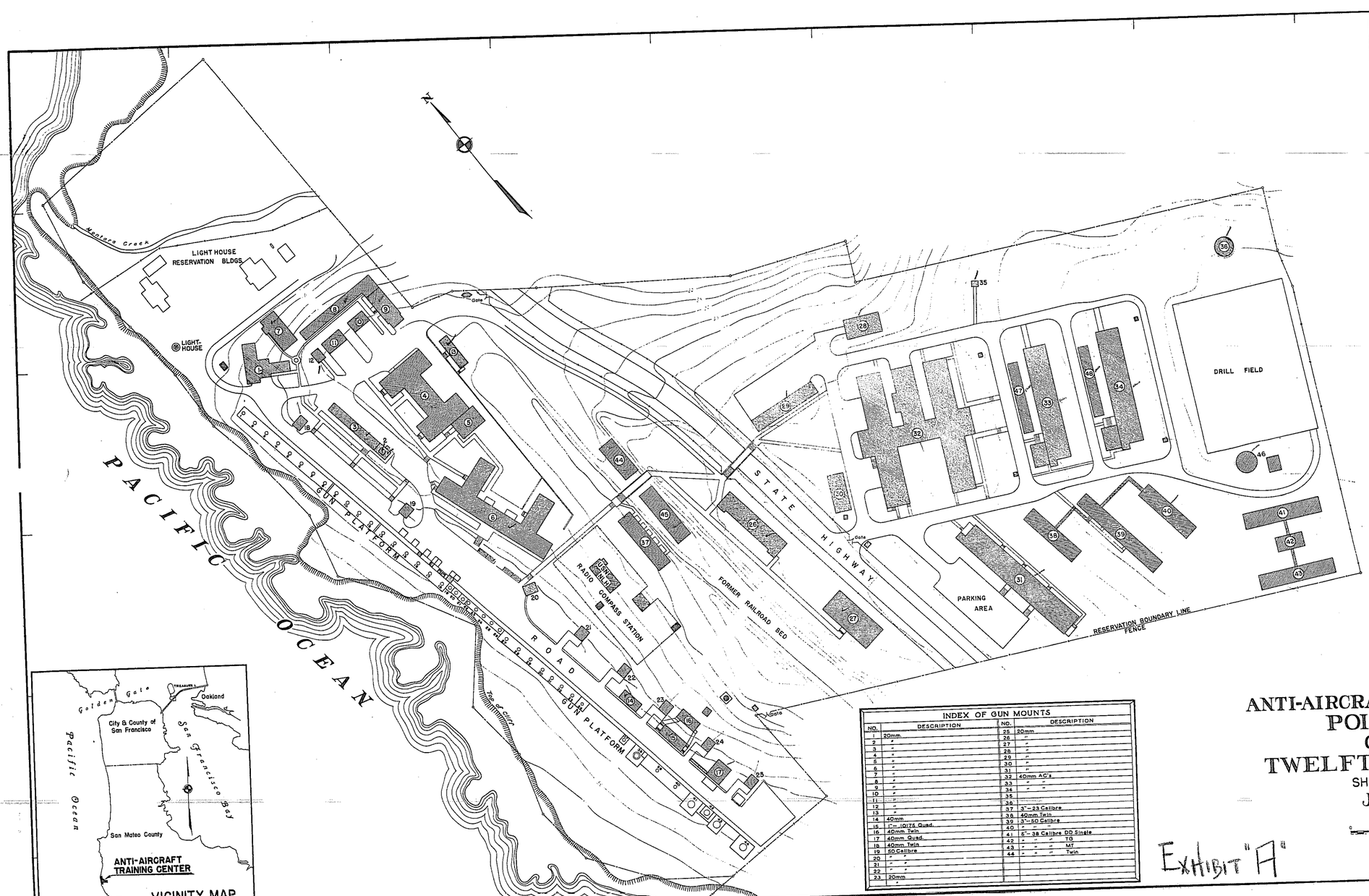
Person completing questionnaire: Roy Ramos

Title/Affiliation to the subject property: Director Facilities & Real Estate for CSEA

Number of years associated with the subject property: 15 years

Date: November 9, 2015

County Review Draft



LIST OF BUILDINGS			
NO.	USE	ZONE	FL. ELEV.
1	ADMINISTRATION BUILDING	B-2	79.0
2	RANGE CONTROL TOWER	C-3	
3	FIRE CONTROL BUILDING	C-3	85.2
4	CLASSROOM BUILDING NO. 3	C-3	92.0
5	NIGHT LOOKOUT TRAINER BUILDING	C-3	89.0
6	CREW'S BARRACKS NO. 1	B-2	73.0
7	POLOROID TRAINING BUILDING NO. 1	B-2	95.0
8	CLASSROOM BUILDING NO. 2	B-3	85.5
9	THEATRE	B-3	
10	CARPENTER SHOP	B-2	
11	PUMP HOUSE	B-2	
12	PAINT LOCKER	B-3	
13	CREW'S LATRINE NO. 1	E-4	
14	LOADING MACHINE BUILDING NO. 1	E-4	
15	LOADING MACHINE BUILDING NO. 2	E-4	
16	CREW'S LATRINE NO. 2	E-5	
17	MARK 37 DIRECTOR BUILDING	C-2	71.8
18	MAGAZINE NO. 1	C-3	
19	MAGAZINE NO. 2	D-4	
20	MAGAZINE NO. 3	D-4	
21	MAGAZINE NO. 4	D-4	
22	MAGAZINE NO. 5	E-4	
23	MAGAZINE NO. 6	E-5	
24	MAGAZINE NO. 7	E-5	
25	MAGAZINE NO. 8	C-5	
26	POLOROID TRAINING BUILDING NO. 1 AND 2	D-6	
27	VISUAL EDUCATION BUILDING	B-6	115.0
28	MAIN BOILER ROOM	C-5	
29	GARAGE	C-6	
30	LIBRARY	D-7	139.0
31	BACHELOR OFFICER'S QUARTERS	C-6	137.0
32	SUBSISTENCE BUILDING	C-7	155.0
33	CREW'S BARRACKS NO. 2	C-7	167.0
34	CREW'S BARRACKS NO. 3	B-6	
35	INCINERATOR	B-9	235.0
36	WATER TOWER	D-4	
37	CLASSROOM BLDG.	D-7	
38	CREW'S BARRACKS NO. 5	D-7	
39	CREW'S BARRACKS NO. 6	D-8	
40	T.O.D. HANGAR	D-8	
41	CREW'S BARRACKS NO. 7	D-8	
42	CREW'S HEAD	D-8	
43	CREW'S BARRACKS NO. 8	D-8	
44	MARK 3 TRAINER BLDG.	C-4	
45	MARK 3 TRAINER BLDG.	C-4	
46	PUMPHOUSE & WATER STORAGE TANK	C-8	
47	LOADING SHED	C-7	
48	LOADING SHED	D-7	

INDEX OF GUN MOUNTS			
NO.	DESCRIPTION	NO.	DESCRIPTION
1	20mm	25	20mm
2	"	26	"
3	"	27	"
4	"	28	"
5	"	29	"
6	"	30	"
7	"	31	"
8	"	32	40mm AC's
9	"	33	" "
10	"	34	" "
11	"	35	
12	"	36	
13	"	37	3"-23 Calibre
14	40mm	38	40mm Twin
15	1"-.1075 Quad.	39	3"-50 Calibre
16	40mm Twin	40	" " "
17	40mm Quad.	41	5"-38 Calibre DD Single
18	40mm Twin	42	" " " TG
19	50 Calibre	43	" " " M7
20	" "	44	" " " Twin
21	" "		
22	" "		
23	20mm		
24	"		

MAP OF ANTI-AIRCRAFT TRAINING CENTER POINT MONTARA CALIFORNIA TWELFTH NAVAL DISTRICT

SHOWING CONDITIONS ON

JUNE 30, 1945

SCALE OF FEET

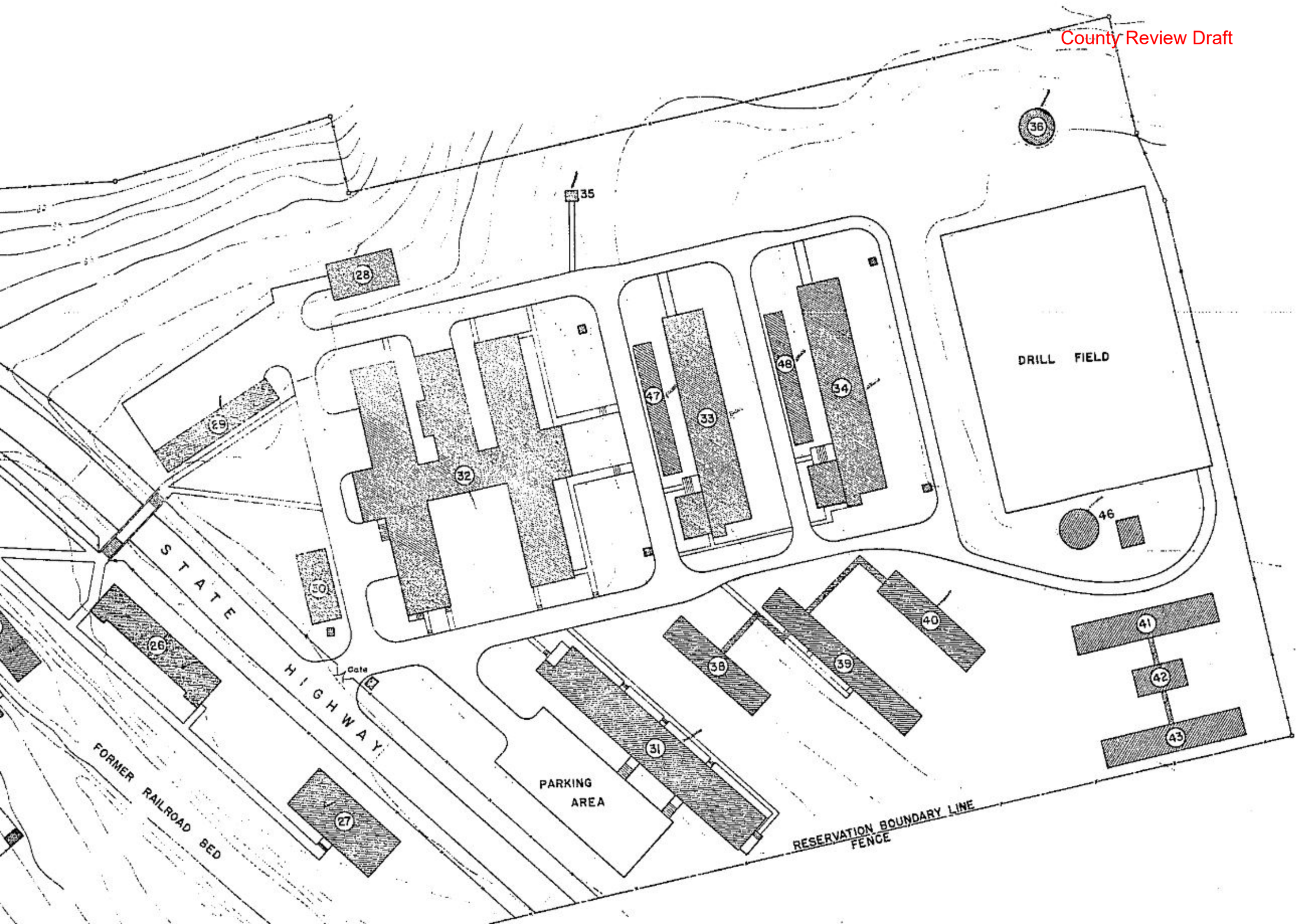
0 50 100 150 200 250

EXHIBIT "A"

W. W. Scudder
CAPTAIN, (C.E.C.) U.S. NAVY
DISTRICT PUBLIC WORKS OFFICER

DC-16002

County Review Draft



LIST OF BUILDINGS

County Review Draft

NO.	USE	ZONE	FL. ELEV.
1	ADMINISTRATION BUILDING	B-2	79.0
2	RANGE CONTROL TOWER	C-3	
3	FIRE CONTROL BUILDING	C-3	85.2
4	CLASSROOM BUILDING NO. 3	C-3	92.0
5	NIGHT LOOKOUT TRAINER BUILDING	C-3	89.0
6	CREW'S BARRACKS NO. 1	C-3	
7	POLOROID TRAINING BUILDING NO. 1	B-2	73.0
8	CLASSROOM BUILDING NO. 2	B-2	85.0
9	THEATRE	B-3	85.5
10	CARPENTER SHOP	B-3	
11	PUMP HOUSE	B-2	
12	PAINT LOCKER	B-2	
13	CREW'S LATRINE NO. 1	B-3	
14	LOADING MACHINE BUILDING NO. 1	E-4	
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18	MAGAZINE NO. 1	C-2	71.8
19	MAGAZINE NO. 2	C-3	
20	MAGAZINE NO. 3	D-4	
21	MAGAZINE NO. 4	D-4	
22	MAGAZINE NO. 5	D-4	
23	MAGAZINE NO. 6	E-4	
24	MAGAZINE NO. 7	E-5	
25	MAGAZINE NO. 8	E-5	
26	POLOROID TRAINING BUILDING NO. 1 AND 2	C-5	
27	VISUAL EDUCATION BUILDING	D-6	
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37	CLASSROOM BLDG.	D-4	
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39	CREW'S BARRACKS NO. 6	D-7	
40	T.D.D. HANGAR	D-8	
41	CREW'S BARRACKS NO. 7	D-8	
42	CREW'S HEAD	D-8	
43	CREW'S BARRACKS NO. 8	D-8	
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45	MARK 3 TRAINER BLDG.	C-4	
46	PUMPHOUSE & WATER STORAGE TANK	C-8	
47	LOADING SHED	C-7	
48	LOADING SHED	C-7	

APPENDIX G

QUALIFICATIONS

Lena Chervin – Associate Consultant

B.S. – Environmental Toxicology, University of California at Davis

Ms. Chervin has approximately one year of experience in the environmental field. Her past experiences include working for a toxicology consulting company in the Bay Area.

Project experience for Ms. Chervin includes:

- Phase I Environmental Site Assessments
- Environmental Transaction Screens
- Environmental Transaction Analyses
- Regulatory Database Review
- Historical Records Review

Ms. Chervin provides project management to ensure ASTM compliance and satisfaction of client requirements.

Prior to joining the environmental service industry, Ms. Chervin spent more than four years studying a diverse range of environmental disciplines including: toxicology, environmental fate and transport of contaminants, exposure and dose assessment, soil science, water quality management, and environmental law and policy.

Shannon Lefebvre – National Client Manager

BS Earth Science, Western Michigan University

Ms. Lefebvre has nearly 20 years of experience in the environmental services industry, primarily as a project manager working directly with clients to fulfill their environmental needs. Ms. Lefebvre has been responsible for management of small local clients as well as large national and regional accounts.

Project experience for Ms. Lefebvre includes:

- Phase I Environmental Site Assessments – Responsible for scheduling and managing all phases of environmental assessments and due diligence including debt and equity type clients. Properties range from large and small acreage raw land to residential, agricultural, retail, commercial and industrial properties. Projects included single sites and large portfolios of sites.

- Phase II Environmental Site Assessments – Responsible for planning and coordinating all phases of subsurface soil investigation at former landfills, agricultural operations, underground storage tank (UST) sites, dry cleaners, and industrial facilities; interpretation of analytical results and technical review of peer reports. Projects included removal of USTs and associated remediation for Leaking Underground Storage Tank (LUST) case closure.

- National Environmental Policy Act (NEPA) Compliance – Responsible for all aspects of NEPA compliance for telecommunication towers including tribal notification, review of archaeology reports and endangered species reports, State Historic Preservation Office (SHPO) submittals, and windshield surveys), for preparation of Environmental Assessments/Finding of No Significant Impact (FONSI), and Environmental Impact Statements (EIS).

- Stormwater Pollution Prevention Plans (SWPPP)– Responsible for preparation of SWPPPs for Arizona Department of Transportation (ADOT) statewide maintenance facilities, interpretation of analytical results of storm water sampling from ADOT facilities for comparison to regulatory requirements and preparation of reports; conducting annual SWPPP inspections for City of Phoenix Aviation Department, preparation of ADOT Quality Assurance Manual and ADOT Enforcement Response Plan.

- Indoor Air Quality - Responsible for the management and planning of assessment and remediation oversight regarding indoor quality issues for apartment complexes, dialysis facilities, mobile office units, retail centers, and banking workplaces throughout the U.S. Roles include instituting assessment criteria and remediation strategies.

- Asbestos – Responsible for managing asbestos survey and abatement projects throughout the U.S. Properties include multi-family complexes, banking centers, dialysis facilities, mobile office units and retail facilities. Work performed ranged from due diligence and/or proposed demolition projects, including large scale retail malls, to localized assessment for renovations for property upgrades.

APPENDIX I

Limited Phase II Subsurface Investigation

February 15, 2016

LIMITED PHASE II SUBSURFACE INVESTIGATION

Property Identification:
Carlos Street at Sierra Street
Moss Beach, San Mateo County, California 94038

AEI Project No. 350428

Prepared for:
MidPen Housing Corporation
1970 Broadway, Suite 440
Oakland, California 94612

Prepared by:
AEI Consultants
3880 S. Bascom Avenue, Suite 109
San Jose, California 95124
(408) 559-7600

Environmental & Engineering Due Diligence

Site Investigation & Remediation

Energy Performance & Benchmarking

Industrial Hygiene

Construction Consulting

Construction, Site Stabilization & Stormwater Services

Zoning Analysis Reports & ALTA Surveys

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AEI Consultants
Environmental & Engineering Services

February 15, 2016

Ms. Jennifer Liu
Acquisitions Analyst
MidPen Housing Corporation
1970 Broadway, Suite 440
Oakland, California 94612

Subject: **Limited Phase II Subsurface Investigation**
Carlos Street at Sierra Street
Moss Beach, San Mateo County, California 94038
AEI Project No. 350428

Dear Ms. Liu:

AEI Consultants (AEI) is pleased to provide this report which presents the results of the Limited Phase II Subsurface Investigation (Phase II) performed at the above referenced subject property. This investigation was completed in general accordance with the authorized scope of services outlined in our proposal dated November 19, 2015 (AEI Proposal No. 44236), as well as in accordance with the findings presented in AEI's DRAFT Phase I Environmental Site Assessment Report dated November 10, 2015. The location of the subject property is shown on Figure 1.

The purpose of this investigation is to assess whether or not subsurface conditions (i.e., soil) beneath the property have been impacted by the historical onsite operations. Information regarding the site description, background, scope of work, findings, conclusions, and recommendations for this investigation is provided in the following sections of this report.

1.0 SITE DESCRIPTION

The subject property comprises approximately 10.4 acres of vacant land, located to the north-northeast of the intersection between Carlos Street and Sierra Street in Moss Beach, an unincorporated community within San Mateo County, California. As shown on Figure 2, the property is bounded by residential properties along 16th Street (in Montara), and vacant land to the north, residential properties along Carlos, Sierra, and Stetson Streets to the south, residential properties along Lincoln and Buena Vista Street to the east, and one residential property and vacant land along Carlos Street to the west. Numerous concrete slab-on-grade building foundations, along with foundation retaining walls having scattered areas of graffiti, are present within the western and southwestern portions of the property. In some areas, these foundations are covered by thick vegetation consisting of trees and shrubs. Heavy vegetation also covers the majority of the property outside the areas of the building foundations. Unpaved roadways extend northwest-southeast across the north and central portions of the property. As shown on an Old Republic Title Company Preliminary Title Report Map dated October 8, 2015,

easements for Montara Water and Sanitary District (MWSD) and Pacific Gas and Electric (PG&E) utilities extend along the unpaved roadways within the property. MWSD infrastructure consisting of water storage tanks, a booster pumping system, and distribution facilities are located within a small, fenced-in parcel of land (known as Schoolhouse) adjacent to and west of the intersection of Lincoln Street and Buena Vista Street near the eastern boundary of the property. Another MWSD easement also extends southward form this parcel to Sierra Street, as shown on the Preliminary Title Report Map.

Topographically, the property generally slopes to the west-southwest with the exception of a steeply inclined, north-facing slope along the northern property boundary. Localized, relatively flat areas or topographic benches are present near the west and southwest boundaries of the property, as well as adjacent to Lincoln Street along the northeast corner of the property. Surface elevations at the property generally range between approximately 100 and 200 feet above mean sea level. The closest surface water body includes an unnamed, east-west trending, ephemeral drainage which parallels 16th Street to the north of the property.

Based on our review of a United States Geological Survey (USGS) Open File Report 98-137 Map entitled *Geology of the Onshore Part of San Mateo County, California* (Brabb, et.al., 1998), the subject property is situated upon a marine terrace underlain by Quaternary-aged alluvial deposits, along with thin, scattered veneers of residual soils. These units are further underlain by Montara Mountain granitic bedrock of Cenozoic age. Artificial fill consisting of soils, construction debris, wood debris, and other miscellaneous materials were scattered along the ground surface across the property.

The current estimated depth to groundwater beneath the property is unknown; however, well yield report information associated with a water supply well installed on the property in 1986 showed a static water level of 168 feet below ground surface (bgs). Based on the local site topography, the direction of groundwater flow is inferred to generally flow to the west-southwest, but also is inferred to flow to the north into the drainage adjacent to 16th Street.

2.0 BACKGROUND

As described in AEI's Phase I ESA report, historical sources indicated that the subject property was part of a large World War II training area circa 1945. Numerous military buildings had been present on the subject property, as shown on a drawing entitled *Map of Anti-Aircraft Training Center, Point Montara, California, Twelfth Naval District, Showing Conditions on June 30, 1945*, which was presented in Appendix F of AEI's Phase I ESA report. These buildings included barracks, offices, a mess hall, a library, a garage, a boiler room, an incinerator, a "TDD hanger", and a "drill field". After the war was over, the mess hall building was converted into a grammar school, and was later abandoned after a new school site was built (date unknown). By the late 1960s, the property was used as a training ground for firefighters. During firefighter training, AEI assumed that accelerants, such as those containing gasoline, may have been used along concrete pad surfaces. Burned materials from the firefighter training may have been washed off the pads and into unpaved, surrounding areas. Between approximately 1968 and 1970, a controlled burn occurred, which resulted in the burning of the several remaining buildings, leaving only exposed concrete foundations. Since at least 1970, the property has been vacant with the exception of the scattered, older building foundations, as well as the

fenced area containing MWSD infrastructure to support current water storage and distribution operations.

Recognized environmental conditions (RECs) were identified during AEI's Phase I ESA. These included the potential presence of lead-based paint in soils surrounding the building foundations, the "drill field", which may have been used for weaponry or as a shooting range, concrete pad areas potentially used for firefighter training, and an incinerator. In addition, during the planning stages of this Phase II, a boiler room was noted and identified as a REC to be further investigated. Other environmental considerations included two (2) domestic water supply wells that were reportedly no longer in use. Prior to this investigation, the locations of these wells were unknown. It was also unknown if the wells were properly abandoned in accordance with local County regulations.

3.0 INVESTIGATION EFFORTS

The scope of work for this investigation focused on assessing the presence or absence of impacted subsurface conditions (i.e., soil) relative to the former historical operations. AEI's investigation efforts included a site reconnaissance and utility clearance to locate the water supply wells and to check for the presence of underground utilities around planned drilling locations, a drilling/soil sampling program, and laboratory analyses.

3.1 Pre-Field Activities

3.1.1 Health and Safety Plan

A site-specific health and safety plan was prepared, reviewed by onsite personnel, and kept onsite for the duration of the fieldwork.

3.1.2 Permitting and Utility Clearance

Based on the scope of work including only shallow soil sample collection, no drilling permit was required from San Mateo County Environmental Health Services (SMCEHS) for this investigation.

On December 17, 2015, the property was reconnoitered by AEI to attempt to locate the former water supply wells. In addition, planned boring locations were staked and marked with white paint. Upon marking the boring locations, Underground Services Alert (USA) North was contacted, who, in turn, notified subscribing utility companies in order for their underground utility locations to be marked along property boundaries and around planned boring locations.

On December 21, 2015, a limited geophysical survey and utility clearance was performed by Foresite Engineering Surveys (Foresite) of Pleasant Hill, California under subcontract to AEI. The geophysical survey was performed to support site reconnaissance efforts in locating the water supply wells. The utility clearance was performed to check for the presence of underground utilities around planned boring locations and to shift boring locations, as appropriate.

3.1.3 Review of Water Supply Well Information

During December 2015 and January 2016, SMCEHS was contacted on numerous occasions to gather more information about the former water supply wells at the subject property. To date, no

information regarding these wells has been provided by SMCEHS other than the information provided during AEI's Phase I ESA. However, one (1) of the wells appears to have been located during the investigation, as further discussed in Section 4.1.

3.2 Field Activities

3.2.1 Exploratory Borings

The drilling program for this investigation was conducted on December 22 and 23, 2015. Thirty-three exploratory borings (B-1 and B-3 through B-34) were advanced to depths between 2.0 and 9.5 feet bgs. Of these total borings, twenty-seven (27) borings were advanced to the 2.0-foot depth for the collection of soil samples at the 0.0- and 1.5-foot depths. These locations included Boring B-1, which was advanced around the former incinerator area, and Borings B-4 through B-11, B-14, B-16, and B-18 through B-34, which were advanced to the 2.0-foot depth around former concrete foundation areas and "drill field" area. The other five (5) borings were advanced to depths between 5.5 and 9.5 feet bgs with soil samples for laboratory analyses obtained at depths between 2.0 and 7.0 feet bgs. These locations included Boring B-3, which was advanced along the west side of the concrete foundation for the former boiler room, and Borings B-12, B-13, B-15, and B-17 , which were advanced to the 9.5-foot depth around the former locations of concrete pads suspected of using accelerants during firefighter training. Four attempts were made to advance Boring B-2; however, this location was abandoned due to drilling refusal encountered just below the ground surface at each attempted location. The locations of these borings are shown on Figure 3.

The borings were drilled by a State of California C-57 licensed company, Environmental Control Associates, Inc. (ECA) of Aptos, California, under subcontract to AEI. Because of difficult, heavily-vegetated, soft terrain caused by recent rainy weather, the borings were advanced with a track-mounted drilling rig equipped with direct push technology. Upon completion of drilling, the borings were backfilled with soil cuttings generated during the drilling program.

The borings were continuously sampled throughout their entire depths for the purposes of lithologic logging, field screening (headspace testing), and selection of samples for laboratory analyses. Soil samples were obtained using a single-walled coring system approximately 2.25 inches in diameter and 4 feet in length containing plastic liners. The coring system was connected to 1-inch diameter, flush-jointed drill rod that was hydraulically driven (pushed) by the rig to each target sample depth. Upon retrieval from each sample depth interval, the coring system was opened, and the liners were removed and cut for preparing samples for laboratory analyses, as well as for visual inspection and lithologic logging purposes. Recovered soil samples were examined for soil classification and described on detailed boring logs in general conformance with the Unified Soil Classification System (USCS). Headspace tests were performed with a photo-ionization detector (PID) used for detecting the presence of volatile organic compounds (VOCs) in the soil samples. Headspace tests only were conducted in soil samples obtained from Borings B-3, B-12, B-13, B-15, and B-17, which were advanced around the former locations of concrete pads used for firefighter training and the former boiler room. The boring logs are presented in Appendix A.

Soil samples selected for laboratory analyses were sealed, labeled, and entered onto chain of custody documentation for transportation to a California state-certified laboratory for analyses.

Upon collection, the ends of the plastic tubes were covered with Teflon tape and capped. The samples were labeled with the project name, project number, boring number, sample depth, and sampling date/time of sampling. After labeling, the samples were placed into a chilled ice chest for transport to the analytical laboratory.

3.3.2 Headspace Testing

Headspace testing was performed during drilling activities with a photo-ionization detector (PID) for detecting the presence of VOCs in recovered soil samples. Headspace testing was generally performed at every 2-foot interval of the recovered sample cores from Borings B-3, B-12, B-13, B-15, and B-17. To initiate the headspace testing procedure, soil samples were removed from the liners, placed into labeled, plastic bags, and sealed for conducting the tests. After sufficient time elapsed for vapor build-up inside the bags, the bags were punctured with the probe tip of the PID to allow for measurement of the headspace. Measurements of the headspace were obtained in the parts per million (ppm) range for total VOCs. During this investigation, none of the headspace test measurements exceeded ambient air background concentrations, which were generally measured at 0.0 ppm.

3.3.3 Decontamination and Investigation-Derived Wastes

Drilling and sampling equipment were cleaned prior to and after drilling each boring. The equipment also was cleaned between core intervals using a triple rinse method. The initial rinse consisted of an Alconox and water solution, followed by two (2) tap water rinses (second and final rinses). No investigation-derived wastes were generated during this investigation.

3.4 Laboratory Analyses

Soil samples were submitted McCampbell Analytical, Inc. of Pittsburg, California for laboratory analyses. Additional samples also were submitted to the analytical laboratory and initially placed on hold. Additional laboratory analyses for lead were run on soil samples obtained from the 1.5-foot depth at Borings B-7, B-20, and B-21 on the basis of the initial analytical results.

The types and numbers of soil analyses included the following:

- Lead by United States Environmental Protection Agency (EPA) Method 6010.....27 samples
- Volatile Organic Compounds (VOCs) by EPA Method 8260B.....5 samples
- Total Petroleum Hydrocarbons as gasoline (TPH-g) by EPA Method 8015M.....5 samples
- TPH as diesel (TPH-d) and motor oil (TPH-mo) by EPA Method 8015M.....2 samples
- Polychlorinated Biphenyls (PCBs) by EPA Method SW8082 .....1 sample
- Dioxans and Furans by EPA Method 1613 .....1 sample
- California Assessment Manual (CAM) 17 Metals by EPA Method 6010.....1 sample

The samples were analyzed over a standard turnaround time (TAT) except for the additional soil samples, which were analyzed over a 1-day TAT. Chain-of-custody documentation and certified analytical reports are provided in Appendix B.

4.0 FINDINGS

4.1 Water Supply Wells

During AEI's Phase I ESA, it was found that two (2) former domestic water supply wells were located on the property. To gather more information about these wells, AEI attempted to contact SMCEHS; however, no additional information regarding these wells has been provided to date.

Based upon our review of preliminary information appended to AEI's Phase I ESA report, it was noted that at least one (1) domestic well permit (Permit No. W-43-86) was issued to California School Employee Association by San Mateo County Department of Public Health & Welfare on May 28, 1986. On June 18, 1986, a well yield test was performed, which included the well depth, standing and static water levels, and time versus drawdown testing over an approximate 5-hour period of time. As shown on a Well Yield Report Information form dated June 19, 1986, the owner was identified as Farrallon Vista Association under Permit No. DRW #149554. The total depth of the well is 400 feet. Static and standing water levels were measured at depths of 168 and 35 feet bgs, respectively. No information was provided regarding the well construction details other than the recorded well depth. On July 9, 1986, water quality testing for bacteriology and chemistry purposes had been performed at this well. As described under some telephone notes dated December 19, 1990, shown on a County Septic and Well Check-Off List, it was stated that the two (2) wells were installed under one permit and that both wells "would be repaired so that the aquifers were adequately protected." In addition, on this same Check-Off List, it was stated that the "upper well has been sealed by welded steel; lower well has been sealed flush with pad with bolted steel plate."

On the basis of the information provided to date, it appears that information for only one (1) well and its approximate location, instead of two (2) wells, was shown on the well construction application. The locations of the well shown on the application appeared to be the "upper well". No information on the location of the lower well was shown on the application.

During the site reconnaissance, it is believed that the location of the "upper well" was found. It is located upslope and to the east of Boring B-1, as shown on Figure 3. The surface completion for this well consists of a rectangular-shaped concrete pad which surrounds rusted, welded steel cover. The lower well was not located during the site reconnaissance. It is unknown if either of these wells were properly abandoned (i.e., backfilled with a new cement grout using tremie methods) in accordance with local regulations.

4.2 Subsurface Conditions

The results from the drilling program show that the subject property is underlain by alluvial and residual soils primarily consisting of sandy clays and clayey sands to the depths explored. No groundwater was encountered during drilling operation. No visual or olfactory evidence (i.e., soil discoloration, odor) of impacted soils was observed in any of the recovered soil cores during drilling operations. No PID readings above background levels above 0.0 ppm were measured during headspace testing.

4.3 Soil Analytical Results

Soil analytical results are presented on Table 1. Chain-of-custody documentation and certified analytical reports are provided in Appendix B.

Analytical results for soil obtained during this investigation are as follows:

- Lead was detected at concentrations between 4.5 and 230 milligrams per kilogram (mg/kg) in surface soils at each of the borings advanced around the concrete foundation and "drill field" areas.
- No TPH-g or VOCs were detected at concentrations at or above the laboratory reporting limits in any of the soil samples obtained from borings advanced around concrete pad areas used for firefighting purposes.
- TPH-d was detected at a concentration of 1.3 mg/kg at the 2.0-foot depth in Boring B-3, located around the former boiler room. No TPH-d was detected at a concentration at or above the laboratory reporting limit at the 5.0-foot depth in Boring B-3. No TPH-mo was detected at concentrations at or above the laboratory reporting limits in Boring B-3.
- Metals, including arsenic, barium, chromium, cobalt, copper, molybdenum, nickel, vanadium, and zinc, were detected at concentrations between 1.0 and 44 mg/kg at the 1.5-foot depth in Boring B-1, which is located around the former incinerator. No other metals were detected at concentrations at or above the laboratory reporting limits at that location.
- Total hexafurans were detected at a concentration of 2.78 picograms per gram (which is equivalent to 2.78 x 10^{-6} mg/kg) at the 1.5-foot depth in Boring B-1. No other dioxins/furans were detected at concentrations at or above the laboratory reporting limits.
- No PCBs were detected at concentrations at or above the laboratory reporting limits in any of the soil sample obtained from the one boring advanced around the area of the former incinerator.

For the purpose of providing context to the data obtained during this investigation, analytical results for soil were compared to established regulatory screening levels, including California Regional Water Quality Control Board (RWQCB), San Francisco Bay Region, Environmental Screening Levels (RWQCB ESLs) for residential land use for shallow soils (less than approximately 10 feet deep) assuming groundwater is a current or potential drinking water resource and USEPA Regional Screening Levels (RSLs) for resident soils. Of the chemical constituents analyzed, lead was found to exceed its RWQCB ESL within surface soils (0.0-foot depth) only at two (2) locations (Borings B-7 and B-21) adjacent to concrete foundation area. Subsequent analytical results for soils at the 1.5-foot depths at Borings B-7 and B-21 showed lead concentrations at one to two orders of magnitude below the RWQCB ESL. Arsenic was detected at a concentration slightly above its RWQCB ESL and USEPA RSL at the 1.5-foot depth in Boring B-1, located around the former incinerator area.

In summary, none of the detected chemical constituents in soil, including TPH-d and other metals, were found to exceed their respective RWQCB ESLs and USEPA RSLs. With respect to the low concentration of the total hexafurans, no regulatory screening levels are established for this constituent.

5.0 CONCLUSIONS AND RECOMMENDATIONS

AEI has completed a Phase II investigation at the subject property. The purpose of the Phase II at the subject property was to assess whether release(s) have occurred into the subsurface relative to the environmental concerns identified at the subject property. Thirty-three (33) exploratory soil borings were advanced the collection and analyses of soil samples during this investigation. Select samples were analyzed for one or more of the following: Lead, TPHs, VOCs, PCBs, CAM Metals, and Dioxins/Furans.

Detected concentrations of the various chemical constituents in soil were compared with their respective RWQCB ESLs and USEPA RSLs for those regulatory screening levels already established. None of the detected chemical constituents were found to exceed their respective RWQCB ESLs and USEPA RSLs except for lead detected within surface soils at two locations and arsenic detected at the 1.5-foot depth at one location. Additional laboratory analyses were run on soil samples obtained from the 1.5-foot depth to assess the vertical extent of lead-impacted soils at these two locations. Analytical results for the soil samples at the 1.5-foot depth showed lead concentrations below the RWQCB ESL and USEPA RSL. With respect to the presence of arsenic at the one location, its detected concentration is representative of naturally-occurring background conditions, which is within the range of arsenic concentrations found in soils within the San Francisco Bay Area (Bradford, et.al.).

Analytical results generated during this investigation suggest that the lead detected in soils may have originated from lead-based paint on former building exteriors. Furthermore, analytical results also suggest that lead concentrations, where elevated, are localized and appear to be restricted to surface soils at the two (2) identified locations. The vertical extent of lead-impacted soils at these two locations has been delineated on the basis of the lead concentrations not exceeding their RWQCB ESLs. The horizontal extent of lead-impacted soils at these two locations is undefined.

On the basis of the information, presented above, AEI recommends that a limited soil sampling program be performed to further assess the horizontal extent of lead-impacted surface soils around the two identified locations. AEI also recommends that the steel cover for the “upper well” be removed an experienced water well driller under subcontract to AEI to measure the well depth, as well as whether the well has been properly abandoned in accordance with County regulations.

6.0 REFERENCES

AEI Consultants, 2015, *Phase I Environmental Site Assessment, Carlos Street at Sierra Street, Moss Beach, San Mateo County, California 94038*, report prepared for MidPen Housing Corporation dated November 10, 2015.

Brabb, E.E., Graymer, R.W., and Jones, D.L., 1998, *Geology of the Onshore Part of San Mateo County, California: A digital database*, USGS Open-File Report 98-137

Bradford, G.R., Chang, A.C., Page, A.L., Bakhtar, D., Frampton, J.A., and Wright, H., 1996, *Background Concentrations of Trace and Major Elements in California Soils,* Kearney Foundation Special Report, Kearney Foundation of Soil Science, Division of Agriculture and Natural Resources, University of California Riverside (UCR), dated March 1996.

California Regional Water Quality Control Board, San Francisco Bay Region, 2013, *User's Guide: Derivation and Application of Environmental Screening Levels and Detailed Lookup Tables,* Interim Final 2013.

Pampeyan, E.H., 1994, *Geologic Map of the Montara Mountain and San Mateo 7-1/2' Quadrangles, San Mateo County, California*, USGS Map I-2390.

7.0 REPORT LIMITATIONS AND RELIANCE

This report presents a summary of work completed by AEI Consultants. The completed work includes observations and descriptions of site conditions encountered. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide the requested information, subject to scope of work for which AEI was retained and limitations inherent in this type of work, but it cannot be assumed that they are representative of areas not sampled. This report should not be regarded as a guarantee that no further contamination beyond that which could have been detected within the scope of this investigation is present beneath the subject property. Undocumented, unauthorized releases of hazardous material, the remains of which are not readily identifiable by visual inspection and are of different chemical constituents, are difficult and often impossible to detect within the scope of a chemical specific investigation.

Any conclusions and/or recommendations are based on these analyses and observations, and the governing regulations. Conclusions beyond those stated and reported herein should not be inferred from this document. These services were performed in accordance with generally accepted practices, in the environmental engineering and construction field, which existed at the time and location of the work. No other warranty, either expressed or implied, has been made.

This investigation was prepared for the sole use and benefit of MidPen Housing Corporation. All reports, both verbal and written, whether in draft or final, are for the benefit of Seagate Properties, Inc. This report has no other purpose and may not be relied upon by any other person or entity without the written consent of AEI. Either verbally or in writing, third parties may come into possession of this report or all or part of the information generated as a result of this work. In the absence of a written agreement with AEI granting such rights, no third parties shall have rights of recourse or recovery whatsoever under any course of action against AEI, its officers, employees, vendors, successors or assigns. Reliance is provided in accordance with AEI's Proposal and Standard Terms & Conditions executed by MidPen Housing Corporation. The limitation of liability defined in the Terms and Conditions is the aggregate limit of AEI's liability to the client and all relying parties.

If there are any questions regarding our investigation, please do not hesitate to contact AEI at (408) 559-7600.

Sincerely,
AEI Consultants



Timothy G. Bodkin, PG (4706), CEG (EG-1551)
Senior Geologist – Site Mitigation



Peter McIntyre, PG
Executive Vice President

FIGURES



N

Figure 1: TOPOGRAPHIC MAP

Carlos Street at Sierra Street, Moss Beach, California, 94038
Project Number: 350428

AEI Consultants



Figure 2: SITE MAP

Carlos Street at Sierra Street, Moss Beach, California, 94038
Project Number: 350428

AEI Consultants



0 100 200

APPROXIMATE SCALE: 1" = 200'

Legend

Estimated Groundwater Flow Direction

Approximate Property Boundary

Approximate Water Tank Parcel

Water Well Location

Boring Location

Approximate Drill Field Boundary

Approximate Building Boundary

Approximate Incinerator Location

N

Figure 3: BORING LOCATION MAP

Carlos Street at Sierra Street, Moss Beach, California, 94038

Project Number: 350428

AEI Consultants

TABLES

County Review Draft

TABLE 1: SOIL SAMPLE DATA SUMMARY
Carlos Street at Sierra Street, Moss Beach, CA

Location ID	Date	Depth (feet bgs)	Lead (mg/kg)	TPH-g (mg/kg)	TPH-d (mg/kg)	TPH-mo (mg/kg)	VOCs (mg/kg)	PCBs (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Molybdenu (mg/kg)	Nickel (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	Remaining Metals (mg/kg)	Total Hexafurans (mg/kg)	Other Dioxins/Furans (mg/kg)
B-1-1.5	12/22/2015	1.5	4.5	--	--	--	--	<MRL	**2.3**	44	15	3.9	2.2	1.0	13	36	29	<MRL	2.78 x 10^{-5}	--
B-3-2.0	12/23/2015	2	--	--	1.3	<5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-3-5.0	12/23/2015	5	--	--	<1.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-4-0.0	12/23/2015	0	29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-5-0.0	12/23/2015	0	54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-6-0.0	12/23/2015	0	8.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-7-0.0	12/23/2015	0	**230**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-7-1.5	12/23/2015	1.5	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-8-0.0	12/23/2015	0	23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-9-0.0	12/22/2015	0	6.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-10-0.0	12/22/2015	0	45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-11-0.0	12/22/2015	0	6.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-12-5.0	12/23/2015	5	--	<1.0	--	--	<MRL	--	--	--	--	--	--	--	--	--	--	--	--	--
B-13-6.0	12/23/2015	6	--	<1.0	--	--	<MRL	--	--	--	--	--	--	--	--	--	--	--	--	--
B-14-2.0	12/23/2015	2	--	<1.0	--	--	<MRL	--	--	--	--	--	--	--	--	--	--	--	--	--
B-15-0.0	12/22/2015	0	25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-15-7.0	12/23/2015	7	--	<1.0	--	--	<MRL	--	--	--	--	--	--	--	--	--	--	--	--	--
B-16-0.0	12/22/2015	0	15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-17-4.0	12/22/2015	4	--	<1.0	--	--	<MRL	--	--	--	--	--	--	--	--	--	--	--	--	--
B-18-0.0	12/22/2015	0	12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-19-0.0	12/22/2015	0	7.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-20-0.0	12/22/2015	0	41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-20-1.5	12/22/2015	1.5	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-21-0.0	12/22/2015	0	**88**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-21-1.5	12/22/2015	1.5	8.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-22-0.0	12/22/2015	0	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-23-0.0	12/22/2015	0	15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-24-0.0	12/22/2015	0	16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-25-0.0	12/22/2015	0	8.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-26-0.0	12/22/2015	0	7.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-27-0.0	12/22/2015	0	6.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-28-0.0	12/22/2015	0	9.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-29-0.0	12/22/2015	0	8.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-30-0.0	12/22/2015	0	9.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-31-0.0	12/22/2015	0	7.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-32-0.0	12/22/2015	0	7.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-33-0.0	12/22/2015	0	39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-34-0.0	12/22/2015	0	34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Regulatory Screening Levels																				
RWQCB $ESL_{residential}$			**80**	100	100	100	varies	varies	**0.39**	750	750	23	230	40	150	200	600	N/A	N/A	N/A
USEPA $RSL_{residential}$			400	82 - 520	96 - 110	2500 - 230000	varies	varies	**0.68**	15,000	120,000	23	3,100	390	NE	390	23,000	N/A	N/A	N/A

Notes:

mg/kg	milligrams per kilogram
<MRL	less than the method reporting limit
bgs	below ground surface
TPH-g	Total Petroleum Hydrocarbons as Gasoline
TPH-d	Total Petroleum hydrocarbons as Diesel
VOCs	Volatile Organic Compounds
PCBs	Polychlorinated biphenyls
Bold	Result exceeds applicable Comparison Value
--	Not analyzed
N/A	Not applicable
NE	Not established

Regulatory Screening Levels:
RWQCB $ESL_{residential}$: California Regional Water Quality Control Board Environmental Screening Level for residential land use for shallow soils (<3 meters bgs) assuming groundwater is a current or potential drinking water resource RWQCB, 2013, Table A-1).
USEPA $RSL_{residential}$: United States Environmental Protection Agency (USEPA) Regional Screening Level for resident soil (USEPA, June 2015 revised)

APPENDIX A

BORING LOGS

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BORING NUMBER B-1

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-1-0.0				YELLOW BROWN (10 YR 5/6) SILTY CLAY (CL) , soft, moist, no odor.	
1.0	B-1-1.5				BROWNISH YELLOW (10YR 6/6) GRAVELLY CLAY (CL), medium stiff, moist, no odor.	
2.0					Bottom of boring at 2.0 feet.	

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BORING NUMBER B-2

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/23/15 **COMPLETED** 12/23/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Hand Auger
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
					0.0 Hand auger refusal at ground surface (driller attempted hand augering at four locations)	

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BORING NUMBER B-3

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/23/15 **COMPLETED** 12/23/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-3-0.0				VERY DARK BROWN (10YR 2/2) SILTY CLAY (CL), soft, moist, no odor.	
	B-3-1.5			1.0	VERY DARK BROWN (10YR 2/2) CLAYEY SAND (SC), medium dense, moist, no odor.	
5	B-3-5.0			5.5		

Bottom of boring at 5.5 feet.

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BORING NUMBER B-4

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/23/15 **COMPLETED** 12/23/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-4-0.0				YELLOWISH BROWN (10 YR 5/6) GRAVELLY CLAY (CL), medium stiff, moist, no odor, some fine gravel.	
1.0	B-4-1.5				DARK BROWN (10YR 3/3/) SILTY CLAY (CL), soft, moist, no odor.	
2.0					Bottom of boring at 2.0 feet.	

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BORING NUMBER B-3

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/23/15 **COMPLETED** 12/23/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-3-0.0				VERY DARK BROWN (10YR 2/2) SILTY CLAY (CL), soft, moist, no odor.	
	B-3-1.5			1.0	VERY DARK BROWN (10YR 2/2) CLAYEY SAND (SC), medium dense, moist, no odor.	
5	B-3-5.0			5.5		

Bottom of boring at 5.5 feet.

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BORING NUMBER B-5

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/23/15 **COMPLETED** 12/23/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-5-0.0				DARK BROWN (10YR 3/3) SILTY CLAY (CL), soft to medium stiff, moist, no odor.	
1.0	B-5-1.5				YELLOWISH BROWN (10YR 5/6) SANDY CLAY (CL), medium stiff, moist, no odor, with fine to coarse sand.	
2.0					Bottom of boring at 2.0 feet.	

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BORING NUMBER B-6

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/23/15 **COMPLETED** 12/23/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-6-0.0 B-6-1.5				DARK BROWN (10YR 3/3) SANDY SILTY CLAY (CL), soft to medium stiff, moist, no odor, trace of fine sand.	
2.0					Bottom of boring at 2.0 feet.	

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BORING NUMBER B-7

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/23/15 **COMPLETED** 12/23/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-7-0.0 B-7-1.5				YELLOWISH BROWN (10YR 5/6) SANDY CLAY (CL), medium stiff, moist, no odor.	
2.0					Bottom of boring at 2.0 feet.	

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BORING NUMBER B-8

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/23/15 **COMPLETED** 12/23/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-8-0.0				DARK BROWN (10YR 4/3) SANDY CLAY (CL), medium stiff, moist, no odor.	
1.0	B-8-1.5				YELLOWISH BROWN (10YR 5/6) SANDY CLAY (CL), medium stiff, moist, no odor.	
2.0					Bottom of boring at 2.0 feet.	

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BORING NUMBER B-9

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-9-0.0 B-9-1.5				DARK BROWN (10YR 3/3) SANDY CLAY (CL), medium stiff, moist, no odor.	
2.0					Bottom of boring at 2.0 feet.	

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BORING NUMBER B-10

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-10-0.0 B-10-1.5				DARK BROWN (7.5YR 3/2) CLAYEY SAND (SC), loose to medium dense, moist, no odor. 2.0	

Bottom of boring at 2.0 feet.

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BORING NUMBER B-11

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-11-0.0 B-11-1.5				DARK BROWN (7.5YR 3/2) SANDY CLAY (CL) and CLAYEY SAND (SC), soft, moist, no odor.	
2.0					Bottom of boring at 2.0 feet.	

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BORING NUMBER B-12

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-12-0.0				DARK BROWN (7.5YR 4/3) CLAYEY SAND (SC), loose, moist, no odor.	
	B-12-1.5					
					3.0	
					STRONG BROWN (7.5YR 5/6) SANDY CLAY (CL), soft to medium stiff, moist, no odor.	
5	B-12-5.0					
					8.0	
	B-12-9.0				STRONG BROWN (7.5YR 5/6) CLAYEY SAND (SC), medium dense, moist, no odor.	
					9.5	

Bottom of boring at 9.5 feet.

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BORING NUMBER B-13

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/23/15 **COMPLETED** 12/23/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-13-3.0				STRONG BROWN (7.5YR 5/6) CLAYEY SAND (SC), medium dense, moist, no odor.	
5	B-13-6.0					
	B-13-9.0					
9.5					Bottom of boring at 9.5 feet.	

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BORING NUMBER B-14

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/23/15 **COMPLETED** 12/23/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0						
	B-14-2.0				DARK BROWN (7.5YR 3/3) CLAYEY SILTY SAND (SM), loose, moist, no odor. Drilling refusal encountered at 2 feet.	
					2.0	

Bottom of boring at 2.0 feet.

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BORING NUMBER B-15

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/23/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-15-0.0				DARK BROWN (7.5YR 3/3/) SANDY CLAY (CL), medium stiff, moist, no odor. Color changes to STRONG BROWN at 1.0 feet.	
	B-15-1.5					
5	B-15-4.0				5.0	
					STRONG BROWN GRAVELLY CLAYEY SAND (SC), medium dense, moist, no odor, with occasional pockets of sandy clay.	
	B-15-9.0				9.5	

Bottom of boring at 9.5 feet.

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BORING NUMBER B-16

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-16-0.0 B-16-1.5				DARK BROWN (7.5YR 3/4) CLAYEY SAND (SC), medium dense, moist, no odor.	
2.0					Bottom of boring at 2.0 feet.	

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BORING NUMBER B-17

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0					DARK BROWN (7.5YR 4/3) SANDY CLAY (CL), medium stiff, moist, no odor.	
5	B-17-4.0				4.5 STRONG BROWN GRAVELLY CLAYEY SAND (SC), medium dense, moist, no odor, some fine to coarse gravel.	
	B-17-8.0				9.5	

Bottom of boring at 9.5 feet.

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BORING NUMBER B-18

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-18-0.0 B-18-1.5				DARK BROWN (10YR 3/3) SILTY CLAY (CL), soft to medium stiff, moist, no odor.	
2.0					Bottom of boring at 2.0 feet.	

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BORING NUMBER B-19

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-19-0.0 B-19-1.5				DARK BROWN (10YR 3/3/) SANDY SILTY CLAY (CL), medium stiff, moist, no odor. grades to CLAYEY SAND at 1.8 feet. 2.0	

Bottom of boring at 2.0 feet.

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BORING NUMBER B-20

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-20-0.0				1.0 DARK BROWN (10YR 3/3) CLAYEY SAND (SC), medium dense, moist, no odor.	
	B-20-1.5				2.0 STRONG BROWN (7.5YR 5/6) SANDY CLAY (CL), medium stiff, moist.	
					Bottom of boring at 2.0 feet.	

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BORING NUMBER B-21

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-21-0.0 B-21-1.5			2.0	DARK BROWN (7.5 3/4) SANDY SILTY CLAY (CL), medium stiff, moist, no odor. Color changes to STRONG BROWN (7.5YR 5/6) with increased sand content below 1.5 feet.	
					Bottom of boring at 2.0 feet.	

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BORING NUMBER B-22

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-22-0.0				1.0 DARK BROWN (7.5YR 3/6) SILTY CLAY (CL), medium stiff, moist, no odor.	
	B-22-1.5				2.0 STRONG BROWN (7.5YR 5/6) SANDY CLAY (CL), medium stiff, moist, no odor.	
					Bottom of boring at 2.0 feet.	

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BORING NUMBER B-23

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-23-0.0 B-23-1.5			2.0	DARK BROWN (7.5 3/3) CLAYEY SAND (SC), loose to medium dense, moist, no odor, with STRONG BROWN mottling below 1.5 feet.	

Bottom of boring at 2.0 feet.

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BORING NUMBER B-24

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-24-0.0 B-24-1.5				DARK BROWN (7.5YR 3/3) SILTY CLAY (CL), soft to medium stiff, moist, no odor. Trace fine sand, color changed to BROWN (7.5YR 5/4), increased sand content.	
2.0					Bottom of boring at 2.0 feet.	

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BORING NUMBER B-25

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-25-0.0 B-25-1.5				DARK BROWN (7.5YR 3/4) SILTY CLAY (CL), medium stiff, moist, no odor, trace fine sand.	
2.0					Bottom of boring at 2.0 feet.	

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BORING NUMBER B-26

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-26-0.0 B-26-1.5				DARK BROWN (7.5YR 3/4) CLAYEY SAND (SC), medium dense, moist, no odor. increased sand content with depth.	
2.0					Bottom of boring at 2.0 feet.	

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BORING NUMBER B-27

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-27-0.0 B-27-1.5				DARK BROWN (7.5YR 4/3) CLAYEY SAND (SC), loose to medium dense, moist, no odor, with fine to coarse sand. 2.0	

Bottom of boring at 2.0 feet.

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BORING NUMBER B-28

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-28-0.0 B-28-1.5				STRONG BROWN (7.5 5/6) to DARK BROWN (7.5 4/4) CLAYEY SILTY SAND (SM), medium dense, moist, no odor.	
2.0					Bottom of boring at 2.0 feet.	

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BORING NUMBER B-29

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-29-0.0 B-29-1.5				DARK BROWN (7.5YR 4/4) to STRONG BROWN (7.5YR 5/6) SILTY SAND (SM), medium dense, moist, no odor, fine to coarse sand.	
2.0					Bottom of boring at 2.0 feet.	

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BORING NUMBER B-30

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-3-0.0 B-30-1.5				DARK BROWN (7.5YR 4/4) SANDY SILTY CLAY (CL), medium stiff, moist, no odor, at 1 foot, color change to STRONG BROWN (7.5YR 5/6), becomes stiff with increased sand content.	
2.0					Bottom of boring at 2.0 feet.	

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BORING NUMBER B-31

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-31-0.0 B-31-1.5			2.0	DARK BROWN (7.5YR 4/4) CLAYEY SAND (SC), loose to medium dense, moist, no odor. Color changes to STRONG BROWN (7.5YR 5/6) at 1.0 feet, fine to coarse sand.	

Bottom of boring at 2.0 feet.

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BORING NUMBER B-32

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-32-0.0 B-32-1.5				DARK BROWN (7.5YR 4/3) to STRONG BROWN (7.5yr 5/6) SILTY SANDY CLAY (CL) with CLAYEY SAND (SC), medium stiff, moist, no odor.	
2.0					Bottom of boring at 2.0 feet.	

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BORING NUMBER B-33

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-33-0.0 B-33-1.5				DARK BROWN (7.5YR 4/4) SANDY CLAY (CL), medium stiff, moist, stiff.	
2.0					Bottom of boring at 2.0 feet.	

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BORING NUMBER B-34

CLIENT MidPen Housing
PROJECT NAME Carlos at Sierra Streets
PROJECT NUMBER 350428
PROJECT LOCATION Moss Beach, California
DATE STARTED 12/22/15 **COMPLETED** 12/22/15
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Tim Bodkin **CHECKED BY** Tim Bodkin
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	B-34-0.0 B34-1.5				DARK BROWN (7.5YR) SANDY CLAY (CL), medium stiff, moist, no odor.	
2.0					Bottom of boring at 2.0 feet.	

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APPENDIX B

LABORATORY ANALYTICAL REPORTS

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McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1512A77

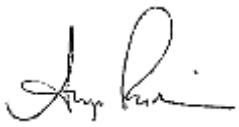
Report Created for: AEI Consultants

3880 S. Bascom Ave, Suite 109
San Jose, CA 95124

Project Contact: Tim Bodkin
Project P.O.:
Project Name: 350428; Carlos & Sierra Streets, Moss Beach, CA

Project Received: 12/28/2015

Analytical Report reviewed & approved for release on 01/11/2016 by:



Angela Rydelius,
Laboratory Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.

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McCampbell Analytical, Inc.
"When Quality Counts"
1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: AEI Consultants
Project: 350428; Carlos & Sierra Streets, Moss Beach, CA
WorkOrder: 1512A77

Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

Analytical Qualifiers

S	spike recovery outside accepted recovery limits
e2	diesel range compounds are significant; no recognizable pattern
e7	oil range compounds are significant

County Review Draft

McCampbell Analytical, Inc.
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Glossary of Terms & Qualifier Definitions

Client: AEI Consultants
Project: 350428; Carlos & Sierra Streets, Moss Beach, CA
WorkOrder: 1512A77

Quality Control Qualifiers

F8	MS/MSD recovery and/or RPD was out of acceptance criteria; PDS validated the prep batch. If PDS recovery was out of acceptance criteria, DLT validated the prep batch.

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	E1613
Date Prepared:	12/31/15	**Analytical Method:**	E1613
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	pg/g

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1-1.5	**1512A77-002A**	**Soil**	**12/22/2015 10:20**	**GC36**	**114978**

Analytes	TEF WHO '05	Result	RL	DF	Ion Ratio	RRT	TEQ	Date Analyzed
2,3,7,8-TCDD		ND	0.500	1				01/08/2016 14:29
1,2,3,7,8-PeCDD		ND	2.50	1				01/08/2016 14:29
1,2,3,4,7,8-HxCDD		ND	2.50	1				01/08/2016 14:29
1,2,3,6,7,8-HxCDD		ND	2.50	1				01/08/2016 14:29
1,2,3,7,8,9-HxCDD		ND	2.50	1				01/08/2016 14:29
1,2,3,4,6,7,8-HpCDD		ND	2.50	1				01/08/2016 14:29
OCDD		ND	5.00	1				01/08/2016 14:29
2,3,7,8-TCDF		ND	0.500	1				01/08/2016 14:29
1,2,3,7,8-PeCDF		ND	2.50	1				01/08/2016 14:29
2,3,4,7,8-PeCDF		ND	2.50	1				01/08/2016 14:29
1,2,3,4,7,8-HxCDF		ND	2.50	1				01/08/2016 14:29
1,2,3,6,7,8-HxCDF		ND	2.50	1				01/08/2016 14:29
2,3,4,6,7,8-HxCDF		ND	2.50	1				01/08/2016 14:29
1,2,3,7,8,9-HxCDF		ND	2.50	1				01/08/2016 14:29
1,2,3,4,6,7,8-HpCDF		ND	2.50	1				01/08/2016 14:29
1,2,3,4,7,8,9-HpCDF		ND	2.50	1				01/08/2016 14:29
OCDF		ND	5.00	1				01/08/2016 14:29
Total-Tetradioxins		ND	0.500	1				01/08/2016 14:29
Total-Heptadioxins		ND	2.50	1				01/08/2016 14:29
Total-Hexadioxins		ND	2.50	1				01/08/2016 14:29
Total-Pentadioxins		ND	2.50	1				01/08/2016 14:29
Total-Tetrafurans		ND	0.500	1				01/08/2016 14:29
Total-Heptafurans		ND	2.50	1				01/08/2016 14:29
Total-Hexafurans		**2.78**	2.50	1				01/08/2016 14:29
Total-Pentafurans		ND	2.50	1				01/08/2016 14:29

Total TEQ: 0

Cleanup Standard	REC (%)	Limits	
37Cl-2,3,7,8-TCDD	85	35-197	01/08/2016 14:29
Labeled Compound Recovery			
13C-2,3,7,8-TCDD	78	25-164	01/08/2016 14:29
13C-1,2,3,7,8-PeCDD	99	25-181	01/08/2016 14:29
13C-1,2,3,4,7,8-HxCDD	86	32-141	01/08/2016 14:29
13C-1,2,3,6,7,8-HxCDD	77	28-130	01/08/2016 14:29
13C-1,2,3,4,6,7,8-HpCDD	97	23-140	01/08/2016 14:29

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CDPH ELAP 1644 ♦ NELAP 4033ORELAP

Angela Rydelius, Lab Manager

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	E1613
Date Prepared:	12/31/15	**Analytical Method:**	E1613
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	pg/g

Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1-1.5	**1512A77-002A**	**Soil**	**12/22/2015 10:20**	**GC36**	**114978**

Analytes	TEF WHO '05	Result	RL	DF	Ion Ratio	RRT	TEQ	Date Analyzed
13C-OCDD		117	17-157					01/08/2016 14:29
13C-2,3,7,8-TCDF		74	24-169					01/08/2016 14:29
13C-1,2,3,7,8-PeCDF		88	24-185					01/08/2016 14:29
13C-2,3,4,7,8-PeCDF		92	21-178					01/08/2016 14:29
13C-1,2,3,4,7,8-HxCDF		76	26-152					01/08/2016 14:29
13C-1,2,3,6,7,8-HxCDF		71	26-123					01/08/2016 14:29
13C-2,3,4,6,7,8-HxCDF		73	28-136					01/08/2016 14:29
13C-1,2,3,7,8,9-HxCDF		78	29-147					01/08/2016 14:29
13C-1,2,3,4,6,7,8-HpCDF		88	28-143					01/08/2016 14:29
13C-1,2,3,4,7,8,9-HpCDF		94	26-138					01/08/2016 14:29

Analyst(s): MG

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW3550B
Date Prepared:	12/28/15	**Analytical Method:**	SW8082
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/kg

Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1-1.5	1512A77-002A	Soil	12/22/2015 10:20	GC5A	114732

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.050	1	12/28/2015 23:35
Aroclor1221	ND	0.050	1	12/28/2015 23:35
Aroclor1232	ND	0.050	1	12/28/2015 23:35
Aroclor1242	ND	0.050	1	12/28/2015 23:35
Aroclor1248	ND	0.050	1	12/28/2015 23:35
Aroclor1254	ND	0.050	1	12/28/2015 23:35
Aroclor1260	ND	0.050	1	12/28/2015 23:35
PCBs, total	ND	0.050	1	12/28/2015 23:35

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	90	70-130	12/28/2015 23:35

Analyst(s): SS

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW5030B
Date Prepared:	12/28/15	**Analytical Method:**	SW8260B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-12-5.0	1512A77-021A	Soil	12/23/2015 10:15	GC18	114716

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	12/31/2015 00:37
tert-Amyl methyl ether (TAME)	ND	0.0050	1	12/31/2015 00:37
Benzene	ND	0.0050	1	12/31/2015 00:37
Bromobenzene	ND	0.0050	1	12/31/2015 00:37
Bromochloromethane	ND	0.0050	1	12/31/2015 00:37
Bromodichloromethane	ND	0.0050	1	12/31/2015 00:37
Bromoform	ND	0.0050	1	12/31/2015 00:37
Bromomethane	ND	0.0050	1	12/31/2015 00:37
2-Butanone (MEK)	ND	0.020	1	12/31/2015 00:37
t-Butyl alcohol (TBA)	ND	0.050	1	12/31/2015 00:37
n-Butyl benzene	ND	0.0050	1	12/31/2015 00:37
sec-Butyl benzene	ND	0.0050	1	12/31/2015 00:37
tert-Butyl benzene	ND	0.0050	1	12/31/2015 00:37
Carbon Disulfide	ND	0.0050	1	12/31/2015 00:37
Carbon Tetrachloride	ND	0.0050	1	12/31/2015 00:37
Chlorobenzene	ND	0.0050	1	12/31/2015 00:37
Chloroethane	ND	0.0050	1	12/31/2015 00:37
Chloroform	ND	0.0050	1	12/31/2015 00:37
Chloromethane	ND	0.0050	1	12/31/2015 00:37
2-Chlorotoluene	ND	0.0050	1	12/31/2015 00:37
4-Chlorotoluene	ND	0.0050	1	12/31/2015 00:37
Dibromochloromethane	ND	0.0050	1	12/31/2015 00:37
1,2-Dibromo-3-chloropropane	ND	0.0040	1	12/31/2015 00:37
1,2-Dibromoethane (EDB)	ND	0.0040	1	12/31/2015 00:37
Dibromomethane	ND	0.0050	1	12/31/2015 00:37
1,2-Dichlorobenzene	ND	0.0050	1	12/31/2015 00:37
1,3-Dichlorobenzene	ND	0.0050	1	12/31/2015 00:37
1,4-Dichlorobenzene	ND	0.0050	1	12/31/2015 00:37
Dichlorodifluoromethane	ND	0.0050	1	12/31/2015 00:37
1,1-Dichloroethane	ND	0.0050	1	12/31/2015 00:37
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	12/31/2015 00:37
1,1-Dichloroethene	ND	0.0050	1	12/31/2015 00:37
cis-1,2-Dichloroethene	ND	0.0050	1	12/31/2015 00:37
trans-1,2-Dichloroethene	ND	0.0050	1	12/31/2015 00:37
1,2-Dichloropropane	ND	0.0050	1	12/31/2015 00:37
1,3-Dichloropropane	ND	0.0050	1	12/31/2015 00:37
2,2-Dichloropropane	ND	0.0050	1	12/31/2015 00:37

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW5030B
Date Prepared:	12/28/15	**Analytical Method:**	SW8260B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-12-5.0	1512A77-021A	Soil	12/23/2015 10:15	GC18	114716

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	12/31/2015 00:37
cis-1,3-Dichloropropene	ND	0.0050	1	12/31/2015 00:37
trans-1,3-Dichloropropene	ND	0.0050	1	12/31/2015 00:37
Diisopropyl ether (DIPE)	ND	0.0050	1	12/31/2015 00:37
Ethylbenzene	ND	0.0050	1	12/31/2015 00:37
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	12/31/2015 00:37
Freon 113	ND	0.0050	1	12/31/2015 00:37
Hexachlorobutadiene	ND	0.0050	1	12/31/2015 00:37
Hexachloroethane	ND	0.0050	1	12/31/2015 00:37
2-Hexanone	ND	0.0050	1	12/31/2015 00:37
Isopropylbenzene	ND	0.0050	1	12/31/2015 00:37
4-Isopropyl toluene	ND	0.0050	1	12/31/2015 00:37
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	12/31/2015 00:37
Methylene chloride	ND	0.0050	1	12/31/2015 00:37
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	12/31/2015 00:37
Naphthalene	ND	0.0050	1	12/31/2015 00:37
n-Propyl benzene	ND	0.0050	1	12/31/2015 00:37
Styrene	ND	0.0050	1	12/31/2015 00:37
1,1,1,2-Tetrachloroethane	ND	0.0050	1	12/31/2015 00:37
1,1,2,2-Tetrachloroethane	ND	0.0050	1	12/31/2015 00:37
Tetrachloroethene	ND	0.0050	1	12/31/2015 00:37
Toluene	ND	0.0050	1	12/31/2015 00:37
1,2,3-Trichlorobenzene	ND	0.0050	1	12/31/2015 00:37
1,2,4-Trichlorobenzene	ND	0.0050	1	12/31/2015 00:37
1,1,1-Trichloroethane	ND	0.0050	1	12/31/2015 00:37
1,1,2-Trichloroethane	ND	0.0050	1	12/31/2015 00:37
Trichloroethene	ND	0.0050	1	12/31/2015 00:37
Trichlorofluoromethane	ND	0.0050	1	12/31/2015 00:37
1,2,3-Trichloropropane	ND	0.0050	1	12/31/2015 00:37
1,2,4-Trimethylbenzene	ND	0.0050	1	12/31/2015 00:37
1,3,5-Trimethylbenzene	ND	0.0050	1	12/31/2015 00:37
Vinyl Chloride	ND	0.0050	1	12/31/2015 00:37
Xylenes, Total	ND	0.0050	1	12/31/2015 00:37

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CDPH ELAP 1644 ♦ NELAP 4033ORELAP

Angela Rydelius, Lab Manager

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW5030B
Date Prepared:	12/28/15	**Analytical Method:**	SW8260B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-12-5.0	1512A77-021A	Soil	12/23/2015 10:15	GC18	114716

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	89	70-130		12/31/2015 00:37
Toluene-d8	89	70-130		12/31/2015 00:37
4-BFB	81	70-130		12/31/2015 00:37
Benzene-d6	83	60-140		12/31/2015 00:37
Ethylbenzene-d10	86	60-140		12/31/2015 00:37
1,2-DCB-d4	85	60-140		12/31/2015 00:37

Analyst(s): KF

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW5030B
Date Prepared:	12/28/15	**Analytical Method:**	SW8260B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-13-6.0	1512A77-026A	Soil	12/23/2015 10:43	GC16	114716

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	12/31/2015 01:30
tert-Amyl methyl ether (TAME)	ND	0.0050	1	12/31/2015 01:30
Benzene	ND	0.0050	1	12/31/2015 01:30
Bromobenzene	ND	0.0050	1	12/31/2015 01:30
Bromochloromethane	ND	0.0050	1	12/31/2015 01:30
Bromodichloromethane	ND	0.0050	1	12/31/2015 01:30
Bromoform	ND	0.0050	1	12/31/2015 01:30
Bromomethane	ND	0.0050	1	12/31/2015 01:30
2-Butanone (MEK)	ND	0.020	1	12/31/2015 01:30
t-Butyl alcohol (TBA)	ND	0.050	1	12/31/2015 01:30
n-Butyl benzene	ND	0.0050	1	12/31/2015 01:30
sec-Butyl benzene	ND	0.0050	1	12/31/2015 01:30
tert-Butyl benzene	ND	0.0050	1	12/31/2015 01:30
Carbon Disulfide	ND	0.0050	1	12/31/2015 01:30
Carbon Tetrachloride	ND	0.0050	1	12/31/2015 01:30
Chlorobenzene	ND	0.0050	1	12/31/2015 01:30
Chloroethane	ND	0.0050	1	12/31/2015 01:30
Chloroform	ND	0.0050	1	12/31/2015 01:30
Chloromethane	ND	0.0050	1	12/31/2015 01:30
2-Chlorotoluene	ND	0.0050	1	12/31/2015 01:30
4-Chlorotoluene	ND	0.0050	1	12/31/2015 01:30
Dibromochloromethane	ND	0.0050	1	12/31/2015 01:30
1,2-Dibromo-3-chloropropane	ND	0.0040	1	12/31/2015 01:30
1,2-Dibromoethane (EDB)	ND	0.0040	1	12/31/2015 01:30
Dibromomethane	ND	0.0050	1	12/31/2015 01:30
1,2-Dichlorobenzene	ND	0.0050	1	12/31/2015 01:30
1,3-Dichlorobenzene	ND	0.0050	1	12/31/2015 01:30
1,4-Dichlorobenzene	ND	0.0050	1	12/31/2015 01:30
Dichlorodifluoromethane	ND	0.0050	1	12/31/2015 01:30
1,1-Dichloroethane	ND	0.0050	1	12/31/2015 01:30
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	12/31/2015 01:30
1,1-Dichloroethene	ND	0.0050	1	12/31/2015 01:30
cis-1,2-Dichloroethene	ND	0.0050	1	12/31/2015 01:30
trans-1,2-Dichloroethene	ND	0.0050	1	12/31/2015 01:30
1,2-Dichloropropane	ND	0.0050	1	12/31/2015 01:30
1,3-Dichloropropane	ND	0.0050	1	12/31/2015 01:30
2,2-Dichloropropane	ND	0.0050	1	12/31/2015 01:30

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW5030B
Date Prepared:	12/28/15	**Analytical Method:**	SW8260B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-13-6.0	1512A77-026A	Soil	12/23/2015 10:43	GC16	114716

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	12/31/2015 01:30
cis-1,3-Dichloropropene	ND	0.0050	1	12/31/2015 01:30
trans-1,3-Dichloropropene	ND	0.0050	1	12/31/2015 01:30
Diisopropyl ether (DIPE)	ND	0.0050	1	12/31/2015 01:30
Ethylbenzene	ND	0.0050	1	12/31/2015 01:30
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	12/31/2015 01:30
Freon 113	ND	0.0050	1	12/31/2015 01:30
Hexachlorobutadiene	ND	0.0050	1	12/31/2015 01:30
Hexachloroethane	ND	0.0050	1	12/31/2015 01:30
2-Hexanone	ND	0.0050	1	12/31/2015 01:30
Isopropylbenzene	ND	0.0050	1	12/31/2015 01:30
4-Isopropyl toluene	ND	0.0050	1	12/31/2015 01:30
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	12/31/2015 01:30
Methylene chloride	ND	0.0050	1	12/31/2015 01:30
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	12/31/2015 01:30
Naphthalene	ND	0.0050	1	12/31/2015 01:30
n-Propyl benzene	ND	0.0050	1	12/31/2015 01:30
Styrene	ND	0.0050	1	12/31/2015 01:30
1,1,1,2-Tetrachloroethane	ND	0.0050	1	12/31/2015 01:30
1,1,2,2-Tetrachloroethane	ND	0.0050	1	12/31/2015 01:30
Tetrachloroethene	ND	0.0050	1	12/31/2015 01:30
Toluene	ND	0.0050	1	12/31/2015 01:30
1,2,3-Trichlorobenzene	ND	0.0050	1	12/31/2015 01:30
1,2,4-Trichlorobenzene	ND	0.0050	1	12/31/2015 01:30
1,1,1-Trichloroethane	ND	0.0050	1	12/31/2015 01:30
1,1,2-Trichloroethane	ND	0.0050	1	12/31/2015 01:30
Trichloroethene	ND	0.0050	1	12/31/2015 01:30
Trichlorofluoromethane	ND	0.0050	1	12/31/2015 01:30
1,2,3-Trichloropropane	ND	0.0050	1	12/31/2015 01:30
1,2,4-Trimethylbenzene	ND	0.0050	1	12/31/2015 01:30
1,3,5-Trimethylbenzene	ND	0.0050	1	12/31/2015 01:30
Vinyl Chloride	ND	0.0050	1	12/31/2015 01:30
Xylenes, Total	ND	0.0050	1	12/31/2015 01:30

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW5030B
Date Prepared:	12/28/15	**Analytical Method:**	SW8260B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-13-6.0	1512A77-026A	Soil	12/23/2015 10:43	GC16	114716

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	81	70-130		12/31/2015 01:30
Toluene-d8	80	70-130		12/31/2015 01:30
4-BFB	80	70-130		12/31/2015 01:30
Benzene-d6	69	60-140		12/31/2015 01:30
Ethylbenzene-d10	76	60-140		12/31/2015 01:30
1,2-DCB-d4	60	60-140		12/31/2015 01:30

Analyst(s): KF

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CDPH ELAP 1644 ♦ NELAP 4033ORELAP

Angela Rydelius, Lab Manager

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW5030B
Date Prepared:	12/28/15	**Analytical Method:**	SW8260B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-14-2.0	1512A77-028A	Soil	12/23/2015 11:50	GC18	114716

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	12/31/2015 01:53
tert-Amyl methyl ether (TAME)	ND	0.0050	1	12/31/2015 01:53
Benzene	ND	0.0050	1	12/31/2015 01:53
Bromobenzene	ND	0.0050	1	12/31/2015 01:53
Bromochloromethane	ND	0.0050	1	12/31/2015 01:53
Bromodichloromethane	ND	0.0050	1	12/31/2015 01:53
Bromoform	ND	0.0050	1	12/31/2015 01:53
Bromomethane	ND	0.0050	1	12/31/2015 01:53
2-Butanone (MEK)	ND	0.020	1	12/31/2015 01:53
t-Butyl alcohol (TBA)	ND	0.050	1	12/31/2015 01:53
n-Butyl benzene	ND	0.0050	1	12/31/2015 01:53
sec-Butyl benzene	ND	0.0050	1	12/31/2015 01:53
tert-Butyl benzene	ND	0.0050	1	12/31/2015 01:53
Carbon Disulfide	ND	0.0050	1	12/31/2015 01:53
Carbon Tetrachloride	ND	0.0050	1	12/31/2015 01:53
Chlorobenzene	ND	0.0050	1	12/31/2015 01:53
Chloroethane	ND	0.0050	1	12/31/2015 01:53
Chloroform	ND	0.0050	1	12/31/2015 01:53
Chloromethane	ND	0.0050	1	12/31/2015 01:53
2-Chlorotoluene	ND	0.0050	1	12/31/2015 01:53
4-Chlorotoluene	ND	0.0050	1	12/31/2015 01:53
Dibromochloromethane	ND	0.0050	1	12/31/2015 01:53
1,2-Dibromo-3-chloropropane	ND	0.0040	1	12/31/2015 01:53
1,2-Dibromoethane (EDB)	ND	0.0040	1	12/31/2015 01:53
Dibromomethane	ND	0.0050	1	12/31/2015 01:53
1,2-Dichlorobenzene	ND	0.0050	1	12/31/2015 01:53
1,3-Dichlorobenzene	ND	0.0050	1	12/31/2015 01:53
1,4-Dichlorobenzene	ND	0.0050	1	12/31/2015 01:53
Dichlorodifluoromethane	ND	0.0050	1	12/31/2015 01:53
1,1-Dichloroethane	ND	0.0050	1	12/31/2015 01:53
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	12/31/2015 01:53
1,1-Dichloroethene	ND	0.0050	1	12/31/2015 01:53
cis-1,2-Dichloroethene	ND	0.0050	1	12/31/2015 01:53
trans-1,2-Dichloroethene	ND	0.0050	1	12/31/2015 01:53
1,2-Dichloropropane	ND	0.0050	1	12/31/2015 01:53
1,3-Dichloropropane	ND	0.0050	1	12/31/2015 01:53
2,2-Dichloropropane	ND	0.0050	1	12/31/2015 01:53

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW5030B
Date Prepared:	12/28/15	**Analytical Method:**	SW8260B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-14-2.0	1512A77-028A	Soil	12/23/2015 11:50	GC18	114716

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	12/31/2015 01:53
cis-1,3-Dichloropropene	ND	0.0050	1	12/31/2015 01:53
trans-1,3-Dichloropropene	ND	0.0050	1	12/31/2015 01:53
Diisopropyl ether (DIPE)	ND	0.0050	1	12/31/2015 01:53
Ethylbenzene	ND	0.0050	1	12/31/2015 01:53
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	12/31/2015 01:53
Freon 113	ND	0.0050	1	12/31/2015 01:53
Hexachlorobutadiene	ND	0.0050	1	12/31/2015 01:53
Hexachloroethane	ND	0.0050	1	12/31/2015 01:53
2-Hexanone	ND	0.0050	1	12/31/2015 01:53
Isopropylbenzene	ND	0.0050	1	12/31/2015 01:53
4-Isopropyl toluene	ND	0.0050	1	12/31/2015 01:53
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	12/31/2015 01:53
Methylene chloride	ND	0.0050	1	12/31/2015 01:53
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	12/31/2015 01:53
Naphthalene	ND	0.0050	1	12/31/2015 01:53
n-Propyl benzene	ND	0.0050	1	12/31/2015 01:53
Styrene	ND	0.0050	1	12/31/2015 01:53
1,1,1,2-Tetrachloroethane	ND	0.0050	1	12/31/2015 01:53
1,1,2,2-Tetrachloroethane	ND	0.0050	1	12/31/2015 01:53
Tetrachloroethene	ND	0.0050	1	12/31/2015 01:53
Toluene	ND	0.0050	1	12/31/2015 01:53
1,2,3-Trichlorobenzene	ND	0.0050	1	12/31/2015 01:53
1,2,4-Trichlorobenzene	ND	0.0050	1	12/31/2015 01:53
1,1,1-Trichloroethane	ND	0.0050	1	12/31/2015 01:53
1,1,2-Trichloroethane	ND	0.0050	1	12/31/2015 01:53
Trichloroethene	ND	0.0050	1	12/31/2015 01:53
Trichlorofluoromethane	ND	0.0050	1	12/31/2015 01:53
1,2,3-Trichloropropane	ND	0.0050	1	12/31/2015 01:53
1,2,4-Trimethylbenzene	ND	0.0050	1	12/31/2015 01:53
1,3,5-Trimethylbenzene	ND	0.0050	1	12/31/2015 01:53
Vinyl Chloride	ND	0.0050	1	12/31/2015 01:53
Xylenes, Total	ND	0.0050	1	12/31/2015 01:53

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW5030B
Date Prepared:	12/28/15	**Analytical Method:**	SW8260B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-14-2.0	1512A77-028A	Soil	12/23/2015 11:50	GC18	114716

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	89	70-130		12/31/2015 01:53
Toluene-d8	89	70-130		12/31/2015 01:53
4-BFB	80	70-130		12/31/2015 01:53
Benzene-d6	92	60-140		12/31/2015 01:53
Ethylbenzene-d10	95	60-140		12/31/2015 01:53
1,2-DCB-d4	92	60-140		12/31/2015 01:53

Analyst(s): KF

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW5030B
Date Prepared:	12/28/15	**Analytical Method:**	SW8260B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-15-7.0	1512A77-032A	Soil	12/23/2015 09:50	GC18	114716

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	12/31/2015 01:15
tert-Amyl methyl ether (TAME)	ND	0.0050	1	12/31/2015 01:15
Benzene	ND	0.0050	1	12/31/2015 01:15
Bromobenzene	ND	0.0050	1	12/31/2015 01:15
Bromochloromethane	ND	0.0050	1	12/31/2015 01:15
Bromodichloromethane	ND	0.0050	1	12/31/2015 01:15
Bromoform	ND	0.0050	1	12/31/2015 01:15
Bromomethane	ND	0.0050	1	12/31/2015 01:15
2-Butanone (MEK)	ND	0.020	1	12/31/2015 01:15
t-Butyl alcohol (TBA)	ND	0.050	1	12/31/2015 01:15
n-Butyl benzene	ND	0.0050	1	12/31/2015 01:15
sec-Butyl benzene	ND	0.0050	1	12/31/2015 01:15
tert-Butyl benzene	ND	0.0050	1	12/31/2015 01:15
Carbon Disulfide	ND	0.0050	1	12/31/2015 01:15
Carbon Tetrachloride	ND	0.0050	1	12/31/2015 01:15
Chlorobenzene	ND	0.0050	1	12/31/2015 01:15
Chloroethane	ND	0.0050	1	12/31/2015 01:15
Chloroform	ND	0.0050	1	12/31/2015 01:15
Chloromethane	ND	0.0050	1	12/31/2015 01:15
2-Chlorotoluene	ND	0.0050	1	12/31/2015 01:15
4-Chlorotoluene	ND	0.0050	1	12/31/2015 01:15
Dibromochloromethane	ND	0.0050	1	12/31/2015 01:15
1,2-Dibromo-3-chloropropane	ND	0.0040	1	12/31/2015 01:15
1,2-Dibromoethane (EDB)	ND	0.0040	1	12/31/2015 01:15
Dibromomethane	ND	0.0050	1	12/31/2015 01:15
1,2-Dichlorobenzene	ND	0.0050	1	12/31/2015 01:15
1,3-Dichlorobenzene	ND	0.0050	1	12/31/2015 01:15
1,4-Dichlorobenzene	ND	0.0050	1	12/31/2015 01:15
Dichlorodifluoromethane	ND	0.0050	1	12/31/2015 01:15
1,1-Dichloroethane	ND	0.0050	1	12/31/2015 01:15
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	12/31/2015 01:15
1,1-Dichloroethene	ND	0.0050	1	12/31/2015 01:15
cis-1,2-Dichloroethene	ND	0.0050	1	12/31/2015 01:15
trans-1,2-Dichloroethene	ND	0.0050	1	12/31/2015 01:15
1,2-Dichloropropane	ND	0.0050	1	12/31/2015 01:15
1,3-Dichloropropane	ND	0.0050	1	12/31/2015 01:15
2,2-Dichloropropane	ND	0.0050	1	12/31/2015 01:15

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW5030B
Date Prepared:	12/28/15	**Analytical Method:**	SW8260B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-15-7.0	1512A77-032A	Soil	12/23/2015 09:50	GC18	114716

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	12/31/2015 01:15
cis-1,3-Dichloropropene	ND	0.0050	1	12/31/2015 01:15
trans-1,3-Dichloropropene	ND	0.0050	1	12/31/2015 01:15
Diisopropyl ether (DIPE)	ND	0.0050	1	12/31/2015 01:15
Ethylbenzene	ND	0.0050	1	12/31/2015 01:15
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	12/31/2015 01:15
Freon 113	ND	0.0050	1	12/31/2015 01:15
Hexachlorobutadiene	ND	0.0050	1	12/31/2015 01:15
Hexachloroethane	ND	0.0050	1	12/31/2015 01:15
2-Hexanone	ND	0.0050	1	12/31/2015 01:15
Isopropylbenzene	ND	0.0050	1	12/31/2015 01:15
4-Isopropyl toluene	ND	0.0050	1	12/31/2015 01:15
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	12/31/2015 01:15
Methylene chloride	ND	0.0050	1	12/31/2015 01:15
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	12/31/2015 01:15
Naphthalene	ND	0.0050	1	12/31/2015 01:15
n-Propyl benzene	ND	0.0050	1	12/31/2015 01:15
Styrene	ND	0.0050	1	12/31/2015 01:15
1,1,1,2-Tetrachloroethane	ND	0.0050	1	12/31/2015 01:15
1,1,2,2-Tetrachloroethane	ND	0.0050	1	12/31/2015 01:15
Tetrachloroethene	ND	0.0050	1	12/31/2015 01:15
Toluene	ND	0.0050	1	12/31/2015 01:15
1,2,3-Trichlorobenzene	ND	0.0050	1	12/31/2015 01:15
1,2,4-Trichlorobenzene	ND	0.0050	1	12/31/2015 01:15
1,1,1-Trichloroethane	ND	0.0050	1	12/31/2015 01:15
1,1,2-Trichloroethane	ND	0.0050	1	12/31/2015 01:15
Trichloroethene	ND	0.0050	1	12/31/2015 01:15
Trichlorofluoromethane	ND	0.0050	1	12/31/2015 01:15
1,2,3-Trichloropropane	ND	0.0050	1	12/31/2015 01:15
1,2,4-Trimethylbenzene	ND	0.0050	1	12/31/2015 01:15
1,3,5-Trimethylbenzene	ND	0.0050	1	12/31/2015 01:15
Vinyl Chloride	ND	0.0050	1	12/31/2015 01:15
Xylenes, Total	ND	0.0050	1	12/31/2015 01:15

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW5030B
Date Prepared:	12/28/15	**Analytical Method:**	SW8260B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-15-7.0	1512A77-032A	Soil	12/23/2015 09:50	GC18	114716

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	90	70-130		12/31/2015 01:15
Toluene-d8	89	70-130		12/31/2015 01:15
4-BFB	80	70-130		12/31/2015 01:15
Benzene-d6	86	60-140		12/31/2015 01:15
Ethylbenzene-d10	89	60-140		12/31/2015 01:15
1,2-DCB-d4	88	60-140		12/31/2015 01:15

Analyst(s): KF

(Cont.)

CDPH ELAP 1644 ♦ NELAP 4033ORELAP

Angela Rydelius, Lab Manager

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW5030B
Date Prepared:	12/28/15	**Analytical Method:**	SW8260B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-17-4.0	1512A77-036A	Soil	12/22/2015 15:25	GC18	114716

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	12/30/2015 20:10
tert-Amyl methyl ether (TAME)	ND	0.0050	1	12/30/2015 20:10
Benzene	ND	0.0050	1	12/30/2015 20:10
Bromobenzene	ND	0.0050	1	12/30/2015 20:10
Bromochloromethane	ND	0.0050	1	12/30/2015 20:10
Bromodichloromethane	ND	0.0050	1	12/30/2015 20:10
Bromoform	ND	0.0050	1	12/30/2015 20:10
Bromomethane	ND	0.0050	1	12/30/2015 20:10
2-Butanone (MEK)	ND	0.020	1	12/30/2015 20:10
t-Butyl alcohol (TBA)	ND	0.050	1	12/30/2015 20:10
n-Butyl benzene	ND	0.0050	1	12/30/2015 20:10
sec-Butyl benzene	ND	0.0050	1	12/30/2015 20:10
tert-Butyl benzene	ND	0.0050	1	12/30/2015 20:10
Carbon Disulfide	ND	0.0050	1	12/30/2015 20:10
Carbon Tetrachloride	ND	0.0050	1	12/30/2015 20:10
Chlorobenzene	ND	0.0050	1	12/30/2015 20:10
Chloroethane	ND	0.0050	1	12/30/2015 20:10
Chloroform	ND	0.0050	1	12/30/2015 20:10
Chloromethane	ND	0.0050	1	12/30/2015 20:10
2-Chlorotoluene	ND	0.0050	1	12/30/2015 20:10
4-Chlorotoluene	ND	0.0050	1	12/30/2015 20:10
Dibromochloromethane	ND	0.0050	1	12/30/2015 20:10
1,2-Dibromo-3-chloropropane	ND	0.0040	1	12/30/2015 20:10
1,2-Dibromoethane (EDB)	ND	0.0040	1	12/30/2015 20:10
Dibromomethane	ND	0.0050	1	12/30/2015 20:10
1,2-Dichlorobenzene	ND	0.0050	1	12/30/2015 20:10
1,3-Dichlorobenzene	ND	0.0050	1	12/30/2015 20:10
1,4-Dichlorobenzene	ND	0.0050	1	12/30/2015 20:10
Dichlorodifluoromethane	ND	0.0050	1	12/30/2015 20:10
1,1-Dichloroethane	ND	0.0050	1	12/30/2015 20:10
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	12/30/2015 20:10
1,1-Dichloroethene	ND	0.0050	1	12/30/2015 20:10
cis-1,2-Dichloroethene	ND	0.0050	1	12/30/2015 20:10
trans-1,2-Dichloroethene	ND	0.0050	1	12/30/2015 20:10
1,2-Dichloropropane	ND	0.0050	1	12/30/2015 20:10
1,3-Dichloropropane	ND	0.0050	1	12/30/2015 20:10
2,2-Dichloropropane	ND	0.0050	1	12/30/2015 20:10

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW5030B
Date Prepared:	12/28/15	**Analytical Method:**	SW8260B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-17-4.0	1512A77-036A	Soil	12/22/2015 15:25	GC18	114716

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	12/30/2015 20:10
cis-1,3-Dichloropropene	ND	0.0050	1	12/30/2015 20:10
trans-1,3-Dichloropropene	ND	0.0050	1	12/30/2015 20:10
Diisopropyl ether (DIPE)	ND	0.0050	1	12/30/2015 20:10
Ethylbenzene	ND	0.0050	1	12/30/2015 20:10
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	12/30/2015 20:10
Freon 113	ND	0.0050	1	12/30/2015 20:10
Hexachlorobutadiene	ND	0.0050	1	12/30/2015 20:10
Hexachloroethane	ND	0.0050	1	12/30/2015 20:10
2-Hexanone	ND	0.0050	1	12/30/2015 20:10
Isopropylbenzene	ND	0.0050	1	12/30/2015 20:10
4-Isopropyl toluene	ND	0.0050	1	12/30/2015 20:10
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	12/30/2015 20:10
Methylene chloride	ND	0.0050	1	12/30/2015 20:10
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	12/30/2015 20:10
Naphthalene	ND	0.0050	1	12/30/2015 20:10
n-Propyl benzene	ND	0.0050	1	12/30/2015 20:10
Styrene	ND	0.0050	1	12/30/2015 20:10
1,1,1,2-Tetrachloroethane	ND	0.0050	1	12/30/2015 20:10
1,1,2,2-Tetrachloroethane	ND	0.0050	1	12/30/2015 20:10
Tetrachloroethene	ND	0.0050	1	12/30/2015 20:10
Toluene	ND	0.0050	1	12/30/2015 20:10
1,2,3-Trichlorobenzene	ND	0.0050	1	12/30/2015 20:10
1,2,4-Trichlorobenzene	ND	0.0050	1	12/30/2015 20:10
1,1,1-Trichloroethane	ND	0.0050	1	12/30/2015 20:10
1,1,2-Trichloroethane	ND	0.0050	1	12/30/2015 20:10
Trichloroethene	ND	0.0050	1	12/30/2015 20:10
Trichlorofluoromethane	ND	0.0050	1	12/30/2015 20:10
1,2,3-Trichloropropane	ND	0.0050	1	12/30/2015 20:10
1,2,4-Trimethylbenzene	ND	0.0050	1	12/30/2015 20:10
1,3,5-Trimethylbenzene	ND	0.0050	1	12/30/2015 20:10
Vinyl Chloride	ND	0.0050	1	12/30/2015 20:10
Xylenes, Total	ND	0.0050	1	12/30/2015 20:10

(Cont.)

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW5030B
Date Prepared:	12/28/15	**Analytical Method:**	SW8260B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-17-4.0	1512A77-036A	Soil	12/22/2015 15:25	GC18	114716

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	89	70-130		12/30/2015 20:10
Toluene-d8	90	70-130		12/30/2015 20:10
4-BFB	82	70-130		12/30/2015 20:10
Benzene-d6	85	60-140		12/30/2015 20:10
Ethylbenzene-d10	87	60-140		12/30/2015 20:10
1,2-DCB-d4	85	60-140		12/30/2015 20:10

Analyst(s): KF

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW3050B
Date Prepared:	12/28/15	**Analytical Method:**	SW6020
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1-1.5	1512A77-002A	Soil	12/22/2015 10:20	ICP-MS2	114719

Analytes	Result	RL	DF	Date Analyzed
Antimony	ND	0.50	1	12/29/2015 12:32
Arsenic	**2.3**	0.50	1	12/29/2015 12:32
Barium	**44**	5.0	1	12/29/2015 12:32
Beryllium	ND	0.50	1	12/29/2015 12:32
Cadmium	ND	0.25	1	12/29/2015 12:32
Chromium	**15**	0.50	1	12/29/2015 12:32
Cobalt	**3.9**	0.50	1	12/29/2015 12:32
Copper	**2.2**	0.50	1	12/29/2015 12:32
Lead	**4.5**	0.50	1	12/29/2015 12:32
Mercury	ND	0.050	1	12/29/2015 12:32
Molybdenum	**1.0**	0.50	1	12/29/2015 12:32
Nickel	**13**	0.50	1	12/29/2015 12:32
Selenium	ND	0.50	1	12/29/2015 12:32
Silver	ND	0.50	1	12/29/2015 12:32
Thallium	ND	0.50	1	12/29/2015 12:32
Vanadium	**36**	0.50	1	12/29/2015 12:32
Zinc	**29**	5.0	1	12/29/2015 12:32

Surrogates	REC (%)	Limits	
Terbium	103	70-130	12/29/2015 12:32

Analyst(s): DVH

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW5030B
Date Prepared:	12/28/15-12/30/15	**Analytical Method:**	SW8021B/8015Bm
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-12-5.0	1512A77-021A	Soil	12/23/2015 10:15	GC19	114731

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	12/29/2015 19:08
MTBE	---	0.050	1	12/29/2015 19:08
Benzene	---	0.0050	1	12/29/2015 19:08
Toluene	---	0.0050	1	12/29/2015 19:08
Ethylbenzene	---	0.0050	1	12/29/2015 19:08
Xylenes	---	0.015	1	12/29/2015 19:08

Surrogates	REC (%)	Limits	
2-Fluorotoluene	114	70-130	12/29/2015 19:08

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-13-6.0	1512A77-026A	Soil	12/23/2015 10:43	GC19	114731

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	12/29/2015 19:38
MTBE	---	0.050	1	12/29/2015 19:38
Benzene	---	0.0050	1	12/29/2015 19:38
Toluene	---	0.0050	1	12/29/2015 19:38
Ethylbenzene	---	0.0050	1	12/29/2015 19:38
Xylenes	---	0.015	1	12/29/2015 19:38

Surrogates	REC (%)	Limits	
2-Fluorotoluene	118	70-130	12/29/2015 19:38

Analyst(s): IA

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW5030B
Date Prepared:	12/28/15-12/30/15	**Analytical Method:**	SW8021B/8015Bm
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-14-2.0	1512A77-028A	Soil	12/23/2015 11:50	GC19	114790

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	12/30/2015 22:50
MTBE	---	0.050	1	12/30/2015 22:50
Benzene	---	0.0050	1	12/30/2015 22:50
Toluene	---	0.0050	1	12/30/2015 22:50
Ethylbenzene	---	0.0050	1	12/30/2015 22:50
Xylenes	---	0.015	1	12/30/2015 22:50

Surrogates	REC (%)	Limits	
2-Fluorotoluene	120	70-130	12/30/2015 22:50

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-15-7.0	1512A77-032A	Soil	12/23/2015 09:50	GC19	114731

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	12/29/2015 22:07
MTBE	---	0.050	1	12/29/2015 22:07
Benzene	---	0.0050	1	12/29/2015 22:07
Toluene	---	0.0050	1	12/29/2015 22:07
Ethylbenzene	---	0.0050	1	12/29/2015 22:07
Xylenes	---	0.015	1	12/29/2015 22:07

Surrogates	REC (%)	Limits	
2-Fluorotoluene	118	70-130	12/29/2015 22:07

Analyst(s): IA

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW5030B
Date Prepared:	12/28/15-12/30/15	**Analytical Method:**	SW8021B/8015Bm
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-17-4.0	1512A77-036A	Soil	12/22/2015 15:25	GC19	114731

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	12/29/2015 22:37
MTBE	---	0.050	1	12/29/2015 22:37
Benzene	---	0.0050	1	12/29/2015 22:37
Toluene	---	0.0050	1	12/29/2015 22:37
Ethylbenzene	---	0.0050	1	12/29/2015 22:37
Xylenes	---	0.015	1	12/29/2015 22:37

Surrogates	REC (%)	Limits	
2-Fluorotoluene	119	70-130	12/29/2015 22:37

Analyst(s): IA

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW3050B
Date Prepared:	12/28/15	**Analytical Method:**	SW6010B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/Kg

Lead

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-4-0.0	1512A77-005A	Soil	12/23/2015 11:30	ICP-JY	114733

Analytes	Result	RL	DF	Date Analyzed
Lead	**29**	5.0	1	12/31/2015 12:24
Surrogates	**REC (%)**	**Limits**		
Terbium	108	70-130		12/31/2015 12:24

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-5-0.0	1512A77-007A	Soil	12/23/2015 11:45	ICP-JY	114733

Analytes	Result	RL	DF	Date Analyzed
Lead	**54**	5.0	1	12/31/2015 13:01
Surrogates	**REC (%)**	**Limits**		
Terbium	116	70-130		12/31/2015 13:01

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-6-0.0	1512A77-009A	Soil	12/23/2015 11:18	ICP-JY	114733

Analytes	Result	RL	DF	Date Analyzed
Lead	**8.4**	5.0	1	12/31/2015 12:02
Surrogates	**REC (%)**	**Limits**		
Terbium	118	70-130		12/31/2015 12:02

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8-0.0	1512A77-011A	Soil	12/23/2015 11:00	ICP-JY	114733

Analytes	Result	RL	DF	Date Analyzed
Lead	**23**	5.0	1	12/31/2015 12:10
Surrogates	**REC (%)**	**Limits**		
Terbium	115	70-130		12/31/2015 12:10

Analyst(s): DB

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW3050B
Date Prepared:	12/28/15	**Analytical Method:**	SW6010B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/Kg

Lead

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-9-0.0	1512A77-013A	Soil	12/22/2015 13:00	ICP-JY	114733

Analytes	Result	RL	DF	Date Analyzed
Lead	**6.5**	5.0	1	12/31/2015 12:58

Surrogates	REC (%)	Limits	
Terbium	109	70-130	12/31/2015 12:58

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-10-0.0	1512A77-015A	Soil	12/22/2015 13:08	ICP-JY	114733

Analytes	Result	RL	DF	Date Analyzed
Lead	**45**	5.0	1	12/31/2015 11:52

Surrogates	REC (%)	Limits	
Terbium	110	70-130	12/31/2015 11:52

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-11-0.0	1512A77-017A	Soil	12/22/2015 13:17	ICP-JY	114733

Analytes	Result	RL	DF	Date Analyzed
Lead	**6.2**	5.0	1	12/31/2015 12:56

Surrogates	REC (%)	Limits	
Terbium	123	70-130	12/31/2015 12:56

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7-0.0	1512A77-023A	Soil	12/23/2015 10:55	ICP-JY	114733

Analytes	Result	RL	DF	Date Analyzed
Lead	**230**	5.0	1	12/31/2015 11:55

Surrogates	REC (%)	Limits	
Terbium	112	70-130	12/31/2015 11:55

Analyst(s): DB

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW3050B
Date Prepared:	12/28/15	**Analytical Method:**	SW6010B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/Kg

Lead

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-15-0.0	1512A77-029A	Soil	12/22/2015 15:10	ICP-JY	114733

Analytes	Result	RL	DF	Date Analyzed
Lead	**25**	5.0	1	12/31/2015 12:12

Surrogates	REC (%)	Limits	
Terbium	113	70-130	12/31/2015 12:12

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-16-0.0	1512A77-034A	Soil	12/22/2015 15:00	ICP-JY	114733

Analytes	Result	RL	DF	Date Analyzed
Lead	**15**	5.0	1	12/31/2015 11:57

Surrogates	REC (%)	Limits	
Terbium	126	70-130	12/31/2015 11:57

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-18-0.0	1512A77-038A	Soil	12/22/2015 14:30	ICP-JY	114733

Analytes	Result	RL	DF	Date Analyzed
Lead	**12**	5.0	1	12/31/2015 12:34

Surrogates	REC (%)	Limits	
Terbium	119	70-130	12/31/2015 12:34

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-19-0.0	1512A77-040A	Soil	12/22/2015 16:00	ICP-JY	114733

Analytes	Result	RL	DF	Date Analyzed
Lead	**7.9**	5.0	1	12/31/2015 12:22

Surrogates	REC (%)	Limits	
Terbium	111	70-130	12/31/2015 12:22

Analyst(s): DB

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW3050B
Date Prepared:	12/28/15	**Analytical Method:**	SW6010B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/Kg

Lead

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-20-0.0	1512A77-042A	Soil	12/22/2015 13:35	ICP-JY	114733

Analytes	Result	RL	DF	Date Analyzed
Lead	**41**	5.0	1	12/31/2015 12:29

Surrogates	REC (%)	Limits	
Terbium	104	70-130	12/31/2015 12:29

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-21-0.0	1512A77-044A	Soil	12/22/2015 13:55	ICP-JY	114733

Analytes	Result	RL	DF	Date Analyzed
Lead	**88**	5.0	1	12/31/2015 12:41

Surrogates	REC (%)	Limits	
Terbium	110	70-130	12/31/2015 12:41

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-22-0.0	1512A77-046A	Soil	12/22/2015 16:38	ICP-JY	114733

Analytes	Result	RL	DF	Date Analyzed
Lead	**19**	5.0	1	12/31/2015 12:14

Surrogates	REC (%)	Limits	
Terbium	115	70-130	12/31/2015 12:14

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-23-0.0	1512A77-048A	Soil	12/22/2015 16:20	ICP-JY	114733

Analytes	Result	RL	DF	Date Analyzed
Lead	**15**	5.0	1	12/31/2015 12:00

Surrogates	REC (%)	Limits	
Terbium	119	70-130	12/31/2015 12:00

Analyst(s): DB

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW3050B
Date Prepared:	12/28/15	**Analytical Method:**	SW6010B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/Kg

Lead

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-24-0.0	1512A77-050A	Soil	12/22/2015 16:30	ICP-JY	114733

Analytes	Result	RL	DF	Date Analyzed
Lead	**16**	5.0	1	12/31/2015 12:39
Surrogates	**REC (%)**	**Limits**		
Terbium	106	70-130		12/31/2015 12:39

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-25-0.0	1512A77-052A	Soil	12/22/2015 17:00	ICP-JY	114733

Analytes	Result	RL	DF	Date Analyzed
Lead	**8.9**	5.0	1	12/31/2015 12:31
Surrogates	**REC (%)**	**Limits**		
Terbium	110	70-130		12/31/2015 12:31

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-26-0.0	1512A77-054A	Soil	12/22/2015 16:47	ICP-JY	114733

Analytes	Result	RL	DF	Date Analyzed
Lead	**7.4**	5.0	1	12/31/2015 12:05
Surrogates	**REC (%)**	**Limits**		
Terbium	102	70-130		12/31/2015 12:05

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-27-0.0	1512A77-056A	Soil	12/22/2015 09:15	ICP-JY	114733

Analytes	Result	RL	DF	Date Analyzed
Lead	**6.3**	5.0	1	12/29/2015 11:48
Surrogates	**REC (%)**	**Limits**		
Terbium	108	70-130		12/29/2015 11:48

Analyst(s): BBO

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW3050B
Date Prepared:	12/28/15	**Analytical Method:**	SW6010B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/Kg

Lead

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-28-0.0	1512A77-058A	Soil	12/22/2015 08:45	ICP-JY	114734

Analytes	Result	RL	DF	Date Analyzed
Lead	**9.7**	5.0	1	12/31/2015 12:07

Surrogates	REC (%)	Limits	
Terbium	105	70-130	12/31/2015 12:07

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-29-0.0	1512A77-060A	Soil	12/22/2015 08:30	ICP-JY	114734

Analytes	Result	RL	DF	Date Analyzed
Lead	**8.7**	5.0	1	12/31/2015 12:51

Surrogates	REC (%)	Limits	
Terbium	117	70-130	12/31/2015 12:51

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-30-0.0	1512A77-062A	Soil	12/22/2015 08:15	ICP-JY	114734

Analytes	Result	RL	DF	Date Analyzed
Lead	**9.1**	5.0	1	12/31/2015 12:44

Surrogates	REC (%)	Limits	
Terbium	104	70-130	12/31/2015 12:44

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-31-0.0	1512A77-064A	Soil	12/22/2015 09:30	ICP-JY	114734

Analytes	Result	RL	DF	Date Analyzed
Lead	**7.8**	5.0	1	12/31/2015 12:53

Surrogates	REC (%)	Limits	
Terbium	112	70-130	12/31/2015 12:53

Analyst(s): DB

(Cont.)

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW3050B
Date Prepared:	12/28/15	**Analytical Method:**	SW6010B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/Kg

Lead

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-32-0.0	1512A77-066A	Soil	12/22/2015 09:45	ICP-JY	114734

Analytes	Result	RL	DF	Date Analyzed
Lead	**7.0**	5.0	1	12/31/2015 12:36

Surrogates	REC (%)	Limits	
Terbium	112	70-130	12/31/2015 12:36

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-33-0.0	1512A77-068A	Soil	12/22/2015 10:00	ICP-JY	114734

Analytes	Result	RL	DF	Date Analyzed
Lead	**39**	5.0	1	12/31/2015 12:27

Surrogates	REC (%)	Limits	
Terbium	108	70-130	12/31/2015 12:27

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-34-0.0	1512A77-070A	Soil	12/22/2015 14:10	ICP-JY	114734

Analytes	Result	RL	DF	Date Analyzed
Lead	**34**	5.0	1	12/29/2015 11:31

Surrogates	REC (%)	Limits	
Terbium	96	70-130	12/29/2015 11:31

Analyst(s): BBO

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW3550B
Date Prepared:	12/28/15	**Analytical Method:**	SW8015B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/Kg

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3-2.0	1512A77-003A	Soil	12/23/2015 09:00	GC39B	114721

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	**1.3**	1.0	1	12/29/2015 17:37
TPH-Motor Oil (C18-C36)	ND	5.0	1	12/29/2015 17:37

Surrogates	REC (%)	Limits	
C9	100	70-130	12/29/2015 17:37

Analyst(s): RB Analytical Comments: e7,e2

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-3-5.0	1512A77-004A	Soil	12/23/2015 09:15	GC39B	114721

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	12/29/2015 18:55
TPH-Motor Oil (C18-C36)	ND	5.0	1	12/29/2015 18:55

Surrogates	REC (%)	Limits	
C9	100	70-130	12/29/2015 18:55

Analyst(s): RB Analytical Comments: e7,e2

CLIENT: AEI Consultants
Work Order: 1512A77
Project: 350428; Carlos & Sierra Streets, Moss Beach, CA

ANALYTICAL QC SUMMARY REPORT

BatchID: 114978

SampleID **MB-114978** TestCode: **1613_FULL_S** Units: **pg/g** Prep Date: **12/31/2015**
Batch ID: **114978** TestNo: **E1613** Run ID: **GC36_160111A** Analysis Date: **1/8/2016**

Analyte	Result	PQL	SPKValue	SPKRefVal	%REC	Limits	RPDRefVal	%RPD	RPDLimit	Qual
2,3,7,8-TCDD	ND	0.500				-				
1,2,3,7,8-PeCDD	ND	2.50				-				
1,2,3,4,7,8-HxCDD	ND	2.50				-				
1,2,3,6,7,8-HxCDD	ND	2.50				-				
1,2,3,7,8,9-HxCDD	ND	2.50				-				
1,2,3,4,6,7,8-HpCDD	ND	2.50				-				
OCDD	ND	5.00				-				
2,3,7,8-TCDF	ND	0.500				-				
1,2,3,7,8-PeCDF	ND	2.50				-				
2,3,4,7,8-PeCDF	ND	2.50				-				
1,2,3,4,7,8-HxCDF	ND	2.50				-				
1,2,3,6,7,8-HxCDF	ND	2.50				-				
2,3,4,6,7,8-HxCDF	ND	2.50				-				
1,2,3,7,8,9-HxCDF	ND	2.50				-				
1,2,3,4,6,7,8-HpCDF	ND	2.50				-				
1,2,3,4,7,8,9-HpCDF	ND	2.50				-				
OCDF	ND	5.00				-				
Cleanup Standard										
37Cl-2,3,7,8-TCDD	8.08		10		81	35 - 197				
Labeled Compound Recovery										
13C-2,3,7,8-TCDD	76.6		100		77	25 - 164				
13C-1,2,3,7,8-PeCDD	96.1		100		96	25 - 181				
13C-1,2,3,4,7,8-HxCDD	80.1		100		80	32 - 141				
13C-1,2,3,6,7,8-HxCDD	72.1		100		72	28 - 130				
13C-1,2,3,4,6,7,8-HpCDD	91.9		100		92	23 - 140				
13C-OCDD	225		200		112	17 - 157				
13C-2,3,7,8-TCDF	71.9		100		72	24 - 169				
13C-1,2,3,7,8-PeCDF	83.5		100		84	24 - 185				
13C-2,3,4,7,8-PeCDF	86.7		100		87	21 - 178				
13C-1,2,3,4,7,8-HxCDF	68.8		100		69	26 - 152				
13C-1,2,3,6,7,8-HxCDF	64.4		100		64	26 - 123				
13C-2,3,4,6,7,8-HxCDF	69.6		100		70	28 - 136				
13C-1,2,3,7,8,9-HxCDF	74.9		100		75	29 - 147				
13C-1,2,3,4,6,7,8-HpCDF	82.7		100		83	28 - 143				
13C-1,2,3,4,7,8,9-HpCDF	86.4		100		86	26 - 138				

CLIENT: AEI Consultants
Work Order: 1512A77
Project: 350428; Carlos & Sierra Streets, Moss Beach, CA

ANALYTICAL QC SUMMARY REPORT

BatchID: 114978

SampleID **LCS-114978** TestCode: **1613_FULL_S** Units: **pg/g** Prep Date: **12/31/2015**
Batch ID: **114978** TestNo: **E1613** Run ID: **GC36_160111B** Analysis Date: **1/8/2016**

Analyte	Result	PQL	SPKValue	SPKRefVal	%REC	Limits	RPDRefVal	%RPD	RPDLimit	Qual
2,3,7,8-TCDD	12.4	0.500	10	0	124	67 - 158				
1,2,3,7,8-PeCDD	55.2	2.50	50	1.14	110	70 - 142				
1,2,3,4,7,8-HxCDD	47.8	2.50	50	1.04	96	70 - 164				
1,2,3,6,7,8-HxCDD	48.7	2.50	50	1.04	97	76 - 134				
1,2,3,7,8,9-HxCDD	50.5	2.50	50	0.96	101	64 - 162				
1,2,3,4,6,7,8-HpCDD	47.1	2.50	50	0.68	94	70 - 140				
OCDD	85.5	5.00	100	0.48	86	78 - 144				
2,3,7,8-TCDF	12.6	0.500	10	0	126	75 - 158				
1,2,3,7,8-PeCDF	47.3	2.50	50	0.94	95	80 - 134				
2,3,4,7,8-PeCDF	50.0	2.50	50	0.86	100	68 - 160				
1,2,3,4,7,8-HxCDF	48.9	2.50	50	1.08	98	72 - 134				
1,2,3,6,7,8-HxCDF	50.3	2.50	50	1.14	101	84 - 130				
2,3,4,6,7,8-HxCDF	51.9	2.50	50	1.08	104	70 - 156				
1,2,3,7,8,9-HxCDF	47.3	2.50	50	0.56	95	78 - 130				
1,2,3,4,6,7,8-HpCDF	67.5	2.50	50	0.68	135	82 - 122				S
1,2,3,4,7,8,9-HpCDF	51.9	2.50	50	0.48	104	78 - 138				
OCDF	63.1	5.00	100	0.36	63	63 - 170				
Cleanup Standard										
37Cl-2,3,7,8-TCDD	8.28		10		83	31 - 191				
Labeled Compound Recovery										
13C-2,3,7,8-TCDD	71.1		100		71	20 - 175				
13C-1,2,3,7,8-PeCDD	93.2		100		93	21 - 227				
13C-1,2,3,4,7,8-HxCDD	55.6		100		56	21 - 193				
13C-1,2,3,6,7,8-HxCDD	52.7		100		53	25 - 163				
13C-1,2,3,4,6,7,8-HpCDD	69.3		100		69	26 - 166				
13C-OCDD	122		200		61	13 - 199				
13C-2,3,7,8-TCDF	63.9		100		64	22 - 152				
13C-1,2,3,7,8-PeCDF	94.6		100		95	21 - 192				
13C-2,3,4,7,8-PeCDF	79.1		100		79	13 - 328				
13C-1,2,3,4,7,8-HxCDF	55.2		100		55	19 - 202				
13C-1,2,3,6,7,8-HxCDF	54.9		100		55	21 - 159				
13C-2,3,4,6,7,8-HxCDF	50.3		100		50	22 - 176				
13C-1,2,3,7,8,9-HxCDF	36.0		100		36	17 - 205				
13C-1,2,3,4,6,7,8-HpCDF	51.3		100		51	21 - 158				
13C-1,2,3,4,7,8,9-HpCDF	40.3		100		40	20 - 186				

CLIENT: AEI Consultants
Work Order: 1512A77
Project: 350428; Carlos & Sierra Streets, Moss Beach, CA

ANALYTICAL QC SUMMARY REPORT

BatchID: 114978

SampleID **1512747-001AMS** TestCode: **1613_FULL_S** Units: **pg/g** Prep Date: **12/31/2015**
Batch ID: **114978** TestNo: **E1613** Run ID: **GC36_160111A** Analysis Date: **1/8/2016**

Analyte	Result	PQL	SPKValue	SPKRefVal	%REC	Limits	RPDRefVal	%RPD	RPDLimit	Qual
2,3,7,8-TCDD	94.2	5.00	100	0	94	67 - 158				
1,2,3,7,8-PeCDD	484	25.0	500	5.8	96	70 - 142				
1,2,3,4,7,8-HxCDD	476	25.0	500	8.2	94	70 - 164				
1,2,3,6,7,8-HxCDD	486	25.0	500	9	95	76 - 134				
1,2,3,7,8,9-HxCDD	497	25.0	500	7.4	98	64 - 162				
1,2,3,4,6,7,8-HpCDD	509	25.0	500	20.6	98	70 - 140				
OCDD	1090	50.0	1000	127.4	97	78 - 144				
2,3,7,8-TCDF	97.4	5.00	100	0	97	75 - 158				
1,2,3,7,8-PeCDF	457	25.0	500	5	90	80 - 134				
2,3,4,7,8-PeCDF	464	25.0	500	3.8	92	68 - 160				
1,2,3,4,7,8-HxCDF	464	25.0	500	7.8	91	72 - 134				
1,2,3,6,7,8-HxCDF	482	25.0	500	8.2	95	84 - 130				
2,3,4,6,7,8-HxCDF	488	25.0	500	8	96	70 - 156				
1,2,3,7,8,9-HxCDF	469	25.0	500	5	93	78 - 130				
1,2,3,4,6,7,8-HpCDF	470	25.0	500	8.4	92	82 - 122				
1,2,3,4,7,8,9-HpCDF	491	25.0	500	4.8	97	78 - 138				
OCDF	894	50.0	1000	14.2	88	63 - 170				
Cleanup Standard										
37Cl-2,3,7,8-TCDD	84.0		100		84	31 - 191				
Labeled Compound Recovery										
13C-2,3,7,8-TCDD	777		1000		78	20 - 175				
13C-1,2,3,7,8-PeCDD	1050		1000		105	21 - 227				
13C-1,2,3,4,7,8-HxCDD	856		1000		86	21 - 193				
13C-1,2,3,6,7,8-HxCDD	762		1000		76	25 - 163				
13C-1,2,3,4,6,7,8-HpCDD	994		1000		99	26 - 166				
13C-OCDD	2240		2000		112	13 - 199				
13C-2,3,7,8-TCDF	761		1000		76	22 - 152				
13C-1,2,3,7,8-PeCDF	934		1000		93	21 - 192				
13C-2,3,4,7,8-PeCDF	984		1000		98	13 - 328				
13C-1,2,3,4,7,8-HxCDF	748		1000		75	19 - 202				
13C-1,2,3,6,7,8-HxCDF	696		1000		70	21 - 159				
13C-2,3,4,6,7,8-HxCDF	769		1000		77	22 - 176				
13C-1,2,3,7,8,9-HxCDF	800		1000		80	17 - 205				
13C-1,2,3,4,6,7,8-HpCDF	850		1000		85	21 - 158				
13C-1,2,3,4,7,8,9-HpCDF	933		1000		93	20 - 186				

CLIENT: AEI Consultants
Work Order: 1512A77
Project: 350428; Carlos & Sierra Streets, Moss Beach, CA

ANALYTICAL QC SUMMARY REPORT

BatchID: 114978

SampleID **1512747-001AMSD** TestCode: **1613_FULL_S** Units: **pg/g** Prep Date: **12/31/2015**
Batch ID: **114978** TestNo: **E1613** Run ID: **GC36_160111A** Analysis Date: **1/8/2016**

Analyte	Result	PQL	SPKValue	SPKRefVal	%REC	Limits	RPDRefVal	%RPD	RPDLimit	Qual
2,3,7,8-TCDD	103	5.00	100	0	103	67 - 158	94.2	9.31	20	
1,2,3,7,8-PeCDD	482	25.0	500	5.8	95	70 - 142	483.6	0.373	20	
1,2,3,4,7,8-HxCDD	482	25.0	500	8.2	95	70 - 164	476.2	1.29	20	
1,2,3,6,7,8-HxCDD	478	25.0	500	9	94	76 - 134	485.6	1.58	20	
1,2,3,7,8,9-HxCDD	499	25.0	500	7.4	98	64 - 162	497	0.362	20	
1,2,3,4,6,7,8-HpCDD	489	25.0	500	20.6	94	70 - 140	509.2	4.01	20	
OCDD	958	50.0	1000	127.4	83	78 - 144	1093.2	13.1	20	
2,3,7,8-TCDF	98.0	5.00	100	0	98	75 - 158	97.4	0.614	20	
1,2,3,7,8-PeCDF	467	25.0	500	5	92	80 - 134	457	2.25	20	
2,3,4,7,8-PeCDF	488	25.0	500	3.8	97	68 - 160	464.2	5.00	20	
1,2,3,4,7,8-HxCDF	482	25.0	500	7.8	95	72 - 134	463.6	3.97	20	
1,2,3,6,7,8-HxCDF	501	25.0	500	8.2	98	84 - 130	482.2	3.74	20	
2,3,4,6,7,8-HxCDF	494	25.0	500	8	97	70 - 156	487.8	1.26	20	
1,2,3,7,8,9-HxCDF	468	25.0	500	5	93	78 - 130	469.4	0.213	20	
1,2,3,4,6,7,8-HpCDF	464	25.0	500	8.4	91	82 - 122	470.2	1.24	20	
1,2,3,4,7,8,9-HpCDF	501	25.0	500	4.8	99	78 - 138	491.2	1.94	20	
OCDF	861	50.0	1000	14.2	85	63 - 170	893.8	3.69	20	
Cleanup Standard										
37Cl-2,3,7,8-TCDD	82.2		100		82	31 - 191				
Labeled Compound Recovery										
13C-2,3,7,8-TCDD	756		1000		76	20 - 175				
13C-1,2,3,7,8-PeCDD	1020		1000		102	21 - 227				
13C-1,2,3,4,7,8-HxCDD	855		1000		86	21 - 193				
13C-1,2,3,6,7,8-HxCDD	767		1000		77	25 - 163				
13C-1,2,3,4,6,7,8-HpCDD	974		1000		97	26 - 166				
13C-OCDD	2220		2000		111	13 - 199				
13C-2,3,7,8-TCDF	759		1000		76	22 - 152				
13C-1,2,3,7,8-PeCDF	919		1000		92	21 - 192				
13C-2,3,4,7,8-PeCDF	943		1000		94	13 - 328				
13C-1,2,3,4,7,8-HxCDF	721		1000		72	19 - 202				
13C-1,2,3,6,7,8-HxCDF	669		1000		67	21 - 159				
13C-2,3,4,6,7,8-HxCDF	755		1000		75	22 - 176				
13C-1,2,3,7,8,9-HxCDF	784		1000		78	17 - 205				
13C-1,2,3,4,6,7,8-HpCDF	845		1000		84	21 - 158				
13C-1,2,3,4,7,8,9-HpCDF	940		1000		94	20 - 186				

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Prepared:	12/28/15	**BatchID:**	114716
Date Analyzed:	12/28/15	**Extraction Method:**	SW5030B
Instrument:	GC18	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/Kg
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Sample ID:**	MB/LCS-114716 1512A04-003AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.0468	0.0050	0.050	-	94	53-116
Benzene	ND	0.0494	0.0050	0.050	-	99	63-137
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	0.181	0.050	0.20	-	90	41-135
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.0474	0.0050	0.050	-	95	77-121
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.0457	0.0040	0.050	-	91	67-119
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.0440	0.0040	0.050	-	88	58-135
1,1-Dichloroethene	ND	0.0441	0.0050	0.050	-	88	42-145
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-

(Cont.)

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Prepared:	12/28/15	**BatchID:**	114716
Date Analyzed:	12/28/15	**Extraction Method:**	SW5030B
Instrument:	GC18	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/Kg
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Sample ID:**	MB/LCS-114716 1512A04-003AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
Diisopropyl ether (DIPE)	ND	0.0485	0.0050	0.050	-	97	52-129
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.0475	0.0050	0.050	-	95	53-125
Freon 113	ND	-	0.0050	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.0463	0.0050	0.050	-	93	58-122
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	0.0472	0.0050	0.050	-	94	76-130
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.0489	0.0050	0.050	-	98	72-132
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-
Xylenes, Total	ND	-	0.0050	-	-	-	-

(Cont.)

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Prepared:	12/28/15	**BatchID:**	114716
Date Analyzed:	12/28/15	**Extraction Method:**	SW5030B
Instrument:	GC18	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/Kg
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Sample ID:**	MB/LCS-114716 1512A04-003AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Surrogate Recovery							
Dibromofluoromethane	0.110	0.110		0.12	88	88	70-130
Toluene-d8	0.131	0.120		0.12	105	96	70-130
4-BFB	0.00919	0.0111		0.012	74	89	70-130
Benzene-d6	0.103	0.105		0.10	103	105	60-140
Ethylbenzene-d10	0.101	0.104		0.10	101	104	60-140
1,2-DCB-d4	0.0989	0.105		0.10	99	105	60-140

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	0.0433	0.0441	0.050	ND	87	88	70-130	1.83	20
Benzene	0.0439	0.0445	0.050	ND	88	89	70-130	1.36	20
t-Butyl alcohol (TBA)	0.166	0.166	0.20	ND	83	83	70-130	0	20
Chlorobenzene	0.0424	0.0433	0.050	ND	85	87	70-130	1.95	20
1,2-Dibromoethane (EDB)	0.0430	0.0432	0.050	ND	86	86	70-130	0	20
1,2-Dichloroethane (1,2-DCA)	0.0401	0.0410	0.050	ND	80	82	70-130	2.18	20
1,1-Dichloroethene	0.0396	0.0402	0.050	ND	79	80	70-130	1.49	20
Diisopropyl ether (DIPE)	0.0437	0.0444	0.050	ND	87	89	70-130	1.58	20
Ethyl tert-butyl ether (ETBE)	0.0434	0.0445	0.050	ND	87	89	70-130	2.52	20
Methyl-t-butyl ether (MTBE)	0.0426	0.0433	0.050	ND	85	87	70-130	1.55	20
Toluene	0.0413	0.0424	0.050	ND	83	85	70-130	2.60	20
Trichloroethene	0.0434	0.0439	0.050	ND	87	88	70-130	1.22	20
Surrogate Recovery									
Dibromofluoromethane	0.112	0.110	0.12		89	88	70-130	1.09	20
Toluene-d8	0.119	0.120	0.12		95	96	70-130	0.570	20
4-BFB	0.0106	0.0107	0.012		85	85	70-130	0	20
Benzene-d6	0.0930	0.0943	0.10		93	94	60-140	1.37	20
Ethylbenzene-d10	0.0916	0.0931	0.10		92	93	60-140	1.67	20
1,2-DCB-d4	0.0979	0.0985	0.10		98	99	60-140	0.625	20

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Prepared:	12/28/15	**BatchID:**	114719
Date Analyzed:	12/29/15	**Extraction Method:**	SW3050B
Instrument:	ICP-MS2	**Analytical Method:**	SW6020
Matrix:	Soil	**Unit:**	mg/Kg
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Sample ID:**	MB/LCS-114719 1512A70-001AMS/MSD 1512A70-001APDS

QC Summary Report for Metals

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Antimony	ND	54.3	0.50	50	-	109	75-125
Arsenic	ND	52.3	0.50	50	-	105	75-125
Barium	ND	534	5.0	500	-	107	75-125
Beryllium	ND	52.5	0.50	50	-	105	75-125
Cadmium	ND	52.2	0.25	50	-	104	75-125
Chromium	ND	53.1	0.50	50	-	106	75-125
Cobalt	ND	52.3	0.50	50	-	105	75-125
Copper	ND	55.2	0.50	50	-	110	75-125
Lead	ND	53.4	0.50	50	-	107	75-125
Mercury	ND	1.33	0.050	1.25	-	106	75-125
Molybdenum	ND	53.0	0.50	50	-	106	75-125
Nickel	ND	55.0	0.50	50	-	110	75-125
Selenium	ND	52.8	0.50	50	-	106	75-125
Silver	ND	55.3	0.50	50	-	111	75-125
Thallium	ND	50.3	0.50	50	-	101	75-125
Vanadium	ND	52.9	0.50	50	-	106	75-125
Zinc	ND	547	5.0	500	-	109	75-125
Surrogate Recovery							
Terbium	535	531		500	107	106	70-130

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Prepared:	12/28/15	**BatchID:**	114719
Date Analyzed:	12/29/15	**Extraction Method:**	SW3050B
Instrument:	ICP-MS2	**Analytical Method:**	SW6020
Matrix:	Soil	**Unit:**	mg/Kg
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Sample ID:**	MB/LCS-114719 1512A70-001AMS/MSD 1512A70-001APDS

QC Summary Report for Metals

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Antimony	54.0	53.6	50	0.6766	107	106	75-125	0.763	20
Arsenic	53.6	56.0	50	3.241	101	105	75-125	4.27	20
Barium	647	669	500	84.53	113	117	75-125	3.25	20
Beryllium	52.5	52.4	50	ND	104	104	75-125	0	20
Cadmium	51.8	52.8	50	0.3813	103	105	75-125	2.06	20
Chromium	95.2	99.0	50	32.66	125	133,F8	75-125	3.92	20
Cobalt	57.5	57.0	50	10.72	94	93	75-125	0.890	20
Copper	89.2	92.4	50	29.55	119	126,F8	75-125	3.62	20
Lead	238	258	50	177.9	119	160,F8	75-125	8.24	20
Mercury	1.44	1.49	1.25	0.1659	102	106	75-125	3.89	20
Molybdenum	52.6	52.2	50	0.6537	104	103	75-125	0.725	20
Nickel	81.0	84.1	50	23.98	114	120	75-125	3.74	20
Selenium	50.6	52.2	50	ND	101	104	75-125	3.09	20
Silver	54.5	54.7	50	ND	108	109	75-125	0.403	20
Thallium	48.1	48.6	50	ND	96	97	75-125	0.972	20
Vanadium	130	112	50	60.27	139,F8	104	75-125	14.2	20
Zinc	646	664	500	91.55	111	115	75-125	2.86	20
Surrogate Recovery									
Terbium	532	532	500		106	106	70-130	0	20

Analyte	PDS Result	SPK Val	SPKRef Val	PDS %REC	PDS Limits
Chromium	84.7	50	32.66	104	80-120
Copper	85.2	50	29.55	111	80-120
Lead	251	50	177.9	146	80-120
Vanadium	114	50	60.27	108	80-120

Analyte	DLT Result	DLTRef Val	RPD	RPD Limit
Lead	172	177.9	3.43	10

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Prepared:	12/28/15	**BatchID:**	114721
Date Analyzed:	12/29/15	**Extraction Method:**	SW3550B
Instrument:	GC39A, GC39B	**Analytical Method:**	SW8015B
Matrix:	Soil	**Unit:**	mg/Kg
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Sample ID:**	MB/LCS-114721 1512A70-001AMS/MSD

QC Report for SW8015B w/out SG Clean-Up

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	34.5	1.0	40	-	86	70-130
TPH-Motor Oil (C18-C36)	ND	-	5.0	-	-	-	-
Surrogate Recovery							
C9	25.0	23.8		25	100	95	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	NR	NR		110	NR	NR	-	NR	
Surrogate Recovery									
C9	NR	NR			NR	NR	-	NR	

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Prepared:	12/28/15	**BatchID:**	114731
Date Analyzed:	12/29/15	**Extraction Method:**	SW5030B
Instrument:	GC19	**Analytical Method:**	SW8021B/8015Bm
Matrix:	Soil	**Unit:**	mg/Kg
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Sample ID:**	MB/LCS-114731 1512A83-001AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.619	0.40	0.60	-	103	70-130
MTBE	ND	0.0913	0.050	0.10	-	91	70-130
Benzene	ND	0.111	0.0050	0.10	-	111	70-130
Toluene	ND	0.113	0.0050	0.10	-	113	70-130
Ethylbenzene	ND	0.116	0.0050	0.10	-	116	70-130
Xylenes	ND	0.373	0.015	0.30	-	124	70-130
Surrogate Recovery							
2-Fluorotoluene	0.104	0.126		0.10	104	126	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.575	0.591	0.60	ND	96	99	70-130	2.85	20
MTBE	0.0811	0.0789	0.10	ND	81	79	70-130	2.69	20
Benzene	0.0993	0.106	0.10	ND	99	106	70-130	6.68	20
Toluene	0.102	0.109	0.10	ND	100	107	70-130	6.50	20
Ethylbenzene	0.106	0.116	0.10	ND	106	116	70-130	9.02	20
Xylenes	0.340	0.382	0.30	ND	113	127	70-130	11.6	20
Surrogate Recovery									
2-Fluorotoluene	0.118	0.127	0.10		118	127	70-130	7.09	20

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Prepared:	12/28/15	**BatchID:**	114732
Date Analyzed:	12/28/15	**Extraction Method:**	SW3550B
Instrument:	GC5A	**Analytical Method:**	SW8082
Matrix:	Soil	**Unit:**	mg/kg
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Sample ID:**	MB/LCS-114732 1512A77-002AMS/MSD

QC Summary Report for SW8082

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Aroclor1016	ND	-	0.050	-	-	-	-
Aroclor1221	ND	-	0.050	-	-	-	-
Aroclor1232	ND	-	0.050	-	-	-	-
Aroclor1242	ND	-	0.050	-	-	-	-
Aroclor1248	ND	-	0.050	-	-	-	-
Aroclor1254	ND	-	0.050	-	-	-	-
Aroclor1260	ND	0.173	0.050	0.15	-	115	70-130
PCBs, total	ND	-	0.050	-	-	-	-
Surrogate Recovery							
Decachlorobiphenyl	0.0458	0.0462		0.050	92	92	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Aroclor1260	0.173	0.164	0.15	ND	115	109	70-130	5.26	30
Surrogate Recovery									
Decachlorobiphenyl	0.0457	0.0469	0.050		91	94	70-130	2.56	30

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Prepared:	12/29/15	**BatchID:**	114790
Date Analyzed:	12/30/15	**Extraction Method:**	SW5030B
Instrument:	GC19	**Analytical Method:**	SW8021B/8015Bm
Matrix:	Soil	**Unit:**	mg/Kg
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Sample ID:**	MB/LCS-114790 1512B46-011AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.600	0.40	0.60	-	100	70-130
MTBE	ND	0.0813	0.050	0.10	-	81	70-130
Benzene	ND	0.109	0.0050	0.10	-	109	70-130
Toluene	ND	0.111	0.0050	0.10	-	111	70-130
Ethylbenzene	ND	0.115	0.0050	0.10	-	115	70-130
Xylenes	ND	0.368	0.015	0.30	-	123	70-130
Surrogate Recovery							
2-Fluorotoluene	0.128	0.129		0.10	128	129	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.459	0.482	0.60	ND	76	80	70-130	4.89	20
MTBE	0.0906	0.0967	0.10	ND	91	97	70-130	6.56	20
Benzene	0.0962	0.0941	0.10	ND	96	94	70-130	2.31	20
Toluene	0.0947	0.0926	0.10	ND	95	93	70-130	2.19	20
Ethylbenzene	0.0965	0.0940	0.10	ND	97	94	70-130	2.69	20
Xylenes	0.295	0.297	0.30	ND	98	99	70-130	0.597	20
Surrogate Recovery									
2-Fluorotoluene	0.112	0.109	0.10		112	109	70-130	2.62	20

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Prepared:	12/28/15	**BatchID:**	114733
Date Analyzed:	12/29/15	**Extraction Method:**	SW3050B
Instrument:	ICP-JY	**Analytical Method:**	SW6010B
Matrix:	Soil	**Unit:**	mg/Kg
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Sample ID:**	MB/LCS-114733 1512A77-056AMS/MSD

QC Summary Report for Lead

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Lead	ND	51.0	5.0	50	-	102	75-125
Surrogate Recovery							
Terbium	526	542		500	105	108	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Lead	54.9	55.1	50	6.260	97	98	75-125	0.318	25
Surrogate Recovery									
Terbium	521	503	500		104	101	70-130	3.42	20

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County Review Draft

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Prepared:	12/28/15	**BatchID:**	114734
Date Analyzed:	12/29/15	**Extraction Method:**	SW3050B
Instrument:	ICP-JY	**Analytical Method:**	SW6010B
Matrix:	Soil	**Unit:**	mg/Kg
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Sample ID:**	MB/LCS-114734 1512A77-070AMS/MSD

QC Summary Report for Lead

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Lead	ND	51.1	5.0	50	-	102	75-125
Surrogate Recovery							
Terbium	495	504		500	99	101	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Lead	74.8	81.3	50	33.95	82	95	75-125	8.39	25
Surrogate Recovery									
Terbium	534	544	500		107	109	70-130	1.99	20

McCampbell Analytical, Inc.
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CHAIN-OF-CUSTODY RECORD

WorkOrder: 1512A77 **ClientCode: AELS**

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Report to:
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Email: tbodkin@aeiconsultants.com
cc/3rd Party:
PO:
ProjectNo: 350428; Carlos & Sierra Streets, Moss Beach, CA

Bill to:
Accounts Payable
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
AccountsPayable@AEIConsultants.com

Requested TATs: 15 days; 5 days;

Date Received: **12/28/2015**
Date Logged: **12/28/2015**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1512A77-002	B-1-1.5	Soil	12/22/2015 10:20	☐	A	A		A								
1512A77-003	B-3-2.0	Soil	12/23/2015 9:00	☐							A					
1512A77-004	B-3-5.0	Soil	12/23/2015 9:15	☐							A					
1512A77-005	B-4-0.0	Soil	12/23/2015 11:30	☐						A						
1512A77-007	B-5-0.0	Soil	12/23/2015 11:45	☐						A						
1512A77-009	B-6-0.0	Soil	12/23/2015 11:18	☐						A						
1512A77-011	B-8-0.0	Soil	12/23/2015 11:00	☐						A						
1512A77-013	B-9-0.0	Soil	12/22/2015 13:00	☐						A						
1512A77-015	B-10-0.0	Soil	12/22/2015 13:08	☐						A						
1512A77-017	B-11-0.0	Soil	12/22/2015 13:17	☐						A						
1512A77-021	B-12-5.0	Soil	12/23/2015 10:15	☐			A		A							
1512A77-023	B-7-0.0	Soil	12/23/2015 10:55	☐						A						
1512A77-026	B-13-6.0	Soil	12/23/2015 10:43	☐			A		A							
1512A77-028	B-14-2.0	Soil	12/23/2015 11:50	☐			A		A							
1512A77-029	B-15-0.0	Soil	12/22/2015 15:10	☐						A						

Test Legend:

1	1613_FULL_S	2	8082_PCB_S	3	8260B_S	4	CAM17MS_TTLC_S
5	G-MBTEX_S	6	PB_TTLC_S	7	TPH(DMO)_S	8	
9		10		11		12	

Prepared by: Agustina Venegas

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1512A77 **ClientCode: AELS**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Tim Bodkin
AEI Consultants
3880 S. Bascom Ave, Suite 109
San Jose, CA 95124
408-559-7600 FAX:

Email: tbodkin@aeiconsultants.com
cc/3rd Party:
PO:
ProjectNo: 350428; Carlos & Sierra Streets, Moss Beach, CA

Bill to:
Accounts Payable
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
AccountsPayable@AEIConsultants.com

Requested TATs: 15 days; 5 days;

Date Received: **12/28/2015**
Date Logged: **12/28/2015**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below) 1	2	3	4	5	6	7	8	9	10	11	12
1512A77-032	B-15-7.0	Soil	12/23/2015 9:50	☐			A		A							
1512A77-034	B-16-0.0	Soil	12/22/2015 15:00	☐						A						
1512A77-036	B-17-4.0	Soil	12/22/2015 15:25	☐			A		A							
1512A77-038	B-18-0.0	Soil	12/22/2015 14:30	☐						A						
1512A77-040	B-19-0.0	Soil	12/22/2015 16:00	☐						A						
1512A77-042	B-20-0.0	Soil	12/22/2015 13:35	☐						A						
1512A77-044	B-21-0.0	Soil	12/22/2015 13:55	☐						A						
1512A77-046	B-22-0.0	Soil	12/22/2015 16:38	☐						A						
1512A77-048	B-23-0.0	Soil	12/22/2015 16:20	☐						A						
1512A77-050	B-24-0.0	Soil	12/22/2015 16:30	☐						A						
1512A77-052	B-25-0.0	Soil	12/22/2015 17:00	☐						A						
1512A77-054	B-26-0.0	Soil	12/22/2015 16:47	☐						A						
1512A77-056	B-27-0.0	Soil	12/22/2015 9:15	☐						A						
1512A77-058	B-28-0.0	Soil	12/22/2015 8:45	☐						A						
1512A77-060	B-29-0.0	Soil	12/22/2015 8:30	☐						A						

Test Legend:

1	1613_FULL_S	2	8082_PCB_S	3	8260B_S	4	CAM17MS_TTLC_S
5	G-MBTEX_S	6	PB_TTLC_S	7	TPH(DMO)_S	8	
9		10		11		12	

Prepared by: Agustina Venegas

Comments:

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(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1512A77 **ClientCode: AELS**

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Report to:
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cc/3rd Party:
PO:
ProjectNo: 350428; Carlos & Sierra Streets, Moss Beach, CA

Bill to:
Accounts Payable
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
AccountsPayable@AEIConsultants.com

Requested TATs: 15 days; 5 days;

Date Received: **12/28/2015**
Date Logged: **12/28/2015**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below) 1	2	3	4	5	6	7	8	9	10	11	12
1512A77-062	B-30-0.0	Soil	12/22/2015 8:15	☐						A						
1512A77-064	B-31-0.0	Soil	12/22/2015 9:30	☐						A						
1512A77-066	B-32-0.0	Soil	12/22/2015 9:45	☐						A						
1512A77-068	B-33-0.0	Soil	12/22/2015 10:00	☐						A						
1512A77-070	B-34-0.0	Soil	12/22/2015 14:10	☐						A						

Test Legend:

1	1613_FULL_S	2	8082_PCB_S	3	8260B_S	4	CAM17MS_TTLC_S
5	G-MBTEX_S	6	PB_TTLC_S	7	TPH(DMO)_S	8	
9		10		11		12	

Prepared by: Agustina Venegas

Comments:

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http://www.mccampbell.com / E-mail: main@mccampbell.com

WORK ORDER SUMMARY

Client Name: AEI CONSULTANTS
QC Level: LEVEL 2
Work Order: 1512A77
Project: 350428; Carlos & Sierra Streets, Moss Beach, CA
Client Contact: Tim Bodkin
Date Logged: 12/28/2015
Comments:
Contact's Email: tbodkin@aeiconsultants.com

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1512A77-001A	B-1-0.0	Soil		1	Acetate Liner	☐	12/22/2015 10:20			☑	
1512A77-002A	B-1-1.5	Soil	SW6020 (CAM 17)	1	Acetate Liner	☐	12/22/2015 10:20	5 days		☐	
			SW8082 (PCBs Only)			☐		5 days		☐	
			E1613 (PCDDs & PCDFs)			☐		15 days		☐	
1512A77-003A	B-3-2.0	Soil	SW8015B (Diesel & Motor Oil)	1	Acetate Liner	☐	12/23/2015 9:00	5 days		☐	
1512A77-004A	B-3-5.0	Soil	SW8015B (Diesel & Motor Oil)	1	Acetate Liner	☐	12/23/2015 9:15	5 days		☐	
1512A77-005A	B-4-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/23/2015 11:30	5 days		☐	
1512A77-006A	B-4-1.5	Soil		1	Acetate Liner	☐	12/23/2015 11:30			☑	
1512A77-007A	B-5-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/23/2015 11:45	5 days		☐	
1512A77-008A	B-5-1.5	Soil		1	Acetate Liner	☐	12/23/2015 11:45			☑	
1512A77-009A	B-6-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/23/2015 11:18	5 days		☐	
1512A77-010A	B-6-1.5	Soil		1	Acetate Liner	☐	12/23/2015 11:18			☑	
1512A77-011A	B-8-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/23/2015 11:00	5 days		☐	
1512A77-012A	B-8-1.5	Soil		1	Acetate Liner	☐	12/23/2015 11:00			☑	
1512A77-013A	B-9-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 13:00	5 days		☐	
1512A77-014A	B-9-1.5	Soil		1	Acetate Liner	☐	12/22/2015 13:00			☑	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

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WORK ORDER SUMMARY

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Project: 350428; Carlos & Sierra Streets, Moss Beach, CA
Client Contact: Tim Bodkin
Date Logged: 12/28/2015
Comments:
Contact's Email: tbodkin@aeiconsultants.com

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1512A77-015A	B-10-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 13:08	5 days		☐	
1512A77-016A	B-10-1.5	Soil		1	Acetate Liner	☐	12/22/2015 13:08			☑	
1512A77-017A	B-11-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 13:17	5 days		☐	
1512A77-018A	B-11-1.5	Soil		1	Acetate Liner	☐	12/22/2015 13:17			☑	
1512A77-019A	B-12-0.0	Soil		1	Acetate Liner	☐	12/22/2015 13:20			☑	
1512A77-020A	B-12-1.5	Soil		1	Acetate Liner	☐	12/22/2015 13:20			☑	
1512A77-021A	B-12-5.0	Soil	SW8021B/8015Bm (G/MBTEX)	1	Acetate Liner	☐	12/23/2015 10:15	5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
1512A77-022A	B-12-9.0	Soil		1	Acetate Liner	☐	12/23/2015 10:22			☑	
1512A77-023A	B-7-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/23/2015 10:55	5 days		☐	
1512A77-024A	B-7-1.5	Soil		1	Acetate Liner	☐	12/23/2015 10:55			☑	
1512A77-025A	B-13-3.0	Soil		1	Acetate Liner	☐	12/23/2015 10:35			☑	
1512A77-026A	B-13-6.0	Soil	SW8021B/8015Bm (G/MBTEX)	1	Acetate Liner	☐	12/23/2015 10:43	5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
1512A77-027A	B-13-9.0	Soil		1	Acetate Liner	☐	12/23/2015 10:55			☑	
1512A77-028A	B-14-2.0	Soil	SW8021B/8015Bm (G/MBTEX)	1	Acetate Liner	☐	12/23/2015 11:50	5 days		☐	

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WORK ORDER SUMMARY

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Project: 350428; Carlos & Sierra Streets, Moss Beach, CA
Client Contact: Tim Bodkin
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Contact's Email: tbodkin@aeiconsultants.com

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1512A77-028A	B-14-2.0	Soil	SW8260B (VOCs)	1	Acetate Liner	☐	12/23/2015 11:50	5 days		☐	
1512A77-029A	B-15-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 15:10	5 days		☐	
1512A77-030A	B-15-1.5	Soil		1	Acetate Liner	☐	12/22/2015 15:10			☑	
1512A77-031A	B-15-4.0	Soil		1	Acetate Liner	☐	12/23/2015 9:35			☑	
1512A77-032A	B-15-7.0	Soil	SW8021B/8015Bm (G/MBTEX)	1	Acetate Liner	☐	12/23/2015 9:50	5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
1512A77-033A	B-15-9.0	Soil		1	Acetate Liner	☐	12/23/2015 10:00			☑	
1512A77-034A	B-16-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 15:00	5 days		☐	
1512A77-035A	B-16-1.5	Soil		1	Acetate Liner	☐	12/22/2015 15:00			☑	
1512A77-036A	B-17-4.0	Soil	SW8021B/8015Bm (G/MBTEX)	1	Acetate Liner	☐	12/22/2015 15:25	5 days		☐	
			SW8260B (VOCs)			☐		5 days		☐	
1512A77-037A	B-17-8.0	Soil		1	Acetate Liner	☐	12/22/2015 15:35			☑	
1512A77-038A	B-18-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 14:30	5 days		☐	
1512A77-039A	B-18-1.5	Soil		1	Acetate Liner	☐	12/22/2015 14:30			☑	
1512A77-040A	B-19-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 16:00	5 days		☐	
1512A77-041A	B-19-1.5	Soil		1	Acetate Liner	☐	12/22/2015 16:00			☑	

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Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1512A77-042A	B-20-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 13:35	5 days		☐	
1512A77-043A	B-20-1.5	Soil		1	Acetate Liner	☐	12/22/2015 13:35			☑	
1512A77-044A	B-21-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 13:55	5 days		☐	
1512A77-045A	B-21-1.5	Soil		1	Acetate Liner	☐	12/22/2015 13:55			☑	
1512A77-046A	B-22-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 16:38	5 days		☐	
1512A77-047A	B-22-1.5	Soil		1	Acetate Liner	☐	12/22/2015 16:38			☑	
1512A77-048A	B-23-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 16:20	5 days		☐	
1512A77-049A	B-23-1.5	Soil		1	Acetate Liner	☐	12/22/2015 16:20			☑	
1512A77-050A	B-24-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 16:30	5 days		☐	
1512A77-051A	B-24-1.5	Soil		1	Acetate Liner	☐	12/22/2015 16:30			☑	
1512A77-052A	B-25-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 17:00	5 days		☐	
1512A77-053A	B-25-1.5	Soil		1	Acetate Liner	☐	12/22/2015 17:00			☑	
1512A77-054A	B-26-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 16:47	5 days		☐	
1512A77-055A	B-26-1.5	Soil		1	Acetate Liner	☐	12/22/2015 16:47			☑	
1512A77-056A	B-27-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 9:15	5 days		☐	
1512A77-057A	B-27-1.5	Soil		1	Acetate Liner	☐	12/22/2015 9:15			☑	

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Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1512A77-058A	B-28-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 8:45	5 days		☐	
1512A77-059A	B-28-1.5	Soil		1	Acetate Liner	☐	12/22/2015 8:45			☑	
1512A77-060A	B-29-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 8:30	5 days		☐	
1512A77-061A	B-29-1.5	Soil		1	Acetate Liner	☐	12/22/2015 8:30			☑	
1512A77-062A	B-30-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 8:15	5 days		☐	
1512A77-063A	B-30-1.5	Soil		1	Acetate Liner	☐	12/22/2015 8:15			☑	
1512A77-064A	B-31-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 9:30	5 days		☐	
1512A77-065A	B-31-1.5	Soil		1	Acetate Liner	☐	12/22/2015 9:30			☑	
1512A77-066A	B-32-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 9:45	5 days		☐	
1512A77-067A	B-32-1.5	Soil		1	Acetate Liner	☐	12/22/2015 9:45			☑	
1512A77-068A	B-33-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 10:00	5 days		☐	
1512A77-069A	B-33-1.5	Soil		1	Acetate Liner	☐	12/22/2015 10:00			☑	
1512A77-070A	B-34-0.0	Soil	SW6010B (Lead)	1	Acetate Liner	☐	12/22/2015 14:10	5 days		☐	
1512A77-071A	B-34-1.5	Soil		1	Acetate Liner	☐	12/22/2015 14:10			☑	

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151247 7

CHAIN OF CUSTODY RECORD

County Review Draft

TURN AROUND TIME: RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY ☒

GeoTracker EDF ☐ PDF ☐ EDD ☐ Write On (DW) ☐ EQuIS ☐ 10 DAY ☐

Effluent Sample Requiring "J" flag ☐ **UST Clean Up Fund Project** ☐ ; **Claim #**_____

Report To: Tim Bolkin	**Bill To:** SAME
Company: AEI CONSULTANTS	
3880 S. BASCOM AVE STE. 109	
SAN JOSE CA 95124	**E-Mail:** tbolkin@aeiconsultants.com
Tele: (408) 559-7600	**Fax:** ( )
Project #: 350428	**Project Name:** CARLOS & SONS EXXON STATION
Project Location: MOSS BEACH CA	**Purchase Order#**
Sampler Signature:	

SAMPLE ID	Location/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	MATRIX: Ground Water	Waste Water	Drinking Water	Sea Water	Soil	Air	Sludge	Other	METHOD PRESERVED: HCL	HNO_3	Other	Analysis Request: BTEX & TPH as Gas (8015) / 8260	TPH as Diesel (8015) ADD MOTOR OIL	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	MTBE / BTEX ONLY (EPA 8260/ 8021)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)	LUFT 5 Metals (200.8 / 6020)	Metals (200.8 / 6020)	Filter sample for DISSOLVED metals analysis	LEAD (EPA 6010)	OXYGENATES (EPA 8260)		HOLD FOR FUTURE ANALYSES
* B-1-0.0		12/2/15	10:20	1					X						X																			X
B-1-1.5		↓	↓	↓					↓						↓						X						X					X		
B-3-2.0		12/23/15	9:00													X																		
B-3-5.0			9:15													X																		
B-4-0.0			11:30																												X			
B-4-1.5			↓																														X	
B-5-0.0			11:45																												X			
B-5-1.5			↓																														X	
B-6-0.0			11:18																												X			
B-6-1.5			↓																														X	
B-8.0.0			11:00																												X			

**MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

Relinquished By:	Date:	Time:	Received By:
	12/28/15	13:22	
	12/28/15	15:10	Agustin V.

ICE/t° 5
GOOD CONDITION
HEAD SPACE ABSENT
DECHLORINATED IN LAB
APPROPRIATE CONTAINERS
PRESERVED IN LAB

VOAS O&G METALS OTHER HAZARDOUS:
PRESERVATION pH<2

COMMENTS: * SAMPLE WAS LABELED "B-1-0.5".

PAGE 1 OF 7

McCampbell Analytical, Inc.

1534 Willow Pass Rd. / Pittsburg, Ca. 94565-1701
www.mccampbell.com / main@mccampbell.com
Telephone: (877) 252-9262 / Fax: (925) 252-9269

CHAIN OF CUSTODY RECORD

County Review Draft

TURN AROUND TIME: RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY ☒

GeoTracker EDF ☐ PDF ☐ EDD ☐ Write On (DW) ☐ EQuIS ☐ 10 DAY ☐

Effluent Sample Requiring "J" flag ☐ **UST Clean Up Fund Project** ☐ ; **Claim #**_____

Report To: Tim Boikin	**Bill To:** SAME
Company: AEI CONSULTANTS	
3880 S. BASCOM AVE STE. 109	
SAN JOSE CA 95124	**E-Mail:** tboikin@aeiconsultants.com
Tele: (408) 559-7600	**Fax:** ( ) —
Project #: 350428	**Project Name:** CHILDS & SYCAMORE STREETS
Project Location: MODESTO CA	**Purchase Order#**
Sampler Signature: T Boikin	

Analysis Request

SAMPLE ID	Location/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	MATRIX: Ground Water	Waste Water	Drinking Water	Sea \ Water	Soil	Air	Sludge	Other	METHOD PRESERVED: HCL	HNO_3	Other	BTEX & TPH as Gas (8015) MTBE	TPH as Diesel (8015) ADD MOTOR OIL	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	MTBE / BTEX ONLY (EPA 8260/ 8021)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)	LUFT 5 Metals (200.8 / 6020)	Metals (200.8 / 6020)	Filter sample for DISSOLVED metals analysis	LEAD (EPA 6010)	OXYGENATES (EPA 8260)		HOLD FOR FUTURE ANALYSIS
B-8-1.5		12/23/15	11:00	1					X						X																					X
B-9-0.0		12/23/15	13:00																													X				
B-9-1.5		↓	↓																																	X
B-10-0.0			13:08																													X				
B-10-1.5			↓																																	X
B-11-0.0			13:17																													X				
B-11-1.5			↓																																	X
B-12-0.0			13:20																																	
B-12-1.5			↓																																	
B-12-5.0		12/23/15	10:15													X									X							.				
B-12-9.0		↓	10:22																																	X

**MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

Relinquished By:	Date:	Time:	Received By:
T Boikin	12/28/15	13:22	
Relinquished By:	Date:	Time:	Received By:
	12-28-15	1510	Agustin V.
Relinquished By:	Date:	Time:	Received By:

ICE/t°_____
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

VOAS O&G METALS OTHER HAZARDOUS:
PRESERVATION_____ pH<2_____

COMMENTS:

PAGE 2 OF 7

McCampbell Analytical, Inc.

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www.mccampbell.com / main@mccampbell.com
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CHAIN OF CUSTODY RECORD

County Review Draft

TURN AROUND TIME: RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY ☒

GeoTracker EDF ☐ PDF ☐ EDD ☐ Write On (DW) ☐ EQuIS ☐ 10 DAY ☐

Effluent Sample Requiring "J" flag ☐ **UST Clean Up Fund Project** ☐; **Claim #**_____

Report To: TIM BOLKEN	**Bill To:** SAME
Company: AEI CONSULTANTS	
3880 S. BASCOM AVE STE. 109	
SAN JOSE, CA 95124	**E-Mail:** tbolken@aeiconsultants.com
Tele: (408) 559-7600	**Fax:** ( )
Project #: 350428	**Project Name:** CHEVRON & SUNOCO STATION
Project Location: MOSS LANDING, CA	**Purchase Order#**
Sampler Signature:	

Analysis Request

SAMPLE ID	Location/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	MATRIX: Ground Water	Waste Water	Drinking Water	Sea \ Water	Soil	Air	Sludge	Other	METHOD PRESERVED: HCL	HNO_3	Other	BTEX & TPH as Gas (8015) / MTBE	TPH as Diesel (8015) ADD MOTOR OIL	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	MTBE / BTEX ONLY (EPA 8260/ 8021)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's / Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)	LUFT 5 Metals (200.8 / 6020)	Metals (200.8 / 6020)	Filter sample for DISSOLVED metals analysis	LEAD (EPA 6010)	MDXA'S & ATU'S DISTRIBUTED BY (EPA 1613)		HOLD FOR FUTURE ANALYSES
B-7-0.0		12/23/15	10:55	1					X						X																X				
B-7-1.5			↓																																X
B-13-3.0			10:35																																X
B-13-6.0			10:43													X									X										X
B-13-9.0			10:55																																X
B-14-2.0			11:50													X									X										
B-15-0.0		12/22/15	15:10																												X				
B-15-1.5		↓	↓																																X
B-15-4.0		12/23/15	9:35																																X
B-15-7.0			9:50													X									X										
B-15-9.0		↓	10:00																																X

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Relinquished By:	Date:	Time:	Received By:
	12/28/15	13:22	
Relinquished By:	Date:	Time:	Received By:
	12-28-15	1510	
Relinquished By:	Date:	Time:	Received By:

ICE/t°_____
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

VOAS O&G METALS OTHER HAZARDOUS:
PRESERVATION_____ pH<2_____

COMMENTS:

PAGE 3 OF 7

McCampbell Analytical, Inc.

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CHAIN OF CUSTODY RECORD

County Review Draft

TURN AROUND TIME: RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY ☒
GeoTracker EDF ☐ PDF ☐ EDD ☐ Write On (DW) ☐ EQuIS ☐ 10 DAY ☐
Effluent Sample Requiring "J" flag ☐ **UST Clean Up Fund Project** ☐ ; **Claim #**_____

Report To: Tim Bolkin	**Bill To:** SAME
Company: AEI CONSULTANTS	
3880 S. Bascom Ave Ste. 109	
San Jose CA 95124	**E-Mail:** tbolkin@aeiconsultants.com
Tele: (408) 559-7600	**Fax:** ( )
Project #: 350428	**Project Name:** Chevron & Sunoco Stores
Project Location: Moss Landing CA	**Purchase Order#**
Sampler Signature: T Bolkin	

Analysis Request

SAMPLE ID	Location/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	MATRIX: Ground Water	Waste Water	Drinking Water	Sea \ Water	Soil	Air	Sludge	Other	METHOD PRESERVED: HCL	HNO_3	Other	BTEX & TPH as Gas (8021) 8015 or 8260 MTBE	TPH as Diesel (8015) Add MOTOR OIL	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	MTBE / BTEX ONLY (EPA 8260/ 8021)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)	LUFT 5 Metals (200.8 / 6020)	Metals (200.8 / 6020)	Filter sample for DISSOLVED metals analysis	LEAD (EPA 6010)	1,2-DCA & EDB (EPA 8260 / 8011)		HOLD FOR FUTURE ANALYSES
B-16-0.0		12/22/15	15:00	1					X						X																X				
B-16-1.5			↓																																X
B-17-4.0			15:25													X									X										
B-17-8.0			15:35																																X
B-18-0.0			14:30																												X				
B-18-1.5			14:30																																X
B-19-0.0			16:00																												X				
B-19-1.5			↓																																X
B-20-0.0			13:35																												X				
B-20-1.5			↓																																X
B-21-0.0			13:55																												X				

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Relinquished By:	Date:	Time:	Received By:
T Bolkin	12/28/15	13:22	
	Date:	Time:	Received By:
	12-28-15	15:10	Agustina V.
	Date:	Time:	Received By:

ICE/t°_____
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

COMMENTS:

PAGE 4 OF 7

VOAS O&G METALS OTHER **HAZARDOUS:**
PRESERVATION_____ pH<2_____

McCampbell Analytical, Inc.

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CHAIN OF CUSTODY RECORD

County Review Draft

TURN AROUND TIME: RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY ☒

GeoTracker EDF ☐ PDF ☐ EDD ☐ Write On (DW) ☐ EQuIS ☐ 10 DAY ☐

Effluent Sample Requiring "J" flag ☐ **UST Clean Up Fund Project** ☐ ; **Claim #**_____

Report To: Tim Boykin	**Bill To:** SAME
Company: AEI CONSULTANTS	
3880 S. BASCOM AVE STE. 109	
SAN JOSE, CA 95124	**E-Mail:** tboykin@aeiconsultants.com
Tele: (408) 559-7600	**Fax:** ( ) —
Project #: 350428	**Project Name:** CARLOS & SWEASY STREET
Project Location: MOUNTAIN VIEW, CA	**Purchase Order#**
Sampler Signature: T Boykin	

SAMPLE ID	Location/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	MATRIX: Ground Water	Waste Water	Drinking Water	Sea \ Water	Soil	Air	Sludge	Other	METHOD PRESERVED: HCL	HNO_3	Other	Analysis Request: TPH as Gas (8015) MTBE	TPH as Diesel (8015) Add Motor Oil	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	MTBE / BTEX ONLY (EPA 8260/ 8021)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's / Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)	LUFT 5 Metals (200.8 / 6020)	Metals (200.8 / 6020)	Filter sample for DISSOLVED metals analysis	LEAD (EPA 6010)	NITRATE & NITRITE (EPA 300.0)		HOLD FOR FUTURE ANALYSIS
B-21-1.5		12/22/15	13:55	1					X						X																				X
B-22-0.0			16:38	1																												X			
B-22-1.5			↓																																X
B-23-0.0			16:20																													X			
B-23-1.5			↓																																X
B-24-0.0			16:30																													X			
B-24-1.5			↓																																X
B-25-0.0			17:02																													X			
B-25-1.5			↓																																X
B-26-0.0			16:47																													X			
B-26-1.5			↓																																X

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Relinquished By:	Date:	Time:	Received By:
T Boykin	12/28/15	13:22	
Relinquished By:	Date:	Time:	Received By:
	12-28-15	1570	AGUSTIN V.
Relinquished By:	Date:	Time:	Received By:

ICE/t°_____
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

COMMENTS:

PAGE 5 OF 7

VOAS O&G METALS OTHER HAZARDOUS:
PRESERVATION_____ pH<2_____

McCampbell Analytical, Inc.

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CHAIN OF CUSTODY RECORD

County Review Draft

TURN AROUND TIME: RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY ☒

GeoTracker EDF ☐ PDF ☐ EDD ☐ Write On (DW) ☐ EQuIS ☐ 10 DAY ☐

Effluent Sample Requiring "J" flag ☐ **UST Clean Up Fund Project** ☐ ; **Claim #**_____

Report To: TIM BOLKEN	**Bill To:** SAME
Company: AEI CONSULTANTS	
3880 S. BASCOM AVE STE. 109	
SAN JOSE CA 95124	**E-Mail:** tbolken@aeiconsultants.com
Tele: (408) 559-7600	**Fax:** ( )
Project #: 350428	**Project Name:** CHEVRON & SUNOCO STATION
Project Location: MOSS LANDING CA	**Purchase Order#**
Sampler Signature:	

SAMPLE ID	Location/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	MATRIX: Ground Water	Waste Water	Drinking Water	Sea \ Water	Soil	Air	Sludge	Other	METHOD PRESERVED: HCL	HNO_3	Other 10S
B-27-0.0		12/22/15	9:15	1					X						X
B-27-1.5			↓												
B-28-0.0			8:45												
B-28-1.5			↓												
B-29-0.0			8:30												
B-29-1.5			↓												
B-30-0.0			8:15												
B-30-1.5			↓												
B-31-0.0			9:30												
B-31-1.5			↓												
B-32-0.0			9:45												

Analysis Request

BTEX & TPH as Gas (8015) MTBE 8260	TPH as Diesel (8015) ADD MOTOR OIL	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	MTBE / BTEX ONLY (EPA 8260/ 8021)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's / Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)	LUFT 5 Metals (200.8 / 6020)	Metals (200.8 / 6020)	Filter sample for DISSOLVED metals analysis	LEAD (EPA 6010)	MOXYGENATES (EPA 8260)		HOLD FOR FUTURE ANALYSES
																X			X
																X			
																X			X
																X			
																X			X
																X			
																X			X
																X			

****MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.**

Relinquished By:	Date:	Time:	Received By:
	12/29/15	13:22	
Relinquished By:	Date:	Time:	Received By:
	12-28-15	7510	AGUSTINA V.
Relinquished By:	Date:	Time:	Received By:

ICE/t°_____
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

COMMENTS:

PAGE 6 OF 7

VOAS O&G METALS OTHER HAZARDOUS:
PRESERVATION_____ pH<2_____

McCampbell Analytical, Inc.

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Telephone: (877) 252-9262 / Fax: (925) 252-9269

CHAIN OF CUSTODY RECORD

County Review Draft

TURN AROUND TIME: RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY ☒

GeoTracker EDF ☐ PDF ☐ EDD ☐ Write On (DW) ☐ EQuIS ☐ 10 DAY ☐

Effluent Sample Requiring "J" flag ☐ **UST Clean Up Fund Project** ☐ ; **Claim #**_____

Report To: TIM BOLKEN	**Bill To:** SAME
Company: AEI CONSULTANTS	
3880 S. BASCOM AVE STE. 109	
SAN JOSE CA 95124	**E-Mail:** tbolken@aeiconsultants.com
Tele: (408) 559-7600	**Fax:** ( )
Project #: 320428	**Project Name:** CHEVRON & SVEGA STATION
Project Location: MOSS LANDING CA	**Purchase Order#**
Sampler Signature:	

SAMPLE ID	Location/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	MATRIX: Ground Water	Waste Water	Drinking Water	Sea \ Water	Soil	Air	Sludge	Other	METHOD PRESERVED: HCL	HNO_3	Other	Analysis Request: BTEX & TPH as Gas (8015 or 8260) MTBE	TPH as Diesel (8015) ADD MOTOR OIL	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	MTBE / BTEX ONLY (EPA 8260/ 8021)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)	LUFT 5 Metals (200.8 / 6020)	Metals (200.8 / 6020)	Filter sample for DISSOLVED metals analysis	LEAD (EPA 6010)	OXYGENATES (EPA 8260)		HOLD FOR FUTURE ANALYSIS
B-32-1.5		12/22/15	9:45	1					X						X																				X
B-33-0.0			10:00																												X				
B-33-1.5																																			X
B-34-0.0			14:10																												X				
B-34-1.5																																			X

**MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

Relinquished By:	Date:	Time:	Received By:
	12/28/15	13:22	
Relinquished By:	Date:	Time:	Received By:
	12-28-15	15:10	Agustina V.
Relinquished By:	Date:	Time:	Received By:

ICE/t°_____
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

COMMENTS:

PAGE 7 of 7

VOAS O&G METALS OTHER HAZARDOUS:
PRESERVATION_____ pH<2_____

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Sample Receipt Checklist

Client Name:	**AEI Consultants**	Date and Time Received:	**12/28/2015 15:10**
Project Name:	**350428; Carlos & Sierra Streets, Moss Beach, CA**	Date Logged:	**12/28/2015**
WorkOrder №:	**1512A77** Matrix: Soil	Received by:	Agustina Venegas
Carrier:	Bernie Cummins (MAI Courier)	Logged by:	Agustina Venegas

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐
Chain of custody signed when relinquished and received?	Yes ☑	No ☐
Chain of custody agrees with sample labels?	Yes ☑	No ☐
Sample IDs noted by Client on COC?	Yes ☑	No ☐
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐
Sampler's name noted on COC?	Yes ☑	No ☐

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	
Sample/Temp Blank temperature	Temp: 5°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☐	No ☐	NA ☑
Sample labels checked for correct preservation?	Yes ☑	No ☐	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes ☐	No ☐	NA ☑
Samples Received on Ice?	Yes ☑	No ☐	
	(Ice Type: WET ICE)		

UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522?	Yes ☐	No ☐	NA ☑
Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539?	Yes ☐	No ☐	NA ☑

** NOTE: If the "No" box is checked, see comments below.*

Comments:

County Review Draft

McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1512A77 A

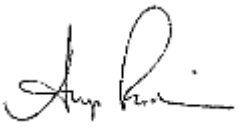
Report Created for: AEI Consultants

3880 S. Bascom Ave, Suite 109
San Jose, CA 95124

Project Contact: Tim Bodkin
Project P.O.:
Project Name: 350428; Carlos & Sierra Streets, Moss Beach, CA

Project Received: 12/28/2015

Analytical Report reviewed & approved for release on 01/15/2016 by:



Angela Rydelius,
Laboratory Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.

County Review Draft

McCampbell Analytical, Inc.
"When Quality Counts"
1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: AEI Consultants
Project: 350428; Carlos & Sierra Streets, Moss Beach, CA
WorkOrder: 1512A77

Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

Analytical Qualifiers

S	spike recovery outside accepted recovery limits
e2	diesel range compounds are significant; no recognizable pattern
e7	oil range compounds are significant

County Review Draft

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Glossary of Terms & Qualifier Definitions

Client: AEI Consultants
Project: 350428; Carlos & Sierra Streets, Moss Beach, CA
WorkOrder: 1512A77

Quality Control Qualifiers

F8	MS/MSD recovery and/or RPD was out of acceptance criteria; PDS validated the prep batch. If PDS recovery was out of acceptance criteria, DLT validated the prep batch.

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW3050B
Date Prepared:	1/14/16	**Analytical Method:**	SW6010B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/Kg

Lead

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-7-1.5	1512A77-024A	Soil	12/23/2015 10:55	ICP-JY	115395

Analytes	Result	RL	DF	Date Analyzed
Lead	**7.0**	5.0	1	01/15/2016 11:55

Surrogates	REC (%)	Limits	
Terbium	125	70-130	01/15/2016 11:55

Analyst(s): BBO

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-20-1.5	1512A77-043A	Soil	12/22/2015 13:35	ICP-JY	115395

Analytes	Result	RL	DF	Date Analyzed
Lead	**8.1**	5.0	1	01/15/2016 11:45

Surrogates	REC (%)	Limits	
Terbium	106	70-130	01/15/2016 11:45

Analyst(s): BBO

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Prepared:	1/14/16	**BatchID:**	115395
Date Analyzed:	1/15/16	**Extraction Method:**	SW3050B
Instrument:	ICP-JY	**Analytical Method:**	SW6010B
Matrix:	Soil	**Unit:**	mg/Kg
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Sample ID:**	MB/LCS-115395 1512A77-043AMS/MSD

QC Summary Report for Lead

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Lead	ND	54.7	5.0	50	-	109	75-125
Surrogate Recovery							
Terbium	533	536		500	107	107	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Lead	60.9	63.2	50	8.090	106	110	75-125	3.63	25
Surrogate Recovery									
Terbium	596	640	500		119	128	70-130	7.04	20

County Review Draft

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1512A77 A **ClientCode: AELS**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Tim Bodkin
AEI Consultants
3880 S. Bascom Ave, Suite 109
San Jose, CA 95124
408-559-7600 FAX:

Email: tbodkin@aeiconsultants.com
cc/3rd Party:
PO:
ProjectNo: 350428; Carlos & Sierra Streets, Moss Beach, CA

Bill to:
Accounts Payable
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
AccountsPayable@AEIConsultants.com

Requested TAT: 1 day;

Date Received: 12/28/2015
Date Logged: 12/28/2015
Date Add-On: 01/14/2016

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below) 1	2	3	4	5	6	7	8	9	10	11	12
1512A77-024	B-7-1.5	Soil	12/23/2015 10:55	☐	A											
1512A77-043	B-20-1.5	Soil	12/22/2015 13:35	☐	A											

Test Legend:

1	PB_S	2		3		4	
5		6		7		8	
9		10		11		12	

Prepared by: Agustina Venegas

Add-On Prepared By: Maria Venegas

Comments: TTLC Pb added to 024 & 043 1/14/16 1day TAT.

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: AEI CONSULTANTS
Project: 350428; Carlos & Sierra Streets, Moss Beach, CA
Comments: TTLC Pb added to 024 & 043 1/14/16 1day TAT.

QC Level: LEVEL 2
Client Contact: Tim Bodkin
Contact's Email: tbodkin@aeiconsultants.com

Work Order: 1512A77
Date Logged: 12/28/2015
Date Add-On: 1/14/2016

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1512A77-024A	B-7-1.5	Soil	SW6010B (Lead)	1	Acetate Liner	12/23/2015 10:55	1 day		☐	
1512A77-043A	B-20-1.5	Soil	SW6010B (Lead)	1	Acetate Liner	12/22/2015 13:35	1 day		☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

1512A77

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CHAIN OF CUSTODY RECORD

County Review Draft

TURN AROUND TIME: RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY ☒ RUSH

GeoTracker EDF ☐ PDF ☐ EDD ☐ Write On (DW) ☐ EQuIS ☐ 10 DAY ☐

Effluent Sample Requiring "J" flag ☐ UST Clean Up Fund Project ☐; Claim #_____

Report To: Tim Boykin	**Bill To:** SAME
Company: AEI CONSULTANTS	
3880 S. Bascom Ave Ste. 109	
San Jose, CA 95124	**E-Mail:** tboykin@aeiconsultants.com
Tele: (408) 559-7600	**Fax:** ( ) —
Project #: 350428	**Project Name:** Chevron & Shell Station
Project Location: Moss Landing, CA	**Purchase Order#**
Sampler Signature: T Boykin	

SAMPLE ID	Location/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	MATRIX: Ground Water	Waste Water	Drinking Water	Sea \ Water	Soil	Air	Sludge	Other	METHOD PRESERVED: HCL	HNO_3	Other
B-7-0.0		12/23/15	10:55	1					X						X
B-7-1.5			↓												
B-13-3.0			10:35												
B-13-6.0			10:43												
B-13-9.0			10:55												
B-14-2.0			11:50												
B-15-0.0		12/22/15	15:10												
B-15-1.5			↓												
B-15-4.0		12/23/15	9:35												
B-15-7.0			9:50												
B-15-9.0			10:00												

Analysis Request	
BTEX & TPH as Gas (8021 / 8015 mod. / 8260) MTBE	X
TPH as Diesel (8015) Add Motor Oil	
Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	
Total Petroleum Hydrocarbons (418.1)	
MTBE / BTEX ONLY (EPA 8260/ 8021)	
EPA 505/ 608 / 8081 (Cl Pesticides)	
EPA 608 / 8082 PCB's ; Aroclors / Congeners	
EPA 507 / 8141 (NP Pesticides)	
EPA 515 / 8151 (Acidic Cl Herbicides)	
EPA 524.2 / 624 / 8260 (VOCs)	X
EPA 525.2 / 625 / 8270 (SVOCs)	
EPA 8270 SIM / 8310 (PAHs / PNAs)	
CAM 17 Metals (200.8 / 6020)	
LUFT 5 Metals (200.8 / 6020)	
Metals (200.8 / 6020)	
Filter sample for DISSOLVED metals analysis	
Lead (EPA 6010)	X
1,2-DCA & EDB (EPA 8260 / 8011)	
HOLD FOR FUTURE ANALYSES	X

**MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

Relinquished By:	Date:	Time:	Received By:
T Boykin	12/28/15	13:22	
Relinquished By:	Date:	Time:	Received By:
	12/28/15	15:10	
Relinquished By:	Date:	Time:	Received By:

ICE/t°_____
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

COMMENTS: added 1/14/16, 1 day TAT

PRESERVATION_____ VOAS O&G METALS OTHER HAZARDOUS: pH<2_____

PAGE 3 OF 7

McCampbell Analytical, Inc.

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CHAIN OF CUSTODY RECORD

County Review Draft

TURN AROUND TIME: RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY ☒

GeoTracker EDF ☐ PDF ☐ EDD ☐ Write On (DW) ☐ EQuIS ☐ 10 DAY ☐

Effluent Sample Requiring "J" flag ☐ **UST Clean Up Fund Project** ☐ ; **Claim #**_____

Report To: Tim Bolkin	**Bill To:** SAME
Company: AEI CONSULTANTS	
3880 S. BASCOM AVE STE. 109	
SAN JOSE CA 95124	**E-Mail:** tbolkin@aeiconsultants.com
Tele: (408) 559-7600	**Fax:** ( )
Project #: 350428	**Project Name:** CHILDS & SYCAMORE STREETS
Project Location: MOSS BEACH CA	**Purchase Order#**
Sampler Signature:	

SAMPLE ID	Location/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	MATRIX: Ground Water	Waste Water	Drinking Water	Sea \ Water	Soil	Air	Sludge	Other	METHOD PRESERVED: HCL	HNO_3	Other
B-16-0.0		12/22/15	15:00	1					X						X
B-16-1.5			↓	↓											
B-17-4.0			15:25												
B-17-8.0			15:35												
B-18-0.0			14:30												
B-18-1.5			14:30												
B-19-0.0			16:00												
B-19-1.5			↓												
B-20-0.0			13:35												
B-20-1.5			↓												
B-21-0.0			13:55												

Analysis Request

TPH as Gas (8015) ~~MTBE~~	TPH as Diesel (8015) Add MOTOR OIL	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	MTBE / BTEX ONLY (EPA 8260/ 8021)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's / Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)	LUFT 5 Metals (200.8 / 6020)	Metals (200.8 / 6020)	Filter sample for DISSOLVED metals analysis	LEAD (EPA 6010)	MOISTURE AND DRY DENSITY (EPA 1613)		HOLD FOR FUTURE ANALYSES
																X			
																			X
X									X										
																			X
																X			
																			X
																X			
																			X
																X			
																X			X
																X			

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Relinquished By:	Date:	Time:	Received By:
	12/28/15	13:22	
Relinquished By:	Date:	Time:	Received By:
	12-28-15	15:10	Agustina V.
Relinquished By:	Date:	Time:	Received By:

ICE/t°_____
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

VOAS O&G METALS OTHER HAZARDOUS:
PRESERVATION_____ pH<2_____

COMMENTS:

PAGE 4 OF 7

County Review Draft

McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1512A77 B

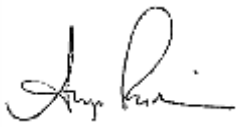
Report Created for: AEI Consultants

3880 S. Bascom Ave, Suite 109
San Jose, CA 95124

Project Contact: Tim Bodkin
Project P.O.:
Project Name: 350428; Carlos & Sierra Streets, Moss Beach, CA

Project Received: 12/28/2015

Analytical Report reviewed & approved for release on 01/19/2016 by:



Angela Rydelius,
Laboratory Manager

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Glossary of Terms & Qualifier Definitions

Client: AEI Consultants
Project: 350428; Carlos & Sierra Streets, Moss Beach, CA
WorkOrder: 1512A77

Glossary Abbreviation

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SPKRef Val	Spike Reference Value
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TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
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Analytical Qualifiers

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e2	diesel range compounds are significant; no recognizable pattern
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Client: AEI Consultants
Project: 350428; Carlos & Sierra Streets, Moss Beach, CA
WorkOrder: 1512A77

Quality Control Qualifiers

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http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Received:	12/28/15 17:55	**Extraction Method:**	SW3050B
Date Prepared:	1/15/16	**Analytical Method:**	SW6010B
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Unit:**	mg/Kg

Lead

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-21-1.5	1512A77-045A	Soil	12/22/2015 13:55	ICP-JY	115442

Analytes	Result	RL	DF	Date Analyzed
Lead	**8.8**	5.0	1	01/19/2016 09:47
Surrogates	**REC (%)**	**Limits**		
Terbium	116	70-130		01/19/2016 09:47

Analyst(s): BBO

County Review Draft

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1512A77
Date Prepared:	1/15/16	**BatchID:**	115442
Date Analyzed:	1/19/16	**Extraction Method:**	SW3050B
Instrument:	ICP-JY	**Analytical Method:**	SW6010B
Matrix:	Soil	**Unit:**	mg/Kg
Project:	350428; Carlos & Sierra Streets, Moss Beach, CA	**Sample ID:**	MB/LCS-115442 1512A77-045AMS/MSD

QC Summary Report for Lead

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Lead	ND	47.5	5.0	50	-	95	75-125
Surrogate Recovery							
Terbium	518	508		500	103	102	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Lead	55.0	54.6	50	8.755	92	92	75-125	0	25
Surrogate Recovery									
Terbium	546	509	500		109	102	70-130	7.06	20

County Review Draft

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1512A77 B **ClientCode: AELS**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Tim Bodkin
AEI Consultants
3880 S. Bascom Ave, Suite 109
San Jose, CA 95124
408-559-7600 FAX:

Email: tbodkin@aeiconsultants.com
cc/3rd Party:
PO:
ProjectNo: 350428; Carlos & Sierra Streets, Moss Beach, CA

Bill to:
Accounts Payable
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
AccountsPayable@AEIConsultants.com

Requested TAT: 1 day;

Date Received: **12/28/2015**
Date Logged: **12/28/2015**
Date Add-On: **01/15/2016**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below) 1	2	3	4	5	6	7	8	9	10	11	12
1512A77-045	B-21-1.5	Soil	12/22/2015 13:55	☐	A											

Test Legend:

1	PB_S	2		3		4	
5		6		7		8	
9		10		11		12	

Prepared by: Agustina Venegas

Add-On Prepared By: Maria Venegas

Comments: TTLC Pb added to 024 & 043 1/14/16 1day TAT. TTLC Pb added 045, no charge since 043 was setup by mistake.

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

County Review Draft

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

WORK ORDER SUMMARY

Client Name: AEI CONSULTANTS
QC Level: LEVEL 2
Work Order: 1512A77
Project: 350428; Carlos & Sierra Streets, Moss Beach, CA
Client Contact: Tim Bodkin
Date Logged: 12/28/2015
Comments: TTLC Pb added to 024 & 043 1/14/16 1day TAT. TTLC Pb added 045, no charge since 043 was setup by mistake.
Contact's Email: tbodkin@aeiconsultants.com
Date Add-On: 1/15/2016

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1512A77-045A	B-21-1.5	Soil	SW6010B (Lead)	1	Acetate Liner	12/22/2015 13:55	1 day		☐	

NOTES: **- STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).**

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

1512A77

McCampbell Analytical, Inc.

1534 Willow Pass Rd. / Pittsburg, Ca. 94565-1701
www.mccampbell.com / main@mccampbell.com
Telephone: (877) 252-9262 / Fax: (925) 252-9269

CHAIN OF CUSTODY RECORD

County Review Draft

TURN AROUND TIME: RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY ☒

GeoTracker EDF ☐ PDF ☐ EDD ☐ Write On (DW) ☐ EQuIS ☐ 10 DAY ☐

Effluent Sample Requiring "J" flag ☐ UST Clean Up Fund Project ☐; Claim #_____

Report To: Tim Bookin	**Bill To:** SAME
Company: AEI Consultants	
3880 S. Bascom Ave Ste. 109	
San Jose, CA 95124	**E-Mail:** tbookin@aeiconsultants.com
Tele: (408) 559-7600	**Fax:** ( ) —
Project #: 350428	**Project Name:** Chevron & Sunoco #351457
Project Location: Moss Landing, CA	**Purchase Order#**
Sampler Signature: T Bookin	

SAMPLE ID	Location/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	MATRIX: Ground Water	Waste Water	Drinking Water	Sea \ Water	Soil	Air	Sludge	Other	METHOD PRESERVED: HCL	HNO_3	Other	Analysis Request: BTEX & TPH as Gas (8021 / 8015 or 8260) MTBE	TPH as Diesel (8015) Add Motor Oil	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	MTBE / BTEX ONLY (EPA 8260/ 8021)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 6247 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)	LUFT 5 Metals (200.8 / 6020)	Metals (200.8 / 6020)	Filter sample for DISSOLVED metals analysis	Lead (EPA 6010)	MOXY's and DEFs only (EPA 16.1?)		HOLD FOR FUTURE ANALYSIS
B-21-1.5		12/22/15	13:55	1					X						X																X				X
B-22-0.0			16:38	1																											X				X
B-22-1.5			↓																																X
B-23-0.0			16:20																												X				
B-23-1.5			↓																																X
B-24-0.0			16:30																												X				
B-24-1.5			↓																																X
B-25-0.0			17:00																												X				
B-25-1.5			↓																																X
B-26-0.0			16:47																												X				
B-26-1.5			↓																																X

**MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

Relinquished By:	Date:	Time:	Received By:
T Bookin	12/28/15	13:22	
Relinquished By:	Date:	Time:	Received By:
	12-28-15	1570	Agustina V.
Relinquished By:	Date:	Time:	Received By:

ICE/t°_____
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

COMMENTS:

PAGE 5 OF 7

VOAS O&G METALS OTHER HAZARDOUS:
PRESERVATION_____ pH<2_____

No Charge 1/15/16 Rush!

APPENDIX J

Draft Site Management Plan

AEI Consultants
Environmental & Engineering Services

DRAFT

March 2, 2016

SITE MANAGEMENT PLAN

Property Identification:
Carlos Street at Sierra Street
Moss Beach, California 94038

AEI Project No. 350428

Prepared for:
MidPen Housing Corporation
1970 Broadway, Suite 440
Oakland, California 94612

Prepared by:
AEI Consultants
3880 S. Bascom Avenue, Suite 122
San Jose, California 95124
(408) 559-7600

Environmental & Engineering Due Diligence

Site Investigation & Remediation

Energy Performance & Benchmarking

Industrial Hygiene

Construction Consulting

Construction, Site Stabilization & Stormwater Services

Zoning Analysis Reports & ALTA Surveys

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FIGURES

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Table 1 Soil Sample Data Summary

DRAFT

March 2, 2015

Ms. Jennifer Liu
Acquisitions Analyst
MidPen Housing Corporation
1970 Broadway, Suite 440
Oakland, California 94612

Subject: **Site Management Plan**
Carlos Street at Sierra Street
Moss Beach, San Mateo County, California 94038
AEI Project No. 350428

Dear Ms. Liu:

AEI Consultants (AEI) is pleased to provide this Site Management Plan (SMP) for the property located at Carlos and Sierra Streets in Moss Beach, California ("the Site"). The location of the Site is shown on Figure 1. The SMP has been prepared in accordance with AEI proposal dated November 19, 2015 (AEI Proposal No. 44236). The SMP has been developed to address worker protection and environmental concerns during construction activities at the Site.

This SMP applies to subsurface disturbances at the Site related to the planned redevelopment activities. The purpose of this SMP is to assess and communicate the presence of contaminants of potential concern (COPCs) that are known or may be present, but unknown at this time, within Site soils and groundwater so that, if necessary, appropriate safety measures can be implemented to protect persons doing invasive work. The only current known COPC includes one metal (lead), which was identified in surface soils, as discussed below. This SMP also provides for the proper management of other unknown environmental conditions that may be identified during redevelopment activities at the Site.

This SMP is not intended to replace Federal, State, or local regulations dictating the handling of contaminated media or regulations addressing worker exposure including Federal and California Occupational Safety and Health Administration (OSHA) training and worker protection rules and regulations, Code of Federal Regulations (CFR) Title 29, Part 1910.120 and California Code of Regulations (CCR) Title 8, § 5192.

This SMP includes the following components:

1. A description of the Site and conceptual project activities;
2. A summary of known and potential environmental conditions;

3. Provisions for an updated Health and Safety Plan (HASP), as well as provisions for odor, storm water, noise, and dust control plans;
4. Guidelines for managing and sampling impacted or potentially-impacted soil and groundwater that may be encountered (contingency plan);
5. Notifications and documentation.

1.0 SITE DESCRIPTION AND BACKGROUND

The subject property comprises approximately 10.4 acres of vacant land, located north-northeast of the intersection between Carlos Street and Sierra Street in Moss Beach, an unincorporated community within San Mateo County, California. As shown on Figure 2, the property is bounded by residential properties along 16th Street (in Montara), and vacant land to the north, residential properties along Carlos, Sierra, and Stetson Streets to the south, residential properties along Lincoln and Buena Vista Street to the east, and one residential property and vacant land along Carlos Street to the west. Numerous concrete slab-on-grade building foundations, along with foundation retaining walls exhibiting scattered areas of graffiti, are present within the western and southwestern portions of the property. In some areas, building foundations and retaining walls are covered by thick vegetation consisting of trees and shrubs. Heavy vegetation also covers the majority of the property outside the areas of the building foundations. Unpaved roadways extend northwest-southeast across the north and central portions of the property.

As shown on an Old Republic Title Company Preliminary Title Report Map dated October 8, 2015, easements for Montara Water and Sanitary District (MWSD) and Pacific Gas and Electric (PG&E) utilities extend along the unpaved roadways within the property. MWSD infrastructure consisting of water storage tanks, a booster pumping system, and distribution facilities are located within a small, fenced-in parcel of land (known as Schoolhouse) adjacent to and west of the intersection of Lincoln Street and Buena Vista Street near the eastern boundary of the property. Another MWSD easement also extends southward form this fenced-in parcel to Sierra Street.

Topographically, the property generally slopes to the west-southwest with the exception of a steeply inclined, north-facing slope along the northern property boundary. Localized, relatively flat areas or topographic benches are present near the west and southwest boundaries of the property, as well as adjacent to Lincoln Street along the northeast corner of the property. Surface elevations at the property generally range between approximately 100 and 200 feet above mean sea level. The closest surface water body includes an unnamed, east-west trending, ephemeral drainage which parallels 16th Street to the north of the property.

Based on our review of a United States Geological Survey (USGS) Open File Report 98-137 Map entitled *Geology of the Onshore Part of San Mateo County, California* (Brabb, et.al., 1998), the subject property is situated upon a marine terrace underlain by Quaternary-aged alluvial deposits, along with thin, scattered veneers of residual soils. These units are further underlain by Montara Mountain granitic bedrock of Cenozoic age. Artificial fill consisting of soils, construction debris, wood debris, and other miscellaneous materials are scattered throughout the entire property.

The current estimated depth to groundwater beneath the property is unknown at this time. Well yield report information associated with a domestic water supply well installed on the property in 1986 showed a static water level of 168 feet below ground surface (bgs). Based on the local site topography, the direction of groundwater flow is inferred to generally flow to the west-southwest, except for a northerly flow direction inferred along the north property boundary into the drainage adjacent to 16th Street. .

In October and November 2015, AEI performed a Phase I Environmental Site Assessment (ESA) at the Site. Phase I ESA findings were presented in a report dated November 10, 2015 (AEI Project Number 350428). As described in AEI's Phase I ESA report, historical sources indicated that the Site was part of a large World War II training area circa 1945. Numerous military buildings had been present on the subject property, as shown on a drawing entitled *Map of Anti-Aircraft Training Center, Point Montara, California, Twelfth Naval District, Showing Conditions on June 30, 1945*, which was presented in Appendix F of AEI's Phase I ESA report. These military buildings included barracks, offices, a mess hall, a library, a garage, a boiler room, an incinerator, a "TDD hanger", and a "drill field". After the war was over, the mess hall building was converted into a grammar school, and was later abandoned after a new school site was built (date unknown). By the late 1960s, the property was then used as a training ground for firefighters. During such firefighter training, AEI assumed that accelerants, such as those containing gasoline, may have been used along concrete pad surfaces. Burned materials from the firefighter training potentially may have been washed off the pads and into surrounding, unpaved areas. Between approximately 1968 and 1970, a controlled burn occurred, which resulted in the burning of several remaining buildings, leaving only exposed concrete foundations. Since at least 1970, the property has been vacant with the exception of the scattered, older building foundations, as well as the fenced area containing MWSD infrastructure used to support current water storage and distribution operations.

Several recognized environmental conditions (RECs) were identified during the course of the Phase I ESA. These included 1) the potential presence of lead-based paint in soils around building foundations, 2) the "drill field", which may have been used for weaponry or as a shooting range, 3) concrete pad areas potentially used for firefighter training, and 4) an incinerator likely used for burning wastes. During the planning stages of the Phase II investigation, a boiler room also was identified as a REC to be further investigated. Other environmental considerations noted during the Phase I ESA included two (2) former domestic water supply wells that were reportedly no longer in use. The locations of these wells were unknown. It was also unknown if the wells were properly abandoned in accordance with local County regulations.

In December of 2015, AEI performed a limited Phase II subsurface investigation at the Site. The results of this investigation were presented in AEI's report dated February 15, 2016. The purpose of the investigation was to assess whether or not release(s) had occurred into the subsurface that resulted from historic Site operations. Thirty-three (33) exploratory soil borings were advanced during the investigation. Soil samples were obtained for various laboratory analyses, including lead, total petroleum hydrocarbons (TPHs), volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), California Assessment Manual (CAM) 17 Metals, and Dioxins/Furans.

Analytical results showed the presence of lead and other metals in surface soils across the Site. A low concentration of TPH quantified as diesel (TPH-d) was detected in shallow soils around the location of the former boiler room. A low concentration of total hexafurans was detected in shallow soils around the area of the former incinerator. No TPH quantified as gasoline (TPH-g) or motor oil (TPH-mo), VOCs, or PCBs were detected in soils at concentrations at or above the laboratory reporting limits during the investigation. Analytical results for soils are presented in Table 1.

Detected concentrations of the various chemical constituents in soil were compared with their respective screening levels, including California Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESLs) and United States Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs). None of the detected chemical constituents were found to exceed their respective screening levels, except for lead in surface soils at two (2) locations and arsenic at the 1.5-foot depth at one (1) location. Additional laboratory analyses for lead were run on soil samples from the 1.5-foot depth at the two (2) locations to assess the vertical extent of lead-impacted soils Analytical results for lead in soils at the 1.5-foot depth showed concentrations below established screening levels. The detected concentration of arsenic at the one (1) location was found to be representative of naturally-occurring background conditions, which is within the range of arsenic concentrations in soils within the San Francisco Bay Area.

Analytical results generated during this investigation suggest that the lead concentrations in soils at the two (2) locations may have originated from lead-based paint associated with former building exteriors. Furthermore, analytical results also suggest that lead concentrations at the two (2) locations are somewhat localized and appear to be restricted to surface soils. Analytical results show that the vertical extent of lead-impacted soils has been delineated at these two (2) locations. However, the horizontal extent of lead-impacted soils at these two locations is undefined Further delineation of shallow lead-impacted soils was recommended and will be investigated during the Second Quarter of 2016 in accordance with MidPen Housing Corporation's request.

2.0 SMP BACKGROUND

2.1 PLANNED DEVELOPMENT

Conceptual development plans include the demolition and removal of existing building foundations, retaining walls, and miscellaneous construction debris and garbage scattered across the Site. ____ ( ) will be constructed for residential land use. Proposed excavation depths will be approximately ___ feet bgs.

2.2 CONTAMINANTS OF POTENTIAL CONCERN

Based upon the results from the Phase II investigation, lead was identified as a contaminant of potential concern (COPC) at the Site. Concentrations of this constituent were detected in surface soils at two (2) locations (B-7 and B-21). Detected concentrations I surface soils were found to exceed the RWQCB ESL for direct exposure under a residential direct exposure scenario, but below construction/trench work exposure scenario. If excavated and transported

offsite for disposal, these surface soils will require further characterization and waste profiling to determine appropriate disposal requirements.

2.3 SUBSURFACE CONDITIONS

The results from the Phase II drilling program show that the subject property is underlain by alluvial and residual soils primarily consisting of sandy clays and clayey sands to the depths explored. No groundwater was encountered during drilling operations. No visual or olfactory evidence (i.e., soil discoloration, odor) of impacted soils was observed in any of the recovered soil cores during drilling operations. No photo-ionization (PID) readings for assessing the presence of VOCs in soils above background levels were noted during headspace testing.

3.0 SITE MITIGATION PLAN

3.1 SMP APPLICABILITY

This SMP presents protocol for the following construction activities that may encounter the COPC, including the following:

- Removal of building pads and slab-on-grade foundations;
- Removal of below grade features, such as footings, deeper building foundations, utilities, and other underground features;
- Mass excavation; and
- Construction dewatering, if needed.

Contractors and their subcontractors shall follow the protocols presented in this SMP while performing the aforementioned onsite activities. Contractors and their subcontractors are responsible for the health and safety of their employees, and are required to prepare their own Site-specific HASPs.

3.2 ENVIRONMENTAL RISK MANAGEMENT

This section presents risk management procedures to be followed during the above described construction activities during Site development, including worker training and impact mitigation measures.

3.2.1 Pre-Construction Planning and Notification

Prior to the start of any construction activity that involves below ground work (e.g., slab removal or excavating), a copy of this SMP will be provided to the contractors for their review. In addition, AEI recommends that each contractor provide such information to its subcontractors.

3.2.2 Site-Specific Health and Safety Worker Requirements

A Site-specific health and safety plan (HASP) for the development project will be prepared by the General Contractor. As previously mentioned, the Contractor and subcontractors shall be responsible for the health and safety of their own workers, as required by Cal-OSHA, including but not limited to preparation of their own HASP and Injury and Illness Prevention Plan (IIPP). The purpose of these two (2) documents is to provide general guidance relating to the work

hazards that may be encountered during each phase of Site construction activities. The Contractor and subcontractors are also required to determine the requirements for worker training, based on the level of expected contact to potentially impacted soil and/or groundwater, if any, associated with the Contractor's activities and locations with respect to the COPC described in Section 2.2. The HASP(s) will contain provisions for limiting and monitoring chemical exposure to construction workers, chemical and non-chemical hazards, emergency procedures, and standard safety protocols.

As required by the appropriate regulatory agency, the General Contractor will submit the HASP at least two weeks prior to beginning construction field work. HASPs will be updated as the project proceeds if unforeseen conditions are identified and necessitate modification(s).

3.2.3 Construction Impact Mitigation Measures

During construction activities, measures will be taken by the Contractor and subcontractors to minimize dust generation, appropriately manage storm water runoff, minimize tracking of soil off-site, and minimize other construction related impacts. The construction impact mitigation measures are described below.

3.2.3.1 Site Control

Site control procedures will be implemented by the contractor to control the flow of personnel, vehicles, and materials in and out of the Site while working with potentially contaminated materials. In addition, Site control measures will help control the spread of the COPC from the Site. The Site perimeter will be fenced by the contractor. Access and egress will be controlled at selected locations. Signs will be posted at each Site entrance by the Contractor, instructing visitors to sign in at the project support area.

3.2.3.2 Equipment Decontamination

Decontamination procedures will be established and implemented by the Contractor to reduce the potential for construction equipment and vehicles to transfer potentially impacted soil onto public roadways or other off-site areas. At a minimum, gravel will be placed at all Site access points by the Contractor and excess soil will be removed from construction equipment using dry methods (e.g., brushing or scraping) prior to moving the equipment to off-Site locations.

3.2.3.3 Personal Protective Equipment

Appropriate Personal Protective Equipment (PPE) will be used to isolate workers from the COPC and physical hazards. The minimum level of protection for workers coming into direct contact with potentially contaminated materials is OSHA Level D PPE, listed below. The level of PPE will be evaluated by the Contractor on a continuing basis and modified, if warranted, based upon conditions encountered at the Site and/or type of work activity in accordance with their own HASP (see Section 3.2.2). The minimum PPE to be utilized during construction activities includes the following:

- Coveralls or similar construction work clothing;
- Reflective safety vests;

- Steel-toed boots;
- Hard hat;
- Work gloves, as necessary;
- Safety glasses, as necessary; and
- Hearing protection, as necessary.

3.2.3.4 Dust Control

All demolition and construction activities that have the potential to create dust must comply with specified dust control measures whether or not the activity requires a County-issued permit. Therefore, the following actions are required to adequately address dust control:

- Construction areas will be watered down at a sufficient frequency to eliminate visible dust. Additional watering may be required whenever the wind speed exceeds 15 miles per hour. Watering should be performed in a manner such that runoff will not be produced at any time.
- At the end of each work day, all streets, sidewalks, paths, and intersections, where work has occurred, will be swept or vacuumed to remove visible soil(s).
- All inactive soil piles expected to remain in-place for more than seven (7) days will be covered with plastic sheeting or an equivalent tarp and properly secured to avoid wind damage.
- Signage will be placed along Lincoln, Sierra, Carlos, and Stetson Streets to inform surrounding community members of the hotline phone number(s) to call and report visible dust problems.
- If proposed dust suppression efforts are unsuccessful, other measures will be implemented to help control dust, such as wind breaks and/or dust curtains along street frontages, pending final resolution of necessary dust suppression efforts.
- Materials contained in all loading trucks or metal bins carrying excavated materials will be maintained below the sides and back of the truck or metal bin, and will be properly covered to avoid dust generation and drying of soils during transport. Excavated materials may be moistened prior to transport.
- Drop heights will be minimized while loading and unloading soil.
- Truck tires will be brushed prior to leaving the Site, and truck loading areas will be routinely swept and cleaned to avoid creating visible dust. Soil handling activities will be halted when the wind speed exceeds 25 miles per hour and visible dust is being created that cannot be mitigated by soil moistening.

3.2.3.5 Storm Water Control Plan

A storm water control plan will be prepared by the General Contractor and submitted to the County of San Mateo prior to beginning construction activities. The General Contractor and subcontractors shall comply with the provisions and protocols of the Storm Water Control Plan. As part of the plan, sediment and erosion control procedures may include, but are not limited to the following:

- Constructing temporary berms or erecting silt fences around exposed soils;
- Placing straw bale barriers or sediment traps around catch basins or other entrances to storm drains;
- Covering soil stockpiles with plastic sheeting or tarps during rainfall events; and
- Implementing other appropriate best management practices (BMPs), especially, for sediment and erosion control, as identified in the Storm Water Control Plan.

3.2.3.6 Odor and Noise Controls

Odor and Noise Control Plans will be prepared by the General Contractor and submitted to the County of San Mateo prior to beginning construction activities. These plans will be prepared in accordance with applicable regulations and address the work practices required for the project.

3.3 GROUNDWATER MANAGEMENT PROTOCOLS

No groundwater is anticipated to be encountered during the proposed Site redevelopment activities. However, if groundwater is encountered during excavation activities or water resulting from rainfall occurs and fills excavation areas, if any, then appropriate mitigation measures will be implemented as follows:

3.3.1 Excavation Dewatering

AEI does not anticipate that installation of a dewatering system will be required. However, if groundwater is encountered or accumulates in any excavation(s) due to rainwater, such water will be handled in accordance with the following protocol.

- For relatively small volumes of water, a temporary storage tank (frac tank) will be utilized to hold such groundwater on a short-term basis while testing and disposal is arranged.
- If conditions require installation of a dewatering system or larger volume of groundwater requires handling, proper permits will be obtained and permit conditions followed for discharge into the nearby existing sanitary sewer or storm water system.

3.4 SOIL MANAGEMENT PROTOCOLS AND CONTINGENCY PLAN

The soils management program is designed to ensure proper handling and disposition of soils from an environmental perspective and includes the following components:

- A protocol for screening and monitoring for environmental conditions identified during demolition and excavation work;
- A protocol for properly managing the handling and disposal of impacted soils; and
- A criteria for import fill soils, if needed.

3.4.1 Soil Monitoring and Screening

Soil may be field-screened by the Environmental Consultant in areas of potential environmental impact during demolition and excavation work on an as-needed basis to assess whether metals specifically, lead, in soils may be present. At this time, field screening is not anticipated; however, the Environmental Consultant will be notified if any of the following are encountered:

- Discovery and removal of previously unidentified features of concern, such as underground storage tanks (USTs), sumps, clarifiers, former water supply wells or similar features of potential environmental concern. However, based on the Site background, it is not anticipated that any of the aforementioned features will be encountered during construction activities except for the former water supply wells.
- Areas of suspected contaminated soils as deemed appropriate by the Environmental Consultant or as reported by the contractor.

The Environmental Consultant will be notified by the Contractor of the discovery of the above conditions and will be on-site to perform screening and possible sample collection as discussed below. The Contractor is responsible for notification to the Owner and Environmental Consultant of suspected impacted soils or possible conditions of environmental concern.

If a UST or other features are discovered, work will be suspended in its immediate vicinity, and the Owner and Environmental Consultant will be notified. San Mateo County Department of Environmental Health (SMCDEH) will then be notified of the proposed response actions. Should a UST be encountered, it shall be addressed under permit with the SMCDEH. In addition, SMCDEH will be provided copies of the required reports.

Prior to any significant construction that will result in excavation within impacted soil areas, AEI should be contacted to assess the work area(s). Depending upon the nature of the work, AEI may conduct soil sampling before the start of construction to test for potentially elevated concentrations of lead. AEI also may use a portable, x-ray fluorescence (XRF) analyzer to field screen work area(s) during construction. Work area soils also may be monitored based upon visual observations.

Soils with lead concentrations exceeding applicable regulatory screening levels or other California thresholds may be segregated for further characterization and laboratory analyses. Laboratory analytical results will be used for waste profiling purposes and to determine proper disposal requirements.

3.4.2 Management of Impacted Soil

Based on the analytical results during the Phase II investigation, soil excavated at the Site may require further assessment prior to its acceptance by a receiving facility. Such additional investigation and analysis will be coordinated by the Contractor, or Contractor's representative

with AEI's technical support for potential disposal facilities to ensure that the soils are properly characterized, segregated, and transported from the Site. Such analyses may include the testing of soil samples at additional locations and depths to delineate the lateral and vertical extent of impact(s) and assess waste disposal characteristics, such as Soluble Threshold Leaching Concentrations (STLCs), Toxic Characteristic Leaching Procedures (TCLPs), and other waste classification analyses, as required. Prior to transportation of impacted soils from the Site, a waste profile acceptance will be obtained by the Contractor and/or subcontractors, along with pre-printed, signed manifests provided to the transporter.

During construction activities and based on the procedures outlined in Section 3.4.1, if soil is encountered that is suspected of being contaminated, or if buried structures, such as clarifiers, tanks, debris or un-abandoned wells are encountered, earthwork in these suspect area(s) will be stopped and worker access to the suspect area(s) will be restricted. Areas will be cordoned off using delineators and caution tape, or similar materials provided by the Contractor, followed by notifying the Environmental Consultant. Soils suspected as being contaminated will then be evaluated through screening and/or analytical testing performed by the Environmental Consultant so that appropriate handling and disposal alternatives can be determined.

Site development activities may result in a net export of soil. Such soil shall be properly characterized in accordance with applicable regulations prior to transportation from the Site.

If on-site re-use of potentially contaminated soil is desired, soil samples shall be collected from such soil and analyzed for the COPC. If the COPC is detected, whether above or below regulatory agency screening levels, further investigation of such soils may be performed as determined by the Owner in coordination with the Environmental Consultant. For soils considered for re-use, if the COPC is detected below the applicable ESL, re-use of the soil may be deemed appropriate, at the discretion of the Owner. If the COPC is detected above the applicable ESL and soils are being considered for reuse on-Site, the results and conditions will be communicated to the SMCDEH for concurrence. Otherwise, impacted soils will be profiled for proper disposal at landfill facilities under appropriate waste manifests. Prior to off-site disposal, additional soil samples may be collected and analyzed in accordance with the requirements of disposal facility(s).

Soil suspected of being contaminated during excavation, shall be stockpiled or otherwise segregated from "clean" soil. Such soil shall be stockpiled on-site on top of and covered by an "impermeable" liner (e.g., 6 mil plastic sheeting) or other appropriate materials to reduce infiltration by rainwater and contamination of underlying soil while its disposition is being determined. Any such stockpiles shall be checked daily by the Contractor to verify that they are adequately covered.

3.4.3 Management of Mass Excavation Surplus Soil

In addition to the procedures outlined above for impacted or potentially-impacted soils, surplus soils generated during grading activities will be profiled for acceptance at appropriate facilities. Criteria for acceptance (e.g., concentrations of specific contaminants, odors, additional analytical testing, etc.) will be determined by the acceptance facility(s) as part of the acceptance process.

Transporter information and disposal location(s) for soils have not yet been finalized. The names and applicable license information of such operators will be provided to the SMCDEH once confirmed.

3.4.4 Import Fill

The Environmental Consultant and Geotechnical Engineer will be notified prior to importing fill soils onto the Site. An evaluation of import fill materials will be conducted to ensure such fill meets the geotechnical and environmental requirements for the proposed redevelopment activities. To minimize the potential introduction of contaminated fill onto the Site, AEI recommends that all selected sources of import fill have adequate documentation or certification to verify that the fill source is appropriate for the Site. Documentation should include detailed information on previous land use of the fill source, any Phase I Environmental Site Assessments performed and findings, and the results of any analytical testing performed. If no documentation is available or the documentation is inadequate or if no analytical testing has been performed, AEI recommends that samples of the potential fill material be collected and analyzed prior to delivery of such soil to the Site. The analyses selected should be based on the fill source(s) and knowledge of the previous land use, as determined by the Environmental Consultant. AEI recommends that the sample frequency for potential fill material be conducted in accordance with that outlined in the technical document entitled "*Information Advisory on Clean Imported Fill Material*" (Department of Toxic Substances Control, October 2001). The Environmental Consultant will provide guidance to the Contractor regarding acceptability of imported fill. No fill material will be accepted if contaminant levels exceed current residential environmental screening goals and/or regional background concentrations.

4.0 NOTIFICATION AND DOCUMENTATION

4.1 NOTIFICATIONS

Notifications of the discovery of the COPC in field screening, observations, or analytical results or other conditions of potential environmental concern shall be immediately made to the Owner, Contractor, and Environmental Consultant. If analytical testing shows that the COPC is above its applicable screening level, the Owner and contractor will then be notified. The discovery of any subsurface features will also be reported to the Environmental Consultant, followed by notifying SMCDEH. If such discovery or conditions require notification to another Contractor or subcontractors, then such notification will be made by the Contractor.

4.2 KEY CONTACTS

Company	Role	Contact	Telephone Number
Jennifer Liu	Owner	MidPen Housing Corporation	510-426-5672 (o)
TBD	General Contractor	TBD	TBD
AEI Consultants	Environmental Consultant	Adrian Angel Tim Bodkin	408-559-7600 (o) 831-331-3547 (c) 408-559-7600 (o) 650-622-6560 (c)

(o) office phone number; (c) cell phone number

4.3 DOCUMENTATION

The Environmental Consultant will prepare a report upon completion of excavation and earthwork performed in accordance with the SMP. The report will include a Site map showing areas of excavation and import fill, sample locations, and tables summarizing data. The report also will include appendices with copies of permits, including any dewatering permits, manifests or bills of lading for removed soil and/or groundwater, and laboratory reports for soil and water profiling not previously submitted. The certified final project report will be prepared for the Owner.

5.0 REFERENCES

AEI Consultants, 2015, *Phase I Environmental Site Assessment Report, Carlos Street at Sierra Street, Moss Beach, San Mateo County, California 94038,* consultant report dated November 10, 2015, prepared for MidPen Housing Corporation.

AEI Consultants, 2015, *Limited Phase II Subsurface Investigation, Carlos Street at Sierra Street, Moss Beach, San Mateo County, California 94038,* consultant report dated February 15, 2016, prepared for MidPen Housing Corporation.

6.0 LIMITATIONS

Contractors and subcontractors are responsible for review of this SMP prior to commencing work at the Site and for the health and safety of their own employees and subcontractors. The Owner is responsible for review of the provisions of this SMP and for incorporating its guidelines into their project planning and specifications. This document was prepared for the use and benefit of Midpen Housing Corporation, as well as for their Contractor, subcontractors, and consultants at the Site. Where information prepared by others has been provided, AEI cannot be responsible for its accuracy or completeness or for the availability of all information that may be relevant to the preparation of this document.

This report presents a summary of work completed by AEI Consultants. The completed work includes observations and descriptions of site conditions encountered. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide the requested information, subject to scope of work for which AEI was retained and limitations inherent in this type of work, but it cannot be assumed that they are representative of areas not sampled. This report should not be regarded as a guarantee that no further contamination beyond that which could have been detected within the scope of this investigation is present beneath the subject property. Undocumented, unauthorized releases of hazardous material(s), the remains of which are not readily identifiable by visual inspection and are of different chemical constituents, are difficult and often impossible to detect within the scope of a chemical-specific investigation.

DRAFT

If there are any questions regarding this report, please do not hesitate to contact us at 408-559-7600 or Peter McIntyre at (925) 746-6000.

Sincerely,
AEI Consultants

DRAFT

Adrian M. Angel, GIT
Project Geologist

Timothy G. Bodkin, PG (4706), CEG (EG 1551)
Senior Geologist – Site Mitigation

DRAFT

FIGURES



N

Figure 1: TOPOGRAPHIC MAP

Carlos Street at Sierra Street, Moss Beach, California, 94038
Project Number: 350428

AEI Consultants



0 100 200 APPROXIMATE SCALE: 1" = 200'

Legend

Estimated Groundwater Flow Direction
Approximate Property Boundary
Approximate Water Tank Parcel
Water Well Location
Approximate Drill Field Boundary
Approximate Building Boundary
Approximate Incinerator Location

N

Figure 2: SITE MAP

Carlos Street at Sierra Street, Moss Beach, California, 94038
Project Number: 350428

AEI Consultants



0 100 200 APPROXIMATE SCALE: 1″ = 200′

Legend

Estimated Groundwater Flow Direction
Approximate Property Boundary
Approximate Water Tank Parcel
Water Well Location
Boring Location
Approximate Drill Field Boundary
Approximate Building Boundary
Approximate Incinerator Location

N

Figure 3: BORING LOCATION MAP

Carlos Street at Sierra Street, Moss Beach, California, 94038
Project Number: 350428

AEI Consultants

TABLES

TABLE 1: SOIL SAMPLE DATA SUMMARY
Carlos Street at Sierra Street, Moss Beach, CA

Location ID	Date	Depth (feet bgs)	Lead (mg/kg)	TPH-g (mg/kg)	TPH-d (mg/kg)	TPH-mo (mg/kg)	VOCs (mg/kg)	PCBs (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Molybdenu (mg/kg)	Nickel (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	Remaining Metals (mg/kg)	Total Hexafurans (mg/kg)	Other Dioxins/Furans (mg/kg)
B-1-1.5	12/22/2015	1.5	4.5	--	--	--	--	<MRL	**2.3**	44	15	3.9	2.2	1.0	13	36	29	<MRL	2.78×10^{-5}	--
B-3-2.0	12/23/2015	2	--	--	1.3	<5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-3-5.0	12/23/2015	5	--	--	<1.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-4-0.0	12/23/2015	0	29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-5-0.0	12/23/2015	0	54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-6-0.0	12/23/2015	0	8.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-7-0.0	12/23/2015	0	**230**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-7-1.5	12/23/2015	1.5	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-8-0.0	12/23/2015	0	23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-9-0.0	12/22/2015	0	6.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-10-0.0	12/22/2015	0	45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-11-0.0	12/22/2015	0	6.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-12-5.0	12/23/2015	5	--	<1.0	--	--	<MRL	--	--	--	--	--	--	--	--	--	--	--	--	--
B-13-6.0	12/23/2015	6	--	<1.0	--	--	<MRL	--	--	--	--	--	--	--	--	--	--	--	--	--
B-14-2.0	12/23/2015	2	--	<1.0	--	--	<MRL	--	--	--	--	--	--	--	--	--	--	--	--	--
B-15-0.0	12/22/2015	0	25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-15-7.0	12/23/2015	7	--	<1.0	--	--	<MRL	--	--	--	--	--	--	--	--	--	--	--	--	--
B-16-0.0	12/22/2015	0	15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-17-4.0	12/22/2015	4	--	<1.0	--	--	<MRL	--	--	--	--	--	--	--	--	--	--	--	--	--
B-18-0.0	12/22/2015	0	12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-19-0.0	12/22/2015	0	7.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-20-0.0	12/22/2015	0	41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-20-1.5	12/22/2015	1.5	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-21-0.0	12/22/2015	0	**88**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-21-1.5	12/22/2015	1.5	8.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-22-0.0	12/22/2015	0	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-23-0.0	12/22/2015	0	15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-24-0.0	12/22/2015	0	16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-25-0.0	12/22/2015	0	8.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-26-0.0	12/22/2015	0	7.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-27-0.0	12/22/2015	0	6.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-28-0.0	12/22/2015	0	9.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-29-0.0	12/22/2015	0	8.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-30-0.0	12/22/2015	0	9.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-31-0.0	12/22/2015	0	7.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-32-0.0	12/22/2015	0	7.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-33-0.0	12/22/2015	0	39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-34-0.0	12/22/2015	0	34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Regulatory Screening Levels																				
RWQCB $ESL_{residential}$			**80**	100	100	100	varies	varies	**0.39**	750	750	23	230	40	150	200	600	N/A	N/A	N/A
USEPA $RSL_{residential}$			400	82 - 520	96 - 110	2500 - 230000	varies	varies	**0.68**	15,000	120,000	23	3,100	390	NE	390	23,000	N/A	N/A	N/A

Notes:

mg/kg	milligrams per kilogram
<MRL	less than the method reporting limit
bgs	below ground surface
TPH-g	Total Petroleum Hydrocarbons as Gasoline
TPH-d	Total Petroleum hydrocarbons as Diesel
VOCs	Volatile Organic Compounds
PCBs	Polychlorinated biphenyls
Bold	Result exceeds applicable Comparison Value
--	Not analyzed
N/A	Not applicable
NE	Not established

Regulatory Screening Levels:
RWQCB $ESL_{residential}$: California Regional Water Quality Control Board Environmental Screening Level for residential land use for shallow soils (<3 meters bgs) assuming groundwater is a current or potential drinking water resource RWQCB, 2013, Table A-1).
USEPA $RSL_{residential}$: United States Environmental Protection Agency (USEPA) Regional Screening Level for resident soil (USEPA, June 2015 revised)

APPENDIX K

Additional Subsurface Investigation

and Water Well Evaluation

February 20, 2018

ADDITIONAL SUBSURFACE INVESTIGATION & WATER WELL EVALUATION

Property Identification:
Cypress Point
Carlos Street and Sierra Street
Moss Beach, San Mateo County, California 94038

AEI Project No. 350428

Prepared for:
Mr. Andrew Bielak
MidPen Housing Corporation
303 Vintage Park Drive, Suite 250
Foster City, California 94404

Prepared by:
AEI Consultants
3880 S. Bascom Avenue, Suite 109
San Jose, California 95124
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Environmental & Engineering Due Diligence

Site Investigation & Remediation

Energy Performance & Benchmarking

Industrial Hygiene

Construction Consulting

Construction, Site Stabilization & Stormwater Services

Zoning Analysis Reports & ALTA Surveys

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Appendix C Statistical Analysis
Appendix D Conceptual Site Drawings

AEI Consultants
Environmental & Engineering Services

February 20, 2018

Mr. Andrew Bielak
MidPen Housing Corporation
303 Vintage Park Drive, Suite 250
Foster City, California 94404

Re: Additional Subsurface Investigation & Water Well Evaluation
Project Number 350428
Cypress Point
Carlos Street and Sierra Street
Moss Beach, San Mateo County, California 94038

Dear Mr. Bielak:

This report presents the results of the Additional Subsurface Investigation conducted by AEI Consultants (AEI) for the Cypress Point development project, located to the north of the intersection of Carlos Street and Sierra Street in Moss Beach, San Mateo County, California (the "Site"). This report has been prepared based on the conclusions and recommendations presented in AEI's *Limited Phase II Subsurface Investigation Report* dated February 15, 2016, as well as in accordance with AEI's proposal dated May 11, 2017 (AEI Proposal No. 52158).

During AEI's *Limited Phase II Subsurface Investigation*, thirty-four (34) exploratory borings (B-1 through B-34) were advanced at the Site. Soil samples obtained at the borings were analyzed for the presence of total petroleum hydrocarbons as gasoline (TPH-g), as diesel (TPH-d), and as motor oil (TPH-mo), as well as for polychlorinated biphenyls (PCBs), metals, total hexafurans, and other dioxins/furans (at few boring locations). Analytical results for soils showed concentrations of lead exceeding applicable San Francisco Bay Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESLs) for any land use/any depth (for construction workers) and residential land use at the 0.0-foot depth at two (2) boring locations (B-7 and B-21). The horizontal extent of lead-impacted soils around these two (2) locations was undefined. The vertical extent of lead-impacted soils at these locations had been delineated based on lead concentrations not exceeding applicable RWQCB ESLs. The locations of the exploratory borings are shown on Figure 1.

An existing water supply well (upper well) also had been identified at the Site during the *Limited Phase II Subsurface Investigation*. The surface completion for this well was found to consist of a rusted, welded steel plate covering the top of the well casing that is encased within a rectangular-shaped, concrete pad. At the time of the Limited Phase II Subsurface Investigation, it was unknown if the well had been properly abandoned in accordance with San Mateo County Environmental Health (SMCEH) regulations.

The purpose of this investigation was to assess the horizontal extent of lead-impacted soils around Borings B-7 and B-21 that were found to exceed applicable RWQCB ESLs. The scope of work included a limited drilling/confirmation sampling program and further inspection and evaluation of the existing water supply well for future abandonment purposes. Information regarding the methodology and results of the investigation is provided in the following sections of this report.

1.0 HEALTH AND SAFETY PLAN

The Site-specific health and safety plan for this project was updated, reviewed by onsite personnel, and kept onsite for the duration of the fieldwork

2.0 PERMITTING AND UNDERGROUND SERVICES ALERT NOTIFICATION

No drilling permit was required from SMCEH for this investigation.

Prior to conducting the drilling program, the planned boring locations were staked and marked with white paint. Upon marking the boring locations, Underground Services Alert (USA) North was contacted, who, in turn, notified subscribing utility companies for their underground utility locations to be marked along property boundaries and around planned boring locations.
February 20, 2018

3.0 FIELD ACTIVITIES

3.1 Exploratory Borings

The drilling program for this investigation was conducted on September 22, 2017. Six (6) exploratory borings (CS-1 through CS-6) were advanced to the 2.0-foot depth using a hand-auger. Borings CS-1 through CS-3 were positioned around existing Boring B-7. Borings CS-4 through CS-6 were positioned around existing Boring B-21. Upon completion of drilling, the borings were backfilled with soil cuttings generated during the drilling program. The locations of these borings are shown on Figure 2.

The borings were continuously sampled throughout their entire depths for the purposes of lithologic logging and selection of soil samples for laboratory analyses. Soil samples were obtained using a hand-driven, slide hammer that contained a core barrel lined with a 2-inch diameter by 6-inch long stainless-steel tube for each sample drive. Soil samples were obtained at the 0.0- and 1.5-foot depths at each boring. Upon retrieval from each sample depth interval, each liner was removed and prepared for laboratory analyses, as well as visually inspected for lithologic logging purposes. Recovered soil samples were examined for soil classification and described on detailed boring logs in general conformance with the Unified Soil Classification System (USCS). The boring logs are presented in Appendix A.

Soil samples selected for laboratory analyses were sealed, labeled, and entered onto chain of custody documentation for transportation to a California state-certified laboratory for analyses. Upon collection, the ends of the sample tubes were covered with Teflon tape and capped. The samples were labeled with the project name, project number, boring number, sample depth, and sampling date/time of sampling. After labeling, the samples were placed into a chilled ice chest containing crushed ice for transport to the analytical laboratory.

3.2 Existing Water Well Evaluation

On October 2, 2017, the existing water well (upper well) was inspected by Wilkinson Well and Pump of Half Moon Bay, California. During their inspection, it was found that the top of the well was covered with tree branches and debris and the well cover had been removed. The driller attempted to obtain a depth-to-water measurement in the well, but could not do so because of blockage present at the 13.3-foot depth. The vertical extent of the blockage below this depth could not be assessed. The driller observed a section of broken or cracked well casing at the 5-foot depth. The driller also noted that the well was constructed with steel casing and contained an inner liner consisting of polyvinyl chloride (PVC) casing. The diameter of the PVC casing was approximately 5 inches. The depths of the outer steel casing and inner PVC casing could not be determined. The total depth of the well also could not be determined.

4.0 LABORATORY ANALYSES

Soil samples obtained during the drilling program were submitted to McCampbell Analytical, Inc. of Pittsburg, California for laboratory analyses. Samples from the 0.0-foot depth were analyzed for the presence of lead using United States Environmental Protection Agency (USEPA) Method 6010. Additional samples from the 1.5-foot depth also were submitted to the analytical laboratory, and placed on hold. The samples were analyzed over a standard turnaround time (TAT). Chain-of-custody documentation and the certified analytical report are provided in Appendix B.

5.0 FINDINGS

5.1 Subsurface Conditions

The results from the drilling program show that the Site is underlain by residual soils primarily consisting of clayey and silty sands. These soils were similar to those soils encountered during AEI's previous investigation. No groundwater was encountered during drilling activities. No visual or olfactory evidence (i.e., soil discoloration, odor) of impacted soils was observed in any of the recovered soil cores during drilling operations.

5.2 Analytical Results

Soil analytical results, along with the analytical results from the previous investigation, are presented on Table 1. As previously mentioned, chain-of-custody documentation and the certified analytical report are provided in Appendix B.

Lead was detected in each of the soil samples analyzed from the 0.0-foot depth in Borings CS-1 through CS-6. Detected concentrations of lead ranged between 13 and 290 milligrams per kilogram (mg/kg). Of these concentrations, lead was found to exceed its applicable RWQCB ESLs for residential land use and any land use/any depth (for construction workers) at only one (1) location, Boring CS-3 (at a concentration of 290 mg/kg), which lies slightly north of Boring B-7.

As discussed with MidPen Housing Corporation, the Site will be redeveloped for residential land use. During redevelopment, the entire Site will be graded and the potential exposure to lead-impacted soils will be removed. The elevated concentrations of lead within the area(s) around Boring CS-3, as well as around Boring B-21, will be graded during future redevelopment. The

areas around Borings CS-1 and B-21 will be covered by community building and residential structure, respectively, as shown on the Conceptual Site Drawings presented in Appendix D.

Because of the anomalous, elevated concentration of lead detected in the surface soil sample at Boring CS-3, along with the non-detect and detected concentrations of lead in other samples analyzed during this investigation and the previous investigation, a statistical analysis for the lead concentrations in surface soils was performed consistent with the lead evaluation procedure identified under Section H of the California Department of Toxic Substances Control (DTSC), Office of Human and Ecological Risk (HERO) Note Number 4, DTSC-modified Screening Levels (DTSC-SLs), dated June 9, 2011. This statistical analysis was performed on a total of forty-four (44) soil samples that were generally obtained from the 0.0 and 1.5-foot depths (with the exception of a few samples obtained at depths as deep as 7 feet bgs), which exhibited both non-detectable and detectable concentrations of lead. The analysis was run using the USEPA's ProUCL Version 5.1 software to establish a representative Site-wide background concentration for lead and to evaluate potential human health risk.

The results of the statistical analysis show that the calculated 95% Adjusted Gamma Upper Confidence Level (UCL) for lead in surface soils at the Site is 42.04 mg/kg. This concentration is below applicable RWQCB ESLs for both residential use and any land use/any depth for construction workers. The RWQCB ESL for lead under a residential land use scenario is more conservative than the United States Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) for lead in resident soil. Furthermore, the RWQCB ESL is the same as the DTSC-recommended screening level for residential soil, as presented in Table 1 of DTSC's Hero Note No. 3. California Human Health Screening Level (CHHSL) for lead under a residential land use scenario. The USEPA RSL and CHHSL for lead under residential scenarios also were referenced in DTSC Hero Note No. 4. The results of the statistical analysis are presented in Appendix C. As previously mentioned above, the locations of Borings B-7 and B-21, where the elevated concentrations of lead were detected relative to the Conceptual Site Drawings are shown in Appendix D.

6.0 CONCLUSIONS AND RECOMMENDATIONS

AEI completed an additional subsurface investigation and water well evaluation at the Site. The purpose of the investigation was to assess the extent of lead-impacted soils that were found to exceed applicable San Francisco Bay Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESLs) for any land use/any depth (for construction workers) and residential land use. The investigation also was conducted to evaluate the potential human health risk relative to the lead concentrations detected in soils across the Site. In addition, the existing water well was inspected for future abandonment purposes. The well was found not to be properly abandoned in accordance with SMCEH regulations.

Six (6) shallow exploratory borings were advanced during this investigation. The borings were positioned around two (2) locations (Borings B-7 and B-21) where lead concentrations had been found to exceed applicable RWQCB ESLs during the previous investigation. Samples obtained from the 0.0-foot depth were analyzed for the presence of lead. Analytical results showed concentrations of lead that were below applicable RWQCB ESLs except for one (1) of the six (6) locations, where an anomalous, elevated concentration of lead was detected. Because of this outlier, a statistical analysis was performed to establish a representative Site-wide background concentration for lead,

as well as to evaluate its potential human health risk in shallow soils. The results of the statistical analysis show that the calculated 95% Adjusted Gamma UCL for lead in shallow soils is 42.04 mg/kg.

Because the statistical analytical results show that the calculated UCL for lead is below its applicable RWQCB ESLs for both residential and construction worker scenarios, it is concluded that the lead concentrations in shallow soils across the Site do not pose a significant potential human health risk relative to the planned development. Furthermore, massive grading will occur at the Site during redevelopment activities. Because of the planned grading, areas of localized elevated lead concentrations around Borings B-7 and B-21 will be mixed and further homogenized, further reducing the potential human health risks associated with shallow soils.

While no known environmental conditions have been identified, as a precautionary measure, it is recommended that a Site Management Plan (SMP) be developed to provide a framework for appropriately addressing potential environmental conditions, such as underground storage tanks (USTs) or other subsurface structures, that may be encountered during future development activities. The SMP will provide information regarding Site-specific conditions and previous investigation results, a summary of known and potential environmental conditions and contaminants of potential concern, provisions for a Site-specific health and safety plan (HASP), as well as odor, storm water, and noise control plans for worker protection, guidelines for sampling and managing impacted or potential-impacted soils that may be encountered (contingency plan), notification(s) to appropriate regulatory agency(ies), and documentation of environmental conditions encountered during Site development.

On the basis of the information, presented herein, no further investigation or remedial action is warranted at this time. It is recommended that the existing water supply well be properly destroyed in accordance with SMCEH regulations.

7.0 REFERENCES

AEI Consultants, 2015, *Limited Phase II Subsurface Investigation, Carlos Street at Sierra Street, Moss Beach, San Mateo County, California 94038*, report prepared for MidPen Housing Corporation dated February 15, 2016.

California Department of Toxic Substances Control (DTSC) Human and Ecological Risk Office (HERO), 2018, *HERO Human Health Risk Assessment (HHRA) Note Number 3: DTSC-modified Screening Levels (DTSC-SLs)*, dated January 2018.

California Department of Toxic Substances Control (DTSC) Human and Ecological Risk Office (HERO), 2011, *HERO Human Health Risk Assessment (HHRA) Note Number 3: Screening Level Human Health Risk Assessments*, dated June 9, 2011.

California Regional Water Quality Control Board, San Francisco Bay Region, 2013, *User's Guide: Derivation and Application of Environmental Screening Levels and Detailed Lookup Tables,* Interim Final 2013.

United States Environmental Protection Agency, 2016, *ProUCL: Statistical Support Software for Site Investigation and Evaluation*.

County Review Draft

8.0 REPORT LIMITATIONS AND RELIANCE

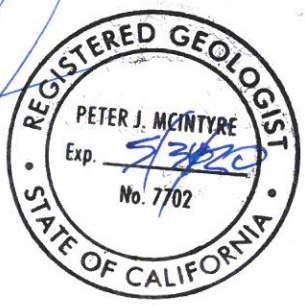
This report presents a summary of work completed by AEI Consultants. The completed work includes observations and descriptions of site conditions encountered. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide the requested information, subject to scope of work for which AEI was retained and limitations inherent in this type of work, but it cannot be assumed that they are representative of areas not sampled. This report should not be regarded as a guarantee that no further contamination beyond that which could have been detected within the scope of this investigation is present beneath the subject property. Undocumented, unauthorized releases of hazardous material, the remains of which are not readily identifiable by visual inspection and are of different chemical constituents, are difficult and often impossible to detect within the scope of a chemical specific investigation.

Any conclusions and/or recommendations are based on these analyses and observations, and the governing regulations. Conclusions beyond those stated and reported herein should not be inferred from this document. These services were performed in accordance with generally accepted practices, in the environmental engineering and construction field, which existed at the time and location of the work. No other warranty, either expressed or implied, has been made.

This investigation was prepared for the sole use and benefit of MidPen Housing Corporation. All reports, both verbal and written, whether in draft or final, are for the benefit of Seagate Properties, Inc. This report has no other purpose and may not be relied upon by any other person or entity without the written consent of AEI. Either verbally or in writing, third parties may come into possession of this report or all or part of the information generated as a result of this work. In the absence of a written agreement with AEI granting such rights, no third parties shall have rights of recourse or recovery whatsoever under any course of action against AEI, its officers, employees, vendors, successors or assigns. Reliance is provided in accordance with AEI's Proposal and Standard Terms & Conditions executed by MidPen Housing Corporation. The limitation of liability defined in the Terms and Conditions is the aggregate limit of AEI's liability to the client and all relying parties.

If you have any questions or comments regarding this report, please do not hesitate to contact me at (925) 746-6000.

Sincerely,



Peter McIntyre, P.G. (7702)
Executive Vice President
AEI Consultants
2500 Camino Diablo
Walnut Creek, California 94597

FIGURES

County Review Draft



LEGEND

- Approximate Property Boundary
- Exploratory Boring

0 100 200

APPROXIMATE SCALE: 1" = 200'

N

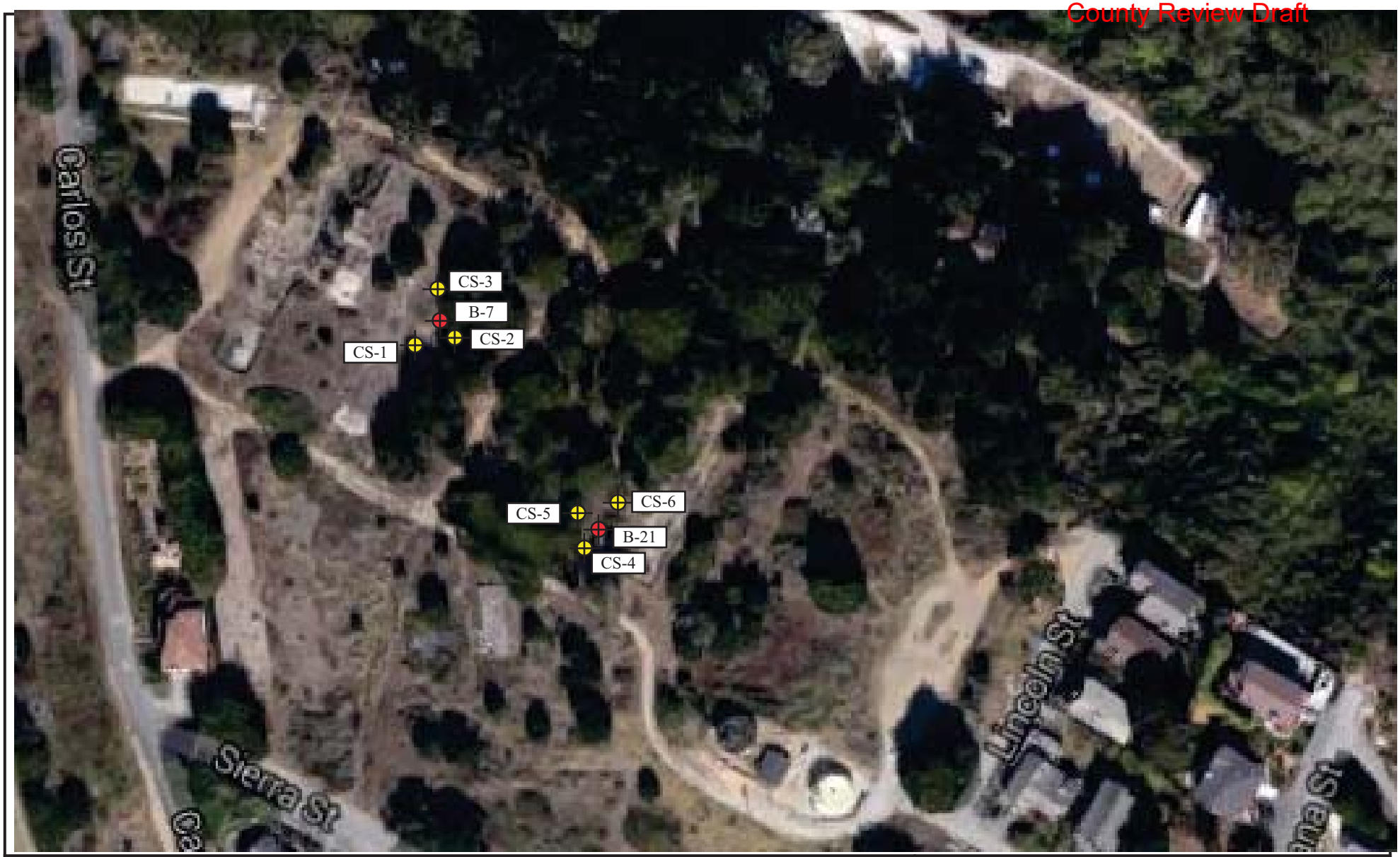
AEI CONSULTANTS
3880 S. BASCOM AVENUE, SAN JOSE, CALIFORNIA

SITE PLAN

Carlos Street at Sierra Street
Moss Beach, California

FIGURE 1
Project No. 350428

County Review Draft



LEGEND

- Soil Boring (AEI, 2017)
- Exploratory Boring (AEI, 2015)

0 50 100
APPROXIMATE SCALE (Feet)

N

AEI CONSULTANTS

3880 S. BASCOM AVENUE, SAN JOSE, CALIFONIA

CONFIRMATION BORING LOCATIONS

Carlos Street at Sierra Street
Moss Beach, California

FIGURE 2
Project No. 350248

TABLES

County Review Draft

TABLE 1: SOIL SAMPLE DATA SUMMARY
Carlos Street at Sierra Street, Moss Beach, California 94038

Location ID	Date	Depth (feet bgs)	Lead (mg/kg)
B-1-1.5	12/22/2015	1.5	4.5
B-3-2.0	12/23/2015	2	--
B-3-5.0	12/23/2015	5	--
B-4-0.0	12/23/2015	0	29
B-5-0.0	12/23/2015	0	54
B-6-0.0	12/23/2015	0	8.4
B-7-0.0	12/23/2015	0	**230**
B-7-1.5	12/23/2015	1.5	7
CS-1	9/22/2017	0	36
CS-2	9/22/2017	0	13
CS-3	9/22/2017	0	**290**
B-8-0.0	12/23/2015	0	23
B-9-0.0	12/22/2015	0	6.5
B-10-0.0	12/22/2015	0	45
B-11-0.0	12/22/2015	0	6.2
B-12-5.0	12/23/2015	5	--
B-13-6.0	12/23/2015	6	--
B-14-2.0	12/23/2015	2	--
B-15-0.0	12/22/2015	0	25
B-15-7.0	12/23/2015	7	--
B-16-0.0	12/22/2015	0	15
B-17-4.0	12/22/2015	4	--
B-18-0.0	12/22/2015	0	12
B-19-0.0	12/22/2015	0	7.9
B-20-0.0	12/22/2015	0	41
B-20-1.5	12/22/2015	1.5	8.1
B-21-0.0	12/22/2015	0	**88**
B-21-1.5	12/22/2015	1.5	8.8
CS-4	9/22/2017	0	30
CS-5	9/22/2017	0	38
CS-6	9/22/2017	0	53
B-22-0.0	12/22/2015	0	19
B-23-0.0	12/22/2015	0	15
B-24-0.0	12/22/2015	0	16
B-25-0.0	12/22/2015	0	8.9
B-26-0.0	12/22/2015	0	7.4
B-27-0.0	12/22/2015	0	6.3
B-28-0.0	12/22/2015	0	9.7
B-29-0.0	12/22/2015	0	8.7
B-30-0.0	12/22/2015	0	9.1
B-31-0.0	12/22/2015	0	7.8
B-32-0.0	12/22/2015	0	7.0
B-33-0.0	12/22/2015	0	39
B-34-0.0	12/22/2015	0	34

Comparison Levels	
RWQCB ESL residential	**80**
RWQCB ESL for any land use/any depth	**160**

Notes:

mg/kg	milligrams per kilogram
bgs	below ground surface
Bold	result exceeds applicable comparison value
--	not analyzed

Comparison Levels:

RWQCB ESL — San Francisco Bay Regional Water Quality Control Board Environmental Screening Level assuming direct exposure human health risk levels for residential and any land use/any depth for construction worker (RWQCB, February 2016, Table S-1)

APPENDIX A

BORING LOGS

County Review Draft

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Environmental & Engineering Services

AEI Consultants

BORING NUMBER CS-1

CLIENT MidPen Housing Corp.
PROJECT NAME Cypress Point
PROJECT NUMBER 350428
PROJECT LOCATION Carlos Street at Sierra Street, Moss Beach, California
DATESTARTED 9/22/17 **COMPLETED** 9/22/17
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD Hand Auger
AT TIME OF DRILLING ---
LOGGED BY WBH **CHECKED BY** TGB
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	CS-1-0.5 CS-1-1.5				CLAYEY SAND (SC), brown, loose, dry, fine to medium sand 2.0	

Bottom of borehole at 2.0 feet.

AEI BORING - GINT STD US LAB.GDT - 11/13/17 14:55 - P:\COMPANYWIDE PROJECTS\350000 SERIES\350428 MOSS BEACH, CA\ASI & WATER WELL EVAL\ASI REPORT\APPENDICES\ASI SEPT 2017 BORING LOGS.GPJ

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Environmental & Engineering Services

AEI Consultants

BORING NUMBER CS-2

CLIENT MidPen Housing Corp.
PROJECT NAME Cypress Point
PROJECT NUMBER 350428
PROJECT LOCATION Carlos Street at Sierra Street, Moss Beach, California
DATE STARTED 9/22/17 **COMPLETED** 9/22/17
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD Hand Auger
AT TIME OF DRILLING ---
LOGGED BY WBH **CHECKED BY** TGB
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	CS-2-0.5 CS-2-1.5				CLAYEY SAND (SC), brown, loose, moist, fine to medium grained sand	
2.0					Bottom of borehole at 2.0 feet.	

AEI BORING - GINT STD US LAB.GDT - 11/13/17 14:55 - P:\COMPANYWIDE PROJECTS\350000 SERIES\350428 MOSS BEACH, CA\ASI & WATER WELL EVAL\ASI REPORT\APPENDICES\ASI SEPT 2017 BORING LOGS.GPJ

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AEI Consultants
Environmental & Engineering Services

AEI Consultants

BORING NUMBER CS-3

CLIENT MidPen Housing Corp.
PROJECT NAME Cypress Point
PROJECT NUMBER 350428
PROJECT LOCATION Carlos Street at Sierra Street, Moss Beach, California
DATE STARTED 9/22/17 **COMPLETED** 9/22/17
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD Hand Auger
AT TIME OF DRILLING ---
LOGGED BY WBH **CHECKED BY** TGB
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	CS-3-0.5 CS-3-1.5				CLAYEY SAND (SC), brown, loose, moist, fine to medium grained sand, glass fragments	
					2.0	

Bottom of borehole at 2.0 feet.

AEI BORING - GINT STD US LAB.GDT - 11/13/17 14:55 - P:\COMPANYWIDE PROJECTS\350000 SERIES\350428 MOSS BEACH, CA\ASI & WATER WELL EVAL\ASI REPORT\APPENDICES\ASI SEPT 2017 BORING LOGS.GPJ

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AEI Consultants
Environmental & Engineering Services

AEI Consultants

BORING NUMBER CS-4

CLIENT MidPen Housing Corp.
PROJECT NUMBER 350428
DATE STARTED 9/22/17 **COMPLETED** 9/22/17
DRILLING CONTRACTOR
DRILLING METHOD Hand Auger
LOGGED BY WBH **CHECKED BY** TGB
NOTES

PROJECT NAME Cypress Point
PROJECT LOCATION Carlos Street at Sierra Street, Moss Beach, California
GROUND ELEVATION **HOLE SIZE** 2.25 inches
GROUND WATER LEVELS:
AT TIME OF DRILLING ---
AT END OF DRILLING ---
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	CS-4-0.5 CS-4-1.5				SILTY SAND (SM), dark brown, loose, moist, fine to medium grained sand	
2.0					Bottom of borehole at 2.0 feet.	

AEI BORING - GINT STD US LAB.GDT - 11/13/17 14:55 - P:\COMPANYWIDE PROJECTS\350000 SERIES\350428 MOSS BEACH, CA\ASI & WATER WELL EVAL\ASI REPORT\APPENDICES\ASI SEPT 2017 BORING LOGS.GPJ

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BORING NUMBER CS-5

CLIENT MidPen Housing Corp.
PROJECT NAME Cypress Point
PROJECT NUMBER 350428
PROJECT LOCATION Carlos Street at Sierra Street, Moss Beach, California
DATE STARTED 9/22/17 **COMPLETED** 9/22/17
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD Hand Auger
AT TIME OF DRILLING ---
LOGGED BY WBH **CHECKED BY** TGB
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	CS-5-0.5				0.5 SILTY SAND (SM), dark brown, moist, fine to medium grained, loose	
	CS-5-1.5				2.0 SILTY SAND (SM), yellowish brown, moist, loose, fine to medium grained with cobbles	
					Bottom of borehole at 2.0 feet.	

AEI BORING - GINT STD US LAB.GDT - 11/13/17 14:55 - P:\COMPANYWIDE PROJECTS\350000 SERIES\350428 MOSS BEACH, CA\ASI & WATER WELL EVAL\ASI REPORT\APPENDICES\ASI SEPT 2017 BORING LOGS.GPJ

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AEI Consultants
Environmental & Engineering Services

AEI Consultants

BORING NUMBER CS-6

CLIENT MidPen Housing Corp.
PROJECT NAME Cypress Point
PROJECT NUMBER 350428
PROJECT LOCATION Carlos Street at Sierra Street, Moss Beach, California
DATE STARTED 9/22/17 **COMPLETED** 9/22/17
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD Hand Auger
AT TIME OF DRILLING ---
LOGGED BY WBH **CHECKED BY** TGB
AT END OF DRILLING ---
NOTES
AFTER DRILLING --- No groundwater encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0	CS-6-0.5 CS-6-1.5				SILTY SAND (SM), dark brown, loose, moist, fine to medium grained sand	
2.0					Bottom of borehole at 2.0 feet.	

AEI BORING - GINT STD US LAB.GDT - 11/13/17 14:55 - P:\COMPANYWIDE PROJECTS\350000 SERIES\350428 MOSS BEACH, CA\ASI & WATER WELL EVAL\ASI REPORT\APPENDICES\ASI SEPT 2017 BORING LOGS.GPJ

APPENDIX B

CHAIN-OF-CUSTODY AND CERTIFIED ANALYTICAL REPORT

County Review Draft

McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1709A05

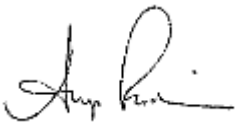
Report Created for: AEI Consultants

2500 Camino Diablo, Ste.#200
Walnut Creek, CA 94597

Project Contact: William Hicks
Project P.O.: 142989
Project Name: 350428

Project Received: 09/22/2017

Analytical Report reviewed & approved for release on 09/28/2017 by:



Angela Rydelius,
Laboratory Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.

1534 Willow Pass Rd. Pittsburg, CA 94565 ♦ TEL: (877) 252-9262 ♦ FAX: (925) 252-9269 ♦ www.mccampbell.com
CA ELAP 1644 ♦ NELAP 4033 ORELAP

McCampbell Analytical, Inc.
"When Quality Counts"
1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: AEI Consultants
Project: 350428
WorkOrder: 1709A05

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

Quality Control Qualifiers

F13	Indigenous sample results too high for a representative matrix spike analysis.

McCampbell Analytical, Inc.
"When Quality Counts"

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1709A05
Date Received:	9/22/17 17:30	**Extraction Method:**	SW3050B
Date Prepared:	9/25/17	**Analytical Method:**	SW6020
Project:	350428	**Unit:**	mg/Kg

Lead

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
CS-1-5	1709A05-001A	Soil	09/22/2017 08:34	ICP-MS2 008SMPL.D	146035

Analytes	Result	RL	DF	Date Analyzed
Lead	**36**	0.50	1	09/26/2017 22:30

Surrogates	REC (%)	Limits	
Terbium	110	70-130	09/26/2017 22:30

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
CS-2-5	1709A05-003A	Soil	09/22/2017 09:06	ICP-MS2 009SMPL.D	146035

Analytes	Result	RL	DF	Date Analyzed
Lead	**13**	0.50	1	09/26/2017 22:36

Surrogates	REC (%)	Limits	
Terbium	100	70-130	09/26/2017 22:36

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
CS-3-5	1709A05-005A	Soil	09/22/2017 09:56	ICP-MS2 010SMPL.D	146035

Analytes	Result	RL	DF	Date Analyzed
Lead	**290**	0.50	1	09/26/2017 22:42

Surrogates	REC (%)	Limits	
Terbium	103	70-130	09/26/2017 22:42

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
CS-4-5	1709A05-007A	Soil	09/22/2017 10:54	ICP-MS2 011SMPL.D	146035

Analytes	Result	RL	DF	Date Analyzed
Lead	**30**	0.50	1	09/26/2017 22:48

Surrogates	REC (%)	Limits	
Terbium	100	70-130	09/26/2017 22:48

Analyst(s): ND

(Cont.)

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1709A05
Date Received:	9/22/17 17:30	**Extraction Method:**	SW3050B
Date Prepared:	9/25/17	**Analytical Method:**	SW6020
Project:	350428	**Unit:**	mg/Kg

Lead

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
CS-5-5	1709A05-009A	Soil	09/22/2017 11:14	ICP-MS2 012SMPL.D	146035

Analytes	Result	RL	DF	Date Analyzed
Lead	**38**	0.50	1	09/26/2017 22:54

Surrogates	REC (%)	Limits	
Terbium	104	70-130	09/26/2017 22:54

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
CS-6-5	1709A05-011A	Soil	09/22/2017 11:47	ICP-MS2 013SMPL.D	146035

Analytes	Result	RL	DF	Date Analyzed
Lead	**53**	0.50	1	09/26/2017 23:00

Surrogates	REC (%)	Limits	
Terbium	101	70-130	09/26/2017 23:00

Analyst(s): ND

McCampbell Analytical, Inc.
"When Quality Counts"
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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1709A05
Date Prepared:	9/25/17	**BatchID:**	146035
Date Analyzed:	9/26/17	**Extraction Method:**	SW3050B
Instrument:	ICP-MS3	**Analytical Method:**	SW6020
Matrix:	Soil	**Unit:**	mg/Kg
Project:	350428	**Sample ID:**	MB/LCS-146035 1709A04-031AMS/MSD

QC Summary Report for Metals

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Lead	ND	45.6	0.50	50	-	91	75-125
Surrogate Recovery							
Terbium	473.2	469		500	95	94	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Lead	294	453	50	401.3	0,F13	103	75-125	NA	20
Surrogate Recovery									
Terbium	487	458	500		97	92	70-130	6.05	20

Analyte	DLT Result	DLTRef Val	%D	%D Limit
Lead	387	401.3	3.56	20

%D Control Limit applied to analytes with concentrations greater than 25 times the reporting limits.

County Review Draft

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1709A05 **ClientCode: AEL**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☐ Detection Summary ☐ Dry-Weight

Report to:
William Hicks
AEI Consultants
2500 Camino Diablo, Ste.#200
Walnut Creek, CA 94597
(925) 283-6000 FAX: (925) 944-2895

Email: whix@aeiconsultants.com
cc/3rd Party: tbodkin@aeiconsultants.com;
PO: 142989
ProjectNo: 350428

Bill to:
Accounts Payable
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
AccountsPayable@AEIConsultants.com

Requested TAT: 5 days;

Date Received: **09/22/2017**
Date Logged: **09/25/2017**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1709A05-001	CS-1-5	Soil	9/22/2017 08:34	☐	A											
1709A05-003	CS-2-5	Soil	9/22/2017 09:06	☐	A											
1709A05-005	CS-3-5	Soil	9/22/2017 09:56	☐	A											
1709A05-007	CS-4-5	Soil	9/22/2017 10:54	☐	A											
1709A05-009	CS-5-5	Soil	9/22/2017 11:14	☐	A											
1709A05-011	CS-6-5	Soil	9/22/2017 11:47	☐	A											

Test Legend:

1	PBMS_TTLC_S	2		3		4	
5		6		7		8	
9		10		11		12	

Prepared by: Jena Alfaro

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

County Review Draft

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

WORK ORDER SUMMARY

Client Name: AEI CONSULTANTS **Project:** 350428 **Work Order:** 1709A05
Client Contact: William Hicks **QC Level:** LEVEL 2
Contact's Email: whix@aeiconsultants.com **Comments:** **Date Logged:** 9/25/2017

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1709A05-001A	CS-1-5	Soil	SW6020 (Lead)	1	Stainless Steel tube 2"x6"	☐	9/22/2017 8:34	5 days		☐	
1709A05-002A	CS-1-1.5	Soil		1	Stainless Steel tube 2"x6"	☐	9/22/2017 8:55			☑	
1709A05-003A	CS-2-5	Soil	SW6020 (Lead)	1	Stainless Steel tube 2"x6"	☐	9/22/2017 9:06	5 days		☐	
1709A05-004A	CS-2-1.5	Soil		1	Stainless Steel tube 2"x6"	☐	9/22/2017 9:43			☑	
1709A05-005A	CS-3-5	Soil	SW6020 (Lead)	1	Stainless Steel tube 2"x6"	☐	9/22/2017 9:56	5 days		☐	
1709A05-006A	CS-3-1.5	Soil		1	Stainless Steel tube 2"x6"	☐	9/22/2017 10:21			☑	
1709A05-007A	CS-4-5	Soil	SW6020 (Lead)	1	Stainless Steel tube 2"x6"	☐	9/22/2017 10:54	5 days		☐	
1709A05-008A	CS-4-1.5	Soil		1	Stainless Steel tube 2"x6"	☐	9/22/2017 11:06			☑	
1709A05-009A	CS-5-5	Soil	SW6020 (Lead)	1	Stainless Steel tube 2"x6"	☐	9/22/2017 11:14	5 days		☐	
1709A05-010A	CS-5-1.5	Soil		1	Stainless Steel tube 2"x6"	☐	9/22/2017 11:39			☑	
1709A05-011A	CS-6-5	Soil	SW6020 (Lead)	1	Stainless Steel tube 2"x6"	☐	9/22/2017 11:47	5 days		☐	
1709A05-012A	CS-6-1.5	Soil		1	Stainless Steel tube 2"x6"	☐	9/22/2017 12:03			☑	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

County Review Draft

General COC

MAI Work Order # 1109405

5

McCAMPBELL ANALYTICAL, INC.

1534 Willow Pass Rd. Pittsburg, Ca. 94565-1701
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CHAIN OF CUSTODY RECORD

Turn Around Time: 1 Day Rush | 2 Day Rush | 3 Day Rush | STD ● | Quote #
J-Flag / MDL | ESL | Cleanup Approved | Bottle Order #
Delivery Format: GeoTracker EDF | PDF ● | EDD | Write On (DW) | EQuIS

Report To: AEI Consultants | Bill To: AEI Consultants
Company: AEI Consultants
Email: whix@aeiconsultants.com
Alt Email: tbodkin@aeiconsultants.com | Tele: 925-746-6050
Project Name/#: 350428
Project Location: Moss Beach | PO #142989
Sampler Signature:

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	Analysis Requested: Lead by 6010	Analysis Requested: Hold
CS-1-5	9/22	0834	1	Soil	ICE	X	
CS-1-1.5		0855					X
CS-2-5		0906				X	
CS-2-1.5		0943					X
CS-3-5		0956				X	
CS-3-1.5		1021					X
CS-4-5		1054				X	
CS-4-1.5		1106					X
CS-5-5		1114				X	
CS-5-1.5		1139					X

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Comments / Instructions

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
	9/22	1730		9/22	1730

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other

Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp 6.0 °C Initials

Page 1 of 2

County Review Draft

General COC

MAI Work Order # _____

5

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CHAIN OF CUSTODY RECORD

Turn Around Time: 1 Day Rush [ ] 2 Day Rush [ ] 3 Day Rush [ ] STD [●] Quote # [ ]
J-Flag / MDL [ ] ESL [ ] Cleanup Approved [ ] Bottle Order # [ ]
Delivery Format: GeoTracker EDF [ ] PDF [●] EDD [ ] Write On (DW) [ ] EQuIS [ ]

Report To: AEI Consultants Bill To: AEI Consultants
Company: AEI Consultants
Email: whix@aeiconsultants.com
Alt Email: tbodkin@aeiconsultants.com Tele: 925-746-6050
Project Name/#: 350428
Project Location: Moss Beach PO #142989
Sampler Signature:

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	Analysis Requested: Lead by 6020 or 6010	Analysis Requested: Hold
CS-6-5	9/22	1147	1	Soil	7 ICE	X	
CS-6-1.5	"	1203	1	"	"		X

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Comments / Instructions

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
	9/22	1730		9/24/22	1730

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other

Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp _____ °C Initials _____

Page 2 of 2

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Sample Receipt Checklist

Client Name:	**AEI Consultants**	Date and Time Received	**9/22/2017 17:30**
Project Name:	**350428**	Date Logged:	**9/25/2017**
		Received by:	Kena Ponce
WorkOrder №:	**1709A05** Matrix: Soil	Logged by:	Jena Alfaro
Carrier:	Client Drop-In		

Chain of Custody (COC) Information

Chain of custody present?	Yes	☑	No	☐		
Chain of custody signed when relinquished and received?	Yes	☑	No	☐		
Chain of custody agrees with sample labels?	Yes	☑	No	☐		
Sample IDs noted by Client on COC?	Yes	☑	No	☐		
Date and Time of collection noted by Client on COC?	Yes	☑	No	☐		
Sampler's name noted on COC?	Yes	☑	No	☐		
COC agrees with Quote?	Yes	☐	No	☐	NA	☑

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes	☐	No	☐	NA	☑
Shipping container/cooler in good condition?	Yes	☑	No	☐		
Samples in proper containers/bottles?	Yes	☑	No	☐		
Sample containers intact?	Yes	☑	No	☐		
Sufficient sample volume for indicated test?	Yes	☑	No	☐		

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes	☑	No	☐	NA	☐
Sample/Temp Blank temperature	Temp: 6°C				NA	☐
Water - VOA vials have zero headspace / no bubbles?	Yes	☐	No	☐	NA	☑
Sample labels checked for correct preservation?	Yes	☑	No	☐		
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes	☐	No	☐	NA	☑
Samples Received on Ice?	Yes	☑	No	☐		
(Ice Type: WET ICE)						

UCMR Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522?	Yes	☐	No	☐	NA	☑
Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539?	Yes	☐	No	☐	NA	☑

Comments:

APPENDIX C

STATISTICAL ANALYSIS

TABLE 1: SOIL SAMPLE DATA SUMMARY 95% UCL CALCULATION

Carlos Street at Sierra Street, Moss Beach, California 94038

November 2-2017

Location ID	Sample Date	Depth (feet bgs)	Lead (mg/kg)
B-1-1.5	12/22/2015	1.5	4.5
B-3-2.0	12/23/2015	2	0.5
B-3-5.0	12/23/2015	5	0.5
B-4-0.0	12/23/2015	0	29
B-5-0.0	12/23/2015	0	**54**
B-6-0.0	12/23/2015	0	8.4
B-7-0.0	12/23/2015	0	**230**
B-7-1.5	12/23/2015	1.5	7
CS-1	9/22/2017	0	36
CS-2	9/22/2017	0	13
CS-3	9/22/2017	0	**290**
B-8-0.0	12/23/2015	0	23
B-9-0.0	12/22/2015	0	6.5
B-10-0.0	12/22/2015	0	45
B-11-0.0	12/22/2015	0	6.2
B-12-5.0	12/23/2015	5	0.5
B-13-6.0	12/23/2015	6	0.5
B-14-2.0	12/23/2015	2	0.5
B-15-0.0	12/22/2015	0	25
B-15-7.0	12/23/2015	7	0.5
B-16-0.0	12/22/2015	0	15
B-17-4.0	12/22/2015	4	0.5
B-18-0.0	12/22/2015	0	12
B-19-0.0	12/22/2015	0	7.9
B-20-0.0	12/22/2015	0	41
B-20-1.5	12/22/2015	1.5	8.1
B-21-0.0	12/22/2015	0	**88**
B-21-1.5	12/22/2015	1.5	8.8
CS-4	9/22/2017	0	30
CS-5	9/22/2017	0	38
CS-6	9/22/2017	0	**53**
B-22-0.0	12/22/2015	0	19
B-23-0.0	12/22/2015	0	15
B-24-0.0	12/22/2015	0	16
B-25-0.0	12/22/2015	0	8.9
B-26-0.0	12/22/2015	0	7.4

TABLE 1: SOIL SAMPLE DATA SUMMARY 95% UCL CALCULATION

Carlos Street at Sierra Street, Moss Beach, California 94038

November 2-2017

Location ID	Sample Date	Depth (feet bgs)	Lead (mg/kg)
B-27-0.0	12/22/2015	0	6.3
B-28-0.0	12/22/2015	0	9.7
B-29-0.0	12/22/2015	0	8.7
B-30-0.0	12/22/2015	0	9.1
B-31-0.0	12/22/2015	0	7.8
B-32-0.0	12/22/2015	0	7.0
B-33-0.0	12/22/2015	0	39
B-34-0.0	12/22/2015	0	34
Comparison Levels			
San Francisco Bay Regional Water Quality Control Board Environmental Screening Level			
(RWQCB ESL) Residential Use			80
RWQCB ESL for any Land Use/any Depth			160
Total Threshold Limit Concentration (TTLC)			1,000
Soluble Threshold Limit Concentration (STLC)			5
Statistical Analysis:			
Lead Laboratory Reporting Limit (mg/kg) =			0.5
Total Number of Observations -			44
Sample Minimum =			0.5
Sample maximum =			290
Sample Mean =			28.88
Standard Deiation (SD) =			54.59
Coefficient of Variation (CV) =			1.89
EPA Pro UCL Version 5.1 Adjusted Gamma UCL (mg/kg) =			**42.04**

95% UCL Calculation for Lead in Soil

County Review Draft

Carlos Street at Sierra Street, Moss Beach, California 94038

November 2, 2017

User Selected Options	
Date/Time of Computation	ProUCL 5.111/2/2017 9:20:27 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lead Soil Results (mg/kg)

General Statistics

Total Number of Observations	44	Number of Distinct Observations	36
		Number of Missing Observations	0
Minimum	0.5	Mean	28.88
Maximum	290	Median	9.4
SD	54.59	Std. Error of Mean	8.229
Coefficient of Variation	1.89	Skewness	3.872

Normal GOF Test

Shapiro Wilk Test Statistic	0.493	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.944	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.302	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.132	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	42.72	95% Adjusted-CLT UCL (Chen-1995)	47.55
		95% Modified-t UCL (Johnson-1978)	43.52

Gamma GOF Test

A-D Test Statistic	1.39	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.804	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.132	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.14	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.595	k star (bias corrected MLE)	0.569
Theta hat (MLE)	48.56	Theta star (bias corrected MLE)	50.73
nu hat (MLE)	52.34	nu star (bias corrected)	50.1
MLE Mean (bias corrected)	28.88	MLE Sd (bias corrected)	38.28
		Approximate Chi Square Value (0.05)	34.85
Adjusted Level of Significance	0.0445	Adjusted Chi Square Value	34.42

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	41.52	95% Adjusted Gamma UCL (use when n<50)	42.04

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.9	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.944	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.197	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.132	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-0.693	Mean of logged Data	2.323
Maximum of Logged Data	5.67	SD of logged Data	1.615

Assuming Lognormal Distribution

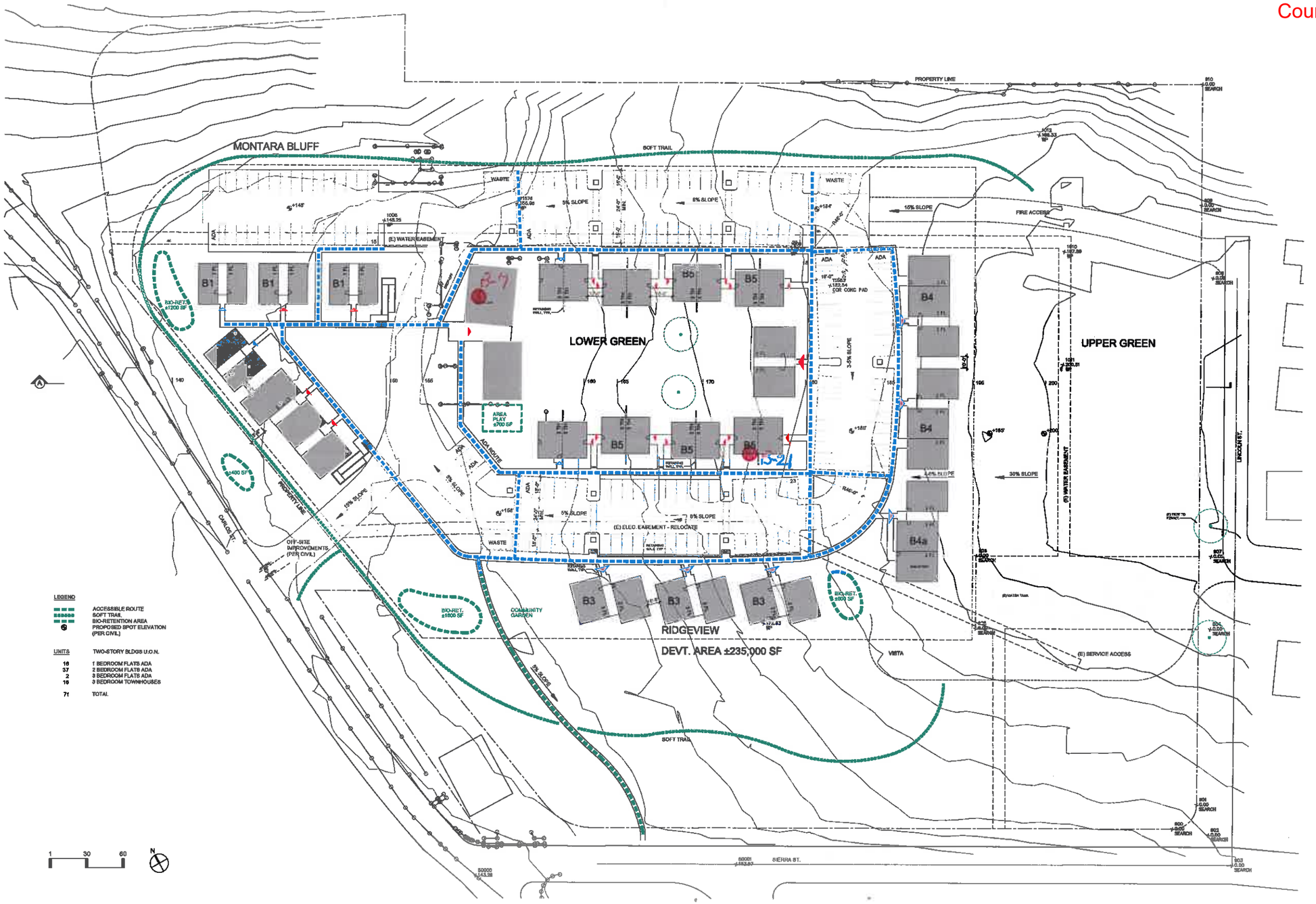
95% H-UCL	81.38	90% Chebyshev (MVUE) UCL	69.93
95% Chebyshev (MVUE) UCL	85.62	97.5% Chebyshev (MVUE) UCL	107.4
99% Chebyshev (MVUE) UCL	150.2		

	A	B	C	D	E	F	G	H	I	J	K	L
65	**Nonparametric Distribution Free UCL Statistics**										County Review Draft	
66	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
67												
68	**Nonparametric Distribution Free UCLs**											
69	95% CLT UCL					42.42	95% Jackknife UCL					42.72
70	95% Standard Bootstrap UCL					42.1	95% Bootstrap-t UCL					68.07
71	95% Hall's Bootstrap UCL					109.1	95% Percentile Bootstrap UCL					43.77
72	95% BCA Bootstrap UCL					51.22						
73	90% Chebyshev(Mean, Sd) UCL					53.57	95% Chebyshev(Mean, Sd) UCL					64.75
74	97.5% Chebyshev(Mean, Sd) UCL					80.27	99% Chebyshev(Mean, Sd) UCL					110.8
75												
76	**Suggested UCL to Use**											
77	95% Adjusted Gamma UCL					42.04						
78												
79	When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test											
80	When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL											
81												
82	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
83	Recommendations are based upon data size, data distribution, and skewness.											
84	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
85	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											

APPENDIX D

CONCEPTUAL SITE DRAWINGS

County Review Draft



LEGEND

- ACCESSIBLE ROUTE
- SOFT TRAIL
- BIO-RETENTION AREA
- PROPOSED SPOT ELEVATION (PER CIVIL)

UNITS	TWO-STORY BLDGS U.O.N.
16	1 BEDROOM FLATS ADA
37	2 BEDROOM FLATS ADA
2	3 BEDROOM FLATS ADA
16	3 BEDROOM TOWNHOUSES
71	TOTAL

1 30 60 N

MidPen HOUSING

CYPRESS POINT AFFORDABLE HOUSING

Moss Beach CA

PRELIMINARY SITE PLAN

PYATOK
1611 TELEGRAPH AVE. SUITE 200
OAKLAND, CA 94612
p 510.465.7010 | f 510.465.8575
www.pyatok.com

01

Project #: 1603

© 2017 PYATOK ARCHITECTURE & URBAN DESIGN

Date: 06.28.17



KEY NOTES

1. CYPRESS POINT ENTRY DRIVE
2. BROAD CANOPY ENTRY TREES
3. BIO-RETENTION AREA
4. PLAY STRUCTURE (AGES 2-5 YEARS)
7. SLOPING PATH THROUGH CENTRAL GREEN
8. SLOPING LAWN
9. PLANTING - TREES, SHRUBS, AND GRASSES
10. TRELLIS, SEATING, AND BBQ AREA
11. WASTE ENCLOSURE (3 TOTAL)
12. OVERLOOK WITH SEATING
13. EXISTING GRAVEL ACCESS ROAD
14. EXISTING WATER TANKS
15. COMMUNITY GARDEN
16. PARKING LOT
17. ACCESSIBLE CROSSING
18. PLANTED SLOPE
19. TRAIL FOOT PATH AROUND PERIMETER OF SITE
20. PATH TO SIERRA STREET
21. EXISTING TREES
22. EMERGENCY VEHICLE ROUTE

0 15' 30' 60'
Scale: 1" = 30' - 0"

MidPen HOUSING | PYATOK

CYPRESS POINT AFFORDABLE HOUSING

MOSS BEACH, CA

CONCEPTUAL LANDSCAPE PLAN

JUNE 23, 2017

JONES & JANECKI & ASSOCIATES

APPENDIX L

Water Well Sampling and Well Destruction

AEI Consultants
Environmental & Engineering Services

April 9, 2018

Ms. Serena Ip
MidPen Housing Corporation
303 Vintage Park Drive, Suite 250
Foster City, California 94404

Re: Water Well Sampling and Well Destruction
Project Number 350428
Cypress Point Development
Carlos and Sierra Streets
Moss Beach, San Mateo County, California 94038

Dear Ms. Ip:

This report presents the results of the **Water Well Sampling and Well Destruction** activities performed by AEI Consultants (AEI) for the Cypress Point development project, located near the intersection of Carlos and Sierra Streets in Moss Beach, San Mateo County, California (the "Site"). The project was conducted in accordance with the conclusions and recommendations presented in AEI's *Additional Subsurface Investigation and Water Well Evaluation Report* dated February 20, 2018. Information regarding the previous investigation results, field activities, analytical results, conclusions, and recommendations is provided in the following sections of this report.

1.0 PREVIOUS INVESTIGATION RESULTS

In November 2015, AEI conducted a *Phase I Environmental Site Assessment (ESA)* at the Site. During the file review, it was found that two (2) domestic water supply wells had been installed at the Site in 1986. Limited regulatory agency records that were obtained from San Mateo County Environmental Health Services (SMCEHS) for the wells are provided in Appendix A.

In December 2015, AEI conducted a *Limited Phase II Subsurface Investigation* with the results presented in a report dated February 15, 2016. During a site reconnaissance for the investigation, one (1) of the wells was found within a vegetated area near the northern property boundary. The wellhead consisted of a rusted, welded steel cover that was secured within a rectangular-shape concrete pad. SMCEHS was contacted to gather more information about the well(s) during the investigation; however, no additional information had been provided by SMCEHS at that time. The other well was not found during the reconnaissance. It was unknown if either well had been properly abandoned in accordance with SMCEHS regulations. No well construction details were available for review other than the limited regulatory agency records gathered during the *Phase I ESA*.

As presented in Appendix A, regulatory agency records show that a San Mateo County Department of Public Health and Welfare permit (Permit No. W-43-86) had been issued to the California School

Employee Association (property owner) for the installation and construction of the well(s) in May 1986. The name of the well owner on the permit was listed as Farallon Vista Associates. In June 1986, a flow test was conducted by H.A.M. Drilling, Inc. (HAM) at one (1) of the wells. Their Well Yield Report Information form for the well showed a total depth of 400 feet. The Well Yield Report also showed the DWR Water Well Drillers Report Number than the permit number shown under the County May 1986 permit. The Well Yield Report showed that the standing water well and static water level (assumed to be measured upon completion of flow testing) were measured at depths of 35 feet and 168 feet deep, respectively. The pump for the flow test was set at a depth of 390 feet. The flow test was conducted over an approximate 3-hour period. Flow (pump) rates during testing ranged between 2 and 5 gallons per minute. At the end of the 3-hour period, the drawdown of the water level was measured at 168 feet. After the flow testing was completed, a recovery test was performed for an approximate 20-minute period. After this period ceased, the water level recovered to the 160-foot depth. In July 1988, water quality testing for bacteriology and chemistry purposes also was performed.

In December 1990, as shown on a Septic and Well Check-Off List, Farallon Vista Associates indicated that the two (2) domestic water supply wells had been installed under one (1) permit, and that both wells would be repaired "so that aquifers were adequately protected." In January 1991, also shown on the same Septic and Well Check-Off List, Farallon Vista Associates indicated that the "upper well" had been "sealed with welded steel" and the "lower well" had been "sealed flush with the well pad with a bolted steel plate." During AEI's December 2015 site reconnaissance, it was believed that the "upper well", rather than the "lower well", had been found.

In October 2017, the "upper well" was inspected by Wilkinson Well and Pump of Half Moon Bay, California (Wilkinson) during AEI's *Additional Subsurface Investigation and Water Well Evaluation*. The area around the wellhead was observed to be covered with tree branches and vegetative debris. It was also observed that the well cover had been removed since the time of AEI's *Limited Phase II Subsurface Investigation*. The well was observed to consist of an outer steel casing that was lined with an inner 5-inch diameter polyvinyl chloride (PVC) casing. Wilkinson attempted to measure the groundwater and total well depths. However, because of an obstruction encountered at the 13.3-foot depth, the groundwater depth and well depth measurements could not be obtained. The vertical extent of the obstruction below the 13.3-foot depth also could not be measured. Wilkinson also observed that a section of broken or cracked well casing was present at the 5-foot depth. Upon inspection, it was assumed that debris had been poured into the well after the cover had been removed.

2.0 FIELD ACTIVITIES

Field activities for the groundwater sampling and well destruction are described in the following sections of this report.

2.1 Health and Safety Plan

A site-specific health and safety plan was prepared, reviewed by onsite personnel, and kept onsite for the duration of the fieldwork.

2.2 Permitting and Utility Clearance

A drilling permit was obtained from the SMCEHS for the well destruction. A copy of the drilling permit is provided in Appendix B.

Prior to well destruction activities, the property boundaries were marked on the ground surface with white paint. Upon marking, Underground Services Alert (USA) North was contacted, who, in turn, notified subscribing utility companies of the planned well destruction work for underground utility locations to be marked along the ground surface around the existing well. A utility clearance was conducted by Ground Penetrating Radar Systems, Inc. (GPRS) of San Jose, California under subcontract to AEI on February 21, 2018. No underground utilities were found to be present around the existing well.

2.3 Well Destruction and Removal of Obstruction

Well destruction commenced on February 21, 2018 upon completion of the utility clearance. Well destruction was performed by a C-57 licensed drilling company, Cascade Drilling, Inc. of West Sacramento, California under subcontract to AEI. Well destruction activities were supervised by an experienced field geologist under the oversight of an AEI State of California-licensed Certified Engineering Geologist.

Prior to well destruction, the wellhead was opened to remove the obstruction from the 13.3-foot depth using a well development rig. A 4-inch diameter drilling rod was lowered into casing to remove and/or push through the obstruction. However, it was discovered that the length of the obstruction was quite extensive and could not be removed. Refusal was encountered at the 47-foot depth. SMCEHS inspected the well destruction procedures and further required that the obstruction be removed. At that time, the depth to groundwater was measured at 45.37 feet below the top of well casing.

Well destruction activities resumed on March 6, 2018. Cascade mobilized a track-mounted, sonic drilling rig to the Site to remove the obstruction and complete the well destruction. Upon removal of the obstruction, the inside of the well casing was further reamed out to the 350-foot depth. Materials associated with obstruction and removed from the well casing included pea gravel, tree debris, miscellaneous trash, and glass bottle fragments. At the 350-foot depth, another obstruction was encountered, which included an older submersible pump, that appeared to be left in place from the time the well was installed. Metal fragments and copper wiring were removed, followed by drilling refusal encountered when attempting to drill through the pump at that depth. Because of the depth of the pump and associated drilling refusal, SMCEHS was contacted for further direction. SMCEHS approved destruction of the well beginning at the 350-foot depth, instead of continuing to drill downward to the 400-foot depth.

2.4 Groundwater Sampling

Groundwater sampling was performed prior to well destruction. Prior to sampling, the well was purged with a portable submersible pump. The pump intake was positioned at an approximate depth of 120 feet below the top of well casing. The depth to groundwater prior to purging was

approximately 54.30 feet below the top of casing. During purging, only 55 gallons could be removed due to the slow purge rate of the pump. The total volume of water removed during was significantly less than the total volume of standing water inside the well casing noted prior to sampling.

Upon purging, a groundwater sample was obtained from inside the sonic drilling rods with a clean, disposable bailer. Upon collection, the clarity of the groundwater water sample was observed to be somewhat turbid and cloudy with a discernible sheen on top of the water surface inside the bailer. The sample was transferred into appropriate, laboratory-supplied, sample containers [i.e., 40-ml glass vials preserved with hydrochloric acid (HCl)]. The 40-ml glass vials were sealed so that no headspace or air bubbles were visible within the containers upon filling.

After collection, the bottles were labeled with the project name, project number, boring number, sample depth, and sampling date/time of sampling. After labelling, the samples were placed into an insulated, chilled ice chest containing crush ice for transport to the analytical laboratory. Chain-of-custody documentation was prepared and accompanied the groundwater sample bottles to the analytical laboratory.

2.5 Completion of Well Destruction

On March 7, 2018, the well was destroyed by the backfilling and placement of neat cement grout inside the well casing using tremie methods. Prior to commencing well destruction, Ms. Allison Fang, the SMCEHS inspector, visited the Site and provided AEI with a State of California Department of Water Resources (DWR) Water Well Drillers Report (No. 149554) for the well. This information had not been shared with AEI, when requested on, at least, two separate occasions, prior to the start of this project and during previous investigations. The DWR Water Well Drillers Report confirmed that the owner of the well was Farallon Vista Association and that the well had been installed during the period from June 11 through 18, 1986. The Report also confirmed the 400-foot depth of the well. The diameter of the boring for the well was 10 inches. The well was screened from the 80- to 400-foot depth with a 1/8-inch slot size, and gravel-packed (filter-packed) with 3/8-inch diameter pea gravel from the 50- to 400-foot depth. A sanitary seal for the well was installed to the 50-foot depth. The depth of first-encountered groundwater was 175 feet. A copy of the DWR Water Well Drillers Report is provided in Appendix C.

During well destruction, approximately 1,100 gallons of neat cement were tremie-grouted into the well casing. Following grouting, the top of the well casing was cut below grade and the concrete pad at the wellhead was removed. The top of the neat cement grout was flush with the surrounding ground surface. Well destruction activities were inspected by Ms. Allison Fang of SMCEHS. A copy of the Well Completion Report documenting the destruction of the water supply well is provided in Appendix D.

3.0 ANALYTICAL RESULTS

The groundwater sample was transported under appropriate chain-of-custody documentation to a State of California-certified laboratory, McCampbell Analytical, Inc. of Pittsburg, California. The sample was analyzed for total petroleum hydrocarbons quantified as gasoline (TPH-g), as diesel

(TPH-d), and as motor oil (TPH-mo) United States Environmental Protection Agency (EPA) Method 8015M and volatile organic compounds (VOCs) by EPA Method 8260B. Chain-of-custody documentation and the laboratory analytical report are provided in Appendix E.

Groundwater analytical results showed the presence of TPHs and VOCs. TPH-g was detected at a concentration of 100 micrograms per liter (µg/L), and TPH-d and TPH-mo were detected at concentrations of 20,000 and 60,000 µg/L, respectively. The TPH-g concentration was found not to exceed applicable San Francisco Bay Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESLs) except that it was found to exceed the RWQCB ESL odor nuisance level for drinking water. The TPH-d and TPH-mo concentrations were found to exceed applicable RWQCB ESLs.

VOCs, including acetone, 2-butanone (methyl ethyl ketone), naphthalene, toluene, and 1,2,4-trimethylbenzene, were detected at concentrations between 0.81 and 13 µg/L. None of the detected VOCs were found to exceed their applicable RWQCB ESLs except for naphthalene, which was found at a concentration (1.9 µg/L) slightly above its RWQCB ESLs for direct exposure human health risk levels, including Maximum Contaminant Level (MCL) Priority and human health risk based only levels.

To further confirm the TPH analytical results, the sample was re-analyzed by EPA Method 8015M with a silica gel cleanup. This analytical approach was utilized to assess whether the TPH results from the initial analyses are representative of petroleum-derived substances originating from the surrounding environment, such as naturally-occurring organic materials, etc. Analytical results showed that the TPH concentrations were the same as those for the initial analyses with the exception of the TPH-mo detected at a slightly lower concentration of 55,000 µg/L. The results of the initial analyses and silica gel analyses also showed that the TPH concentrations were within the same order of magnitude.

The TPH analytical results also were compared with the laboratory chromatograms for the surrogate standard used for diesel and motor oil during the laboratory analyses and actual analytical results. Upon review of the chromatograms, it was noted that the signatures (highest peaks or responses) on both chromatograms were virtually the same (each measured the same at 18.4 minutes). In summary, the analytical results do not appear to be representative of petroleum-derived substances originating from the surrounding environment.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon the results of these activities performed at the Site, the well was destroyed in accordance with SMCEHS permitting requirements. Confirmation of the well destruction permit closeout by SMCEHS is provided in Appendix F.

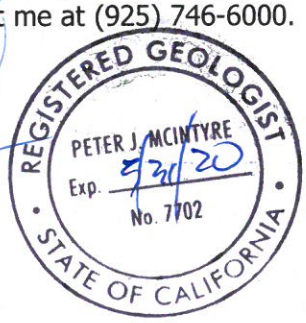
With respect to the groundwater analytical results, it appears that the detected concentrations of TPH-d and TPH-mo are attributed to the older submersible pump that had been left in the well for greater than a 30-year period. Older submersible pumps are known to have seals, bearings, and oil-filled capacitors that contain petroleum-based greases, oil and lubricants, all of which can leak and fail over time.

County Review Draft

Upon recognizing such features in older submersible pumps, the TPH concentrations in this well appear to be associated with an older, leaky submersible pump. Furthermore, during sampling, it was noted that the groundwater sample was somewhat turbid. A representative groundwater sample could not be collected at the time of sampling because the standing water inside the well casing could not be easily removed due to the slow purge rate of the pump.

On the basis of this information, no further investigation or remedial action regarding the well destruction is recommended at this time. If you have any questions or comments regarding this report, please do not hesitate to contact me at (925) 746-6000.

Sincerely,



Peter McIntyre, P.G. (7702)
Executive Vice President
AEI Consultants
2500 Camino Diablo
Walnut Creek, California 94597
Phone: (925) 746-6000
pmcintyre@aeiconsultants.com

Enclosures: Appendix A, SMCEHS Regulatory Agency Records
Appendix B, SMCEHS Drilling Permit
Appendix C, DWR Water Well Drillers Report
Appendix D, DWR Well Completion Report
Appendix E, Chain-of-Custody Documentation, Certified Analytical Report, and Laboratory Chromatograms
Appendix F, SMCEHS Confirmation of Well Destruction Permit Closeout

APPENDIX A

SMCEHS REGULATORY AGENCY RECORDS

County Review Draft

OFFICE OF ENVIRONMENTAL HEALTH
SAN MATEO COUNTY DEPARTMENT OF HEALTH SERVICES

WELL CONSTRUCTION APPLICATION

COUNTY GOVERNMENT CENTER
590 HAMILTON STREET
REDWOOD CITY, CALIF. 94063
(415) 363-4305

DATE
PERMIT ISSUED: _____
PERMIT NO.: _____
FEE: #135.00
RECEIPT NO.: 41342
ASSIGNED TO: R.W
CK# 1042

TO BE COMPLETED BY OWNER AND DRILLER

Property Owner:	Well Owner (if different):	Drilling Co.:
California School Employee Association	Farallon Vista Associates	H.A.M. Drilling
Address:	**Address of Well Site:**	**Driller's Contractor's License Number:**
P.O. Box 640	Carlos and Lincoln Ave.	#426664
City, State, Zip:	**City, State, Zip:**	**Address:**
San Jose, CA. 95106	Montara, CA.	1538 Willow Pass Road
Telephone No.:	**Telephone No.:**	**City, State, Zip:**
(408) 263-8000	(415) 941-6548	Pittsburg, CA. 94565
Assessor's Parcel No. of Well Site:	**Owner's /Consultant's Well No.:**	**Telephone No.:**
037-02-022-04-02-08/A	—	(415) 432-9885

Estimate depth of completed well: ☐ Less than 50 feet ☑ 50 to 300 feet ☐ Over 300 feet

Purpose of Well: ☑ Domestic ☐ Municipal/Industrial ☐ Agricultural * ☐ Monitoring ☐ Cathodic Protection

* Monitoring wells are those constructed for the purpose of obtaining repetitive water level measurements and/or repetitive water samples for analyses. This includes wells constructed for general exploration and investigation purposes as well as those to be constructed in conformance with the Hazardous Materials Storage Permit Ordinance for site-specific groundwater monitoring of existing underground hazardous materials storage tanks.

THIS SECTION TO BE COMPLETED IF THIS APPLICATION IS FOR A MONITORING WELL

Purpose of Monitoring Well: ☐ To comply with City or County Hazardous Materials Ordinance ☐ Exploration studies

☐ Other (specify): _____

Name of Business: _____ Business License No.: _____

If proposed well is to meet compliance with a Hazardous Materials Storage Permit Ordinance has the City or County been contacted? ☐ Yes ☐ No

If yes, give name of City or County

Consultant's Name (company)

Address

City, State, Zip

( ) _____
Area Code Telephone No.

Type of monitoring device: ☐ Groundwater ☐ Vadose
Monitoring well use: ☐ Depth ☐ Quality ☐ Depth and Quality
Vadose device installation: ☐ Vapor ☐ Interface ☐ Suction Lysimeter

SIGNATURE OF RESPONSIBLE PROFESSIONAL

REGISTRATION NO. CIVIL ENGINEER — OR — CERTIFICATE NO. ENGINEERING GEOLOGIST

TOPOGRAPHIC FEATURES

Is well to be constructed: ☐ In a public sidewalk ☐ In a public road ☐ On public property ☑ On private property

Within 50 feet of the top of a creek bank ☐ Yes ☑ No
Within 50 feet of any existing well ☐ Yes ☑ No
Within 50 feet of a sanitary sewer ☐ Yes ☑ No
Within 150 feet of a cesspool or seepage pit ☐ Yes ☑ No
Within 100 feet of a pit privy, septic tank, leachfield ☐ Yes ☑ No

CERTIFICATION BY WELL OWNER/AGENT AND DRILLER/AGENT:

I certify that the information given above is correct to the best of my knowledge. I certify that the well will be constructed in compliance with the conditions of this permit, the San Mateo Co. Ordinance, and, if applicable, the Hazardous Materials Storage Permit Ordinance of the County of San Mateo. It is my responsibility as the well owner to notify the County of any changes in the purpose of this well from that which is indicated on this application form.

Partner
WELL OWNER/AGENT DATE

SIGNATURE OF DRILLER/AGENT DATE

☑ I certify that in the performance of the work for which this permit is being issued I shall not employ any person in any manner so as to become subject to the Workmen's Compensation laws of California.
☑ I certify that I have a valid Workmen's Compensation Coverage.

IMPORTANT: A minimum 24-hour notice must be given to Environmental Health prior to drilling.

OVER

County Review Draft

 WELL PERMIT NO.: _____

WELL CONSTRUCTION APPLICATION

Based on information on the application and attachment(s) hereto (if any) and subject to approval noted below, permission is hereby granted to construct (drill) the described well. Permission to start may be withheld until a field check verifies all statements made on application by Permittee and is also subject to the "General" and "Special" Conditions stated below.

WELL LOCATION (Draw Accurately)
Recommend using Assessor's Map

1. Sketch well location to scale, show dimension to nearest foot.
2. Show a minimum of two dimensions at right angles. Dimensions shall be from the centerline of the closest named streets, roads or highways.

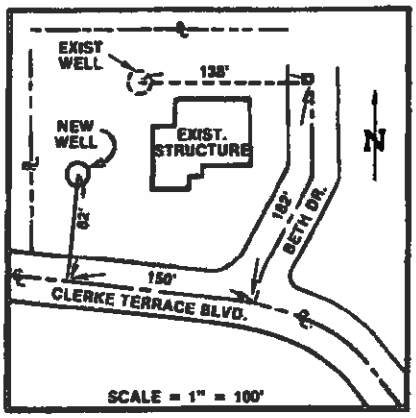
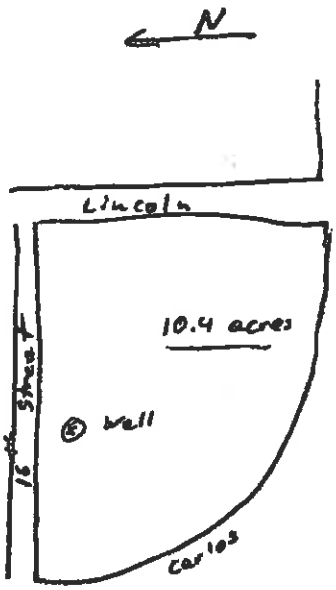


FIGURE 1



N

Scale: 1" = _____

GENERAL CONDITIONS:

A. Construction under this Permit is subject to any instructions by Health Department representative relative to the "Standards for the Construction of Wells in San Mateo County".
B. Permit may be voided before work begins if field check reveals any misrepresentation under "well location" or "Topographic Features" on application.
C. This Permit is valid only for the purpose specified herein. No change in construction procedure as prescribed on attached Standards and in Special Conditions below will be allowed except upon written permission of the County.
D. Permittee shall assume entire responsibility for all activities and uses under this Permit and shall indemnify, defend and save the County of San Mateo, its officers, agents and employees free and harmless from any and all expense, cost or liability in connection with or resulting from the exercise of this Permit including, but not limited to property damage, personal injury and wrongful death.
E. Compliance with "CAL/OSHA" California Labor Code Section 6300 (and following) is required.
F. Water quality and production from all wells to be used for domestic water supply must be approved by the Office of Environment Health.
G. Permit will be automatically cancelled if not exercised or if extension is not requested by Permittee within 90 calendar days of above date.
H. Driller is to complete State DWR Form 188 and mail original to San Mateo County Health Services within 30 days of completion of well construction.
I. For the construction of water producing wells, a Permittee must be a licensed water well drilling contractor unless the work is to be done by the landowner or employees of the landowner. (See Business & Professions Code § 7026.3, 7028).
J. For monitoring wells refer to State Water Well Standards 74-81. Dry holes shall be backfilled within one week of drilling. Well destruction shall be done in accordance with State and County Standards.
K. Each well site requires a separate Well Construction Application, and permit.

SPECIAL CONDITIONS:

APPROVED: _____ DATE: 5/16/86

San Mat[illegible] County Department of Public He[illegible] & Welfare

590 Hamilton Street, Redwood City, California 94063

No. [illegible]

DOMESTIC WELL PERMIT

Permit to construct or install WELL

s

At Carlos and Lincoln Ave. Montara, Ca. 94037

Parcel No. 037-02-022-04-02-08/A

This certifies that approval has been granted to:

California School Employee Association
P.O. Box 640
San Jose, Ca. 95106

Contractor B.A.N. Drilling

B.A.N.Drilling
2338 Willow Pass Road
Pittsburg, Ca. 94565

Date 5/20/83

Fee paid 135.00

5/10/83

Lot No.

Block No.

Ordinance No.

Environmental Health
San Mateo County

For the Director
Department of Public Health and Welfare

PERMIT ISSUED BY RICHARD WILSON

Public Health Engineer

Permit shall be void if construction is not started within 90 days of date of this permit.

5720-21

THIS PERMIT IS NON-TRANSFERABLE

County Review Draft

County Review Draft

H.A.M. Drilling Inc.

2160 Ann Street
Concord, CA 94520
Lic. #426664

(415) 689-4004
(707) 448-4645

(415) 685-1082
(415) 432-9331

WELL YIELD REPORT INFORMATION

OWNERS NAME	Farrallon Vista Assn.
PERMIT NUMBER IF KNOWN	DRW #149554
DATE OF TEST	June 18, 1986
TOTAL DEPTH OF WELL	400 ft.
STANDING WATER LEVEL	35 ft.
STATIC WATER LEVEL	168 ft.
PUMP SET AT	390 ft.
TIME TEST BEGAN	2:30p.m.

TIME	DRAWDOWN	G.P.M.	TIME	DRAWDOWN	G.P.M.
2:30p	35'	5			
3:30	100'	5			
4:00	93'	5			
4:58	160'	3			
5:05	165'	3			
5:30	168'	2			

Recovery time 7:00p.m. 165' 7:17p.m. 160'

I CERTIFY THAT THE ABOVE RESULTS ARE CORRECT FOR THE PUMP TEST AS PREFORMED ON June 18, 1986.

Joyce M Perry
H.A.M. DRILLING, INC. REPRESENTATIVE

June 19, 1986
DATE REPORT COMPLETED

"YOU'VE TRIED THE REST, NOW TRY THE BEST"

County Review Draft

S.W
438-3053

SOIL AND WATER LABORATORY
14072 W. PARK AVENUE
BOULDER CREEK, CA 95006

From

Darrell Weddell
20 Marie Ct.
Half Moon Bay, Ca. 94019

TIME

DATE 7/15/86

REPORT NO. 190 8

TYPE OF SAMPLE

Well Farallone Vista #1

ANALYSES DESIRED AND REMARKS

Water Quality 7/9/86

Bacteriology	MPN	per 100 ml	
	M F	per 100 ml	
Chemistry	Iron	ppm	.125
	Manganese	ppm	.06
	Chloride	ppm	241
	Nitrate	ppm	20
	Total Dissolved Solids	ppm	
	Conductivity	µ mhos/cm	880

Initial

30 ppm?

415-343-5795

JAMES S. MARSH
CONSULTING CIVIL ENGINEER

1-11-89 Gave Marsh name + #
Grantren 056-104-38[illegible]
60 ppm.

20 WEST THIRD AVE., #302 SAN MATEO, CA 94402

County Review Draft

SEPTIC AND WELL CHECK-OFF LIST

Building Site Location: Carlos and Lincoln Ave. Montara, Ca. 94037

Applicant: Ca. School Employee Association

A P Number: 037-[redacted]-022-04-02-08/A

X Application Form

____ Fee

____ Two Plot Plans

____ Water Company Letter

____ Well Report

____ Chem. Analysis

____ Bact. Analysis

____ Pump Test

____ Special Conditions

ISSUE WELL PERMIT
DATE _____

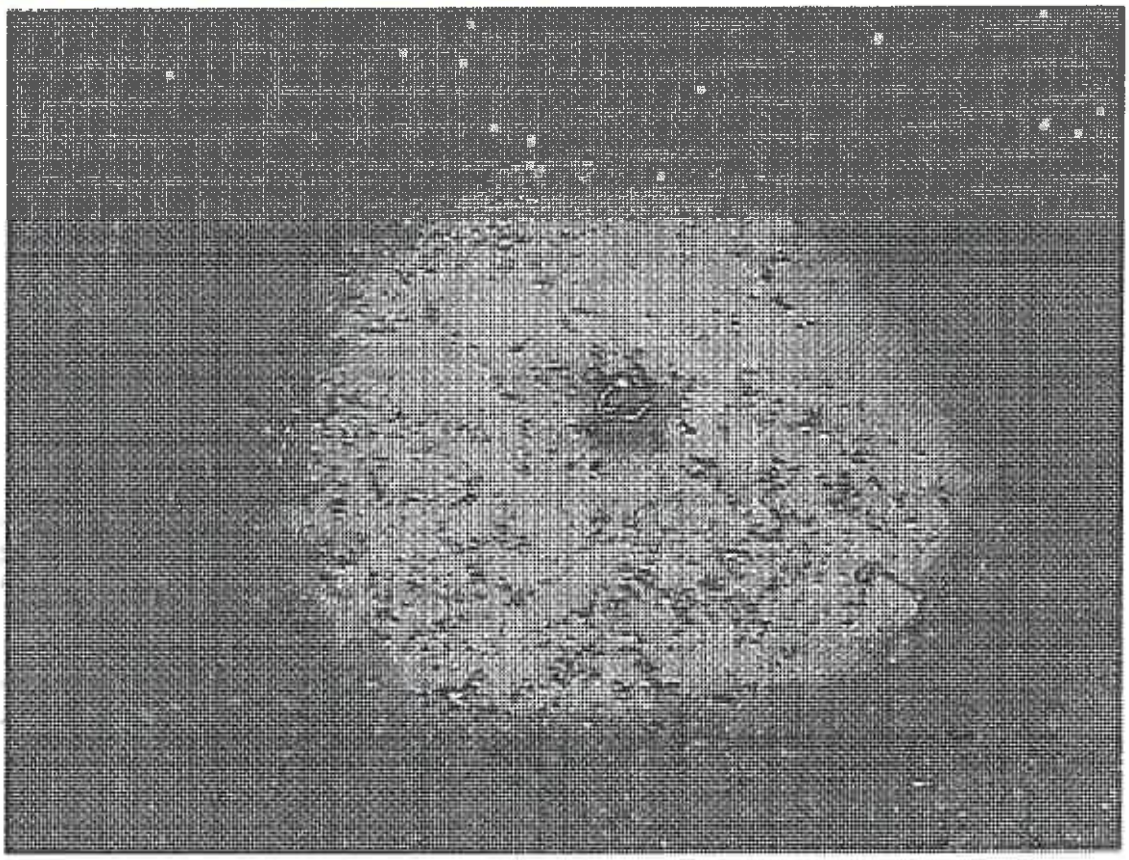
ISSUE SEPTIC PERMIT
DATE _____

ISSUE CCR 15
DATE _____

ISSUE CCR 16 a
DATE _____

DATE	STATUS
12/19/90	Spoke w/ Jack Foster of Farrallon Vista Assoc. who drilled both (2) wells on the one permit. His phone # is 349-1244. He stated that both wells would be repaired so that the aquifers were adequately protected.
1-3-91	Upper Well has been sealed by welded steel Lower well has been sealed flush with pad with bolted steel plate. P.J.P.

Picture taken on 02-28-03 by Greti Wolf



County Review Draft

McCracken, Byers & Haesloop LLP
a Multi-Disciplinary Practice
1528 So. El Camino Real, Suite 306
San Mateo, CA 94402
Tel: 650-377-4890
Fax: 650-377-4895
dbyers@landuselaw.com

SAN MATEO COUNTY ENVIRONMENTAL HEALTH
MAR 2 2005
RECEIVED

Michael D. McCracken
David J. Byers
Mark Haesloop, P.C.
James M. Brennan

Of Counsel
Patrick M. K. Richardson
Paralegals
Jill Briggs

March 1, 2005

Mr. Stanley Low
Department of Environmental Health
County of San Mateo
455 Counter Center, Fourth Floor
Redwood City, CA 94063

Re: Well Logs For Farallon Vista Associates

Dear Stan:

As you will recall quite sometime ago, I asked you to locate the well logs for the Farralon Vista Associates' parcel. I represent the California School Employees Association, who is the owner of the land. I believe the APN number is 037-022-040.

Please contact me with this information.

If you any questions, do not hesitate to call.

Message w/ Dave on 3/7/05 for file review appointment
W-43-86

Sincerely,

McCRACKEN, BYERS & HAESLOOP LLP

David J. Byers

DAVID J. BYERS

APPENDIX B

SMCEHS DRILLING PERMIT

ORDINANCE: CHAPTER 4.68

ENVIRONMENTAL HEALTH
SAN MATEO COUNTY

Protecting Our Health and Environment

PERMIT 18-0245

P/E: 4667 WELL ABANDONMENT

FORMER PRODUCTION WELL

FACILITY:
INT OF CARLOS ST & SIERRA ST MOSS BEACH

OWNER:
CALIFORNIA SCHOOL EMPLOYEES ASSOCIAT
INT OF CARLOS ST & SIERRA
MOSS BEACH

SR0023814
APN: 037022070

CONTRACTOR:
CASCADE DRILLING

TERMS & CONDITIONS:
1. All setback distances are the responsibility of the property owner.
2. Environmental Health will require wells that are in violation to be destroyed by the property owner at their own expense.

DATE ISSUED: 02/09/2018

EXPIRATION DATE: 2/9/2019

ALLISON FANG
ENVIRONMENTAL HEALTH SPECIALIST

To schedule an inspection call (650) 339-5635.
Two (2) working days advance notice is required.

THIS PERMIT IS NONTRANSFERABLE AND MUST BE POSTED ON-SITE IN A CONSPICUOUS PLACE

County Review Draft

APPENDIX C

DWR WATER WELL DRILLERS REPORT

County Review Draft

DRUPLICATE
Use of comply with local requirements

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

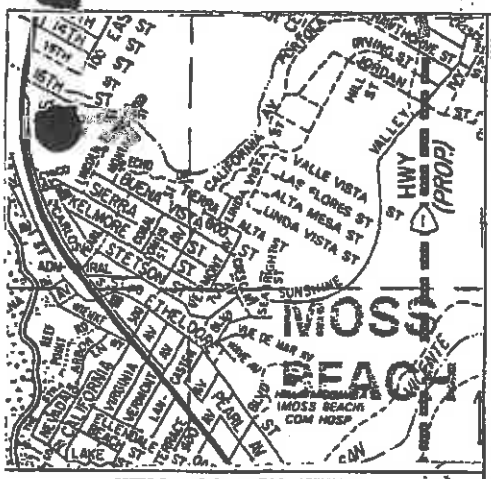
WATER WELL DRILLERS REPORT

Do not fill in
No. 149554

Notice of Intent No.
Local Permit No. or Date
State Well No.
Other Well No.

(1) OWNER: Name Farralon Vista Assn. (mike King)
Address c/o 1015 E. Hillsdale Blvd.
City Foster City, CA. Zip 94404

(2) LOCATION OF WELL (See instructions):
County San Mateo Owner's Well Number
Well address if different from above 15th & Lincoln Ave.
Township Montara Range Section
Distance from cities, roads, railroads, fences, etc.



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic [X]
Irrigation [ ]
Industrial [ ]
Test Well [ ]
Stock [ ]
Municipal [ ]
Other [ ]

(5) EQUIPMENT:
Rotary [X] Reverse [ ]
Cable [ ] Air [X]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [X] No [ ] Size 3/8" pea
Diameter of bore 10"
Packed from 50 to 400 ft.

(7) CASING INSTALLED:
Steel [ ] Plastic [X] Concrete [ ]

(8) PERFORATIONS:
Type of perforation or size of screen

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	400	5"	C-160	80	400	1/8"

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 30 ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval ft.
Method of sealing

(10) WATER LEVELS:
Depth of first water, if known 175 ft.
Standing level after well completion ft.

(11) WELL TESTS:
Was well test made? Yes [ ] No [ ] If yes, by whom?
Type of test Pump [ ] Bailer [ ] Air lift [ ]
Depth to water at start of test ft. At end of test ft
Discharge gal/min after hours Water temperature
Chemical analysis made? Yes [ ] No [ ] If yes, by whom?
Was electric log made? Yes [ ] No [ ] If yes, attach copy to this report

(12) WELL LOG: Total depth 400 ft. Depth of completed well 400 ft.
from ft. to ft. Formation (Describe by color, character, size or material)

0 - 1 Asphalt & Sub base
1 - 55 Brown Decomposed Granite
55 - 70 Gray DG
70 - 73 White DG
73 - 175 Gray DG
175 - 250 Hard Gray DG (water - 175')
250 - 300 Brown/Gray DG
300 - 320 Hard GrayDG
320 - 400 Soft Gray DG

Work started 6/11 19 86 Completed 6/18 19 86

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED (Well Driller)
NAME HAM Drilling, Inc. (Person, firm, or corporation) (Typed or printed)
Address 1538 Willow Pass Road
City Pittsburg, CA Zip 94565
License No. 426654 Date of this report 6/18/86

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM.

County Review Draft

CONFIDENTIAL

APPENDIX D

DWR WELL COMPLETION REPORT

State of California

Well Completion Report

Form DWR 188 Submitted 4/11/2018

WCR2018-003005

County Review Draft

Owner's Well Number | Date Work Began 02/21/2018 | Date Work Ended 03/07/2018

Local Permit Agency San Mateo County Division of Environmental Health

Secondary Permit Agency | Permit Number 18-0245 | Permit Date 02/09/2018

Well Owner (must remain confidential pursuant to Water Code 13752)

Name CALIFORNIA SCHOOL EMPLOYEES ASSOCIATION, N/A N/A

Mailing Address Intersection of Carlos and Sierra Streets

City Moss Beach State [illegible] Zip 94038

Former Use

Activity Destroy

Former Use Water Supply

Well Location

Address

City Zip County San Mateo

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

Dec. Lat. 37.5341489 Dec. Long. -122.5155625

Vertical Datum Horizontal Datum WGS84

Location Accuracy 20 Ft Location Determination Method USGS Quad

APN 037022070

Township 05 S

Range 06 W

Section 04

Baseline Meridian Mount Diablo

Ground Surface Elevation

Elevation Accuracy

Elevation Determination Method

Borehole Information

Orientation Vertical Specify

Drilling Method Drilling Fluid

Total Depth of Boring Feet

Total Depth of Completed Well Feet

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield* (GPM) Test Type

Test Length (Hours) Total Drawdown (feet)

*May not be representative of a well's long term yield.

Destruction Details:

Neat Cement Grout using Tremie Methods

Other Observations:

Borehole Specifications

Depth from Surface Feet to Feet		Borehole Diameter (inches)

Certification Statement

County Review Draft

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name CASCADE DRILLING L P
Person, Firm or Corporation

P O BOX 1184	WOODINVILLE	WA	98072
Address	City	State	Zip

Signed *electronic signature received* | 04/11/2018 | 938110

C-57 Licensed Water Well Contractor | Date Signed | C-57 License Number

DWR Use Only

CSG #	State Well Number	Site Code	Local Well Number

					N						W

Latitude Deg/Min/Sec **Longitude Deg/Min/Sec**

TRS:

APN:

APPENDIX E

CHAIN-OF-CUSTODY, CERTIFIED ANALYTICAL REPORT, AND LABORATORY CHROMATOGRAMS

County Review Draft

McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1803635

Report Created for: AEI Consultants

2500 Camino Diablo, Ste.#200
Walnut Creek, CA 94597

Project Contact: William Hicks
Project P.O.: 154987
Project: 350428; Moss Beach

Project Received: 03/07/2018

Analytical Report reviewed & approved for release on 03/15/2018 by:

Heidi Fruhlinger
Project Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.

McCampbell Analytical, Inc.
"When Quality Counts"
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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: AEI Consultants
Project: 350428; Moss Beach
WorkOrder: 1803635

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

County Review Draft

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Glossary of Terms & Qualifier Definitions

Client: AEI Consultants
Project: 350428; Moss Beach
WorkOrder: 1803635

Analytical Qualifiers

b1	Aqueous sample that contains greater than ~1 vol. % sediment
b6	Lighter than water immiscible sheen/product is present
d7	Strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram
e2	Diesel range compounds are significant; no recognizable pattern
e7	Oil range compounds are significant

Quality Control Qualifiers

F2	LCS/LCSD recovery and/or RPD is out of acceptance criteria.
F3	The surrogate standard recovery and/or RPD is outside of acceptance limits.

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1803635
Date Received:	3/7/18 17:00	**Extraction Method:**	SW5030B
Date Prepared:	3/14/18	**Analytical Method:**	SW8260B
Project:	350428; Moss Beach	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WS-1	1803635-001B	Water	03/06/2018 17:30	GC16 03141815.D	154682

Analytes	Result	RL	DF	Date Analyzed
Acetone	**10**	10	1	03/14/2018 16:41
tert-Amyl methyl ether (TAME)	ND	0.50	1	03/14/2018 16:41
Benzene	ND	0.50	1	03/14/2018 16:41
Bromobenzene	ND	0.50	1	03/14/2018 16:41
Bromochloromethane	ND	0.50	1	03/14/2018 16:41
Bromodichloromethane	ND	0.50	1	03/14/2018 16:41
Bromoform	ND	0.50	1	03/14/2018 16:41
Bromomethane	ND	0.50	1	03/14/2018 16:41
2-Butanone (MEK)	**13**	2.0	1	03/14/2018 16:41
t-Butyl alcohol (TBA)	ND	2.0	1	03/14/2018 16:41
n-Butyl benzene	ND	0.50	1	03/14/2018 16:41
sec-Butyl benzene	ND	0.50	1	03/14/2018 16:41
tert-Butyl benzene	ND	0.50	1	03/14/2018 16:41
Carbon Disulfide	ND	0.50	1	03/14/2018 16:41
Carbon Tetrachloride	ND	0.50	1	03/14/2018 16:41
Chlorobenzene	ND	0.50	1	03/14/2018 16:41
Chloroethane	ND	0.50	1	03/14/2018 16:41
Chloroform	ND	0.50	1	03/14/2018 16:41
Chloromethane	ND	0.50	1	03/14/2018 16:41
2-Chlorotoluene	ND	0.50	1	03/14/2018 16:41
4-Chlorotoluene	ND	0.50	1	03/14/2018 16:41
Dibromochloromethane	ND	0.50	1	03/14/2018 16:41
1,2-Dibromo-3-chloropropane	ND	0.20	1	03/14/2018 16:41
1,2-Dibromoethane (EDB)	ND	0.50	1	03/14/2018 16:41
Dibromomethane	ND	0.50	1	03/14/2018 16:41
1,2-Dichlorobenzene	ND	0.50	1	03/14/2018 16:41
1,3-Dichlorobenzene	ND	0.50	1	03/14/2018 16:41
1,4-Dichlorobenzene	ND	0.50	1	03/14/2018 16:41
Dichlorodifluoromethane	ND	0.50	1	03/14/2018 16:41
1,1-Dichloroethane	ND	0.50	1	03/14/2018 16:41
1,2-Dichloroethane (1,2-DCA)	ND	0.50	1	03/14/2018 16:41
1,1-Dichloroethene	ND	0.50	1	03/14/2018 16:41
cis-1,2-Dichloroethene	ND	0.50	1	03/14/2018 16:41
trans-1,2-Dichloroethene	ND	0.50	1	03/14/2018 16:41
1,2-Dichloropropane	ND	0.50	1	03/14/2018 16:41
1,3-Dichloropropane	ND	0.50	1	03/14/2018 16:41
2,2-Dichloropropane	ND	0.50	1	03/14/2018 16:41

(Cont.)

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1803635
Date Received:	3/7/18 17:00	**Extraction Method:**	SW5030B
Date Prepared:	3/14/18	**Analytical Method:**	SW8260B
Project:	350428; Moss Beach	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WS-1	1803635-001B	Water	03/06/2018 17:30	GC16 03141815.D	154682

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.50	1	03/14/2018 16:41
cis-1,3-Dichloropropene	ND	0.50	1	03/14/2018 16:41
trans-1,3-Dichloropropene	ND	0.50	1	03/14/2018 16:41
Diisopropyl ether (DIPE)	ND	0.50	1	03/14/2018 16:41
Ethylbenzene	ND	0.50	1	03/14/2018 16:41
Ethyl tert-butyl ether (ETBE)	ND	0.50	1	03/14/2018 16:41
Freon 113	ND	0.50	1	03/14/2018 16:41
Hexachlorobutadiene	ND	0.50	1	03/14/2018 16:41
Hexachloroethane	ND	0.50	1	03/14/2018 16:41
2-Hexanone	ND	0.50	1	03/14/2018 16:41
Isopropylbenzene	ND	0.50	1	03/14/2018 16:41
4-Isopropyl toluene	ND	0.50	1	03/14/2018 16:41
Methyl-t-butyl ether (MTBE)	ND	0.50	1	03/14/2018 16:41
Methylene chloride	ND	0.50	1	03/14/2018 16:41
4-Methyl-2-pentanone (MIBK)	ND	0.50	1	03/14/2018 16:41
Naphthalene	**1.9**	0.50	1	03/14/2018 16:41
n-Propyl benzene	ND	0.50	1	03/14/2018 16:41
Styrene	ND	0.50	1	03/14/2018 16:41
1,1,1,2-Tetrachloroethane	ND	0.50	1	03/14/2018 16:41
1,1,2,2-Tetrachloroethane	ND	0.50	1	03/14/2018 16:41
Tetrachloroethene	ND	0.50	1	03/14/2018 16:41
Toluene	**0.81**	0.50	1	03/14/2018 16:41
1,2,3-Trichlorobenzene	ND	0.50	1	03/14/2018 16:41
1,2,4-Trichlorobenzene	ND	0.50	1	03/14/2018 16:41
1,1,1-Trichloroethane	ND	0.50	1	03/14/2018 16:41
1,1,2-Trichloroethane	ND	0.50	1	03/14/2018 16:41
Trichloroethene	ND	0.50	1	03/14/2018 16:41
Trichlorofluoromethane	ND	0.50	1	03/14/2018 16:41
1,2,3-Trichloropropane	ND	0.50	1	03/14/2018 16:41
1,2,4-Trimethylbenzene	**1.2**	0.50	1	03/14/2018 16:41
1,3,5-Trimethylbenzene	ND	0.50	1	03/14/2018 16:41
Vinyl Chloride	ND	0.50	1	03/14/2018 16:41
Xylenes, Total	ND	0.50	1	03/14/2018 16:41

(Cont.)

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1803635
Date Received:	3/7/18 17:00	**Extraction Method:**	SW5030B
Date Prepared:	3/14/18	**Analytical Method:**	SW8260B
Project:	350428; Moss Beach	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WS-1	1803635-001B	Water	03/06/2018 17:30	GC16 03141815.D	154682

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
Dibromofluoromethane	93	78-134		03/14/2018 16:41
Toluene-d8	95	82-120		03/14/2018 16:41
4-BFB	107	69-131		03/14/2018 16:41

Analyst(s): TK Analytical Comments: b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1803635
Date Received:	3/7/18 17:00	**Extraction Method:**	SW5030B
Date Prepared:	3/14/18	**Analytical Method:**	SW8021B/8015Bm
Project:	350428; Moss Beach	**Unit:**	µg/L

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WS-1	**1803635-001A**	**Water**	**03/06/2018 17:30**	**GC3 03141806.D**	**154603**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	**100**	50	1	03/14/2018 14:37
MTBE	---	5.0	1	03/14/2018 14:37
Benzene	---	0.50	1	03/14/2018 14:37
Toluene	---	0.50	1	03/14/2018 14:37
Ethylbenzene	---	0.50	1	03/14/2018 14:37
Xylenes	---	0.50	1	03/14/2018 14:37

Surrogates	REC (%)	Limits	
aaa-TFT	93	90-117	03/14/2018 14:37

Analyst(s): IA Analytical Comments: d7,b1

NELAP 4033ORELAP

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1803635
Date Received:	3/7/18 17:00	**Extraction Method:**	SW3510C
Date Prepared:	3/12/18	**Analytical Method:**	SW8015B
Project:	350428; Moss Beach	**Unit:**	µg/L

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WS-1	**1803635-001A**	**Water**	**03/06/2018 17:30**	**GC11B 03131859.D**	**154526**

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	**20,000**	2500	50	03/14/2018 04:07
TPH-Motor Oil (C18-C36)	**60,000**	12,000	50	03/14/2018 04:07

Surrogates	REC (%)	Limits	
C9	97	61-139	03/14/2018 04:07

Analyst(s): JIS Analytical Comments: e7,e2,b6,b1

NELAP 4033ORELAP

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1803635
Date Prepared:	3/13/18	**BatchID:**	154682
Date Analyzed:	3/13/18	**Extraction Method:**	SW5030B
Instrument:	GC38	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	350428; Moss Beach	**Sample ID:**	MB/LCS/LCSD-154682

QC Summary Report for SW8260B

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
Acetone	ND	10	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.50	-	-	-
Benzene	ND	0.50	-	-	-
Bromobenzene	ND	0.50	-	-	-
Bromochloromethane	ND	0.50	-	-	-
Bromodichloromethane	ND	0.50	-	-	-
Bromoform	ND	0.50	-	-	-
Bromomethane	ND	0.50	-	-	-
2-Butanone (MEK)	ND	2.0	-	-	-
t-Butyl alcohol (TBA)	ND	2.0	-	-	-
n-Butyl benzene	ND	0.50	-	-	-
sec-Butyl benzene	ND	0.50	-	-	-
tert-Butyl benzene	ND	0.50	-	-	-
Carbon Disulfide	ND	0.50	-	-	-
Carbon Tetrachloride	ND	0.50	-	-	-
Chlorobenzene	ND	0.50	-	-	-
Chloroethane	ND	0.50	-	-	-
Chloroform	ND	0.50	-	-	-
Chloromethane	ND	0.50	-	-	-
2-Chlorotoluene	ND	0.50	-	-	-
4-Chlorotoluene	ND	0.50	-	-	-
Dibromochloromethane	ND	0.50	-	-	-
1,2-Dibromo-3-chloropropane	ND	0.20	-	-	-
1,2-Dibromoethane (EDB)	ND	0.50	-	-	-
Dibromomethane	ND	0.50	-	-	-
1,2-Dichlorobenzene	ND	0.50	-	-	-
1,3-Dichlorobenzene	ND	0.50	-	-	-
1,4-Dichlorobenzene	ND	0.50	-	-	-
Dichlorodifluoromethane	ND	0.50	-	-	-
1,1-Dichloroethane	ND	0.50	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.50	-	-	-
1,1-Dichloroethene	ND	0.50	-	-	-
cis-1,2-Dichloroethene	ND	0.50	-	-	-
trans-1,2-Dichloroethene	ND	0.50	-	-	-
1,2-Dichloropropane	ND	0.50	-	-	-
1,3-Dichloropropane	ND	0.50	-	-	-
2,2-Dichloropropane	ND	0.50	-	-	-
1,1-Dichloropropene	ND	0.50	-	-	-
cis-1,3-Dichloropropene	ND	0.50	-	-	-

(Cont.)

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1803635
Date Prepared:	3/13/18	**BatchID:**	154682
Date Analyzed:	3/13/18	**Extraction Method:**	SW5030B
Instrument:	GC38	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	350428; Moss Beach	**Sample ID:**	MB/LCS/LCSD-154682

QC Summary Report for SW8260B

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
trans-1,3-Dichloropropene	ND	0.50	-	-	-
Diisopropyl ether (DIPE)	ND	0.50	-	-	-
Ethylbenzene	ND	0.50	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.50	-	-	-
Freon 113	ND	0.50	-	-	-
Hexachlorobutadiene	ND	0.50	-	-	-
Hexachloroethane	ND	0.50	-	-	-
2-Hexanone	ND	0.50	-	-	-
Isopropylbenzene	ND	0.50	-	-	-
4-Isopropyl toluene	ND	0.50	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.50	-	-	-
Methylene chloride	ND	0.50	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	0.50	-	-	-
Naphthalene	ND	0.50	-	-	-
n-Propyl benzene	ND	0.50	-	-	-
Styrene	ND	0.50	-	-	-
1,1,1,2-Tetrachloroethane	ND	0.50	-	-	-
1,1,2,2-Tetrachloroethane	ND	0.50	-	-	-
Tetrachloroethene	ND	0.50	-	-	-
Toluene	ND	0.50	-	-	-
1,2,3-Trichlorobenzene	ND	0.50	-	-	-
1,2,4-Trichlorobenzene	ND	0.50	-	-	-
1,1,1-Trichloroethane	ND	0.50	-	-	-
1,1,2-Trichloroethane	ND	0.50	-	-	-
Trichloroethene	ND	0.50	-	-	-
Trichlorofluoromethane	ND	0.50	-	-	-
1,2,3-Trichloropropane	ND	0.50	-	-	-
1,2,4-Trimethylbenzene	ND	0.50	-	-	-
1,3,5-Trimethylbenzene	ND	0.50	-	-	-
Vinyl Chloride	ND	0.50	-	-	-
Xylenes, Total	ND	0.50	-	-	-
Surrogate Recovery					
Dibromofluoromethane	21.5		25	86,F3	91-133
Toluene-d8	25.5		25	102	87-127
4-BFB	2.30		2.5	92	66-140

(Cont.)

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1803635
Date Prepared:	3/13/18	**BatchID:**	154682
Date Analyzed:	3/13/18	**Extraction Method:**	SW5030B
Instrument:	GC38	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	350428; Moss Beach	**Sample ID:**	MB/LCS/LCSD-154682

QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Acetone	81.5	81.5	200	41, F2	41, F2	47-122	0	20
tert-Amyl methyl ether (TAME)	8.61	8.72	10	86	87	62-121	1.22	20
Benzene	8.93	8.98	10	89	90	74-121	0.602	20
Bromobenzene	8.35	8.55	10	83	86	63-127	2.42	20
Bromochloromethane	8.73	8.77	10	87	88	70-126	0.448	20
Bromodichloromethane	9.20	9.34	10	92	93	66-127	1.52	20
Bromoform	8.28	8.40	10	83	84	60-119	1.35	20
Bromomethane	9.69	9.80	10	97	98	32-155	1.14	20
2-Butanone (MEK)	34.7	35.3	40	87	88	51-117	1.67	20
t-Butyl alcohol (TBA)	34.2	33.3	40	85	83	41-122	2.52	20
n-Butyl benzene	9.33	9.34	10	93	93	73-137	0	20
sec-Butyl benzene	8.05	8.14	10	80	81	71-137	1.10	20
tert-Butyl benzene	8.37	8.42	10	84	84	61-136	0	20
Carbon Disulfide	9.47	9.33	10	95	93	61-139	1.48	20
Carbon Tetrachloride	9.64	9.65	10	96	97	69-137	0.104	20
Chlorobenzene	8.47	8.52	10	85	85	71-122	0	20
Chloroethane	8.83	8.63	10	88	86	54-132	2.27	20
Chloroform	9.13	9.23	10	91	92	73-122	1.03	20
Chloromethane	9.67	9.29	10	97	93	48-136	3.98	20
2-Chlorotoluene	8.53	8.64	10	85	86	65-134	1.34	20
4-Chlorotoluene	8.54	8.82	10	85	88	65-130	3.20	20
Dibromochloromethane	8.41	8.50	10	84	85	65-121	1.07	20
1,2-Dibromo-3-chloropropane	8.22	8.22	4	205, F2	205, F2	41-132	0	20
1,2-Dibromoethane (EDB)	8.30	8.33	10	83	83	67-125	0	20
Dibromomethane	8.75	8.87	10	88	89	68-121	1.30	20
1,2-Dichlorobenzene	8.44	8.60	10	84	86	69-128	1.92	20
1,3-Dichlorobenzene	8.57	8.59	10	86	86	71-131	0	20
1,4-Dichlorobenzene	8.52	8.64	10	85	86	70-128	1.45	20
Dichlorodifluoromethane	10.4	10.1	10	104	101	21-158	3.13	20
1,1-Dichloroethane	9.41	9.45	10	94	94	73-123	0	20
1,2-Dichloroethane (1,2-DCA)	9.05	9.17	10	90	92	61-127	1.32	20
1,1-Dichloroethene	9.66	9.59	10	97	96	68-130	0.669	20
cis-1,2-Dichloroethene	9.06	9.14	10	91	91	72-123	0	20
trans-1,2-Dichloroethene	9.01	9.01	10	90	90	64-138	0	20
1,2-Dichloropropane	9.04	9.14	10	90	91	71-121	1.19	20
1,3-Dichloropropane	9.10	8.37	10	91	84	69-120	8.30	20
2,2-Dichloropropane	9.77	9.47	10	98	95	64-142	3.18	20
1,1-Dichloropropene	9.27	9.21	10	93	92	70-130	0.616	20
cis-1,3-Dichloropropene	9.05	9.04	10	90	90	58-136	0	20

(Cont.)

County Review Draft

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1803635
Date Prepared:	3/13/18	**BatchID:**	154682
Date Analyzed:	3/13/18	**Extraction Method:**	SW5030B
Instrument:	GC38	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	350428; Moss Beach	**Sample ID:**	MB/LCS/LCSD-154682

QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
trans-1,3-Dichloropropene	9.03	9.00	10	90	90	66-119	0	20
Diisopropyl ether (DIPE)	9.07	9.20	10	91	92	66-123	1.42	20
Ethylbenzene	8.93	8.90	10	89	89	71-125	0	20
Ethyl tert-butyl ether (ETBE)	8.80	8.95	10	88	90	67-122	1.68	20
Freon 113	9.41	9.35	10	94	94	68-132	0	20
Hexachlorobutadiene	9.29	9.14	10	93	91	56-155	1.72	20
Hexachloroethane	8.41	8.68	10	84	87	61-129	3.17	20
2-Hexanone	9.07	8.47	10	91	85	51-115	6.89	20
Isopropylbenzene	8.75	8.91	10	87	89	66-134	1.81	20
4-Isopropyl toluene	8.60	8.68	10	86	87	70-136	0.917	20
Methyl-t-butyl ether (MTBE)	8.62	8.64	10	86	86	64-118	0	20
Methylene chloride	8.24	8.23	10	82	82	62-121	0	20
4-Methyl-2-pentanone (MIBK)	8.75	8.72	10	88	87	51-115	0.434	20
Naphthalene	8.28	8.42	10	83	84	55-137	1.75	20
n-Propyl benzene	8.67	8.73	10	87	87	63-140	0	20
Styrene	8.53	8.58	10	85	86	62-133	0.554	20
1,1,1,2-Tetrachloroethane	8.62	8.77	10	86	88	69-128	1.73	20
1,1,2,2-Tetrachloroethane	8.42	8.57	10	84	86	60-118	1.78	20
Tetrachloroethene	9.09	9.08	10	91	91	63-136	0	20
Toluene	8.56	8.57	10	86	86	67-124	0	20
1,2,3-Trichlorobenzene	8.60	8.67	10	86	87	57-145	0.865	20
1,2,4-Trichlorobenzene	9.07	9.10	10	91	91	60-144	0	20
1,1,1-Trichloroethane	9.26	9.29	10	93	93	70-133	0	20
1,1,2-Trichloroethane	8.20	8.30	10	82	83	65-125	1.22	20
Trichloroethene	8.96	8.98	10	90	90	67-133	0	20
Trichlorofluoromethane	9.50	9.24	10	95	92	59-145	2.78	20
1,2,3-Trichloropropane	8.05	8.19	10	80	82	65-115	1.75	20
1,2,4-Trimethylbenzene	8.66	8.75	10	87	88	67-136	1.02	20
1,3,5-Trimethylbenzene	8.65	8.69	10	86	87	68-135	0.529	20
Vinyl Chloride	10.5	9.87	10	105	99	53-146	5.86	20
Xylenes, Total	26.6	26.7	30	89	89	68-128	0	20
Surrogate Recovery								
Dibromofluoromethane	23.7	23.9	25	95	95	91-133	0	20
Toluene-d8	25.2	25.2	25	101	101	87-127	0	20
4-BFB	2.36	2.32	2.5	95	93	66-140	2.03	20

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1803635
Date Prepared:	3/13/18	**BatchID:**	154603
Date Analyzed:	3/13/18	**Extraction Method:**	SW5030B
Instrument:	GC3	**Analytical Method:**	SW8021B/8015Bm
Matrix:	Water	**Unit:**	µg/L
Project:	350428; Moss Beach	**Sample ID:**	MB/LCS-154603 1803692-001AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
TPH(g) (C6-C12)	ND	50	-	-	-
MTBE	ND	5.0	-	-	-
Benzene	ND	0.50	-	-	-
Toluene	ND	0.50	-	-	-
Ethylbenzene	ND	0.50	-	-	-
Xylenes	ND	0.50	-	-	-
Surrogate Recovery					
aaa-TFT	9.64		10	96	89-116

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH(btex)	69.3	-	60	115	-	78-116	-	-
MTBE	8.92	-	10	89	-	72-122	-	-
Benzene	9.53	-	10	95	-	81-123	-	-
Toluene	9.95	-	10	99	-	83-129	-	-
Ethylbenzene	9.79	-	10	98	-	88-126	-	-
Xylenes	29.6	-	30	99	-	87-131	-	-
Surrogate Recovery								
aaa-TFT	9.26	-	10	93	-	89-116	-	-

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	68.3	66.6	60	ND	114	111	63-133	2.48	20
MTBE	9.17	8.92	10	ND	92	89	69-122	2.65	20
Benzene	9.57	9.77	10	ND	96	98	84-125	2.07	20
Toluene	9.98	10.2	10	ND	100	102	87-131	2.02	20
Ethylbenzene	9.83	10.0	10	ND	98	100	92-126	2.12	20
Xylenes	29.7	30.0	30	ND	99	100	88-132	1.06	20
Surrogate Recovery									
aaa-TFT	9.38	9.58	10		94	96	90-117	2.08	20

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1803635
Date Prepared:	3/12/18	**BatchID:**	154526
Date Analyzed:	3/12/18	**Extraction Method:**	SW3510C
Instrument:	GC11B	**Analytical Method:**	SW8015B
Matrix:	Water	**Unit:**	µg/L
Project:	350428; Moss Beach	**Sample ID:**	MB/LCS/LCSD-154526

QC Report for SW8015B w/out SG Clean-Up

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
TPH-Diesel (C10-C23)	ND	50	-	-	-
TPH-Motor Oil (C18-C36)	ND	250	-	-	-
Surrogate Recovery					
C9	548		625	88	68-127

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	1080	1140	1000	108	113	86-142	5.05	30
Surrogate Recovery								
C9	541	556	625	87	89	68-127	2.76	30

County Review Draft

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CHAIN-OF-CUSTODY RECORD

WorkOrder: 1803635 **ClientCode: AEL**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☐ Detection Summary ☐ Dry-Weight

Report to:
William Hicks
AEI Consultants
2500 Camino Diablo, Ste.#200
Walnut Creek, CA 94597
(925) 321-3561 FAX: (925) 283-6121

Email: whix@aeiconsultants.com
cc/3rd Party: tbodkin@aeiconsultants.com;
PO: 154987
Project: 350428; Moss Beach

Bill to:
Accounts Payable
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
AccountsPayable@AEIConsultants.com

Requested TAT: 5 days;

Date Received: **03/07/2018**
Date Logged: **03/12/2018**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1803635-001	WS-1	Water	3/6/2018 17:30	☐	B	A	A									

Test Legend:

1	8260B_W	2	G-MBTEX_W	3	TPH(DMO)_W	4	
5		6		7		8	
9		10		11		12	

Prepared by: Keylen Juarez

The following SampID: 001A contains testgroup Multi Range_W.

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

County Review Draft

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WORK ORDER SUMMARY

Client Name: AEI CONSULTANTS
Client Contact: William Hicks
Contact's Email: whix@aeiconsultants.com
Project: 350428; Moss Beach
Comments:
Work Order: 1803635
QC Level: LEVEL 2
Date Logged: 3/12/2018

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1803635-001A	WS-1	Water	Multi-Range TPH(g,d,mo) by EPA 8015Bm	4	VOA w/ HCL+ 1-aVOA	☐	3/6/2018 17:30	5 days	10%+	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

County Review Draft

General COC

MAI Work Order # 1803635

McCAMPBELL ANALYTICAL, INC.

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CHAIN OF CUSTODY RECORD

Turn Around Time: 1 Day Rush | 2 Day Rush | 3 Day Rush | STD ● | Quote #
J-Flag / MDL | ESL | Cleanup Approved | Bottle Order #
Delivery Format: GeoTracker EDF | PDF | EDD | Write On (DW) | EQuIS

Report To: AEI Consultants Bill To: AEI Consultants
Company: AEI Consultants
Email: whix@aeiconsultants.com
Alt Email: tbodkin@aeiconsultants.com Tele: 925-746-6050
Project Name/#: 350428
Project Location: Moss Beach PO #154987
Sampler Signature:

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	Analysis Requested: VOCs by 8260	TPH-multirange by 8015M	MultiRange	VOCs by 8260		HOLD — MW	
10/. WS-1	3/6/2018	1730	8	GW	HCL/ICE	●	●	X	X		●	●

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
[signature]	~~3/6/18~~		CAP	3/7/18	0900
	3/6/18	1200			
CAP	3/7/18	1500	[signature]	3/7/18	1700

Comments / Instructions
Samples off HOLD 3/9/18

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other
Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp 3.6 °C Initials KJ

Page ___ of ___

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Sample Receipt Checklist

Client Name: **AEI Consultants**
Project: **350428; Moss Beach**

WorkOrder №: **1803635** Matrix: Water
Carrier: Patrick Johnson (MAI Courier)

Date and Time Received: **3/7/2018 17:00**
Date Logged: **3/12/2018**
Received by: Keylen Juarez
Logged by: Keylen Juarez

Chain of Custody (COC) Information

Chain of custody present?	Yes	☑	No	☐		
Chain of custody signed when relinquished and received?	Yes	☑	No	☐		
Chain of custody agrees with sample labels?	Yes	☑	No	☐		
Sample IDs noted by Client on COC?	Yes	☑	No	☐		
Date and Time of collection noted by Client on COC?	Yes	☑	No	☐		
Sampler's name noted on COC?	Yes	☑	No	☐		
COC agrees with Quote?	Yes	☐	No	☐	NA	☑

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes	☑	No	☐	NA	☐
Shipping container/cooler in good condition?	Yes	☑	No	☐		
Samples in proper containers/bottles?	Yes	☑	No	☐		
Sample containers intact?	Yes	☑	No	☐		
Sufficient sample volume for indicated test?	Yes	☑	No	☐		

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes	☑	No	☐	NA	☐
Samples Received on Ice?	Yes	☑	No	☐		
(Ice Type: WET ICE)						
Sample/Temp Blank temperature	Temp: 3.6°C				NA	☐
Water - VOA vials have zero headspace / no bubbles?	Yes	☐	No	☐	NA	☑
Sample labels checked for correct preservation?	Yes	☑	No	☐		
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes	☐	No	☐	NA	☑
UCMR Samples:						
pH tested and acceptable upon receipt (200.8: ≤2; 525.3: ≤4; 530: ≤7; 541: <3; 544: <6.5 & 7.5)?	Yes	☐	No	☐	NA	☑
Free Chlorine tested and acceptable upon receipt (<0.1mg/L)?	Yes	☐	No	☐	NA	☑

Comments:

County Review Draft

McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1803635 A

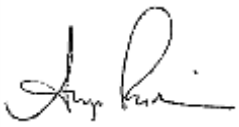
Report Created for: AEI Consultants

2500 Camino Diablo, Ste.#200
Walnut Creek, CA 94597

Project Contact: William Hicks
Project P.O.: 154987
Project: 350428; Moss Beach

Project Received: 03/07/2018

Analytical Report reviewed & approved for release on 03/20/2018 by:



Angela Rydelius
Laboratory Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.

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Glossary of Terms & Qualifier Definitions

Client: AEI Consultants
Project: 350428; Moss Beach
WorkOrder: 1803635 A

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Glossary of Terms & Qualifier Definitions

Client: AEI Consultants
Project: 350428; Moss Beach
WorkOrder: 1803635 A

Analytical Qualifiers

H	Samples were analyzed out of holding time
b1	Aqueous sample that contains greater than ~1 vol. % sediment
e2	Diesel range compounds are significant; no recognizable pattern
e7	Oil range compounds are significant

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1803635
Date Received:	3/7/18 17:00	**Extraction Method:**	SW3510C/3630C
Date Prepared:	3/19/18	**Analytical Method:**	SW8015B
Project:	350428; Moss Beach	**Unit:**	µg/L

Total Extractable Petroleum Hydrocarbons w/ Silica Gel Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
WS-1	1803635-001C	Water	03/06/2018 17:30	GC11A 03191820.D	154919

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	**20,000**	H	1000	20	03/19/2018 15:10
TPH-Motor Oil (C18-C36)	**55,000**	H	5000	20	03/19/2018 15:10

Surrogates	REC (%)	Qualifiers	Limits	
C9	93	H	61-139	03/19/2018 15:10

Analyst(s): JIS Analytical Comments: e7,e2,b1

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1803635
Date Prepared:	3/19/18	**BatchID:**	154919
Date Analyzed:	3/19/18	**Extraction Method:**	SW3510C/3630C
Instrument:	GC9a	**Analytical Method:**	SW8015B
Matrix:	Water	**Unit:**	µg/L
Project:	350428; Moss Beach	**Sample ID:**	MB/LCS/LCSD-154919

QC Report for SW8015B w/ Silica Gel Clean-Up

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
TPH-Diesel (C10-C23)	ND	50	-	-	-
TPH-Motor Oil (C18-C36)	ND	250	-	-	-
Surrogate Recovery					
C9	646		625	103	68-127

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	1080	1080	1000	108	108	86-142	0	30
Surrogate Recovery								
C9	642	645	625	103	103	68-127	0	30

County Review Draft

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CHAIN-OF-CUSTODY RECORD

WorkOrder: 1803635 A **ClientCode: AEL**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☒ Detection Summary ☒ Dry-Weight

Report to:
William Hicks
AEI Consultants
2500 Camino Diablo, Ste.#200
Walnut Creek, CA 94597
(925) 321-3561 FAX: (925) 283-6121

Email: whix@aeiconsultants.com
cc/3rd Party: tbodkin@aeiconsultants.com;
PO: 154987
Project: 350428; Moss Beach

Bill to:
Accounts Payable
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
AccountsPayable@AEIConsultants.com

Requested TAT: 1 day;

Date Received: **03/07/2018**
Date Logged: **03/12/2018**
Date Add-On: **03/19/2018**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1803635-001	WS-1	Water	3/6/2018 17:30	☐	C											

Test Legend:

1	TPH(DMO)WSG_W	2		3		4	
5		6		7		8	
9		10		11		12	

Prepared by: Keylen Juarez

Add-On Prepared By: Kena Ponce

Comments: TPH(dmo) W/ SG added 3/19/18 RTAT

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

County Review Draft

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

WORK ORDER SUMMARY

Client Name: AEI CONSULTANTS
Client Contact: William Hicks
Contact's Email whix@aeiconsultants.com

Project: 350428; Moss Beach
Comments: TPH(dmo) W/ SG added 3/19/18 RTAT

Work Order: 1803635
QC Level: LEVEL 2
Date Logged: 3/12/2018
Date Add-On: 3/19/2018

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1803635-001C	WS-1	Water	SW8015B (TPH-d,mo w/ S.G. Clean-Up)	1	aVOA Unpres	3/6/2018 17:30	1 day	10%+	☐	

NOTES: **- STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).**

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

General COC

County Review Draft

MAI Work Order # 1803635

McCAMPBELL ANALYTICAL, INC.

1534 Willow Pass Rd. Pittsburg, Ca. 94565-1701
Telephone: (877) 252-9262 / Fax: (925) 252-9269
www.mccampbell.com main@mccampbell.com

CHAIN OF CUSTODY RECORD

Turn Around Time: 1 Day Rush | 2 Day Rush | 3 Day Rush | STD ● | Quote #
J-Flag / MDL | ESL | Cleanup Approved | Bottle Order #
Delivery Format: GeoTracker EDF | PDF | EDD | Write On (DW) | EQuIS

Report To: AEI Consultants — Bill To: AEI Consultants
Company: AEI Consultants
Email: whix@aeiconsultants.com
Alt Email: tbodkin@aeiconsultants.com — Tele: 925-746-6050
Project Name/#: 350428
Project Location: Moss Beach — PO #154987
Sampler Signature:

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	VOCs by 8260	TPH-multirange by 8015M	X MultiRange	X VOCs by 8260		HOLD MW		TPH DRO w/SG 3/19/18 KM									
10% WS-1	3/6/2018	1730	8	GW	HCL/ICE	●	●	X	X		●	●										

Analysis Requested

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
	~~3/6~~		CAP	3/7/18	0900
	3/6/18	1200			
CAP	3/7/18	1700		3/7/18	1700

Comments / Instructions: Samples off HOLD 3/9/18

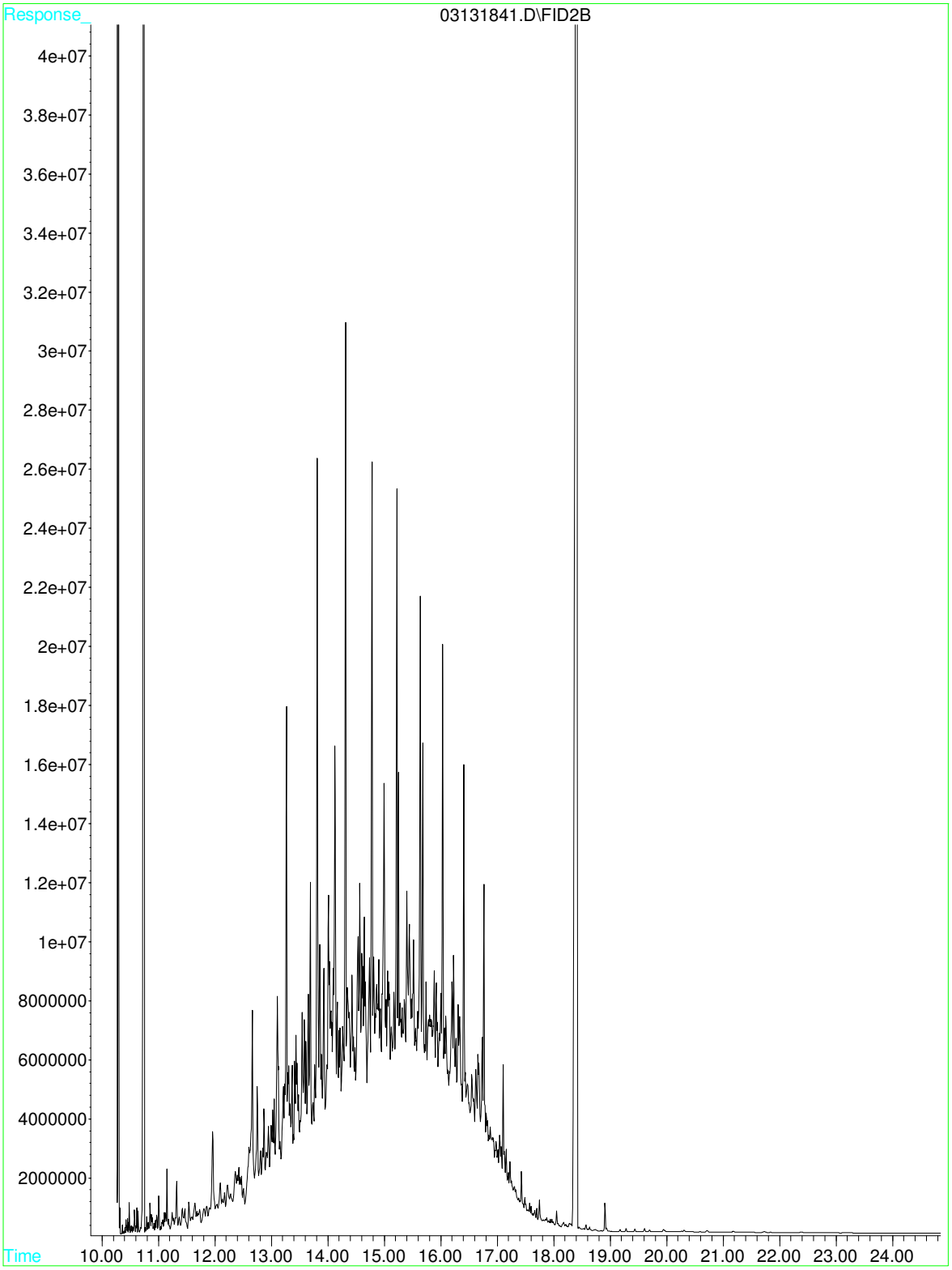
Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other
Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp 3.6 °C Initials KJ

Page ___ of ___

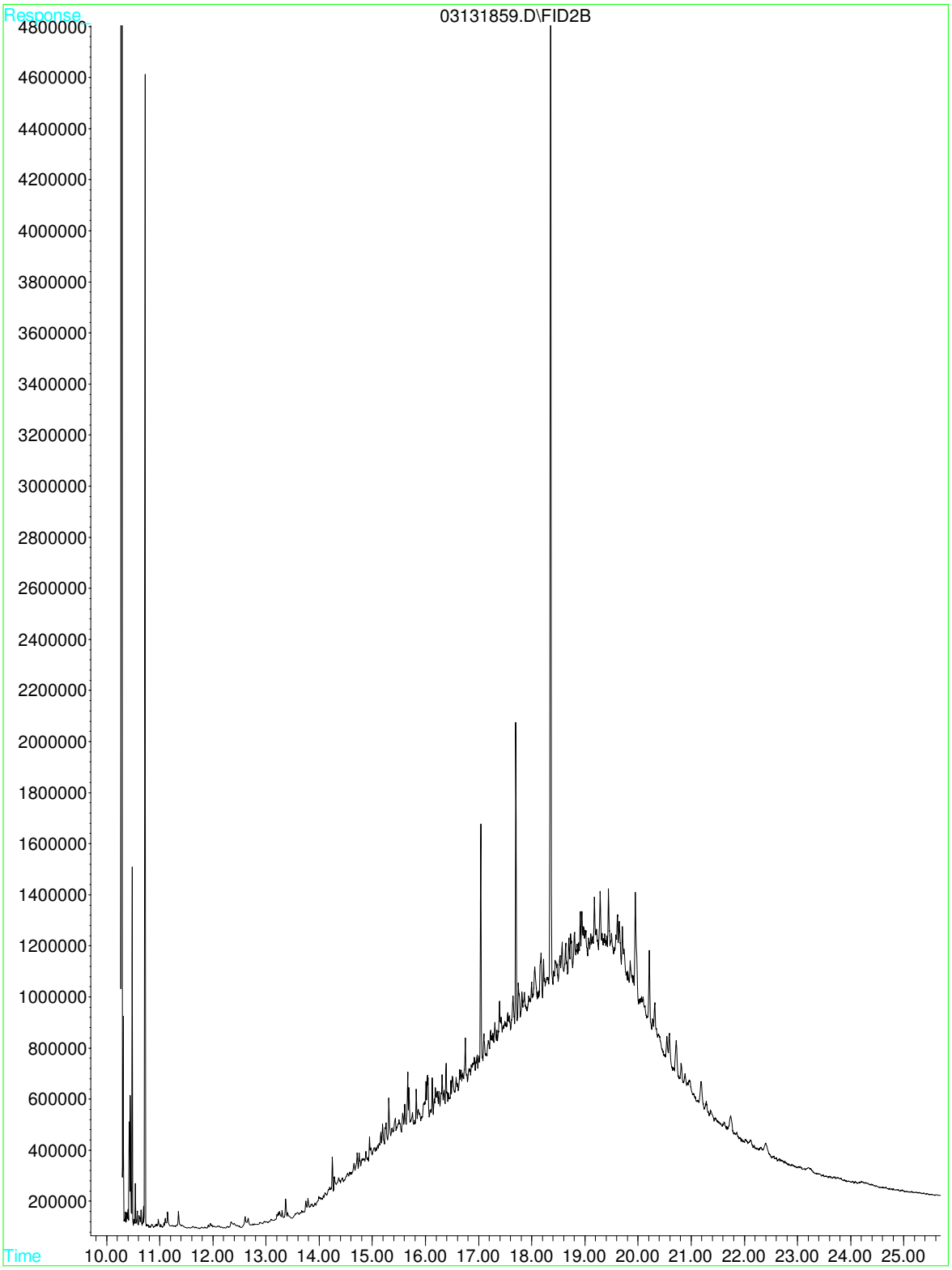
County Review Draft

File : D:\HPCHEM\GC11\DATAB\03131841.D
Operator : JILLIAN
Acquired : 13 Mar 2018 10:17 pm using AcqMethod GC11A_B4.M
Instrument : GC-11
Sample Name: CCV 2-16
Misc Info :
Vial Number: 71



County Review Draft

File : D:\HPCHEM\GC11\DATAB\03131859.D
Operator : JILLIAN
Acquired : 14 Mar 2018 4:07 am using AcqMethod GC11A_B4.M
Instrument : GC-11
Sample Name: 1803635-001A W SHEEN
Misc Info : TPH
Vial Number: 80



APPENDIX F

SMCEHS CONFIRMATION OF WELL DESTRUCTION PERMIT CLOSEOUT

Tim Bodkin

From: Allison Fang <afang@smcgov.org>
Sent: Monday, June 11, 2018 1:29 PM
To: Tim Bodkin
Subject: RE: 350428 Request for Written Confirmation of Permit Closeout for Well Destruction Project, Carlos at Sierra Streets, Moss Beach, CA (AEI PN 350428)

Hello Tim,

Yes, we have closed out the well destruction permit and we did receive the well completion report.

Allison Fang, REHS
Land Use, Septic, and Wells Program
San Mateo County Environmental Health
2000 Alameda de las Pulgas, Suite 100
San Mateo, CA 94403
Work Cell: 650-339-5635
Fax: 650-627-8244
http://smchealth.org/landuse

From: Tim Bodkin [mailto:tbodkin@aeiconsultants.com]
Sent: Monday, June 11, 2018 12:02 PM
To: Allison Fang <afang@smcgov.org>
Cc: Tim Bodkin <tbodkin@aeiconsultants.com>
Subject: RE: 350428 Request for Written Confirmation of Permit Closeout for Well Destruction Project, Carlos at Sierra Streets, Moss Beach, CA (AEI PN 350428)

Good morning, Allison:

I am contacting you to ensure that the permit for our well destruction project has officially been closed out. I assume that you have received the DWR Well Completion Report by now. If you could email me back confirming the permits has been closed out, that would be great. I will need to incorporate it into our report for the project. Thank you very much and look forward to hearing from you.

Kind regards,

--Tim--

Timothy G. Bodkin, PG, CEG
Senior Geologist - Site Mitigation
AEI Consultants
3880 S. Bascom Avenue, Suite 109
San Jose, CA 95124
p. 408.559.7600, ext. 2013
c. 650.622.6560
f. 408.559.7601
www.aeiconsultants.com

Professional Registrations:
PG-CA GEO 4706 / CEG-CA EG 1551 / RG-OR G1294 / CEG-OR E1294 / LG-WA 336 / PG-ID PGL-731 / PG-WY PG-136 / PG-LA 458

From: Tim Bodkin
Sent: Thursday, April 12, 2018 1:34 PM
To: Allison Fang <afang@smcgov.org>
Cc: Tim Bodkin <tbodkin@aeiconsultants.com>
Subject: RE: 350428 Request for Documentation of Well Destruction Approval, Carlos at Sierra Streets, Moss Beach, CA (AEI PN 350428)

Will do and thank you once again for your immediate followup.

Kind regards,

--Tim--

Timothy G. Bodkin, PG, CEG
Senior Geologist - Site Mitigation
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From: Allison Fang <afang@smcgov.org>
Sent: Thursday, April 12, 2018 1:31 PM
To: Tim Bodkin <tbodkin@aeiconsultants.com>
Subject: RE: 350428 Request for Documentation of Well Destruction Approval, Carlos at Sierra Streets, Moss Beach, CA (AEI PN 350428)

Hi Tim,

There is no other written documentation that I can provide, once we receive the well completion report we close out our permit. Feel free to share this e-mail with the client that we are closing out all files on our end.

Allison Fang, REHS
Land Use, Septic, and Wells Program

San Mateo County Environmental Health
2000 Alameda de las Pulgas, Suite 100
San Mateo, CA 94403
Work Cell: 650-339-5635
Fax: 650-627-8244
http://smchealth.org/landuse

From: Tim Bodkin [mailto:tbodkin@aeiconsultants.com]
Sent: Thursday, April 12, 2018 1:23 PM
To: Allison Fang <afang@smcgov.org>
Cc: Tim Bodkin <tbodkin@aeiconsultants.com>
Subject: RE: 350428 Request for Documentation of Well Destruction Approval, Carlos at Sierra Streets, Moss Beach, CA (AEI PN 350428)

Excellent. Please send me written documentation so that I can share it with our client who has been asking for it. Thanks again for your help.

Kind regards,

--Tim--

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From: Allison Fang <afang@smcgov.org>
Sent: Thursday, April 12, 2018 1:22 PM
To: Tim Bodkin <tbodkin@aeiconsultants.com>
Subject: RE: 350428 Request for Documentation of Well Destruction Approval, Carlos at Sierra Streets, Moss Beach, CA (AEI PN 350428)

Hi Tim,

This looks good. We'll get this permit closed out. Thank you!

From: Tim Bodkin [mailto:tbodkin@aeiconsultants.com]
Sent: Thursday, April 12, 2018 12:05 PM

To: Allison Fang <afang@smcgov.org>
Cc: Tim Bodkin <tbodkin@aeiconsultants.com>
Subject: RE: 350428 Request for Documentation of Well Destruction Approval, Carlos at Sierra Streets, Moss Beach, CA (AEI PN 350428)

Hi Allison:

The WCR has been updated. Please let me know if all is OK. Thank you.

Kind regards,

--Tim--

Timothy G. Bodkin, PG, CEG
Senior Geologist - Site Mitigation
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From: Allison Fang <afang@smcgov.org>
Sent: Wednesday, April 11, 2018 3:43 PM
To: Tim Bodkin <tbodkin@aeiconsultants.com>
Subject: RE: 350428 Request for Documentation of Well Destruction Approval, Carlos at Sierra Streets, Moss Beach, CA (AEI PN 350428)

Hi Tim,

The well location section doesn't show the city or the zip code, these should also be added.

From: Tim Bodkin [mailto:tbodkin@aeiconsultants.com]
Sent: Wednesday, April 11, 2018 12:58 PM
To: Allison Fang <afang@smcgov.org>
Subject: RE: 350428 Request for Documentation of Well Destruction Approval, Carlos at Sierra Streets, Moss Beach, CA (AEI PN 350428)

Hi Allison:

I just got off the phone with DWR. The record should be updated showing the street address. Please let me know if all is OK.

Kind regards,

--Tim--

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From: Allison Fang <afang@smcgov.org>
Sent: Wednesday, April 11, 2018 12:36 PM
To: Tim Bodkin <tbodkin@aeiconsultants.com>
Subject: Re: 350428 Request for Documentation of Well Destruction Approval, Carlos at Sierra Streets, Moss Beach, CA (AEI PN 350428)

I see that under the mailing address but not the well location section. You should be able to edit it.

Sent from my iPhone

On Apr 11, 2018, at 12:25 PM, Tim Bodkin <tbodkin@aeiconsultants.com> wrote:

> I originally had input “Carlos and Sierra Streets”. I guess the WCR needs to be updated ? It was my first time using DWR’s new website.
>
> Kind regards,
>
> --Tim--
>
> Timothy G. Bodkin, PG, CEG
> Senior Geologist - Site Mitigation
> **AEI Consultants**
> 3880 S. Bascom Avenue, Suite 109
> San Jose, CA 95124
> p. 408.559.7600, ext. 2013
> c. 650.622.6560
> f. 408.559.7601
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>
> Professional Registrations:
> PG-CA GEO 4706 / CEG-CA EG 1551 / RG-OR G1294 / CEG-OR E1294 / LG-WA 336 / PG-ID PGL-731 / PG-WY PG-136 / PG-LA 458



From: Allison Fang <afang@smcgov.org>
Sent: Wednesday, April 11, 2018 12:22 PM
To: Tim Bodkin <tbodkin@aeiconsultants.com>
Subject: RE: 350428 Request for Documentation of Well Destruction Approval, Carlos at Sierra Streets, Moss Beach, CA (AEI PN 350428)

Tim,

I just checked the OSWCR website and I do see the WCR however the address needs to be input – does the system not allow you to put an intersection under the well location?

From: Tim Bodkin [mailto:tbodkin@aeiconsultants.com]
Sent: Wednesday, April 11, 2018 12:12 PM
To: Allison Fang <afang@smcgov.org>
Cc: Tim Bodkin <tbodkin@aeiconsultants.com>
Subject: RE: 350428 Request for Documentation of Well Destruction Approval, Carlos at Sierra Streets, Moss Beach, CA (AEI PN 350428)

I just completed the Well Completion Report online on Cascade's behalf this morning. I will followup with Cascade. Our client is antsy and wants this put to rest. Back to you once I know more. Thanks for your immediate response.

Kind regards,

--Tim--

Timothy G. Bodkin, PG, CEG
Senior Geologist - Site Mitigation
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c. 650.622.6560
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PG-CA GEO 4706 / CEG-CA EG 1551 / RG-OR G1294 / CEG-OR E1294 / LG-WA 336 / PG-ID PGL-731 / PG-WY PG-136 / PG-LA 458



From: Allison Fang <afang@smcgov.org>
Sent: Wednesday, April 11, 2018 12:09 PM
To: Tim Bodkin <tbodkin@aeiconsultants.com>
Subject: RE: 350428 Request for Documentation of Well Destruction Approval, Carlos at Sierra Streets, Moss Beach, CA (AEI PN 350428)

Hi Tim,

We haven't closed out the permit yet because we're waiting on the well completion report from Cascade Drilling, but I've attached my inspection report.

Allison Fang, REHS
Land Use, Septic, and Wells Program
San Mateo County Environmental Health
2000 Alameda de las Pulgas, Suite 100
San Mateo, CA 94403
Work Cell: 650-339-5635
Fax: 650-627-8244
http://smchealth.org/landuse

From: Tim Bodkin [mailto:tbodkin@aeiconsultants.com]
Sent: Wednesday, April 11, 2018 11:47 AM
To: Allison Fang <afang@smcgov.org>
Cc: Tim Bodkin <tbodkin@aeiconsultants.com>
Subject: 350428 Request for Documentation of Well Destruction Approval, Carlos at Sierra Streets, Moss Beach, CA (AEI PN 350428)

Good morning, Allison:

Our client has requested documentation of your approval of the well destruction completed at our Moss Beach site. Please get back to me when you can. Many thanks.

Kind regards,

--Tim--

Timothy G. Bodkin, PG, CEG
Senior Geologist - Site Mitigation
AEI Consultants
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c. 650.622.6560
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www.aeiconsultants.com

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<image001.png>

APPENDIX M

Environmental Site Investigation

Responses to Comments

AEI Consultants
2500 Camino Diablo, Walnut Creek, CA 94597
Tel: 925.746.6000

August 11, 2020

Ms. Serena Ip
MidPen Housing Corporation
303 Vintage Park Drive, Suite 250
Foster City, California 94404

Subject: **Response to Comments**
Cypress Point Development Project
Moss Beach, San Mateo County, California
AEI Project No. 350428

Dear Ms. Ip:

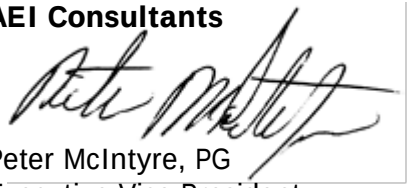
AEI Consultants (AEI) has reviewed the April 9, 2020 *Comments on the MidPen Cypress Point Project, PLN2018-00265* letter prepared by SWAPE (SWAPE Letter) regarding the Cypress Point Development Project located in Moss Beach, California ("the Site"). The SWAPE letter provides comment on the "Preliminary Environmental Evaluation Report" dated April 2019 and several documents prepared by AEI relating to environmental due diligence and environmental testing of the Site, including the February 20, 2018 "Additional Subsurface Investigation & Water Well Evaluation" report. This letter responds to two substantial items in the SWAPE letter, including: 1) the appropriate use of statistical analyses of lead test results, and 2) the relevance of the referenced Terrestrial Habitat Environmental Screening Level (ESL) for lead published subsequent to issuance of the above referenced Site analysis.

As presented in the "Additional Subsurface Investigation & Water Well Evaluation," lead was identified in shallow soils at the Site. In accordance with the "User's Guide: Derivation and Application of Environmental Screening Levels, Interim Final 2019" prepared by the San Francisco Bay Regional Water Quality Control Board (Regional Water Board), the 95-percent upper confidence limit was used to estimate the exposure point concentration (EPC). It is appropriate to statistically estimate the EPC, and not use only the maximum-detected concentrations, since the site will be developed with multiple scattered buildings each consisting of a number of individual apartment-style units. As part of construction activities, some homogenization of soils is to be expected. These buildings will also be surrounded by landscaping and hardscape constituting the common area spaces around the buildings, which also limits exposure to Site soils. These units do not have private yards or gardens, nor are the units to be constructed on individual smaller lots or parcels as would occur for single family homes, condominium, or town-home developments. Therefore, in considering the theoretical exposure to soil by a given future resident, such exposure would be across the larger development, not concentrated in an individual smaller yard area where exposure to a localized "hot spot" would constitute a large fraction of the soil exposure. The project will not create an exceedance of the human health ESL for lead and further mitigation is not necessary.

The Terrestrial Habit ESL for lead in soil was first published in the most recent revision of the ESLs issued in July 2019, which after the issuance of the "Additional Subsurface Investigation & Water Well Evaluation." However, the Regional Water Board continues to provide guidance on how this Terrestrial Habitat ESL should be used. As outlined in Sec 8.0 of the ESL guidance document, it should be noted that the Terrestrial Habitat ESLs also are not applicable to aquatic habitats (e.g., wetlands; ephemeral, intermittent or perennial streams; rivers and mudflats; ponds or lakes; vernal pools; marine intertidal areas). Following development, much of the soils will be improved with buildings and hardscape (Parking, walkways, etc.), including much of the area with the higher lead detections; essentially eliminating the exposure pathway in these areas. The project does include green-scape; such areas will be developed with typical imported topsoil, landscaped lawns, shrubbery and other designed flora. There will be minimal habitat for terrestrial animals or flora, and where there is habitat, Site soils will be below imported topsoil, further limiting contact. The project does not create substantial habitat using soils of the Site, therefore additional analysis or mitigation is not necessary.

AEI appreciates the opportunity to support this important project. If there are any questions or comments, please contact me anytime; I can be reached at (925) 285-8286 or pmcintyre@aeiconsultants.com.

Sincerely,
AEI Consultants



Peter McIntyre, PG
Executive Vice President
Principal Geologist

APPENDIX N

Wildfire and Evacuation Route Assessment

Wildfire and Evacuation Route Assessment for the Cypress Point Affordable Housing Community Project, Moss Beach, San Mateo County, California

JULY 2023

PREPARED FOR

MidPen Housing Corporation

PREPARED BY

SWCA Environmental Consultants

WILDFIRE AND EVACUATION ROUTE ASSESSMENT FOR THE CYPRESS POINT AFFORDABLE HOUSING COMMUNITY PROJECT, MOSS BEACH, SAN MATEO COUNTY, CALIFORNIA

Prepared for

County of San Mateo
455 County Center
Redwood City, California 94063
Attn: Michael Schaller

Prepared by

SWCA Environmental Consultants
60 Stone Pine Road, Suite 100
Half Moon Bay, California 94019
(650) 440-4160
www.swca.com

SWCA Project No. 73999

July 2023

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1 INTRODUCTION

This Wildfire and Evacuation Route Assessment has been prepared for the Cypress Point Affordable Housing Community Project (project). The purpose of the study is to identify wildfire hazards and associated risks with the project and additional hazards and areas of concern in the event of an emergency. The assessment addresses the project location, topography, combustible vegetation (fuel types), fire history, fire behavior, and emergency response capacity, as well as the water supply, emergency access (ingress/egress), structural ignitability and fire-resistant building features, defensible space, and impacts to existing emergency services evacuation.

1.1 Project Location, Description, and Environmental Setting

1.1.1 Project Location

The project site encompasses a total of approximately 11.02 acres within the unincorporated community of Moss Beach in San Mateo County (County), California (Figure 1). The project site is bounded by vacant land to the southwest (toward State Route 1 [SR-1]), residential properties along 16th Street to the northwest (in the community of Montara), and residential properties along Carlos, Sierra, and Lincoln Streets on the other two sides. Individual houses along Stetson Street and Buena Vista Street also border the property. The project site is approximately 750 feet east of the Pacific Ocean and is within 250 feet of Montara Creek at its closest point.

1.1.2 Project Description

The project is an affordable housing development sponsored by MidPen Housing Corporation (MidPen) and designed to provide affordable housing in the San Mateo Midcoast region. The intention of the project sponsors and San Mateo County is to improve the jobs/housing balance and jobs/housing fit by providing preference for those who live or work on the San Mateo Coast.

The project proposes the development of 71 affordable housing units, contained in 16 two-story buildings, and a community building for a total of 66,738 square feet. The project includes six different building layouts and unit configurations, ranging in height from 23 to 28 feet.

The project would cluster the residential units toward the northwestern corner of the site, retaining the forested open space on the northernmost portion of the site. This area primarily contains Monterey cypress (*Hesperocyparis macrocarpa*) and Monterey pine (*Pinus radiata*). To the south and east, the project would consist of landscaping and public trails. The project does not include changes to the two existing potable water tanks on-site.

Unpaved internal roadways extend from the northwest to southeast across the northern and central portions of the project site. In the southeast corner of the site, the existing dirt road is the continuation of Buena Vista Street between Lincoln Street and Carlos Street. The project site can be accessed from the southeast via Buena Vista and Lincoln Streets, and from the west via Carlos Street. The Montara Water and Sanitary District (MWSD) water tanks on the southeastern portion of the site are accessed by this unpaved portion of Buena Vista Street.



Figure 1. Project vicinity map.

1.1.3 Environmental Setting

1.1.3.1. TOPOGRAPHY, ELEVATION, AND CLIMATE

The project site is situated between the Pacific Ocean to the west and Rancho Corral de Tierra, managed by the National Park Service, in the Santa Cruz Mountains to the east. Project site slopes range from 10% to 50%. Elevations range from the high point of 205 feet above mean sea level (amsl) on the east side of the project adjacent to Lincoln Street to the low point of 90 feet amsl at the northwestern boundary along 16th Street. Montara Creek, a perennial stream, is approximately 250 feet to the northeast of the project site and runs in parallel to the northern border of the site (prior to emptying into the Pacific Ocean). Residential communities occur to the east and south of the project site. These communities span approximately 250 and 200 acres, respectively. San Mateo County has a Mediterranean climate characterized by cool wet winters, with an average of 29.6 inches of rain per year, and relatively warmer dry summers with coastal fog. The temperature typically varies from 44 degrees Fahrenheit (°F) to 66°F and is rarely below 38°F or above 75°F (Dwellics 2023; Weatherspark.com 2023).

1.1.3.2. VEGETATION COMMUNITIES

The project site consists of developed uses, including water tanks and an associated maintenance structure operated by the MWSD, concrete remnants of military facilities that are scattered throughout the project area, and dirt access roads that travel around the perimeter of the project area, and undeveloped land dominated by a mix of native and non-native vegetation. Four vegetation communities were mapped and were classified using the naming conventions of *A Manual of California Vegetation*, Second Edition (Sawyer et al. 2009). Vegetation communities present in the biological study area (BSA) include Monterey cypress–Monterey pine woodland stands (*Hesperocyparis macrocarpa–Pinus radiata* Forest and Woodland Semi-Natural Alliance), coyote brush scrub (*Baccharis pilularis* Shrubland Alliance), perennial rye grass fields, and developed/disturbed areas. Thick vegetation also covers the majority of the project site outside the areas of the building foundations.

1.1.3.3. WATER SUPPLY

The project site is served by the MWSD. The project would extend water lines to new project facilities for potable water and fire water supply, as well as for irrigation of landscaping. The proposed water line would extend from the existing MWSD tanks along the existing 10-foot right-of-way (ROW) along the eastern and northern parts of the project. New domestic water and fire water lines would be located in the driveway loop and parking areas, with individual connections to each building.

1.1.3.4. FIRE PROTECTION

Within the project site, fuel loadings vary from low to moderate depending on the species present, past activities on-site, and recent weather patterns. The project site is not located within a California Department of Forestry and Fire Protection (CAL FIRE)–designated very high, high, or moderate fire hazard severity zone (FHSZ) (CAL FIRE 2022).

The Coastside Fire Protection District (Coastside FPD) would provide fire protection services and emergency response on the project site. The Coastside FPD serves the City of Half Moon Bay; the communities of Montara, Moss Beach, Princeton, El Granada, and Miramar; and the surrounding unincorporated areas. Its service area covers approximately 50 square miles and serves a population of approximately 30,000 residents.

In addition to traditional fire service, the Coastside FPD provides advance life support, cliff rescue, water rescue, confined space rescue, and vehicle and residential lock-out services, responding to approximately 2,600 calls each year. These incidents include medical aid, fires and fire alarms, water rescue, cliff rescue, traffic accidents, odor investigations, hazardous materials, and public service assists.

Three fire stations operate within the Coastside FPD: Fire Station 44, located on Stetson Street in Moss Beach 1 block (approximately 300 feet) from the project site; Fire Station 40, located within the downtown area of the City of Half Moon Bay; and Fire Station 41, located within the unincorporated area of El Granada. Fire Station 40 serves as the Coastside FPD headquarters. Fire Station 44 (Moss Beach) would provide initial fire and emergency medical service response to the project site, and Fire Stations 41 (El Granada) and 40 (Half Moon Bay) would support the initial response, if needed.

Coastside FPD's response time goal is within 6 minutes 59 seconds of receiving a call. In an email to SWCA on May 11, 2023, the Coastside FPD Chief confirmed that response times are currently met throughout the service area. The proximity of Fire Station 44 to the project site indicates that response times would meet the established goal.

The Coastside FPD has 32 paid positions, along with 11 volunteer firefighter positions. Paid positions include one assistant fire chief, one fire marshal, one deputy fire marshal, four battalion chiefs, and two administrative support positions. All stations are staffed with one fire captain and two fire apparatus engineers, one of which is a paramedic to provide advance life support service. Shift personnel work a scheduled 3-day/72-hour workweek.

The Half Moon Bay Volunteer Fire Department (Volunteer Fire Department) is a volunteer division of the Coastside FPD. The Volunteer Fire Department comprises approximately 15 members and is under the direction of the fire chief. The number of volunteers reflects the current needs of the Volunteer Fire Department and is determined by the chief of the volunteer division. The objectives of the Volunteer Fire Department are to operate within the boundaries of the Coastside FPD as a supplemental force to the regular paid department, and to operate as a trained unit for both fire suppression and non-suppression situations.

There is an extensive network of roads, both well-maintained dirt and major paved roads, surrounding the project site including SR-1. These roads can support weight loads of fire apparatus and allow for access from all directions. There are main arteries from the nearest communities and fire stations that provide direct emergency response services. Main roads in this network include SR-1, Carlos Street, Sierra Street, Stetson Street, Etheldore Street, California Avenue, and Airport Street.

1.1.4 Regulatory Setting

SPRINKLER SYSTEMS: CALIFORNIA RESIDENTIAL CODE, CHAPTER 3, SECTION R313

All new dwellings, dwelling units, and one- and two-family townhomes must be equipped with an automatic fire-sprinkler system that can protect the entirety of the dwelling. Dwellings and homes constructed prior to January 1, 2011, that do not have a sprinkler system may be retrofitted, but it is not required.

FIRE SAFETY STANDARDS: CALIFORNIA PUBLIC RESOURCES CODE 4290 AND 14 CALIFORNIA CODE OF REGULATIONS (CCR) 1270

These regulations govern roads, driveway width, clearance, turnarounds, signing, and water related to fire safety throughout California. Public Resources Code 4290 is typically enacted through regulation at the county level.

WILDLAND-URBAN INTERFACE BUILDING STANDARDS: CALIFORNIA GOVERNMENT CODE 51189

The Office of the State Fire Marshal is required to create building standards for wildfire resistance. Construction of buildings in the wildland-urban interface must use fire-resistant materials to save life and property. As of 2011, the standards relevant to fire-safe construction for all new structures in the State Responsibility Area (SRA) are the California Building Code, Chapter 7A (for commercial construction) and the California Residential Code, Chapter 3, Section R327 (for residential construction).

STATE RESPONSIBILITY AREA: PUBLIC RESOURCES CODE 4102, 4125–4229 AND 14 CCR 1220

These statutes and regulations establish the locations where CAL FIRE has the financial responsibility for preventing and suppressing fires. These designations define financial arrangements for fire protection services and establish the locations where fire safe and defensible space laws or regulations apply.

HAZARDOUS FIRE AREAS: PUBLIC RESOURCES CODE 4251–4255 AND 14 CCR 1200

These laws and regulations allow petitioners to the Board of Forestry and Fire Protection or CAL FIRE to establish hazardous fire areas, providing for area closures and other restrictions for fire prevention.

DEFENSIBLE VEGETATION CLEARING AROUND STRUCTURES: PUBLIC RESOURCES CODE 4291 AND 14 CCR 1299

Public Resources Code 4291 regulates fuel management around a property. It states that a person who owns or controls a building or structure in or adjoining to forest, brush, or grass covered lands shall follow certain guidelines outlined in the code. At least 100 feet of defensible space is required. The owner of the property is liable for making these changes to protect habitable structures. The 100 feet is separated into two zones, with the closer zone, 30 feet out from the structure, being managed more intensively.

SAN MATEO COUNTY LOCAL COASTAL PROGRAM

The Local Coastal Program provides policies regarding development and project design standards in the coastal zone of San Mateo County (County of San Mateo 2013). This includes hazards such as high-risk fire areas and vegetation management. The Local Coastal Program policies are adopted by reference in the County's Zoning Regulations under Chapter 20B, Section 6328.19 through 6328.30.

SAN MATEO COUNTY GENERAL PLAN, CHAPTER 15

Chapter 15 (Natural Hazards) of the General Plan defines fire hazards as wildland or structural fires that occur in areas that are remote, have difficult access for fire vehicles, and/or contain potentially flammable vegetative communities (County of San Mateo 2021). The General Plan adopts CAL FIRE–designated FHSZs and other fire protection district hazardous area relating to wildfire.

SAN MATEO COUNTY LOCAL HAZARD MITIGATION PLAN

The San Mateo County Department of Emergency Management issued the 2021 Multijurisdictional Local Hazard Mitigation Plan, a large regional and cross-jurisdictional effort to plan for the reduction of risk from natural and human-made disasters (Tetra Tech 2021). The plan addresses natural and human-caused hazards, including wildfire, landslides, and severe weather. The hazard mitigation plan defines measures to reduce risks from natural disasters in the San Mateo County planning area, which consists of the entire county, including unincorporated areas, incorporated cities, and special purpose districts.

CONNECT THE COASTSIDE

Connect the Coastside serves as the San Mateo County Midcoast Comprehensive Transportation Management Plan (CTMP) (County of San Mateo 2022). Connect the Coastside aims to improve the safety and mobility for Midcoast residents, businesses, and visitors by recommending a suite of projects, policies, and programs to address current and future transportation conditions in the Midcoast CTMP. The Midcoast area faces challenges in realizing community goals and vision for transportation. Climate change has accelerated sea level rise, coastal erosion, and the number and severity of emergencies like wildfires.

The following is an overview of different County departments and special projects related to emergency response and hazard mitigation planning:

- In the event of a disaster, the Department of Emergency Management coordinates countywide response and protection services. One of the missions of the Department of Emergency Management is to maintain and improve the Countywide Emergency Operations Plan. This plan establishes policies and procedures and assigns responsibilities to keep residents safe during an emergency situation.

- During an emergency or disaster, law enforcement is responsible for evacuation and the movement of the public away from a hazard area. Representatives from law enforcement and public safety agencies were part of the Connect the Coastside Technical Advisory Committee that reviewed and helped refine the plan proposals.

- In the event of an emergency, public safety agencies such as police and fire will be able to provide emergency information directly to people who have registered for the SMC Alert service. These alerts may include life safety, fire, weather, accidents involving utilities or roadways or disaster notifications. For example, the SMC Alert service would be used to notify Coastside employees and citizens of available evacuation routes during an emergency.

- In March of 2019, Supervisor Don Horsley allocated $75,000 of discretionary Measure K funds to launch the development of a countywide standardized emergency evacuation zone project (Zonehaven). The goals of the project are to reduce the amount of time it takes to notify the public, create a common operating evacuation platform for all jurisdictions, share information, and help people safely and efficiently evacuate in case of an emergency. Since the project began, the CAL FIRE San Mateo Division has worked with every fire and law enforcement agency in San Mateo County to identify over 300 evacuation zones. The project includes a public webpage that shows a map of each evacuation zone and a software application that helps first responders call for evacuations using the standard zones. This will greatly reduce the time from when an evacuation is called to when the public is notified. Additionally, the application integrates with Waze and Google Maps, so as soon as a zone is closed people will be directed accordingly. Zonehaven was used to create an Evacuation

Zone Map for the CZU Lightning Complex Fire in August 2020. The platform is available at https://community.zonehaven.com/

- The County of San Mateo updated its Local Hazard Mitigation Plan (Tetra Tech 2021) and will update the Safety Element of the General Plan. The County will be working with emergency service providers such as CAL FIRE, the Department of Emergency Management, and the new Flood and Sea Level Rise Resiliency District. These efforts will further evaluate hazard risks and identify safety measures on the Midcoast.

2 ANTICIPATED FIRE BEHAVIOR

2.1 Fuels

Fuels within the project site and the surrounding 1-mile area (project area) were classified using fire behavior fuel models (Scott and Burgan 2005). The general classification of fuels is by fire-carrying fuel type. Fuels are then further classified into specific fuel models within a fuel type. Major fuel models for both the project site and project area are listed in Table 1.

The project site is predominantly a low to moderate grass and shrub fuel load with a litter component. Nonburnable substrate is also a major component (Figure 2). The project area is predominantly a low to moderate grass and shrub fuel load with a litter component intermixed with nonburnable substrate (Figure 3). Both the project site and the project area have nonburnable substrate intermixed with flammable vegetation, making fuels discontinuous spatially across the landscape. Smaller-percentage (≤3%) fuel models present in the project area but not present in the project site are not listed in Table 1.

Table 1. Common Fuel Models in the Project Site and 1-mile Buffer Project Area

Fuel Model	Fuel Model Description	Project Site Acres (%)	Project Area Acres (%)
SH2	Moderate shrub fuel load	3.7 (34%)	187.2 (15%)
TU1	Low grass and/or shrub with litter load	3.2 (29%)	93.7 (7%)
TL3	Moderate conifer litter load	1.1 (10%)	100.0 (8%)
NB9 and NB1	Nonburnable bare ground and urban development	0.9 (8%)	334.3 (27%)
GR2	Moderate continuous grass fuel load	0.6 (5%)	178.4 (14%)
TU5	High conifer litter and shrub fuel load	0.6 (5%)	85.4 (6%)
SH5	Heavy shrub fuel load	0.3 (3%)	35.8 (3%)
GS2	Moderate shrub and grass fuel load	0.3 (3%)	13.9 (1%)
SH7	Very heavy shrub fuel load	0.12 (1%)	14.9 (1%)
GR1	Patchy low grass fuel load	0.06 (0.5%)	103 (8%)
GR4	Moderate continuous tall grass fuel load	0.01 (0.1%)	15.5 (1%)

Note: Totals may not add to 100%.

Source: LANDFIRE (2020)

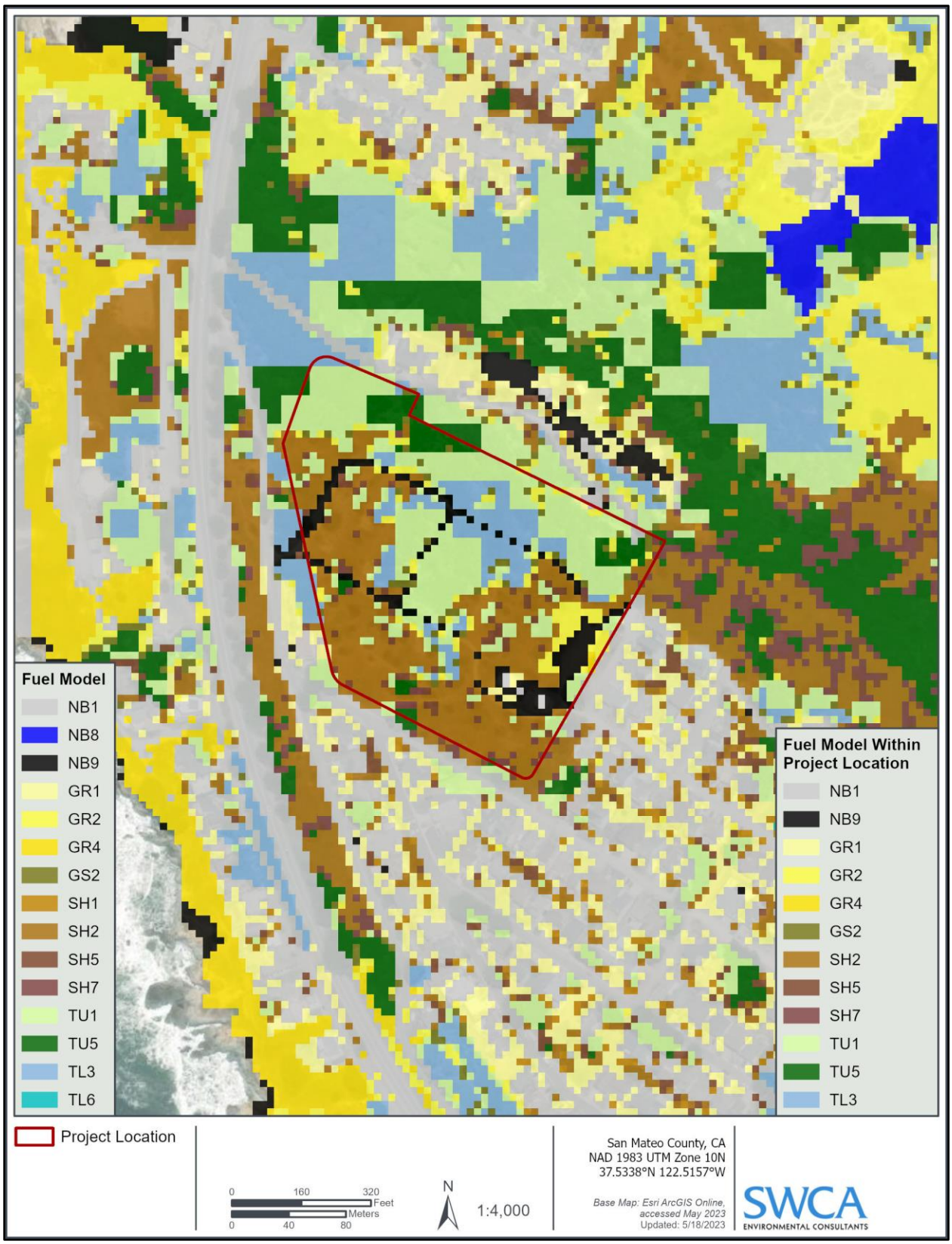


Figure 2. Fire behavior fuel models in the project site.

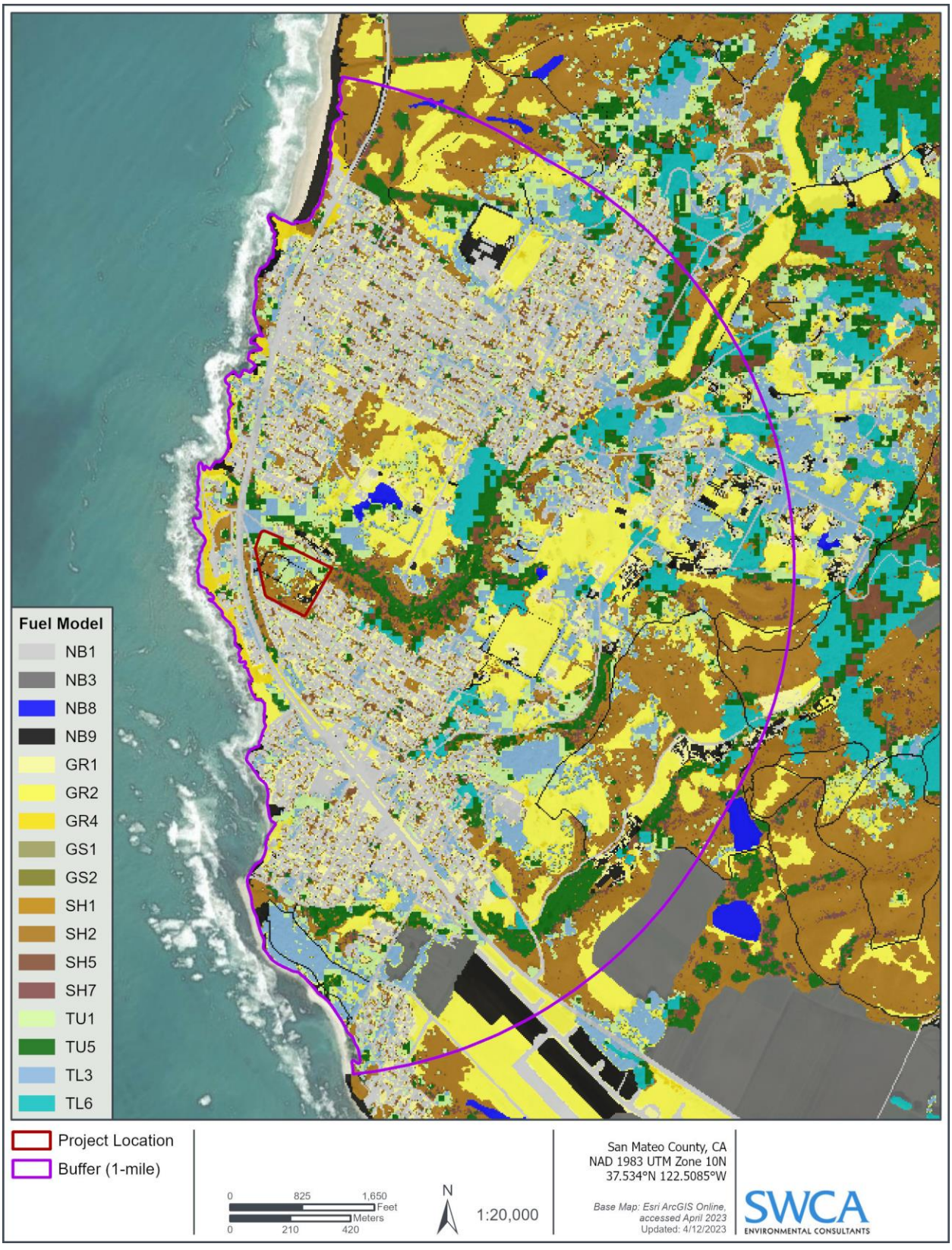


Figure 3. Fire behavior fuel models in the project site and project area.

2.2 Fire Behavior Modeling

The project site is outside of a CAL FIRE–designated very high or high FHSZ. There are SRA very high and high FHSZ–designated areas approximately 0.75 mile north and 0.5 mile east of the project site. There are also Local Responsibility Area (LRA) very high FHSZ–designated areas approximately 1.0 mile east and south of the project site (Figure 4).

The 2022 updated FHSZ data are not yet publicly available for use while updates are open for public commenting through April 2023 (CAL FIRE 2022). CAL FIRE has announced a 2023 release date; an update viewer is currently available to the public. The FHSZ updates are not anticipated to directly impact the project as there would be no change to designation of the project site (CAL FIRE 2022).

Fire behavior metrics were run with parameters set at the 97th percentile from local remote automatic weather stations (RAWS) to represent extreme conditions or the worst-case scenario. Live and dead fuel moistures were modified for the metrics, as available RAWS data used were from 1999 to 2016 and do not account for the continuing long-term drought in the region. Additional details of fire behavior modeling methodology can be found in Appendix A.

Analysis was conducted for the project site and the 1-mile buffer area using the Interagency Fuel Treatment Decision Support System (IFTDSS) (U.S. Department of Interior–Wildland Fire Management RD&A 2021) and FlamMap (U.S. Forest Service 2023) (Table 2). Burn probability, integrated burn hazard, rate of spread, and crown fire activity are the main metrics of predicted fire behavior. Burn probability is the likelihood of an area burning given an ignition source; it is related to historic fire size in the area, which is directly correlated with fire spread and duration. Integrated burn hazard couples burn probability with conditional flame length to show the fire potential at specific locations on the landscape. Rate of spread measures how fast a fire moves in chains per hour (ch/hr), where one chain is approximately 66 feet. Crown fire activity describes the ability for the fire to transition from a more benign surface fire to a more extreme crown fire in the canopy of shrubs and trees. Suppression difficulty index (SDI), a rating of relative difficulty in performing wildfire suppression work in an area, was also considered along with the other fire behavior metrics (Risk Management Assistance 2022). SDI factors in topography, fuels, expected fire behavior under severe fire weather conditions, firefighter line production rates in different fuel types, and accessibility (distance from roads).

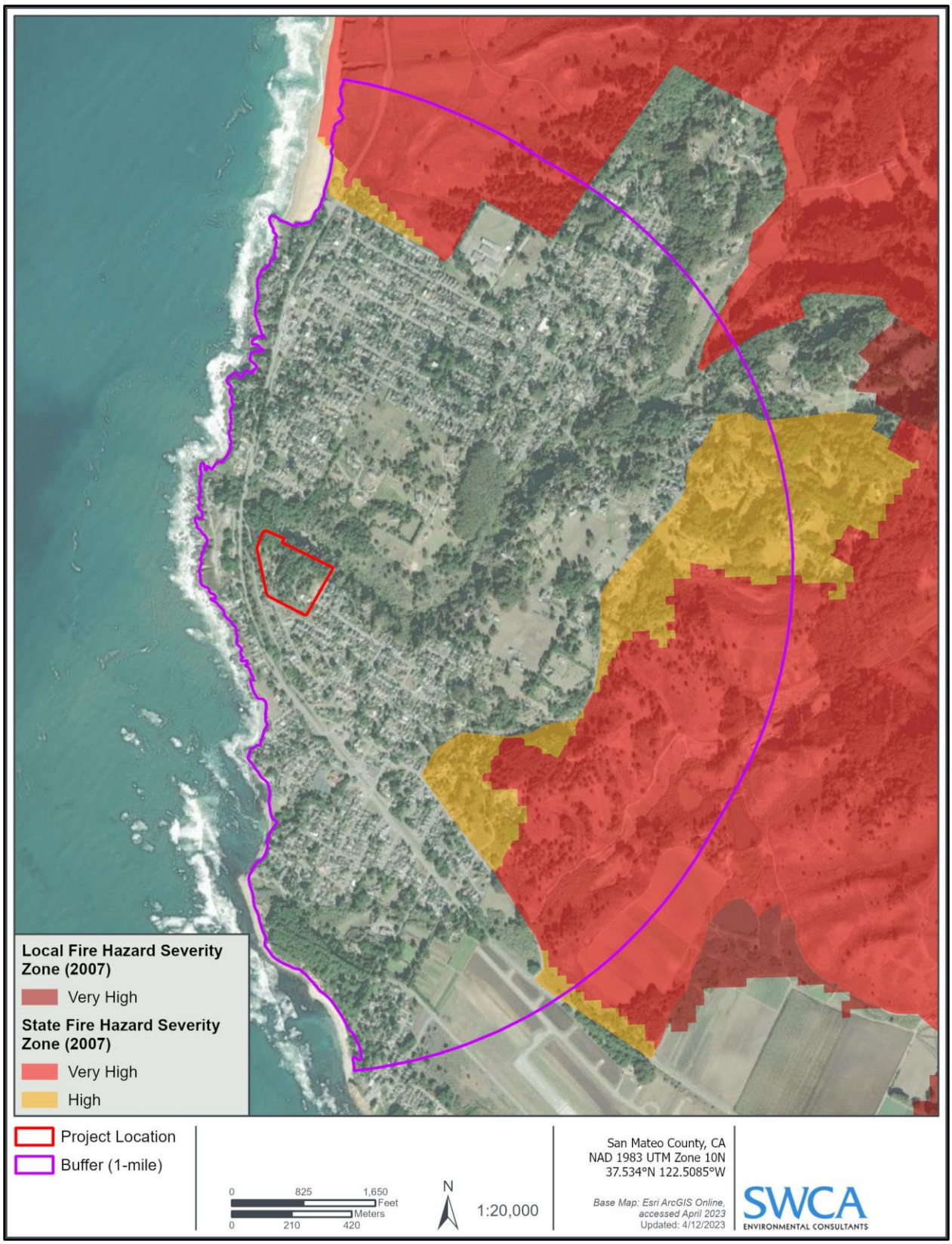


Figure 4. CAL FIRE FHSZ classifications.

Table 2. Fire Behavior Metrics in the Project Site and 1-mile Buffer Area

Burn Probability	Project Site Acres (%)	Project Area Acres (%)	Integrated Burn Hazard	Project Site Acres (%)	Project Area Acres (%)	Rate of Spread (ch/hr)	Project Site Acres (%)	Project Area Acres (%)	Crown Fire Activity	Project Site Acres (%)	Project Area Acres (%)
Non-burnable	3.1 (28%)	586.1 (47%)	**Non-burnable**	3.1 (28%)	586.1 (47%)	**0–5**	4.8 (44%)	731.2 (58%)	**No Fire**	1.0 (9%)	360.2 (29%)
Burnable, not burned	5.6 (50%)	49.3 (4%)	**Burnable, not burned**	5.6 (50%)	49.3 (4%)	**6–20**	2.7 (24%)	336.5 (27%)	**Surface Fire**	6.6 (59%)	616.2 (49%)
Lowest–Lower	2.4 (22%)	616.0 (49%)	**Lowest–Lower**	2.4 (22%)	614.6 (49%)	**21–50**	3.1 (28%)	139.0 (11%)	**Passive Crown Fire**	2.3 (21%)	259.1 (21%)
Middle	0	0	**Middle**	0	0.6 (<1%)	**>50**	0.5 (4%)	44.7 (4%)	**Active Crown Fire**	1.2 (11%)	15.8 (1%)
Higher–Highest	0	0	**Higher–Highest**	0	0.6 (<1%)						

Source: IFTDSS

Fire behavior within the project site was slightly more intense than the surrounding project area for certain metrics (rate of spread and crown fire activity). Fire intensity describes the energy released from the fire or characteristics of the fire behavior. In general, the project site predicts a higher percent capable of sustaining a faster rate of spread, likely due to the dominance of grass and shrub fuel types that exhibit faster rates of spread than other fuel types. There is also a higher percentage of the project site predicted to support crown fire (passive and active) compared to the project area, likely due to the higher percentage of shrub and timber fuel types (Figures 5 and 6).

Burn probability and integrated burn hazard were slightly more moderate in the project site than the buffer area. This is likely due to the larger percent of burnable, not burned acres during modeling, indicating that a fire is unlikely to reach a specific area or spread beyond that specific area due to a slow rate of spread. That is, although flammable vegetation is present, based on fire history it is unlikely a fire would occur or spread on the project site. Additionally, fuels are discontinuous across the landscape because of developed areas and roads; this can contribute to less fire spread. Modifying fuels to reduce fuel load or continuity helps mitigate potential fire behavior by creating fuel conditions and characteristics that naturally exhibit lower fire behavior (Figures 7 and 8).

The SDI for the project site is predominantly of low to lowest difficulty, with a minor percentage as moderate difficulty (Figure 9). The project area is also predominantly of low to lowest difficulty, with a small percentage as moderate difficulty.

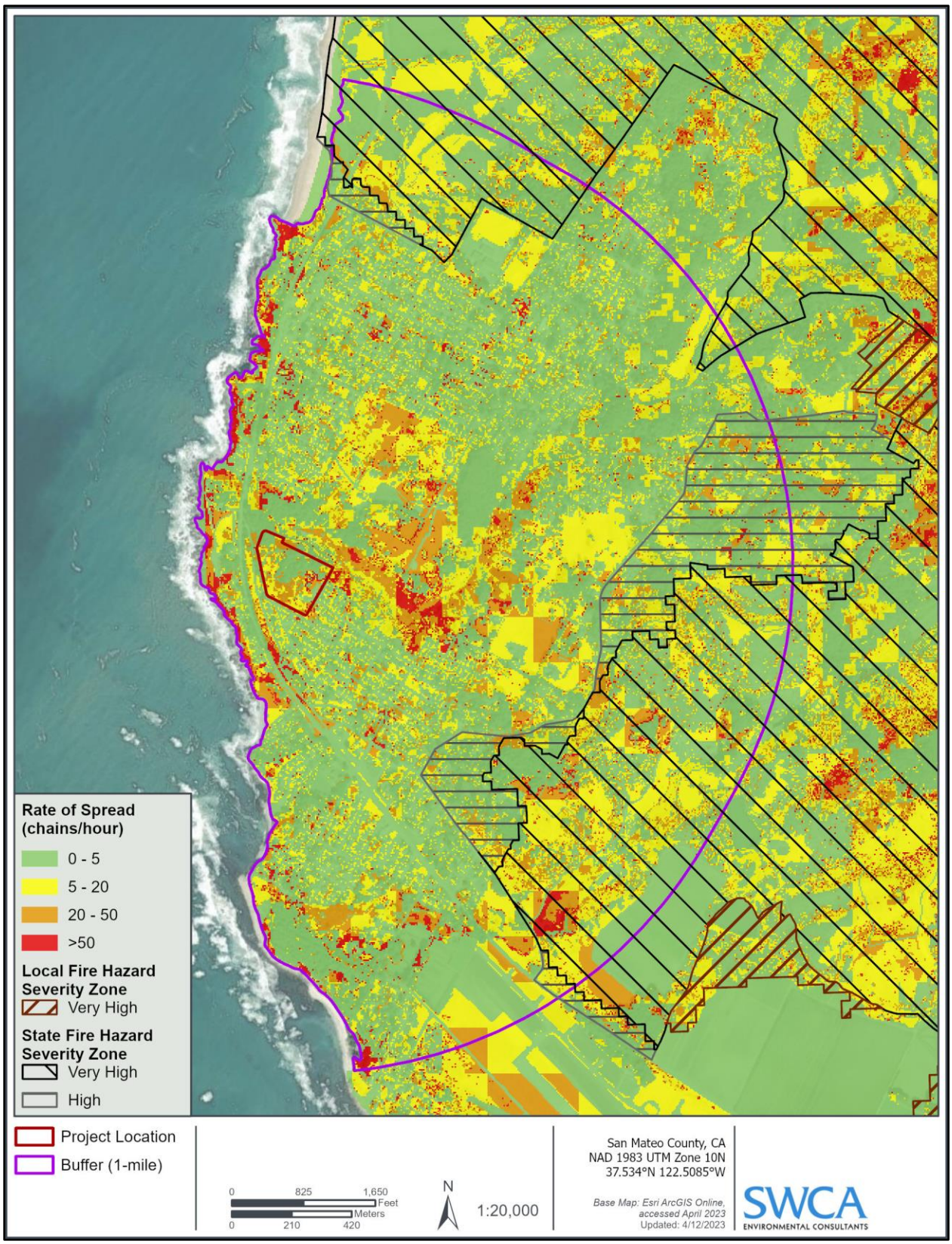


Figure 5. Rate of spread.

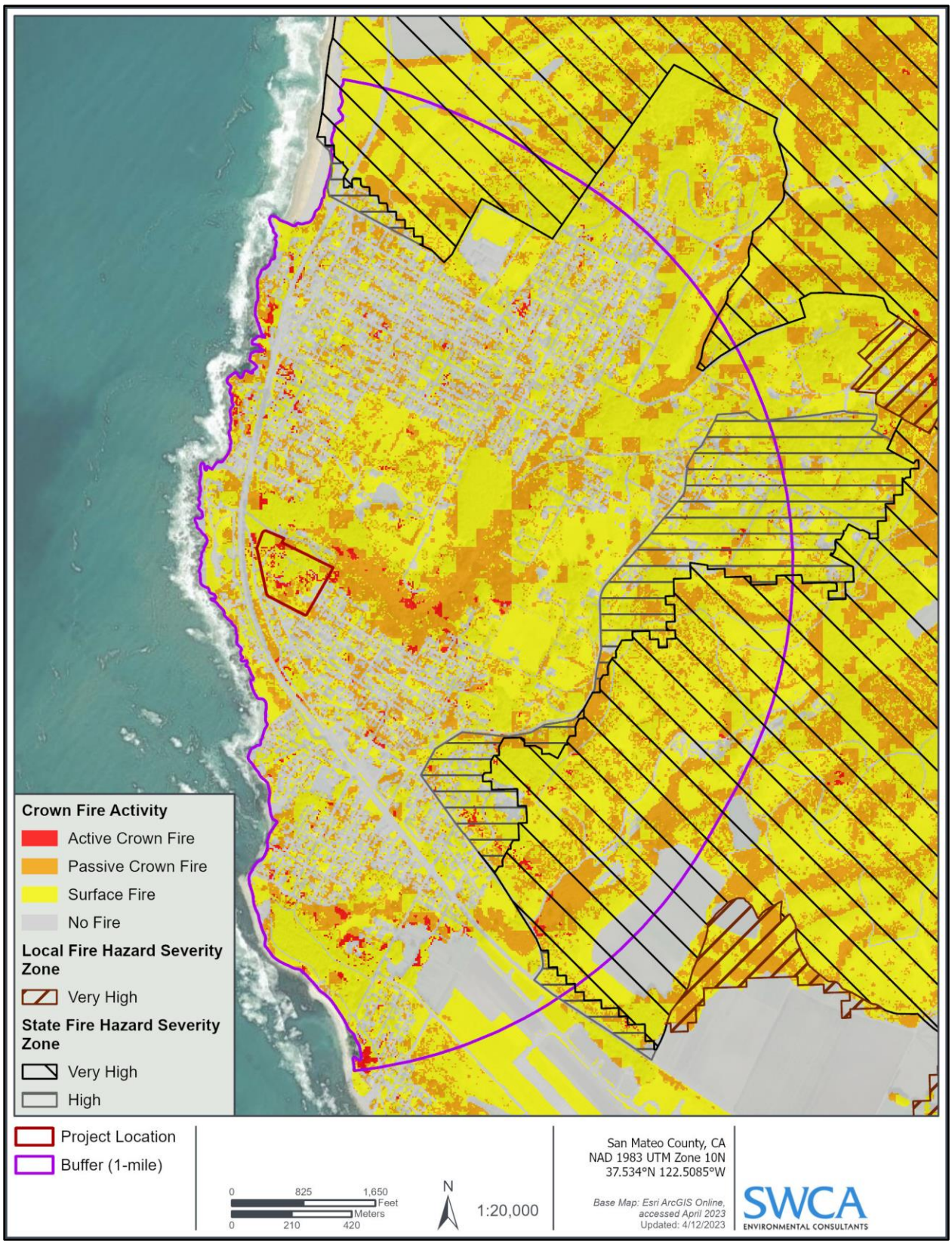


Figure 6. Crown fire activity.

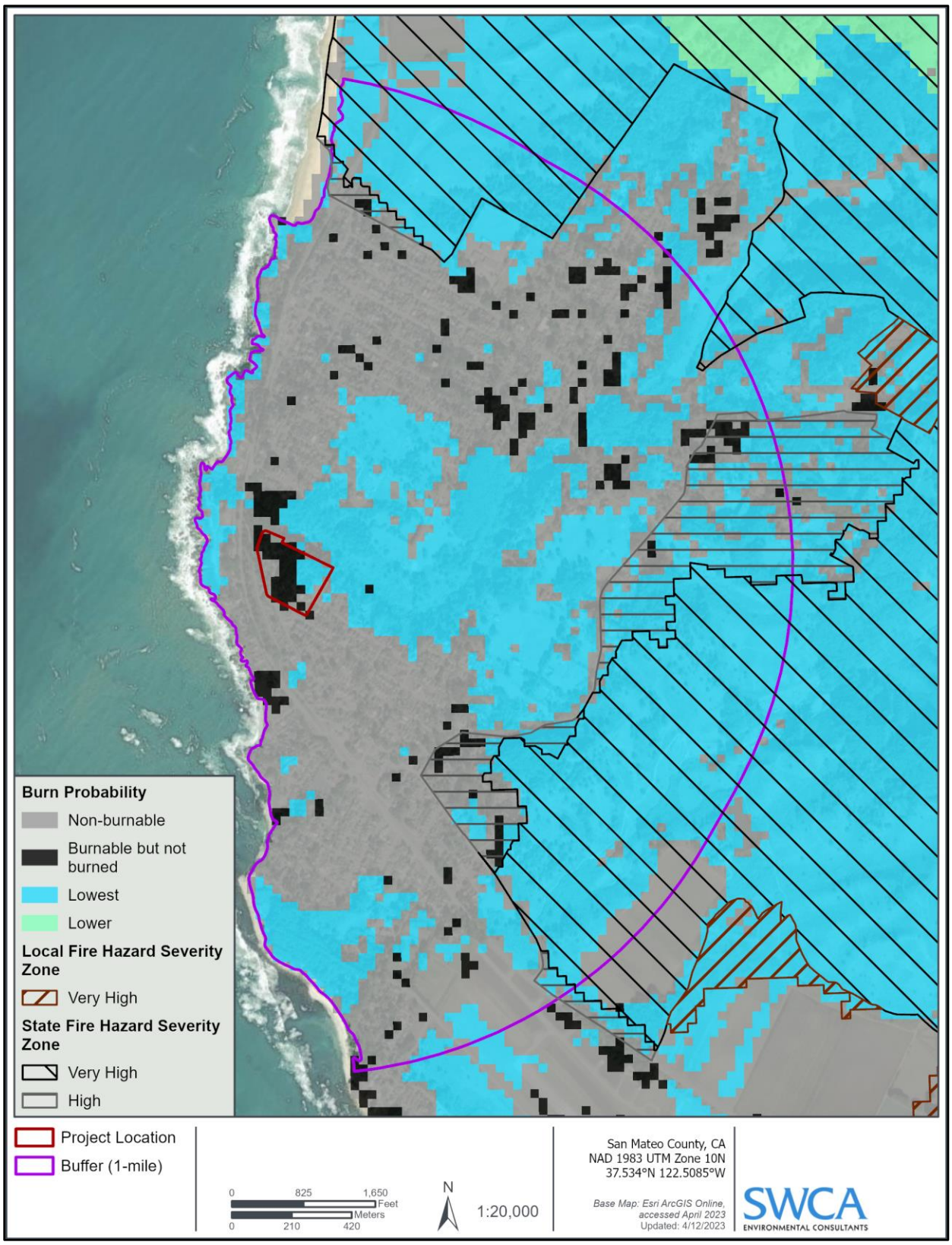


Figure 7. Burn probability.

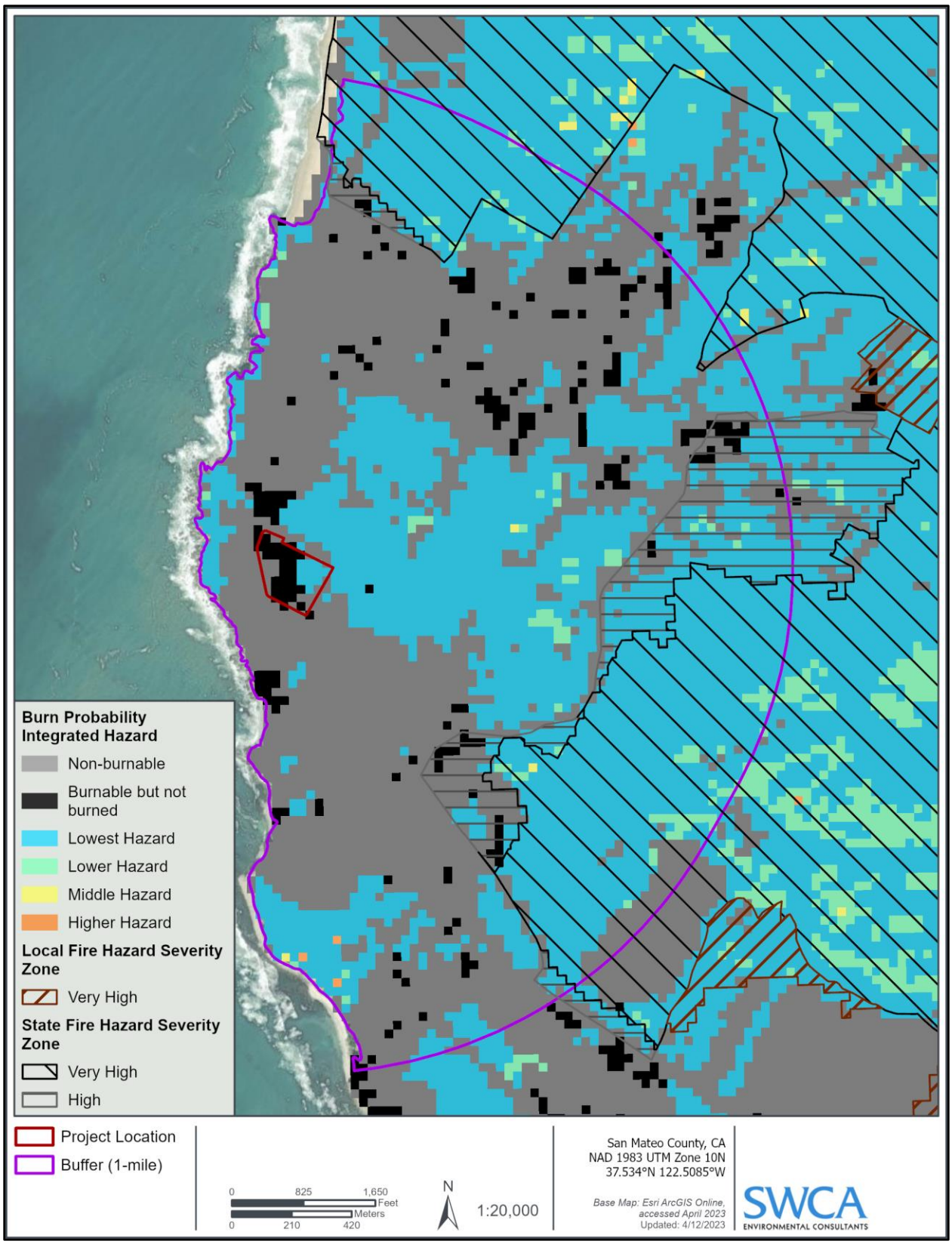


Figure 8. Integrated hazard burn probability.

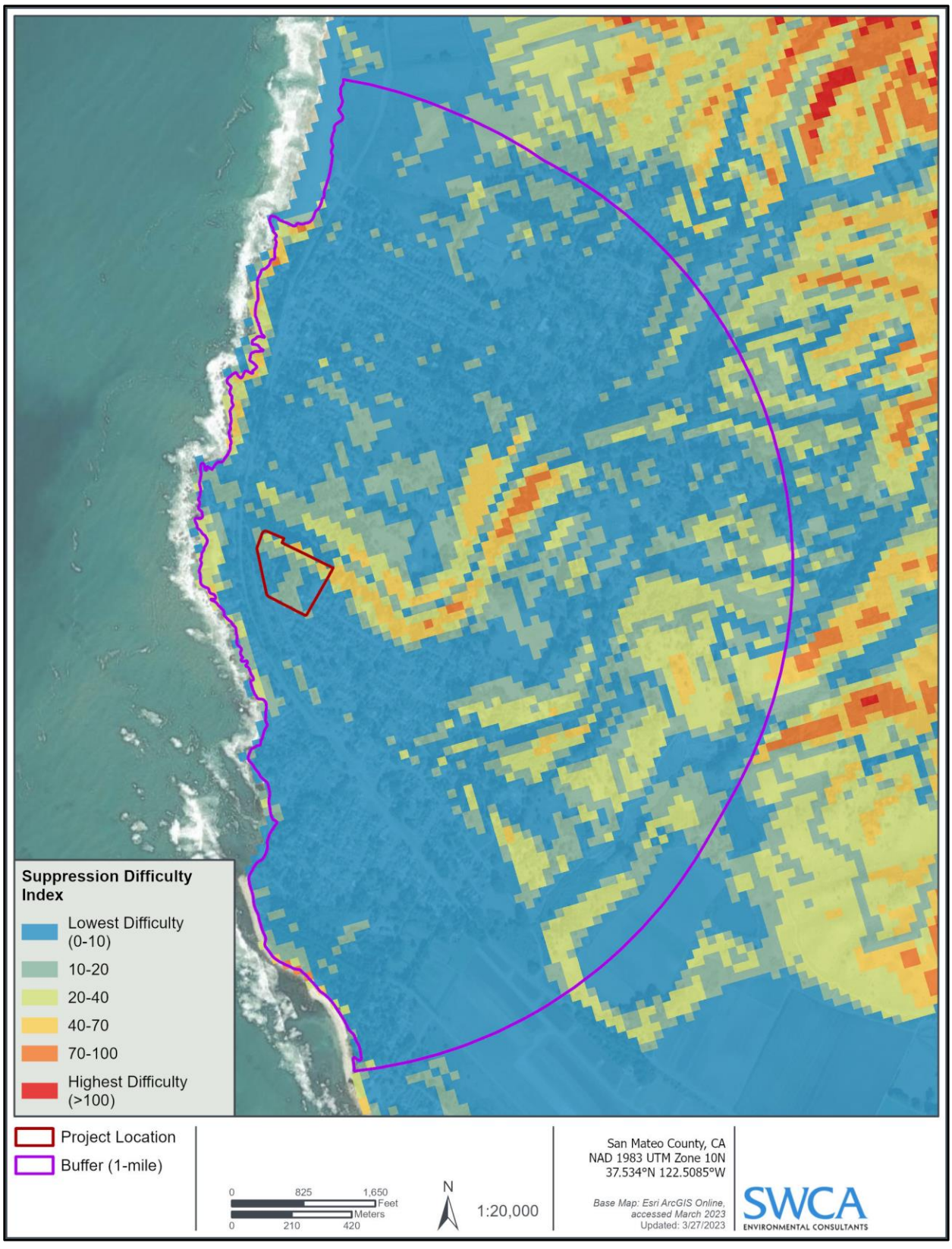


Figure 9. Fire suppression difficulty.

Overall, predicted fire behavior in the project site and 1-mile buffer area is low to moderate. A large percentage of the acres of non-burnable land or burnable, not burned land provides discontinuity in fuels and thus potential fire spread. The rate of spread is low to moderate (less than 50 ch/hr) for most of the project site and project area. Sustained and continuous active crown fire, versus the less extreme passive crown fire, is predicted over a minor percentage of the project site (11%) and project area (1%). Passive crown fire is predicted over less than one-quarter of the project site and project area (21% for each). The low SDI throughout the project site and project area supports the predicted low to moderate fire behavior, low to moderate fuel load, fuel discontinuity, and accessible terrain for emergency responders.

2.3 Fire History

From 2003 to 2022, three fires occurred within a 2-mile radius of the project site (Figure 10). All fires were less than 1 acre and have an "undetermined" cause (Table 3). Historically, in the range of data sourced, the most common causes of wildfires in the County have been "undetermined," equipment use, miscellaneous, and power line/electric power (National Interagency Fire Center 2018).

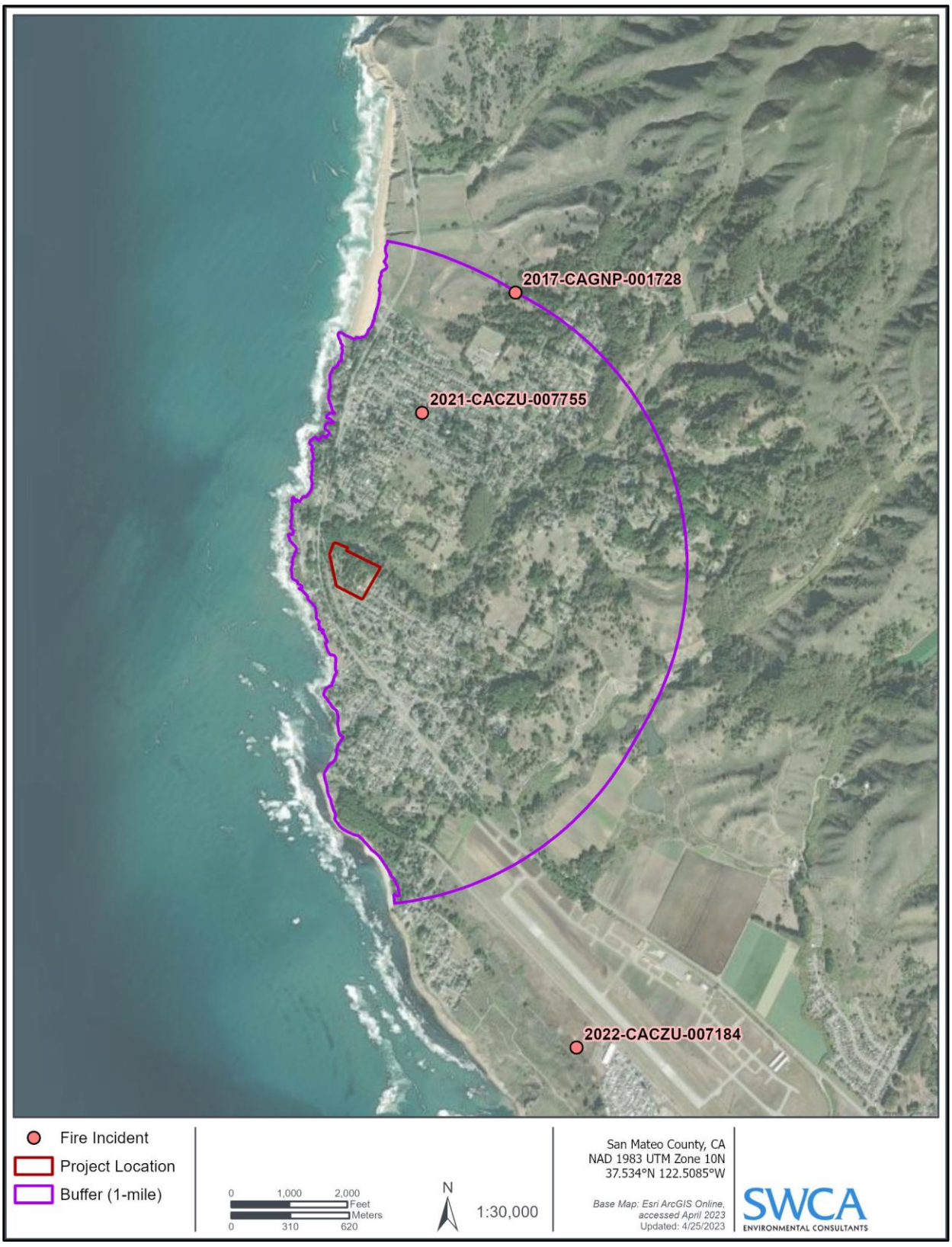


Figure 10. Fire history.

Table 3. Fire History

Date	Incident Name	Size (acres)	Cause
10/20/2022	Airport St Half Moon Bay UNINC (2022-CACZU-007184)	<1	Undetermined
11/19/2021	6th St/East Ave (2021-CACZU-007755)	<1	Undetermined
10/22/2017	Rancho (2017-CAGNP-001728)	<1	Undetermined

Source: National Interagency Fire Center (NIFC) 2018

3 ANALYSIS OF PROJECT EFFECTS ON WILDFIRE AND EMERGENCY SERVICES

3.1 Emergency Services

The project site is located within a 5-minute drive time from Coastside FPD's Fire Station 44 at Stetson and Kelmore Streets south of Sierra Street, which exceeds the Coastside FPD goal of 6-minute and 59-second response time (Figure 11). There are two additional fire stations within a 10-minute drive time and two additional fire stations within a 15-minute drive time from the project site (Table 4). Drive times were calculated using the ArcGIS Pro Generate Service Areas tool in the Network Analysis toolbox (ESRI 2022). This tool determines a network service area around a facility (the project) to measure accessibility. Travel times were set at 5-minute intervals.

Coastside FPD stations are staffed with one fire captain and two fire apparatus engineers. Additional details on Coastside FPD can be found in Section 1.1.3.4 (Fire Protection). Note that North County Fire Authority Station 72 has a shorter drive time to the project site than Coast Side FPD Station 40. Station 72's primary response area is the Linda Mar area and the southern end of Pacifica.

There are major arteries providing direct access for emergency services to the project site (see Section 3.2 [Emergency Access Routes]). Vehicular ingress/egress to the project site would be provided by a new 28-foot-wide single driveway on Carlos Street on the western boundary of the site, which exceeds the 20-foot road width requirement in the California Fire Code, Section 503 (International Code Council, Inc. [ICC] 2022a). In addition to the main entrance, there would be a 20-foot-wide emergency access route from Lincoln Street to the northeast corner of the project.

Table 4. Fire Stations within a 15-minute Drive Time of the Project Site.

Fire Station	Address	Project Drive Time Interval (minutes)	Distance to Project (miles)
Station 44 Coast Side Fire Protection District	501 Stetson Street, Moss Beach, California	5	0.02
Station 41 Coast Side Fire Protection District	531 Obispo Road, Half Moon Bay, California	10	3.2
Station 72 North County Fire Authority	1100 Linda Mar Boulevard, Pacifica, California	10	3.7
Station 40 Coast Side Fire Protection District	1191 Main Street, Half Moon Bay, California	15	7.3
Station 71 North County Fire Authority	616 Edgemar Avenue, Pacifica, California	15	7.8

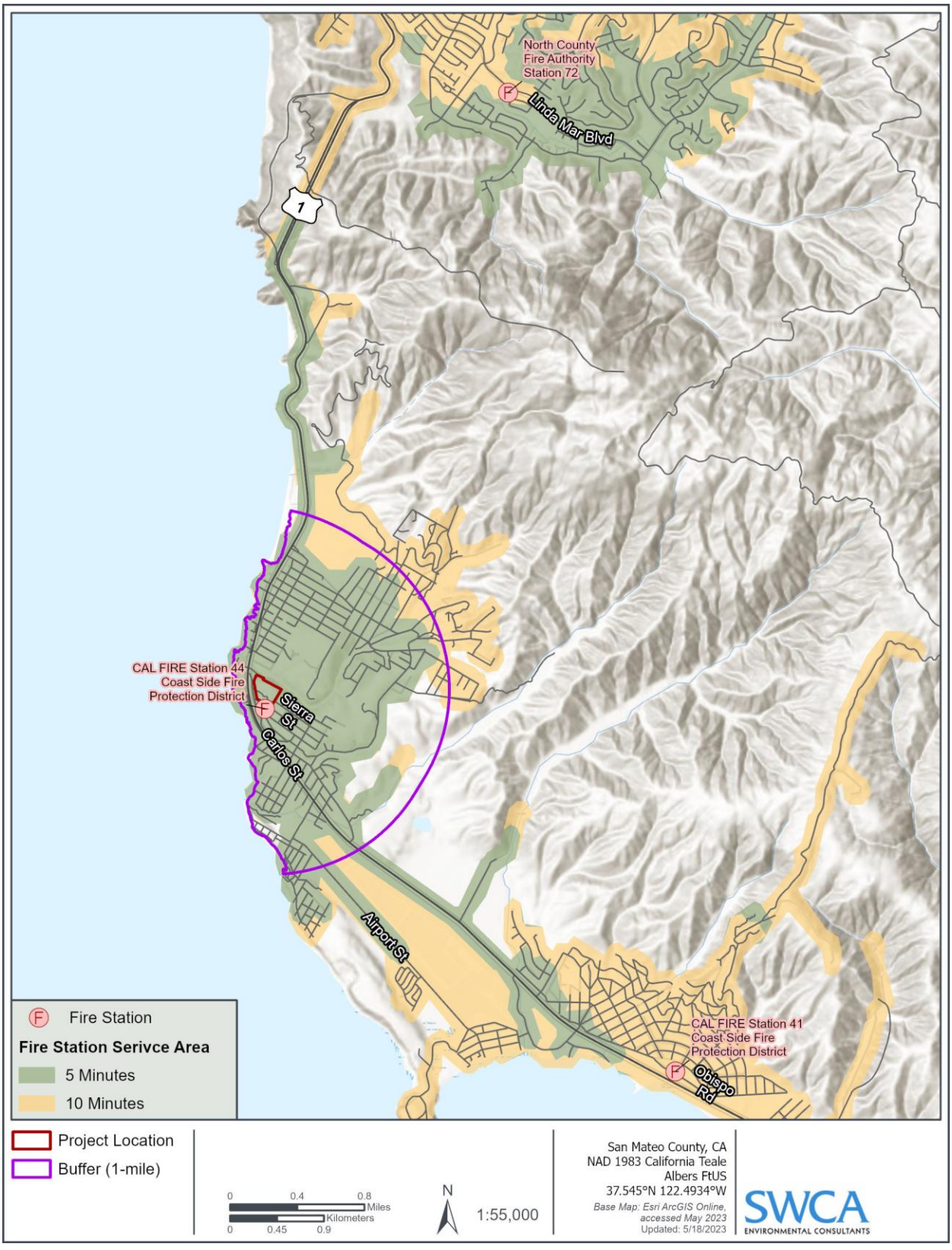


Figure 11. Fire stations within a 10-minute drive time of the project site.

3.2 Emergency Access Routes

There is one existing dirt road on the project site, which is the continuation of Buena Vista Street between Lincoln Street and Carlos Street. The project site can be accessed from Buena Vista Street, Lincoln Street, and Carlos Street. Installation of security gates is not a proposed feature of the project and, therefore, approval from the fire department is not necessary (according to the 2022 California Fire Code, Section 503.6) (ICC 2022a). Addresses would be plainly marked and visible from the street. Numbers would be 4 inches high on a contrasting background, as required by the California Fire Code, Section 505. All access to the project site and identification of site structures have been designed per the 2022 California Fire Code (ICC 2022a).

Vehicular ingress/egress to the project site would be provided by a new 28-foot-wide single driveway on Carlos Street on the western boundary of the site. This road width exceeds the 20-foot road width requirement in the California Fire Code, Section 503 (ICC 2022a). The entrance driveway would split into an access loop that circles the residential and community building areas. In addition to the main entrance, there would be a 20-foot-wide emergency access route from Lincoln Street to the northeast corner of the project.

The applicant has proposed closing Carlos Street between the project driveway and SR-1 to daily traffic from the proposed development; however, it would be available for emergency vehicle ingress/egress and for the public during emergency situations.

All internal driveway and parking areas would be composed of asphalt, concrete, or other approved driving surface capable of supporting the imposed load of fire apparatus weighing up to 75,000 pounds in accordance with California Fire Code, Section D102, which regulates required access and loading for new construction (ICC 2022a).

There is an extensive network of roads, both well-maintained dirt and major paved roads, surrounding the project site, including SR-1. These roads can support weight loads of fire apparatus and allow for access from all directions. There are main arteries from the nearest communities and fire stations that provide direct emergency response services. Descriptions of each roadway facility are presented below.

- SR-1 is a major north-south state highway that facilitates regional travel along California's Pacific coastline and provides the only access to Moss Beach. It connects Moss Beach to destinations in the north such as San Francisco and to the south such as Half Moon Bay. This portion of SR-1 is also known as the Cabrillo Highway. In the vicinity of the project site, it is a two-lane highway with one lane each for both the northbound and southbound directions and median left-turn lanes at the intersections of 16th, Carlos, and Etheldore/Vallemar Streets and California Avenue/Wienke Way. SR-1 has a posted speed limit of 45 miles per hour (mph).
- Carlos Street is a narrow two-way local street that runs north-south through Moss Beach parallel to SR-1. Primary access to the project site is provided via a proposed driveway off Carlos Street north of Sierra Street. North of the project site Carlos Street can be directly accessed from SR-1. From the south access to Carlos Street is from SR-1 via Etheldore Street or California Avenue. The posted speed limit is 25 mph.
- Sierra Street is a two-lane, two-way local street that extends east from Carlos Street to Vermont Street and provides residential access across Moss Beach. The posted speed limit is 15 mph.
- Stetson Street is a two-lane, two-way local street that extends south from Sierra Street near the project site to Sunshine Valley Road and provides access across Moss Beach. The posted speed limit is 15 mph.

- Etheldore Street is a two-lane, two-way local street that connects Moss Beach to SR-1. It extends in a southeasterly direction from the intersection with SR-1 through Moss Beach and intersects with SR-1 further south. The posted speed limit is 15 mph. Vallemar Street is on the west side of SR-1 and is a continuation of Etheldore Street.
- California Avenue is an east-west, two-lane, two-way local street that crosses SR-1 south of the project site, providing SR-1 access to much of the residential area of Moss Beach. The posted speed limit is 15 mph. Wienke Way spurs off California Avenue on the west side of SR-1.
- Airport Street is a north-south, two-lane, two-way local street that runs parallel to SR-1 south of the project site. It provides access from Moss Beach to Half Moon Bay, connecting to local streets in both communities, respectively.

3.3 Fire Water Supply

The project site contains easements for facilities operated by MWSD, including two water storage tanks with a height of 35 feet in the southeastern portion of the site, a booster pump system, and distribution facilities within a fenced parcel of land adjacent to and west of the intersection of Lincoln Street and Buena Vista Street near the eastern boundary of the project site. The project would have water tanks capable of supplying a flow of 100 gallons of water per minute (gpm) for the duration of 2 hours, as required by the California Fire Code, Section 507 (ICC 2019) and in compliance with the San Mateo County General Plan, Chapter 15, Section 15.30 (County of San Mateo 2021). The project would extend water lines to new project facilities for potable water and fire water supply, as well as for irrigation of landscaping. The proposed water line would extend from the existing MWSD tanks along the existing 10-foot right-of-way along the eastern and northern parts of the project site. New domestic water and fire water lines would be located in the driveway loop and parking areas, with individual connections to each building. The fire water would connect to a flow meter in the northeast corner of the driveway loop. The project is considered a R-2 Residential Group occupancy and would have automatic fire sprinkler systems in compliance with California Fire Code, Chapter 9, Section 903.3.1.2 (ICC 2022a). Fire flows for the 63,374 square feet of residential buildings would be at least 1,500 gpm at 20 pounds per square inch residual pressure for a minimum of 2 hours as required by Coastside FPD standards (personal communication via email on October 18, 2022). The fire supply systems meet the requirements listed in California Fire Code, Chapter 5, Section 507.5.1 through 507.5.6 and Appendix C (ICC 2022a). There are 31 fire hydrants located within a 1-mile buffer of the project site (Figure 12). These fire hydrants could be used as additional water sources in the event of wildfire.



Figure 12. Hydrant locations.

3.4 Ignition-Resistant Construction and Fire Protection Systems

Design and construction of new structures within the project site would meet standards in the 2022 California Building Code, Title 24, Part 2, Chapters 7 and 7a for exterior walls and roofing materials, as well as Chapter 9, Section 903 for automatic fire sprinkler systems and fire alarm and detection systems (ICC 2022b). This includes using fire-resistant and ignition-resistant materials of a certain rating for exterior walls and roofing materials.

3.5 Defensible Space and Vegetation Management

The project includes a 30-foot fire break area and a 100-foot reduced fuel zone surrounding the development as required in the Public Resources Code 4291; California Code of Regulations, Title 24, Part 9, Section 4907; and as referenced in the Local Hazard Mitigation Plan (Tetra Tech 2021). The 30-foot fire break would be cleared of all flammable vegetation (except irrigated grass mowed to 4 inches vertical height or less), and the 100-foot reduced fuel zone would maintain vegetation (grass and shrubs) reduced to a maximum of 4 inches vertical height. The reduced fuel zone would ensure adequate spacing between any existing trees, which is a minimum of 10-foot spacing between widest points of the crown of adjacent trees. Tree crowns would be limbed or trimmed to reach this spacing; some trees may also need be removed. The 100-foot reduced fuel zone extends 70 feet beyond the 30-foot fire break area.

The project would retain approximately 193 of the existing trees on-site and remove approximately 295 trees within the project site. Tree Protection Zones would be defined and marked prior to construction to protect each tree to be preserved during construction. Approximately 190 trees would be planted throughout the project site. These trees would be caged for the first year to protect them from herbivores and irrigated until established as evidenced by vigorous top growth in the spring. The project would replant disturbed slopes with native or low-water ground cover and shrubs, and/or seeded with red fescue (*Festuca rubra*) and California poppy (*Eschscholzia californica*), for erosion control.

4 EVACUATION ROUTE ASSESSMENT

Evacuation of residents during an emergency incident is a dynamic situation requiring coordination among different agencies and local residents. Evacuation is recommended by authorities to reduce the risk of residents being impacted by hazards from natural and human-made disasters, such as fire, as well as secondary effects like road congestion. Evacuation recommendations by authorities are done in a manner to help reduce traffic blocks and aid emergency responders during incident operations. A change in population may impact evacuation processes. Ladris Technologies' evacuation platform was used to model potential changes in evacuation times with the increase in residents from the project.

All evacuation simulations were considered with a 1-hour maximum departure timeframe for residents, meaning all vehicles are entering roadways over a 1-hour window. Regional occupancy coverage was set to 100% for each simulation, indicating the maximum number of residents (vehicles) was modeled. All residents within Zone Haven designated zone SMC-E029 (the zone where the project is located) were evacuated to the Coast Side Clinic located at 225 South Cabrillo Highway, Half Moon Bay, California.

Additional details of evacuation modeling methodology can be found in Appendix B.

4.1 Travel Times under Existing and Proposed Development Models

The development proposes an additional 71 residences with approximately 213 occupants. The evacuation modeling platform only considers vehicle counts and not occupancy. Publicly available data indicates recent trends in cars per capita range from 0.8 to 0.9 in the country, depending on specific year. This model assumes 0.85 car per resident. It does not account for possible differences in cars per capita in situations such as affordable or senior housing.

Simulations were run with and without the proposed development to model the impact on travel time from increased vehicles (residents) in the evacuation zone. Table 5 shows the increase in evacuation time by approximately 18% for median travel time and 1% for maximum travel time with the proposed development compared with no proposed development. The development modeled in Table 5 does not include the project mitigation of the temporary closure of Carlos Street between the project driveway and SR-1 as it would be open during an emergency situation.

The model shows all residents within Zone Haven SMC-E029 evacuating within 1-hour to the Coast Side Clinic in Half Moon Bay, California, to the south of Moss Beach. Evacuation times model probable flows of traffic using all available roads and routes to the designated evacuation point; SR-1 and Airport Street are two main arteries. Additional details of the simulation can be found in Appendix B.

Table 5. Travel Times with and without Proposed Development

Project Status	Median Time (H, M)[1]	Percent Increase	Maximum Time (H, M) [1]	Percent Increase
No development	1H, 27M	--	2H, 22M	--
Development	1H, 43M	18.3%	2H, 23M	1%

1. Hours, Minutes

Source: Ladris Technologies

5 CUMULATIVE IMPACTS

The proposed Etheldore Apartments Project is located nearby the project (approximately 2,100 feet southeast). Ethledore Apartments is a project that includes the construction of an eight-unit, multiple-family housing development (San Mateo County 2023). The Etheldore Apartments Project is currently in early planning and development stage of environmental review. The pre-application workshop was held in February 2020. The Etheldore Apartments Project also has the potential to increase human-caused ignitions in the surrounding area, though smaller in scope (fewer housing units). No additional projects are currently planned to occur within 1 mile of the project site.

6 CONCLUSION

The minimal fire history, discontinuity of fuels across the landscape, and the low to moderate predicted fire behavior (burn probability, rate of spread, and crown fire) in the project site and 1-mile buffer area indicate a low fire hazard. While the proposed development of residential buildings where there currently are none potentially increases human-caused ignitions, both during and post-construction, modeled fire behavior does not lend itself to large fire growth. The addition of paved roads and other nonburnable

surfaces associated with project development further fragment flammable fuels, preventing fire spread by acting as fuel breaks. Additionally, the SDI shows a low difficulty in suppression efforts for the project site, indicating the likelihood of stopping forward progression of a fire, minimizing fire size and adverse impacts to the environmental setting.

Given the relatively flat terrain and absence of significant topographic features in the vicinity, it is not likely the topography would exacerbate wildfire risks, and it is not likely a fire would result in landslides, post-fire slope instability, or drainage and debris flow issues. Fire is an intrinsic part of the landscape, and during seasonal prevailing winds when fire season peaks, risks would be reduced by designing an area of defensible space around the building, using ignition-resistant equipment, and adding domestic fire water lines to the buildings.

The project site is located within 300 feet from Fire Station 44, ensuring sufficient emergency response if necessary (less than a 6-minute and 59-second response time). Resident evacuation simulations indicate that the project would increase evacuation time by approximately 1% for median travel time and 18% for maximum travel time. There is, however, a network of roads surrounding the project site. There are main arteries from the nearest communities and fire stations that provide direct emergency response services beyond Station 44.

As the area experiences further growth and development, the County anticipates that exposure to wildfire hazards will remain the same or decrease over time due to codes and regulations enforcement for new construction (Tetra Tech 2021). The project would follow all applicable local, state, and federal regulations designed to reduce wildfire risk for new developments, including defensible space measures (PRC 4291), fire-resistant building materials and features (California Building Code and California Residential Code), and emergency vehicle ingress/egress routes (California Code of Regulations Title 14 and California Fire Code Title 24). Local plans, such as the 2021 Multijurisdictional Local Hazard Mitigation Plan and the Connect the Coastside Plan further describe coordinated actions to reduce wildfire risk and enhance emergency response, including evacuation of the public during emergency situations. The project would not impair the evacuation procedures and warning time protocols as described in the Local Hazard Mitigation Plan (Tetra Tech 2021).

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APPENDIX A

Fire Behavior Modeling

Fire behavior modeling was conducted using the Interagency Fuels Treatment Decision Support System (IFTDSS) (U.S. Department of Interior–Wildland Fire Management RD&A 2021) and FlamMap (U.S. Forest Service 2023). IFTDSS is a web-based application that models fire behavior under a variety of weather conditions and possible fuels treatments for an area of interest or a landscape. FlamMap is a fire behavior mapping and analysis program that computes discrete potential fire behavior characteristics, or metrics. IFTDSS and FlamMap use the following data parameters: 1-hour, 10-hour, and 100-hour dead fuel moistures; herbaceous and woody live fuel moistures; and wind speed and direction. Fuel size classes (1, 10, and 100 hour) used for dead fuel moisture are based on the fuel size diameter and how long it takes for approximately 67% of the moisture content of the woody fuel to reach equilibrium with the environment. Live fuel moistures range from approximately 50% to 300% depending on the stage of vegetative development.

Fire behavior metrics were run with parameters at the 97th percentile to represent extreme conditions or a worst-case scenario. Fire weather and fuels conditions are from the closest remote automated weather station (RAWS) to the project, Spring Valley RAWS. RAWS data available was from July 1999 to October 2016; to account for ongoing drought in the region, some 97th percentile parameters were modified. The 100-hour fuel moisture, live herbaceous fuel moisture, and live woody fuel moisture values were reduced to reflect consistent trends throughout the state and coastal region because of drought. Analysis was conducted for the project site and the 1-mile buffer area.

IFTDSS and FlamMap use fire behavior fuel models to classify the vegetation on the landscape. LANDFIRE was used for certain modeling when the San Mateo Countywide Fine Scale Vegetation Map and Landscape Database Project data were incompatible. LANDFIRE data are at a 30-meter resolution, while the Fine Scale Project data are at a 5-meter resolution.

The 30-foot fuel break maintains irrigated grass mowed to 4 inches or less vertical height. This is best represented by a nonburnable substrate as it would not be flammable with constant irrigation.
The 100-foot reduced fuel zone (70 feet beyond the fuel break) would maintain all grass and shrubs to a vertical height of 4 inches or less, making both grass and shrubs behave like grass fuel model GR1 with a low fuel load and thus low predicted fire behavior. This modified 100-foot zone would reduce fuels in critical areas where new fire starts are likely to occur from human activities and also create defensible space from off-site fuels to prevent fire spread to the structure.

APPENDIX B

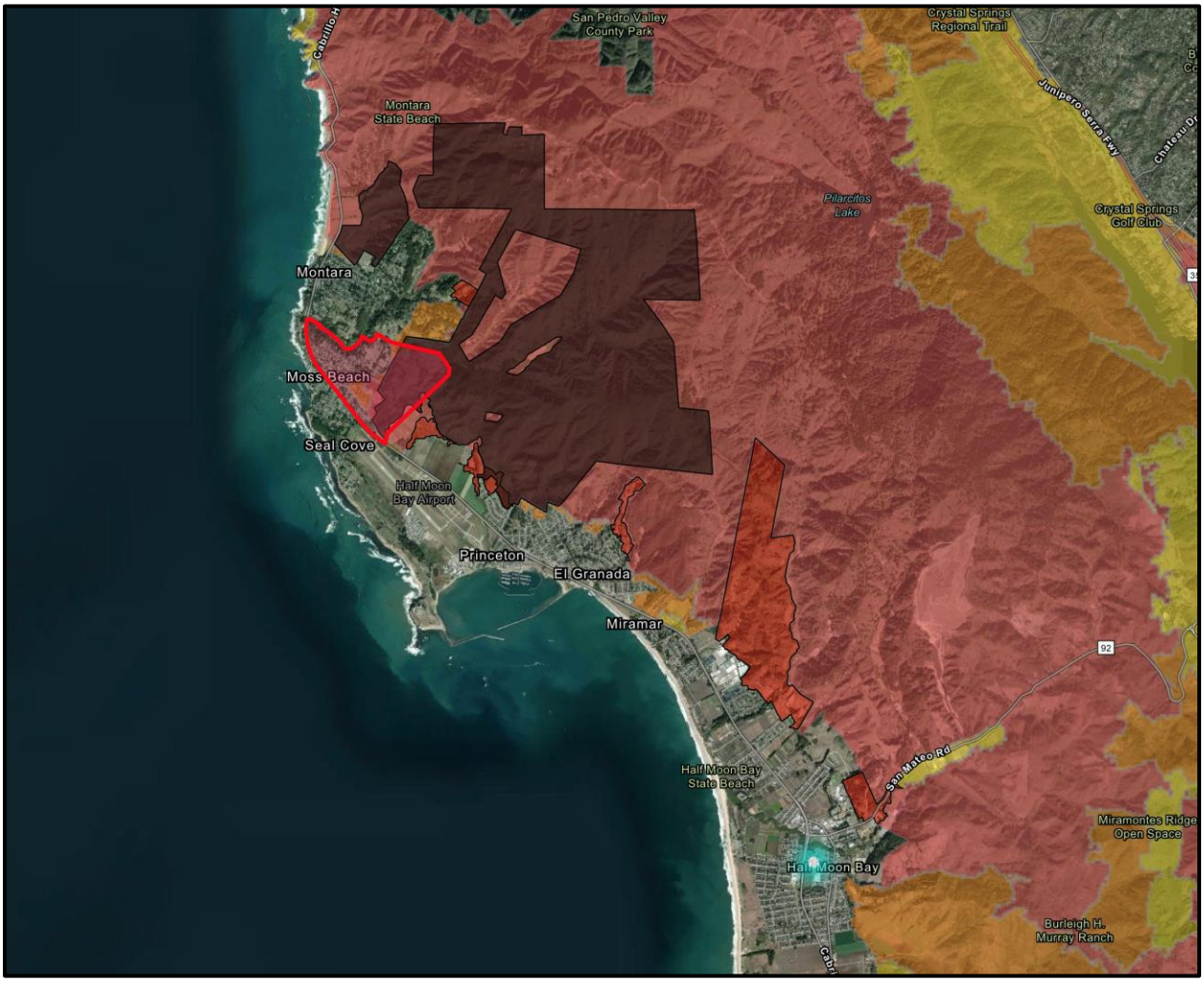
Evacuation Route Simulations

The Ladris Technologies' evacuation modeling platform considers only vehicle counts and not occupancy. Publicly available data indicates recent trends in cars per capita range from 0.8 to 0.9 in the country, depending on specific year. This model assumes 0.85 car per resident and does not distinguish between local differences in the country average.

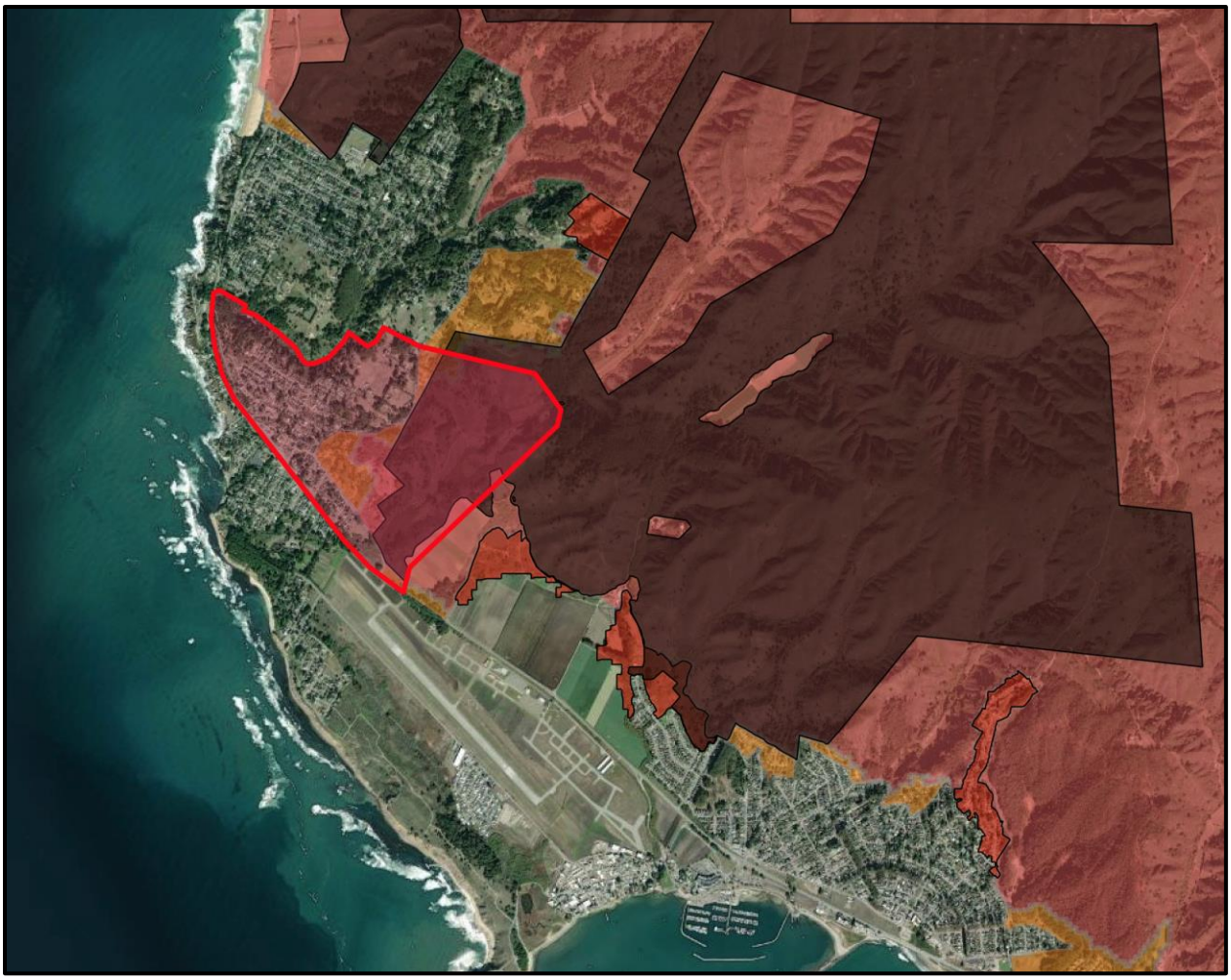
All evacuation simulations were considered with a 1-hour maximum departure timeframe for residents, meaning all vehicles are entering roadways over a 1-hour window. A 1-hour departure timeframe represents an extremely urgent evacuation scenario representing a worst-case-scenario. Regional occupancy coverage was set to 100% for each simulation, indicating the maximum number of residents (vehicles) was modeled.

All residents within Zone Haven designated zone SMC-E029 (the zone where the project is located) were evacuated in all simulations. All residents were evacuated to the Coast Side Clinic located at 225 South Cabrillo Highway, Half Moon Bay, California, to represent a potential temporary shelter for evacuating residents during an emergency incident.

Evacuation zone with CAL FIRE FHSZs and evacuation point.



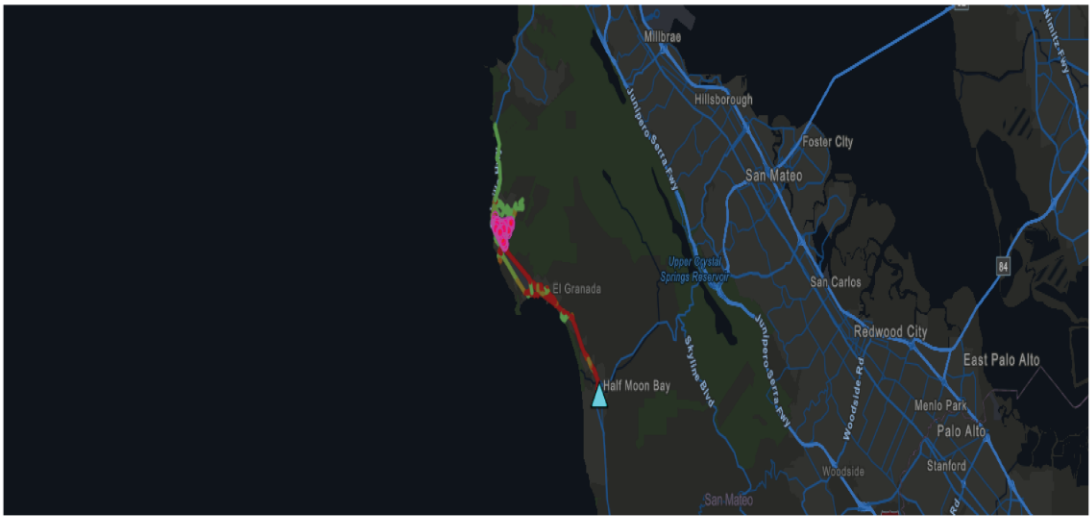
Evacuation zone with CAL FIRE FHSZs.



Evacuation Simulation | San Mateo County - Cypress Point

2023-05-08 12:21:07.07038

Operator: Support Ladris



Map powered by Esri.

Projections

Metric	Projection
Median	1H 27M
Mean	1H 28M
Standard Deviation	0H 29M
Maximum	2H 22M
Minimum	0H 8M
Addresses Evacuated	446 addresses
Passenger Cars Evacuated	892 passenger cars
Heavy Vehicles Evacuated	892 heavy vehicles
Simulation Type	Polygon
Simulation Type	Zoned

Notice: This report is generated by a modeling algorithm that identifies patterns in disaster response. It is dependent upon the assumptions used by the operator in generating the report and the accuracy of third-party data. It is unlikely to fully reflect all of the complexity inherent in chaotic environments. Any assessment of future outcomes carries inherent risk, and Ladris does not assume responsibility for decisions made as a result of projections. End users should possess expertise in understanding the real-world implications of forecasts, and should always exercise sound judgement and expert discretion when interpreting results.

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Evacuation Simulation | San Mateo County - Cypress Point

2023-05-08 12:21:07.07038

Operator: Support Ladris

Assumptions

The following assumptions were configured by the operator prior to running the simulation:

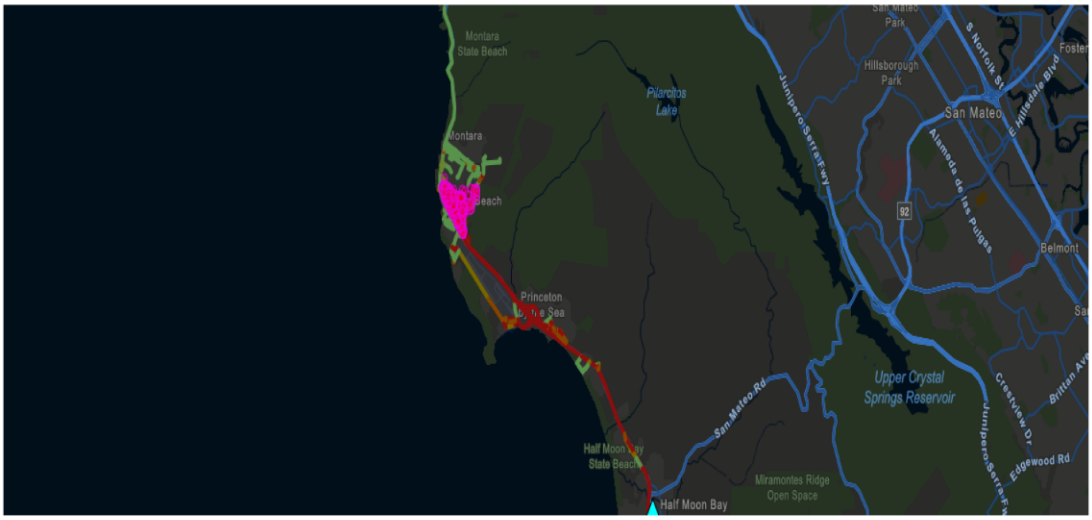
Variable	Assumption
Passenger Cars per Address	2 per address
Heavy Vehicles per Address	2 per address
Freeway Free-Flow Speeds	65 miles per hour
Highway Free-Flow Speeds	50 miles per hour
Arterial Free-Flow Speeds	40 miles per hour
Residential Free-Flow Speeds	28 miles per hour
Service Free-Flow Speeds	15 miles per hour

Notice: This report is generated by a modeling algorithm that identifies patterns in disaster response. It is dependent upon the assumptions used by the operator in generating the report and the accuracy of third-party data. It is unlikely to fully reflect all of the complexity inherent in chaotic environments. Any assessment of future outcomes carries inherent risk, and Ladris does not assume responsibility for decisions made as a result of projections. End users should possess expertise in understanding the real-world implications of forecasts, and should always exercise sound judgement and expert discretion when interpreting results.

Evacuation Simulation | San Mateo County - Cypress Point

2023-05-08 12:19:01.779237

Operator: Support Ladris



Map powered by Esri.

Projections

Metric	Projection
Median	1H 43M
Mean	1H 38M
Standard Deviation	0H 31M
Maximum	2H 23M
Minimum	0H 8M
Addresses Evacuated	459 addresses
Passenger Cars Evacuated	1058 passenger cars
Heavy Vehicles Evacuated	891.4 heavy vehicles
Simulation Type	Polygon
Simulation Type	Zoned

Notice: This report is generated by a modeling algorithm that identifies patterns in disaster response. It is dependent upon the assumptions used by the operator in generating the report and the accuracy of third-party data. It is unlikely to fully reflect all of the complexity inherent in chaotic environments. Any assessment of future outcomes carries inherent risk, and Ladris does not assume responsibility for decisions made as a result of projections. End users should possess expertise in understanding the real-world implications of forecasts, and should always exercise sound judgement and expert discretion when interpreting results.

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Evacuation Simulation | San Mateo County - Cypress Point

2023-05-08 12:19:01.779237

Operator: Support Ladris

Assumptions

The following assumptions were configured by the operator prior to running the simulation:

Variable	Assumption
Passenger Cars per Address	2 per address
Heavy Vehicles per Address	2 per address
Freeway Free-Flow Speeds	65 miles per hour
Highway Free-Flow Speeds	50 miles per hour
Arterial Free-Flow Speeds	40 miles per hour
Residential Free-Flow Speeds	28 miles per hour
Service Free-Flow Speeds	15 miles per hour

Notice: This report is generated by a modeling algorithm that identifies patterns in disaster response. It is dependent upon the assumptions used by the operator in generating the report and the accuracy of third-party data. It is unlikely to fully reflect all of the complexity inherent in chaotic environments. Any assessment of future outcomes carries inherent risk, and Ladris does not assume responsibility for decisions made as a result of projections. End users should possess expertise in understanding the real-world implications of forecasts, and should always exercise sound judgement and expert discretion when interpreting results.

APPENDIX O

Noise and Vibration Assessment

County Review Draft

CYPRESS POINT AFFORDABLE HOUSING PROJECT NOISE AND VIBRATION ASSESSMENT

SAN MATEO COUNTY, CALIFORNIA

June 12, 2018

♦ ♦ ♦

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I&R Job No.: 17-158

INTRODUCTION

The Cypress Point affordable housing project is located on approximately 10.88 acres of vacant land northeast of the intersection of Carlos Street and Sierra Street in Moss Beach, an unincorporated community within San Mateo County, California. The project proposes to develop 71 affordable housing units on this lot, consisting of approximately 22 two-story buildings holding 2 to 4 units each. The project would provide a mixture of 1, 2, and 3-bedroom units, including a combination of two-story townhouses and ADA-accessible 1-story flats. In addition to the housing units, the development will include an approximately 3,200 square foot community building that will include the general office, the manager's office, a community room, kitchen, computer room, laundry, and maintenance and storage areas. The project would also include several outdoor amenities, including a community garden, a children's play area, upper and lower greens, and BBQ areas. The total developed area would be approximately 235,000 square feet.

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, summarizes applicable regulatory criteria, and discusses the results of the ambient noise monitoring survey completed to document existing noise conditions; 2) the Policy Consistency Section discusses the noise and land use compatibility of the proposed project utilizing applicable policies; and 3) the Impacts and Mitigation Measures Section describes the significance criteria used to evaluate project impacts on sensitive receptors, provides a discussion of each project impact, and presents measures, where necessary, to mitigate the identified impacts to a less-than-significant level.

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 a combination of the intensity of sound waves and 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.

Several noise measurement scales 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 the perception of 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 used in this analysis are defined in Table 1.

There are several methods of characterizing sound when multiple frequencies exist or sound intensities change over time. 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 different durations.

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* (*DNL* or L_{dn}) 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 interference with conversation 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 CNEL. Typically, the highest steady traffic noise level during the daytime is about equal to the CNEL 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 to 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 to 62 dBA CNEL with open windows and 65 to 70 dBA CNEL if the windows are closed. Levels of 55 to 60 dBA CNEL are common

along collector streets and secondary arterials, while 65 to 70 dBA CNEL is a typical value for a primary/major arterial. Levels of 75 to 80 dBA CNEL 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 adequate ventilation, heating, and cooling with 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 that result from 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 CNEL 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 CNEL. At a CNEL of about 60 dBA, approximately 12 percent of the population is highly annoyed. When the CNEL increases to 70 dBA, the percentage of the population highly annoyed increases to about 25 to 30 percent of the population. There is, therefore, an increase of about 2 percent in perceived annoyance for each 1 dBA increase between a CNEL of 60 to 70 dBA. Between a CNEL of 70 to 80 dBA, each decibel increase results in an increase of about 3 percent in the percentage of the population highly annoyed. People appear to respond more adversely to aircraft noise. When the CNEL is 60 dBA, approximately 30 to 35 percent of the population is believed to be highly annoyed. Each decibel increase to 70 dBA CNEL adds about 3 percentage points to the number of people highly annoyed. Above 70 dBA CNEL, 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 (i.e. there is no net motion). 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 vibration levels produce.

The annoyance levels shown in Table 3 should be interpreted with care since vibration may be found to be annoying at much 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 complaints for vibrations levels where there is very little risk of actual structural damage.

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 (i.e. periodic, not continuous), 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 induce structural 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. Studies have shown that the threshold of perception for average persons is in the range of 0.008 to 0.012 in/sec PPV. Human perception to 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.

Damage caused by vibration can be classified as cosmetic or structural. Cosmetic damage includes minor cracking of building elements (exterior pavement, room surfaces, etc.). Structural damage involves threats to the integrity of buildings. Damage resulting from construction related vibration typically results only in cosmetic damage. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher and there is no general consensus as to what amount of vibration may pose a threat for structural damage to the building. 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.

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 sounds 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 pm and 7:00 am.
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 pm to 10:00 pm and after addition of 10 decibels to sound levels measured in the night between 10:00 pm and 7:00 am.
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	Virtually no risk of damage to normal buildings
0.3	Strongly perceptible to severe	Threshold at which there is a risk of damage to older residential dwellings such as plastered walls or ceilings
0.5	Severe - Vibrations considered unpleasant	Threshold at which there is a risk of damage to newer residential structures

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

Regulatory Background

The State of California and San Mateo County have established regulatory criteria that are applicable to this assessment. The State 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.

State CEQA Guidelines. Appendix G of the CEQA Guidelines provides criteria with which to evaluate the significance of effects of a proposed project. Under CEQA, noise impacts would be considered significant if the project would result in:

(a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

(b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;

(c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;

(d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;

(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, if the

project would expose people residing or working in the project area to excessive noise levels;

(f) For a project within the vicinity of a private airstrip, if the project would expose people residing or working in the project area to excessive noise levels.

Pursuant to recent court decisions, the impacts on project residents of off-site noise or vibration sources unconnected to the project as described in Checklist Questions (a), (e), and (f) are not included in the Impacts and Mitigation Section of this report. These items are discussed in a separate section addressing Noise and Land Use Compatibility, which evaluates the consistency of the proposed project with the policies set forth in the County's General Plan.

CEQA does not define what noise level increase would be considered substantial. Typically, an increase in the CNEL noise level resulting from the project at noise sensitive land uses of 3 dBA or greater would be considered a significant impact when projected noise levels would exceed those considered acceptable for the affected land use. An increase of 5 dBA CNEL or greater would be considered a significant impact when projected noise levels would remain within those considered acceptable for the affected land use.

2016 California Building Code, Title 24, Part 2. The current version of the California Building Code (CBC) requires interior noise levels attributable to exterior environmental noise sources to be limited to a level not exceeding 45 dBA L_{dn}/CNEL in any habitable room.

California Coastal Act. There are no relevant noise policies in the California Coastal Act that would be applicable to the proposed project.

San Mateo County Mid-Coast Local Coastal Program. The San Mateo County Mid-Coast Local Coastal Program offers qualitative noise goals and objectives, including to 1) require that engines use muffler systems, 2) minimize noise impacts on surrounding land uses, especially residential, and 3) require that all development minimize the impacts of noise on adjacent properties and the community at large.

2014 Final Airport Land Use Compatibility Plan (ALUCP) for the Environs of Half Moon Bay Airport (HAF). The ALUCP adopted by the San Mateo County Airport Land Use Commission contains standards for projects within the vicinity of Half Moon Bay Airport, which are relevant to this project:

4.2.1.1 ***Aircraft Noise Contours.*** Existing (2012) and 20-year future (2032) Community Noise Equivalent Level (CNEL) aircraft noise exposure contours were prepared for HAF and are depicted in Chapter Two of this ALUCP. The 20-year noise exposure contour is slightly larger due to a projected increase in operations as indicated in the *2013 Airport Layout Plan Narrative Report*. Therefore, the 2032 noise exposure contours shall be used for evaluation of airport/land use noise compatibility for HAF.

The 60 dB CNEL noise exposure contour is the threshold for residential noise compatibility for HAF.

4.2.1.3 ***Residential Uses.*** Residential uses are considered conditionally compatible in areas exposed to noise levels between 60-64 dB CNEL 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 detached single-family dwellings must be sound-insulated to achieve an indoor noise level of CNEL 45 dB or less from exterior sources. Residential uses are not considered compatible above 65 CNEL.

San Mateo County General Plan, Chapter 16. San Mateo County offers qualitative noise goals and objectives, including to 1) strive toward a livable noise environment, 2) reduce noise impacts through noise and land use compatibility and noise mitigation, 3) promote protection of noise sensitive land uses and noise reduction in quiet areas and noise impact areas, 4) give priority to reducing noise at the source rather than at the receiver, and 5) promote noise reduction through the use of techniques such as site planning, noise barriers, and architectural design and construction.

The San Mateo County General Plan identifies "normal acceptable" exterior noise levels at residential land uses as 60 CNEL or less and interior noise levels in residences as 45 CNEL or less.

San Mateo County Code of Ordinances.

4.88.330 – Exterior noise standards. It is unlawful for any person at any location within the incorporated area of the County to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person which causes the exterior noise level when measured at any single or multiple family residence, school, hospital, church, or public library situated in either the incorporated of unincorporated area to exceed the noise level standards as set forth in Table 4, below:

TABLE 4 Receiving Land Use: Single or Multiple Family Residence, School, Hospital, Church, or Public Library Properties.

Category	Cumulative Number of Minutes in Any One Hour Time Period	Daytime, dBA 7 am – 10 pm	Nighttime, dBA 10 pm – 7 am
1	30	55	50
2	15	60	55
3	5	65	60
4	1	70	65
5	0	75	70

a) In the event the measured background noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted in five (5) dBA increments so as to encompass the background noise level.

b) Each of the noise standards specified above shall be reduced by 5 dBA for simple tone noises, consisting primarily of speech or music, or for recurring or intermittent impulsive noises.

c) If the intruding noise source is continuous and cannot reasonably be stopped for a period of time whereby the background noise level can be measured, the noise level measured while the source is in operation shall be compared directly to the noise level standards in Table 4.

4.88.340 – Interior noise standards. No person shall, at any location within the unincorporated area of the County operate, or cause to be operated within a dwelling unit, any source of sound, or create, or allow the creation of, any noise which causes the noise level when measured inside a receiving dwelling unit with windows in their normal seasonal configuration to exceed the following noise level standards as set forth in Table 5:

TABLE 5 Interior Noise Level Standards – Dwelling Unit

Category	Cumulative Number of Minutes in Any One Hour Time Period	Daytime, dBA 7 am – 10 pm	Nighttime, dBA 10 pm – 7 am
1	5	45	40
2	1	50	45
3	0	55	50

a) In the event the measured background noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted in five (5) dBA increments so as to encompass the background noise level.
b) Each of the noise standards specified above shall be reduced by 5 dBA for simple tone noises, consisting primarily of speech or music, or for recurring or intermittent impulsive noises.
c) If the intruding noise source is continuous and cannot reasonably be stopped for a period of time whereby the background noise level can be measured, the noise level measured while the source is in operation shall be compared directly to the noise level standards in Table 5.

4.88.360 – Exemptions. The following activities shall be exempted from the provisions of this chapter:

d) Any mechanical device, apparatus, or equipment used, related to or connected with emergency machinery, vehicle, or work.
e) Noise sources associated with demolition, construction, repair, remodeling, or grading of any real property, provided said activities do not take place between the hours of 6:00 pm and 7:00 am on weekdays, 5:00 pm and 9:00 am on Saturdays, or at any time on Sundays, Thanksgiving, and Christmas.

4.88.380 – Exemption. Whenever, for the good of the public, a government agency, public utility, or private utility determines a project must be done before 7:00 am or after 6:00 pm, or weekends, and so states in its contract, change order(s), or bid documents, said work shall be exempted from this chapter.

Existing Noise Environment

The project site is located northeast of the Carlos Street and Sierra Street intersection in Moss Beach, California. Figure 1 shows the project site plan superimposed on an aerial image of the site vicinity. As shown on Figure 1, residential land uses (sensitive receptors) bound the project site to the south, east, and north. There are also commercial buildings associated with the Montara Sanitary District to the west opposite California State Highway 1 (Highway 1).

A noise monitoring survey was made at the project site between Wednesday, August 30, 2017 and Friday, September 1, 2017. The noise monitoring survey included two long-term noise measurements (LT-1 and LT-2) and three short-term noise measurements (ST-1 through ST-3),

as shown in Figure 1. The long-term measurements were made to quantify the daily trends in noise levels near the westernmost and easternmost site boundaries. The 10-minute short-term measurements were made to quantify specific noise sources affecting the project vicinity and characterize the range of noise levels throughout the site. The noise environment at the site and at the nearby land uses results primarily from vehicular traffic along Highway 1.

Long-term noise measurement LT-1 was made in the northeast corner of the project site, approximately 125 feet west of the Lincoln Street centerline. This noise measurement was made to quantify existing noise levels near the adjacent sensitive-receptors. Hourly average noise levels at this location typically ranged from 39 to 55 dBA L_{eq} during the day and from 34 to 47 dBA L_{eq} at night. The average community noise equivalent level on Thursday, August 31, 2017 was 51 dBA CNEL. The daily trend in noise levels at LT-1 is shown in Figure 2.

Long-term noise measurement LT-2 was made along the western boundary of the project site, approximately 60 feet east of the Carlos Street centerline and 200 feet east from the centerline of Highway 1. This noise measurement quantified existing noise levels primarily from vehicular traffic along Highway 1. Hourly average noise levels at this location typically ranged from 48 to 57 dBA L_{eq} during the day and from 41 to 52 dBA L_{eq} at night. The average community noise equivalent level on Thursday, August 31, 2017 was 55 dBA CNEL. The daily trend in noise levels at LT-2 is shown in Figure 3.

Short-term noise measurement ST-1 was made on the southeast corner of the Stetson Street and Sierra Street intersection, approximately 20 feet east of the Stetson Street centerline and approximately 30 feet south of the Sierra Street centerline. The 10-minute average noise level measured at this location between 12:20 p.m. and 12:30 p.m. on Wednesday, August 30, 2017 was 44 dBA L_{eq}. Short-term noise measurement ST-2 was made along 16th Street, approximately 15 feet south of the 16th Street centerline and approximately 260 feet east of the Carlos Street centerline. The 10-minute average noise level measured at this location between 12:40 p.m. and 12:50 p.m. on Wednesday, August 30, 2017 was 53 dBA L_{eq}. Short-term noise measurement ST-3 was made near the center of the project site, approximately 400 feet east of the Carlos Street centerline and approximately 510 feet north of the Sierra Street centerline. The 10-minute average noise level measured at this location between 9:40 a.m. and 9:50 a.m. on Friday, September 1, 2017 was 43 dBA L_{eq}. Table 4 summarizes the results of the short-term noise measurements.

FIGURE 1 Noise Measurement Locations



Source: Google Earth, 2018.

FIGURE 2 Daily Trend in Noise Levels at LT-1

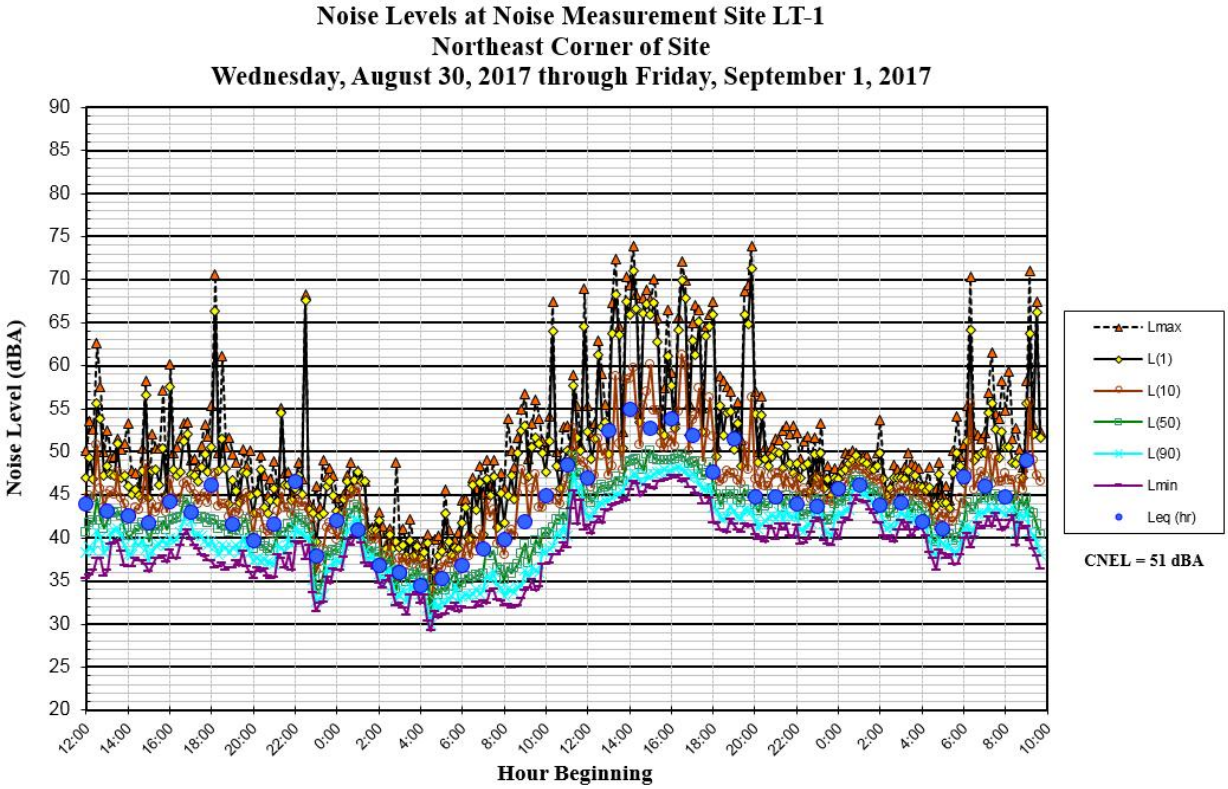


FIGURE 3 Daily Trend in Noise Levels at LT-2

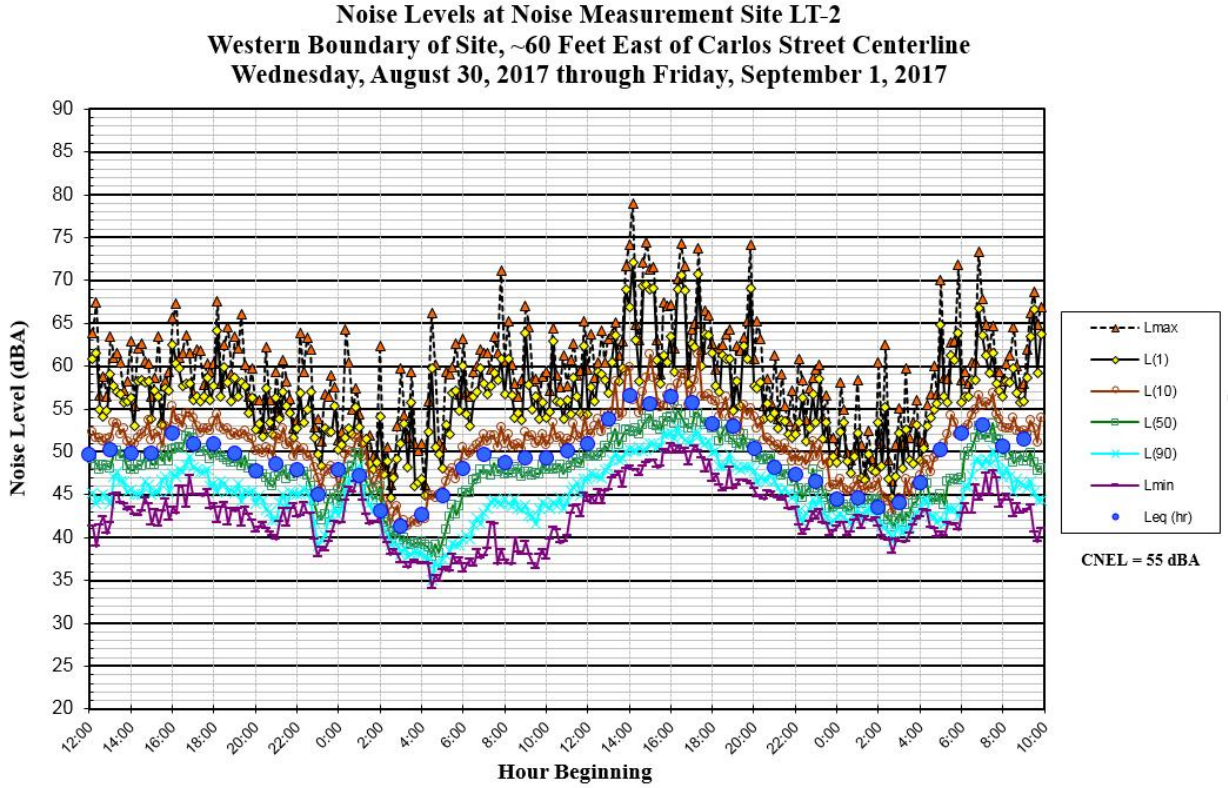


TABLE 4 Summary of Short-Term Noise Measurement Data (dBA)

Noise Measurement Location	L_{max}	$L_{(1)}$	$L_{(10)}$	$L_{(50)}$	$L_{(90)}$	L_{eq}
ST-1: Northeast corner of Stetson Street/Sierra Street intersection. (8/30/2017, 12:20 p.m. - 12:30 p.m.)	51	49	47	43	40	44
ST-2: Along 16th Street. (8/30/2017, 12:40 p.m. - 12:50 p.m.)	60	58	55	52	47	53
ST-3: Center of project site. (9/1/2017, 9:40 a.m. - 9:50 a.m.)	55	51	46	41	38	43

POLICY CONSISTENCY ANALYSIS – COMPATIBILITY OF PROJECT WITH NOISE ENVIRONMENT AFFECTING THE SITE

The County of San Mateo's General Plan sets forth noise policies and programs to mitigate potential impacts through both preventative and responsive measures. The applicable General Plan policies were presented in detail in the Regulatory Background section and are summarized below for the proposed project:

- The County's normally acceptable exterior noise level standard is 60 dBA CNEL or less for the proposed residential land use.

- The County's standard for interior noise at the proposed residential land use is 45 dBA CNEL.

The ambient noise environment at the proposed project site ranges from 51 to 55 dBA CNEL. The future noise environment at the project site would continue to result primarily from vehicular traffic along Highway 1. Traffic volumes in the project vicinity were provided by *Kittelson & Associates, Inc.*[1] A comparison of the traffic volumes indicates that the future cumulative plus project conditions would result in a traffic noise level increase of 2 dBA CNEL along Highway 1 above existing conditions. To estimate the future noise environment at the project site, these increases are applied to the results of the existing measurements described above. Therefore, the future unmitigated ambient noise environment at the project site would range from 53 to 57 dBA CNEL.

Future Exterior Noise Environment

Common residential outdoor use areas would include a community garden, a children's play area, upper and lower greens, and BBQ areas. As noted above, the County's acceptable exterior noise level standard is 60 dBA CNEL or less. The future exterior noise exposure at the site would be considered compatible with the proposed residential land uses as noise levels are calculated to reach 57 dBA CNEL, and would not exceed the 60 dBA CNEL threshold.

[1] Kittelson & Associates, Inc., "Cypress Point Preliminary Traffic Assessment", June 2017.

Future Interior Noise Environment

The County requires that residential interior noise levels be maintained at 45 dBA CNEL or less. The residences closest to Highway 1 along the western boundary of the project site would experience the greatest future exterior traffic noise exposure, which would be up to 57 dBA CNEL.

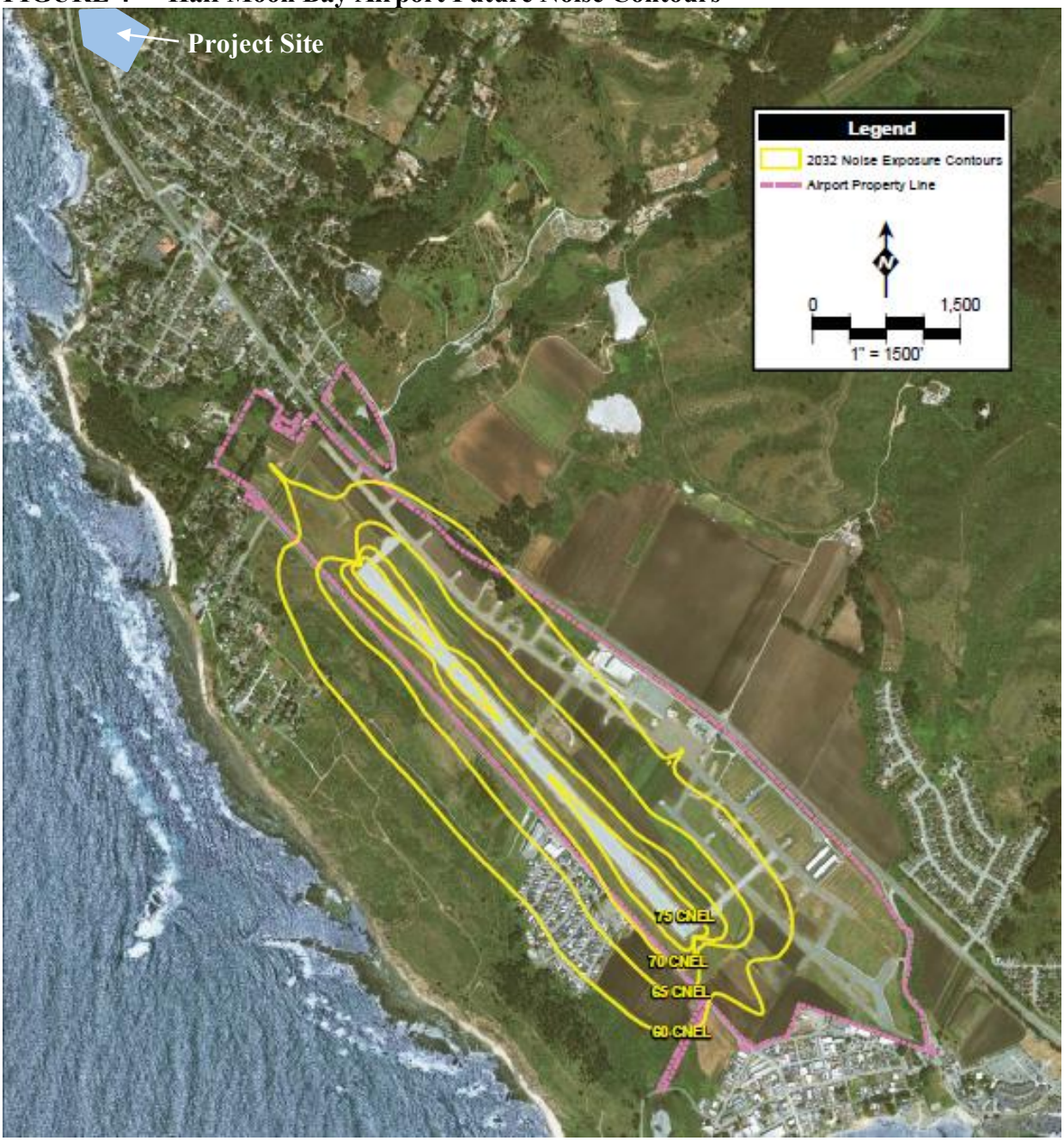
Interior noise levels would vary depending upon the design of the buildings (relative window area to wall area) and the selected construction materials and methods. Standard residential construction provides approximately 15 dBA of exterior to interior noise reduction, assuming the windows are partially open for ventilation. Standard construction with the windows closed provides approximately 20 to 25 dBA of noise reduction in interior spaces. Where exterior noise levels range from 60 to 65 dBA CNEL, the inclusion of adequate forced-air mechanical ventilation is often the method selected to reduce interior noise levels to acceptable levels by closing the windows to control noise.

For this project, the set-back from Highway 1 is sufficient to ensure that the interior noise level standard would be met assuming standard construction methods with the windows open for ventilation. No additional noise insulation features (e.g., sound-rated construction methods) would be required.

Aircraft Noise

The Half Moon Bay Airport located approximately 0.8 miles southeast of the project site. The project site lies outside the 2032 60 dBA CNEL noise contour shown in the ALUCP and in Figure 4. Although noise levels resulting from aircraft would be intermittently audible, they would be less than 60 dBA CNEL at the project site and compatible with the proposed land use.

FIGURE 4 Half Moon Bay Airport Future Noise Contours



Source: Airport Land Use Compatibility Pan for the Environs of Half Moon Bay Airport, Coffman Associates, Inc., September 2014.

NOISE IMPACTS AND MITIGATION MEASURES

Significance Criteria

Paraphrasing from the checklist contained in Appendix G of the CEQA Guidelines, a project would normally result in significant noise impacts if noise levels generated by the project conflict with adopted environmental standards or plans, if the project would generate excessive groundborne vibration levels, or if ambient noise levels at sensitive receivers would be substantially increased over a permanent, temporary, or periodic basis. The following criteria were used to evaluate the significance of potential impacts resulting from the project:

- **CEQA Checklist Question (a): Noise Levels in Excess of Standards.** A significant noise impact would be identified if the construction of the proposed project would expose persons in neighboring homes to or generate noise levels that would exceed applicable noise standards presented in the General Plan or Municipal Code. Section 4.88.360 of the San Mateo County Code of Ordinances establishes allowable hours of construction between 7:00 a.m. and 6:00 p.m. on weekdays and 9:00 a.m. and 5:00 p.m. on Saturdays. No construction shall be allowed at any time on Sundays, Thanksgiving, and Christmas.

- **CEQA Checklist Question (b): Groundborne Vibration from Construction.** A significant impact would be identified if the construction of the project would expose persons to excessive vibration levels. Groundborne vibration levels exceeding 0.3 in/sec PPV would have the potential to result in cosmetic damage to normal buildings.

- **CEQA Checklist Question (c): Permanent Noise Increases.** A significant impact would be identified if traffic generated by the project would substantially increase noise levels at sensitive receivers in the vicinity. A substantial increase would occur if: a) the noise level increase is 5 dBA CNEL or greater, with a future noise level of less than 60 dBA CNEL, or b) the noise level increase is 3 dBA CNEL or greater, with a future noise level of 60 dBA CNEL or greater.

- **CEQA Checklist Question (d): Temporary Noise Increases.** A significant noise impact would be identified if construction-related noise would temporarily increase ambient noise levels at sensitive receptors. Hourly average noise levels resulting from project construction exceeding 60 dBA L_{eq}, and increasing ambient noise levels by at least 5 dBA L_{eq}, for a period of more than one year would constitute a significant temporary noise increase at adjacent residential land uses.

Impact NOISE-1: Noise Levels in Excess of Standards. The proposed project would comply with the allowable hours of construction as established in the County's Code of Ordinances. **This is a less-than-significant impact.**

Construction Noise

Section 4.88.360 of the San Mateo County Code of Ordinances establishes allowable hours of construction between 7:00 a.m. and 6:00 p.m. on weekdays and 9:00 a.m. and 5:00 p.m. on Saturdays. No construction is allowed to occur at any time on Sundays, Thanksgiving, and Christmas. The project proponent will be required to comply with the code limits and construction activities will only be allowed to occur during allowable hours. Project construction activities would comply with applicable noise standards and therefore, this would be a less-than-significant impact, and no mitigation is required.

Impact NOISE-2: Exposure to Excessive Groundborne Vibration due to Construction. Construction-related vibration levels resulting from activities at the project site would not exceed 0.3 in/sec PPV at the nearest sensitive receptor. **This is a less-than-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 demolition, site preparation, grading, excavating, paving, and new building framing and finishing. This analysis assumes the proposed project would not require pile driving, which can cause excessive vibration.

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. Construction activities would have the potential to produce vibration levels of 0.08 in/sec PPV or more at historical structures located within 60 feet of the project site. However, there are no known ancient buildings or buildings that are documented to be structurally weakened within 60 feet of where construction will take place on the project site. Because it is not known if the buildings surrounding the project site are structurally sound and built to modern standards, this analysis conservatively assumes that ground-borne vibration levels exceeding 0.3 in/sec PPV would have the potential to result in a significant vibration impacts on surrounding residences. For human annoyance, a vibration limit of 0.1 in/sec PPV (Table 3), produced by continuous/frequent intermittent sources of construction vibration would be strongly perceptible and would cause human annoyance.

Table 5 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 of the activity. At

a distance of 25 feet, jackhammers typically generate vibration levels of 0.035 in/sec PPV, and drilling typically generates vibration levels of 0.09 in/sec PPV. Vibration levels would vary depending on soil conditions, construction methods, and equipment used.

The nearest sensitive receptor to the project site is the residence located along Carlos Street approximately 80 feet southeast of the primary construction area at the project site. Construction activities occurring in the outer landscaped areas of the project site would not likely utilize heavy equipment capable of producing high vibration levels (e.g., vibratory roller). At a distance of 80 feet from the primary construction area, vibration levels attributable to project construction would be up to 0.06 in/sec PPV,[2] which is below the 0.3 in/sec PPV structural threshold and below the 0.1 in/sec PPV human annoyance threshold. Other buildings and sensitive receptors in the project vicinity located further from the project site would also experience construction vibration levels below these thresholds, as vibration attenuates with distance from the source.

At these locations, and in other surrounding areas where vibration would not be expected to cause structural damage, vibration levels may still be perceptible. MidPen has agreed to use 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, so perceptible vibration can be kept to a minimum. With these controls, and given the intermittent and short duration of the project phases that have the highest potential of producing vibration (use of jackhammers and other high power tools) these levels of vibration would not be considered significant. This would be a less-than-significant impact, and no mitigation is required.

[2] The formula to determined vibration from construction equipment is PPVequip = PPVref x (25/D)^1.1 where PPVequip is the peak particle velocity in in/sec of the equipment adjusted for distance, PPVref is the reference vibration level in in/sec at 25 feet (Table 5), D is the distance from the equipment to the receiver, and 1.1 is used for conservative soil conditions. Formula from the Caltrans Transportation and Construction Vibration Guidance Manual, September 2013.

TABLE 5 Vibration Source Levels for Construction Equipment

Equipment		PPV at 25 ft. (in/sec)	Approximate L_v at 25 ft. (VdB)
Pile Driver (Impact)	upper range	1.158	112
	typical	0.644	104
Pile Driver (Sonic)	upper range	0.734	105
	typical	0.170	93
Clam shovel drop		0.202	94
Hydromill (slurry wall)	in soil	0.008	66
	in rock	0.017	75
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large bulldozer		0.089	87
Caisson drilling		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Source: Transit Noise and Vibration Impact Assessment, United States Department of Transportation, Office of Planning and Environment, Federal Transit Administration, May 2006.

Impact NOISE-3: Substantial Permanent Noise Increase due to Project-Generated Traffic. Project-generated traffic would not cause a permanent noise level increase at existing noise-sensitive land uses in the project vicinity. **This is a less-than-significant impact.**

A significant noise impact would occur if traffic generated by the project would substantially increase noise levels at sensitive receptors in the project vicinity. A substantial increase would occur if: a) the noise level increase with the project is 5 dBA CNEL or greater, where existing noise levels are less than 60 dBA CNEL, or b) the noise level increase with the project is 3 dBA CNEL or greater, where existing noise levels are 60 dBA CNEL or greater. The nearest noise-sensitive receptor is approximately 80 feet to the southeast of the project site, where ambient noise levels are expected to remain below 60 dBA CNEL; therefore, a significant impact would occur if project-generated traffic would permanently increase noise levels by 5 dBA CNEL. For reference, traffic volumes would have to double for noise levels to increase by 3 dBA CNEL.

Peak hour traffic volumes along roadways in the project vicinity, as identified in the project's traffic study,[1] were reviewed to calculate the permanent noise increase attributable to project-generated traffic. A comparison of the volumes expected under the Existing Plus Project scenario and the Existing scenario indicated that the hourly average traffic noise level (L_{eq}) would increase by less than 1 dBA as a result of the project. The change in the CNEL would be the same as the change in the peak hour L_{eq}. The permanent noise level increase due to the project-generated traffic would be less than 1 dBA CNEL at noise-sensitive receptors in project vicinity. Therefore, the proposed project would not cause a substantial permanent noise level increase at the nearby noise-sensitive receptors. This is a less-than-significant impact and no mitigation is required.

Impact NOISE-4: Substantial Temporary Noise Increase due to Construction. Existing noise-sensitive land uses would be exposed to construction noise levels in excess of the significance thresholds for a period of more than one year. **This is a potentially significant impact**.

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. Project construction is anticipated to occur over an approximate period of 14 month.

While noise level thresholds for temporary construction are not provided in the County's General Plan or Code of Ordinances, the Fundamentals section of this report provides a threshold of 45 dBA for speech interference indoors. Assuming a 15 dBA exterior-to-interior reduction for standard residential construction, this would correlate to an exterior threshold of 60 dBA L_{eq} at residential land uses. Additionally, temporary construction would likely be considered to be annoying to surrounding land uses if the ambient noise environment increased by at least 5 dBA L_{eq} over an extended period of time. The temporary construction noise impact would be considered significant if project construction activities exceeded 60 dBA L_{eq} at nearby residences and exceeded the ambient noise environment by 5 dBA L_{eq} or more for a period longer than one year.

The noise-sensitive receptors to the south of the project site along Carlos Street would have existing daytime ambient noise levels similar to the noise levels recorded at LT-2. Based on these data, the average hourly noise level during daytime construction hours would range from 48 to 57 dBA L_{eq}. The noise-sensitive receptors to the east of the project site would have existing daytime ambient noise levels similar to the noise levels recorded at LT-1. Based on these data, the average hourly noise level during daytime construction hours would range from 39 to 55 dBA L_{eq}.

Construction activities for individual projects are typically carried out in stages. During each stage of construction, there would be a different mix of equipment operating, and noise levels would vary by stage and vary within stages, based on the amount of equipment in operation and the location at which the equipment is operating. Typical construction noise levels at a distance of 50 feet are shown in Tables 6 and 7. Table 6 shows the average noise level ranges, by construction phase, and Table 7 shows the maximum noise level ranges for different construction equipment. Most demolition and construction noise falls with the range of 80 to 90 dBA at a distance of 50 feet from the source.

TABLE 6 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 7 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

Equipment Category	L_{max} Level (dBA)1,2	Impact/Continuous
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.
Source: Mitigation of Nighttime Construction Noise, Vibrations and Other Nuisances, National Cooperative Highway Research Program, 1999.

Construction activities generate considerable amounts of noise, especially during earth-moving activities when heavy equipment is used. The construction of the proposed project would include demolition, site preparation, grading and excavating, paving, and building erection and finishing. The hauling of excavated materials and construction materials would generate truck trips on local roadways as well.

Noise sensitive land uses located near the project site include residences to the south, east, and north. Hourly average noise levels due to construction activities during busy construction periods outdoors would range from about 74 to 88 dBA L_{eq} at a distance of 50 feet. Construction-generated noise levels drop off at a rate of about 6 dBA per doubling of the distance between the source and receptor. The noise sensitive land uses (residences) are approximately 80 feet to 270 feet from the project site's central primary construction area. At these distances, hourly average noise levels during busy construction periods would range from 70 to 84 dBA L_{eq} at the closest residence to the south, from 63 to 77 dBA L_{eq} at the closest residence to the north, and from 59 to 73 dBA L_{eq} at the closest residence to the east. Construction noise levels would be expected to exceed 60 dBA L_{eq} and to exceed the ambient noise environment by at least 5 dBA L_{eq} at noise-sensitive residential uses in the project vicinity for a period exceeding one year. The impact would be considered significant.

Mitigation Measure NOISE-1: Reduce Construction Noise

Construction activities will be conducted in accordance with the provisions of Section 4.88.360 of the San Mateo County Code of Ordinances, which limits construction work to the hours of 7:00 a.m. and 6:00 p.m. on weekdays and 9:00 a.m. and 5:00 p.m. on Saturdays. No construction shall occur at any time on Sundays, Thanksgiving, and Christmas.

The noise impacts of construction equipment may be minimized through modification of the equipment, the placement of equipment on the site, and by imposing constraints on equipment operations. Construction equipment should be well-maintained and used judiciously to be as quiet as possible. The project proponent shall include the following best management practices in all contracts related to project construction activities near sensitive land uses:

- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.

- Unnecessary idling of internal combustion engines should be strictly prohibited.

- Locate stationary noise-generating equipment, such as air compressors or portable power generators, as far as possible from sensitive receptors as feasible. If they must be located near receptors, adequate muffling (with enclosures where feasible and appropriate) shall be used reduce noise levels at the adjacent sensitive receptors. Any enclosure openings or venting shall face away from sensitive receptors.

- Utilize "quiet" air compressors and other stationary noise sources where technology exists.

- Establish construction staging areas at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.

- Locate material stockpiles, as well as maintenance/equipment staging and parking areas, as far as feasible from residential receptors.

- Control noise from construction workers' radios to a point where they are not audible at existing residences bordering the project site.

- Notify all adjacent business, residences, and other noise-sensitive land uses of the construction schedule, in writing, and provide a written schedule of "noisy" construction activities to the adjacent land uses and nearby residences.

- Designate a "disturbance coordinator" who would be responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., bad muffler, etc.) and will require that reasonable measures be implemented to correct the problem. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include in it the notice sent to neighbors regarding the construction schedule.

Implementation of the above measures would reduce construction noise levels emanating from the site, limit construction hours, and minimize disruption and annoyance. With the implementation of these measures, and recognizing that noise generated by construction activities would occur over a temporary period, the temporary increase in ambient noise levels would be less-than-significant.

APPENDIX A: REFERENCES

California Building Standards Commission, *2016 California Building Code, Title 24, Part 2, Volumes 1 of 2, Chapter 12 Interior Environment, Section 1207 Sound Transmission, 1207.4 Allowable Interior Noise Levels*, Pg. 635, July 2016.

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National Cooperative Highway Research Program (NCHRP), Mitigation of Nighttime Construction Noise, Vibrations and Other Nuisances, 1999.

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APPENDIX P

Noise Assessment Update of

Proposed Tree Removal Activities

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
429 East Cotati Avenue
Cotati, CA 94931

Memo

Date: **May 19, 2023**

To: **Craig Stevens, Stevens Consulting**

From: **Michael Thill, Illingworth & Rodkin, Inc.**

SUBJECT: **Cypress Point Affordable Housing Project, San Mateo County, California (17-158)**
Noise Assessment Update of Proposed Tree Removal Activities

This memo summarizes Illingworth & Rodkin, Inc.'s (I&R) evaluation of the noise levels that would be produced by tree removal activities currently proposed as part of the Cypress Point Affordable Housing Project in San Mateo, California. Tree removal activities were not proposed at the time of our prior analysis.[1] Other changes made to the project and supporting technical studies, such as minor modifications to the traffic study, were not considered to be substantial enough to warrant additional analysis.

Tree Removal Activities and Anticipated Noise Levels

Dense development is planned in the center of the project area, and demolition, grading, construction and landscaping will likely require the removal of all trees within the limits of grading. Tree removals will also include healthy trees that are too close to grading to survive the root loss and trees that are relatively far from grading but are in poor condition. In total, approximately 295 trees will be removed. Removal activities would utilize a tub grinder with a 12-foot excavator arm on top to process the trees. Approximately 50 trees per day can be processed, so tree removal activities would last approximately 6 days. The tub grinder will be located towards the center of the parcel, where the majority of trees will be removed.

Noise produced by the tree removal activities proposed by the project would be credibly represented by data collected by I&R at a similar tree removal/wood chipping operation in 2021.[2] Short-term noise measurements were made by I&R to quantify the average noise level produced by the overall operation at various distances from the source. Noise measurements were made using a Larson-Davis Laboratories (LDL) precision Type 1 sound level meter fitted with a ½-inch pre-polarized condenser microphone and windscreen. The sound level meter was calibrated before and after the measurements with an LDL acoustical calibrator. Weather conditions were generally good for the purposes of noise monitoring.

---

[1] Cypress Point Affordable Housing Project, Noise and Vibration Assessment, Illingworth & Rodkin, Inc., June 12, 2018.
[2] Atlas Tree Yard at Pruitt Industrial Park, Windsor, California, Illingworth & Rodkin, Inc., April 9, 2021.

During the noise measurements, a Vermeer HG6800TX Horizontal Grinder, a CAT 966 Wheel Loader, a CAT 323 Excavator, and transport trucks contributed to the measured noise levels. The excavator was used to load stumps, logs, and large branches into the horizontal grinder. The wheel loader moved materials on the site and loaded wood chips onto the transport trucks. The predominant noise source was the horizontal grinder, which remained in operation throughout the entirety of the noise measurements.

Given the size and number of equipment operating, the measured noise data from 2021 would credibly represent a worst-case scenario for the proposed tree removal activities. Measured noise levels were 80 dBA L_{eq} at 75 feet from the center of the operation, 72 dBA L_{eq} at 300 feet from the center of the operation, and 70 dBA L_{eq} at 350 feet from the center of the operation. Noise levels produced by tree processing activities at the Cypress Point project site, measured at 300 feet from the center of the operation (representative of the nearest off-site receptors), would reach 72 dBA L_{eq}.

As noted previously, tree removal activities would last approximately 6 days during the proposed 14 month construction period. Tree removal activities would produce noise levels of approximately 84 dBA L_{eq} at 50 feet from the center of the operation, which is within the range of the noise levels disclosed in our prior analysis (74 to 88 dBA L_{eq} at a distance of 50 feet). Therefore, tree removal activities would not produce higher noise levels than previously disclosed. Since these activities would be limited to a relatively short period of time (6 days), additional mitigation measures are not recommended.

APPENDIX Q

Traffic Impact Analysis and

Mitigation Plan

KITTELSON & ASSOCIATES

CYPRESS POINT TRAFFIC IMPACT ANALYSIS AND MITIGATION PLAN

MOSS BEACH, CALIFORNIA

May 2023



Inside front cover

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Cypress Point Traffic Impact Analysis and Mitigation Plan

Moss Beach, California

Prepared for:
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Foster City, CA 94404
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Project Number 20616

May 2023



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Appendix 6. Future with project Operations Results

Appendix 7. Cumulative Operations Results

Appendix 8. Cumulative with project Operations Results

Appendix 9. TDM Plan

Appendix 10. Signal Warrants

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EXECUTIVE SUMMARY

This report presents the results of the transportation study prepared for the proposed Cypress Point project ("project") in support of its Coastal Development Permit application. This study analyzes the potential transportation impacts and effects of the proposed project. The project is analyzed with respect to potential environmental impacts under the California Environmental Quality Act (CEQA) and for transportation effects on local circulation including consistency with Local Coastal Program (LCP) Policy 2.44.

PROJECT DESCRIPTION

The project is located on the northeast corner of Carlos Street and Sierra Street in the unincorporated community of Moss Beach, San Mateo County, California. The 10.875-acre parcel is currently vacant. The proposed project includes 71 affordable housing units. Access to the project site would be provided by a driveway on Carlos Street near the intersection with Sierra Street.

PROJECT IMPACTS

This report identifies the following CEQA impacts related to potential hazards:

- The existing available corner sight distance at the intersection of State Route 1 and Carlos Street is inadequate, and the addition of project traffic will substantially increase the hazard at this intersection.
- The project will increase pedestrian activity with no existing sidewalks along the project frontage and connecting to destinations, including a bus stop, in Moss Beach.
- The nearest SamTrans bus stop (along State Route 1 at 16th Street) would require pedestrians, including residents of the proposed project, to cross State Route 1 at a location without a marked pedestrian crossing and inadequate sight distance.
- The project may result in a significant impact with respect to vehicle miles traveled, pending further analysis. As part of subsequent environmental review, the County may determine whether to rely on a potential screening option to evaluate the project's vehicle miles traveled (which would assume a less-than-significant impact) or a more quantitative analysis approach.

RECOMMENDED MITIGATIONS

Provide additional Transportation Demand Management (TDM) Features

The project's proposed TDM plan includes a package of measures that would be expected to reduce project vehicle trips. The TDM plan would require the project to distribute educational information to residents related to transportation options, bus routes, and transportation safety to address pedestrian safety impacts.

In addition to the TDM elements required as part of the C/CAG TDM Checklist (included as Appendix 9), it is recommended that the project also construct as mitigation measures sidewalk, crosswalk, bicycle route, and transit infrastructure improvements that would improve conditions within Moss Beach for pedestrians and bicyclists.

Address State Route 1 / Carlos Street Sight Distance

The limited sight distance at State Route 1/Carlos Street is deficient for operating conditions. The intersection would provide the main access to and from State Route 1 for the project. This report identifies

an impact related to adding project vehicle trips at this intersection and identifies a combination of mitigation measures that would reduce the impact to less than significant. The mitigation measures include a transportation demand management (TDM) plan and closure of Carlos Street between the Project and State Route 1 to all but emergency vehicles. At the time of this writing, the County is working on a Caltrans Project Initiation Document (PID) as part of the Moss Beach State Route 1 Congestion & Safety Improvements Project. With this project, the County will determine feasibility for a traffic signal and roundabout at a combined State Route 1 / 16th Street / Carlos Street intersection, which would also address the impact and could eventually replace the identified mitigation measure. Implementation authority for that project would rest jointly with the County and Caltrans and is therefore out of the County's exclusive control.

LOCAL CIRCULATION EFFECTS

The results of the operational analysis show project effects degrading the operations to below the level of service standard or adding at least four seconds of delay if the intersection is already below the standard at the following intersections:

- **State Route 1 & California Avenue/Wienke Way** in Existing with project weekday PM and Saturday midday peak hour; in Future with project weekday PM and Saturday midday peak hours; and in Cumulative with project weekday AM, weekday PM, and Saturday midday peak hours;
- **State Route 1 & 16th Street** in the Cumulative with project weekday PM peak hour;
- **State Route 1 & Carlos Street** in the Cumulative with project weekday AM and PM peak hours[1];
- **State Route 1 & Vallemar Street / Etheldore Street** in Cumulative with project weekday PM peak hour conditions.

Recommended Improvements

Change the intersection control at State Route 1 & California Avenue / Wienke Way

The operational analysis shows that a change of intersection control at this intersection would provide Level of Service (LOS) B or better in all conditions and scenarios assuming the intersection is converted from side street stop control to signalization as recommended in San Mateo County's draft *Connect the Coastside* report. A preliminary analysis of changing the intersection control to a roundabout showed a single-lane roundabout option would meet applicable LOS standards as well. A change of traffic control is recommended as a near-term (0 to 7 years) improvement in the County's *Connect the Coastside Report*. However, any change of control at this intersection would be subject to an intersection control evaluation (ICE) report as part of Caltrans procedures; the ICE would compare signal-control and roundabout alternatives to make a final determination on the appropriate intersection control. Final determination and approval authority would require Caltrans approval and does not rest within the County's exclusive control.

[1] The County is currently studying a project that would remove this intersection and provide an alternative intersection geometry, configuration and traffic control. For more information, see the Impact T-1 discussion in the Sight Distance and Safety Impacts section beginning on page 37.



Introduction

INTRODUCTION

Kittelson & Associates, Inc. (Kittelson) has prepared this transportation study of the proposed Cypress Point affordable housing project ("project") in Moss Beach, San Mateo County, California. This study provides two levels of analysis and evaluation:

- California Environmental Quality Act (CEQA) Transportation Analysis
- Local transportation analysis for circulation effects and consistency with Local Coastal Program (LCP) Policy 2.44.

Each analysis approach is described in the Data and Analysis Approach section.

PROJECT DESCRIPTION

The project is an affordable housing project located in the coastal zone on a 10.875-acre parcel adjacent to the northeast corner of Carlos Street and Sierra Street in the unincorporated community of Moss Beach, San Mateo County, California (Figure 1). The property is bounded by vacant land to the southwest (towards State Route 1 [SR1]), residential properties along 16th Street to the northwest (in the community of Montara), and residential properties along Carlos, Sierra, and Lincoln Streets on the other two sides. Individual houses along Stetson Street and Buena Vista Street also border the property.

MidPen proposes the development of 71 affordable housing units on this lot, consisting of approximately 22 two-story buildings holding 2-4 units each (Figure 2). The project would provide a mixture of 1, 2, and 3-bedroom units, including a combination of two-story townhouses and ADA-accessible 1-story flats. All the units, except for the manager's apartment, will be affordable to households earning less than 80% of the Area Median Income (AMI). It is expected that the Cypress Point project will provide housing for approximately 213 people, including adults and children.

In addition to the housing units, the development would include an approximately 3,200 square foot community building, that will include the general office, the manager's office, a community room, kitchen, computer room, laundry, and maintenance and storage areas (Figure 2). The project plan also includes several outdoor amenities, including:

- Landscaping;
- A community garden;
- A children's play area;
- An upper and a lower green;
- BBQ areas; and
- A publicly accessible walking trail.

The project site would include a driveway along Carlos Street and 142 vehicle parking spots, with 5 electric vehicle parking spots in a loop surface parking lot.[2] The site would include racks providing for eight short-term bicycle parking spaces and 36 long-term (i.e., indoors and secure) bicycle parking spaces.

The project also includes a transportation demand management (TDM) plan (see Appendix 9) in accordance with C/CAG requirements (see Appendix 9). The TDM plan includes the following measures:

- M2 – Orientation, Education, Promotional Programs, and/or Materials

[2] This number may change as required by updated code requirements; the project sponsor will coordinate with the County on any changes to requirements and required project description changes.

- M3 – TDM Coordinator/Contact Person
- M6 – Transit or Ridesharing Passes/Subsidies
- M8 – Secure Bicycle Storage
- M9 – Design Streets to Encourage Bike/Ped Access
- M11 – Family-supportive Amenities
- M22 – Active Transportation Subsidies
- M23 – Gap Closure
- M24 – Bike Repair Station

Based on the TDM Checklist, this combination of TDM measures can be expected to reduce project vehicle trips substantially.

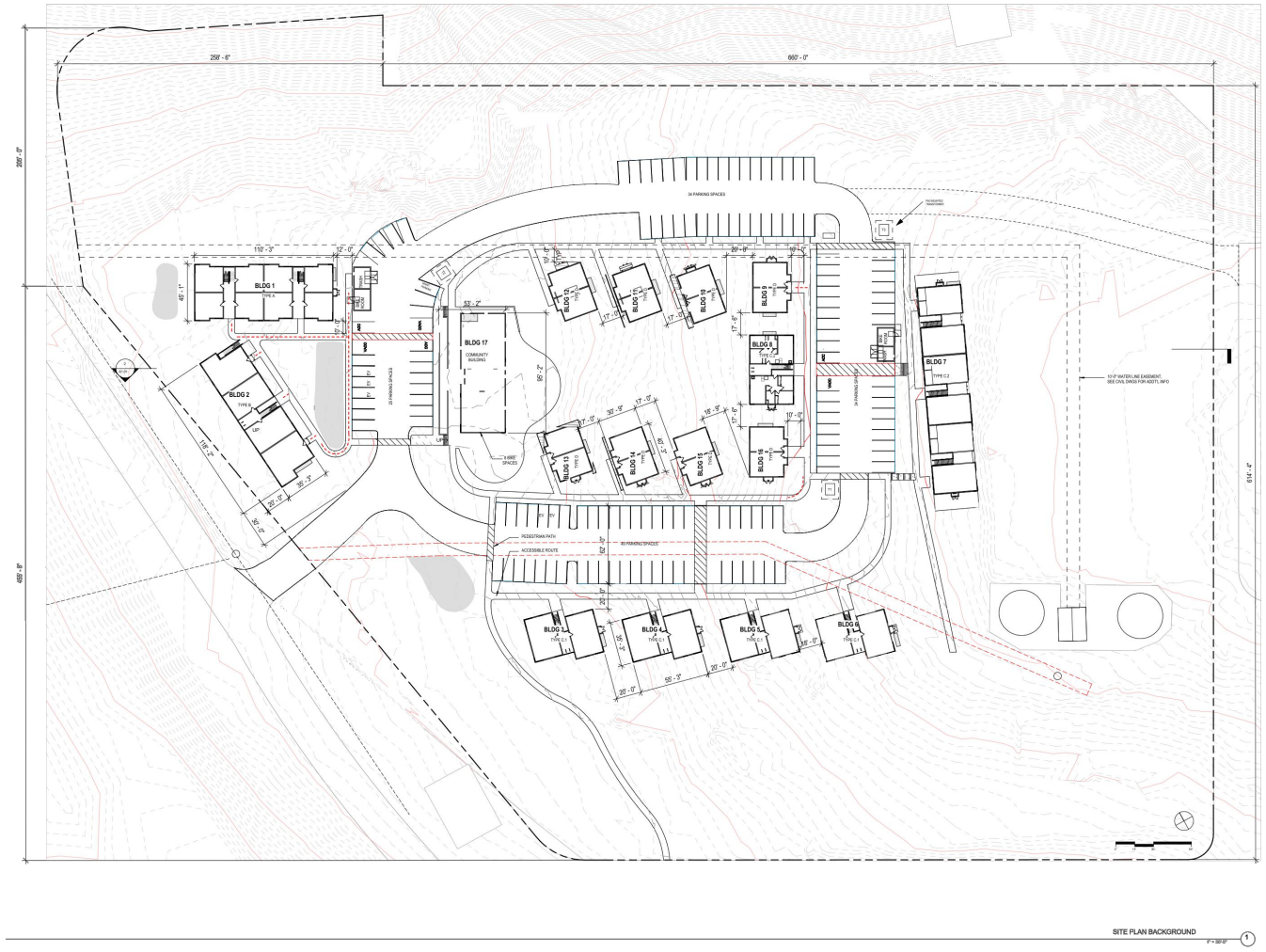


Project Vicinity
Moss Beach, California

Figure
1

Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet
Data Source: ESRI, 2017

KITTELSON & ASSOCIATES



PYATOK

CYPRESS POINT FAMILY COMMUNITY

Carlos Street, Moss Beach

A1.0

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KITTELSON & ASSOCIATES

Cypress Point
Tentative Site Plan
San Mateo County, CA

Figure
2



Data and Analysis Approach

DATA AND ANALYSIS APPROACH

The project is analyzed based on the San Mateo County *Traffic Analysis and Mitigation Approach for "Small" projects*[3] for its effect on local circulation and safety. As explained on the County of San Mateo Public Works website:

> *Effective July 1, 2020, the County of San Mateo has transitioned to using Vehicle Miles Traveled (VMT) instead of Level of Service (LOS) as the metric for determining transportation-related impacts under CEQA.*
>
> *In the past, CEQA transportation-related impacts from a proposed project have been evaluated based on LOS, which measures delay at signalized intersections surrounding the proposed project. Projects determined to have significant impacts based on LOS are required to mitigate these impacts by road widenings, signal improvements, or similar measures to maintain operational efficiency and capacity.*

Therefore, the analysis in this report is present in two sections: first, a CEQA Transportation Analysis section which evaluates the project for potential environmental impacts and second, a Local Transportation Analysis section which evaluates local circulation effects. The approach for each is described below.

CEQA TRANSPORTATION ANALYSIS

The California Environmental Quality Act (CEQA) Guidelines, Appendix G Environmental Checklist Form describes four recommended categories of impacts related to transportation and traffic. These categories are recommended for formal environmental review of projects but are referenced as appropriate for this TIA. The proposed project's impact would be considered significant if it would:

d. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.
b. Conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).
c. Substantially increase hazards due to a geometric feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
d. Result in inadequate emergency access.

Significance criteria "b" is related to the implementation of vehicle miles traveled (VMT) as the primary performance metric as described above.

VMT ANALYSIS

Senate Bill 743 (SB 743) was signed into law in September 2013. Senate Bill 743 (Steinberg, 2013) required changes to the California Environmental Quality Act (CEQA) Guidelines regarding the analysis of transportation impacts. The purpose of SB 743 is to promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses.

Prior to implementation of SB 743, CEQA transportation analyses of individual projects typically determined impacts on the circulation system in terms of roadway delay and/or capacity usage at specific locations, such as street intersections or freeway segments. The SB 743 changes include the elimination of auto delay, level of service (LOS), and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts.

[3] San Mateo County Traffic Analysis and Mitigation Approach for "Small" projects subject to LCP 2.52 (November 2020).

Under SB 743, a project's effect on automobile delay shall not constitute a significant environmental impact. Therefore, level of service (LOS) and other similar vehicle delay or capacity metrics can no longer serve as transportation impact metrics for CEQA analysis. The California Office of Planning and Research (OPR) updated the CEQA Guidelines and provided a final technical advisory in December 2018, which recommends vehicle miles traveled (VMT) as the most appropriate measure of transportation impacts under CEQA. The California Natural Resources Agency certified and adopted the CEQA Guidelines including the Guidelines section implementing SB 743. The changes have been approved by the Office of the Administrative Law and are now in effect.

Each agency applies its own analysis procedures and thresholds of significance. Many jurisdictions have developed screening methodologies to evaluate whether a project would require detailed VMT analysis or if it would be unlikely to result in an a VMT-related impact (and can thus forego detailed analysis). Assessing VMT is not yet reflected in the LCP, County Traffic Impact Study Requirements, or C/CAG's Traffic Impact Analysis Policy.

However, in lieu of final thresholds still under development, the County is using OPR's recommendations with some modifications that are relevant to the project. The County lists the following thresholds and screening criteria, as well as significance criteria:

- **Residential project threshold:** 15% below baseline for home-based work trip per capita by residence. (The baseline County average is 13.60 home-based trip VMT per resident.)
- **Affordable housing screening criteria guidance:** projects that are 100% affordable housing in infill areas typically generate lower VMT than market-rate housing.

Revisions to CEQA transportation analysis requirements do not preclude the application of local general plan policies, municipal and zoning codes, conditions of approval, or any other planning requirements through a city's planning approval process. These requirements aim to ensure adequate operation of the transportation system in terms of transportation congestion measures related to vehicular delay and roadway capacity.

IMPACT CRITERIA

For this report's analysis, the project will be considered to have a significant impact if:

- The project will substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). For this study the project would "substantially increase hazards due to a design feature or incompatible use" if it would increase traffic volumes for movements that have restricted sight distance for existing posted speeds per Caltrans *Highway Design Manual* standards.
- The project would result in more than 11.56 daily home-based VMT per capita by residence. (This represents a 15% reduction from the baseline County average of 13.60 home-based trip VMT per resident.) It could be exempt from detailed VMT analysis if it meets County screening criteria.

LOCAL TRANSPORTATION ANALYSIS

The County typically does not require a traffic report for projects that generate fewer than 100 trips during the peak hour but in the interest of sharing information, this report has been prepared to include local circulation and traffic operations effects. The local transportation analysis is provided for informational purposes.

INTERSECTION OPERATIONS

Level of service (LOS) describes the operating conditions experienced by motorists. LOS is a qualitative measure of the effect of a number of factors, including speed and travel time, traffic interruptions and delay, freedom to maneuver, driving comfort, and convenience. LOS A through LOS F covers the entire range of traffic operations that might occur. Motorists using a facility that operates at LOS A experience very little delay, while those using a facility that operates at LOS F will experience long delays. Intersection analyses for the ten study intersections were conducted using the operational methodologies outlined in the 2010 Highway Capacity Manual (HCM) (Transportation Research Board, Washington, D.C., 2010).

Signalized intersection. The HCM procedure calculates a weighted average control delay in seconds per vehicle at a signalized intersection and assigns a level of service designation based upon the delay.

Unsignalized intersection. The HCM methodology calculates a weighted average control delay in seconds per vehicle for each controlled intersection leg and for the intersection. A level of service designation for all-way stop-controlled intersections is based upon the weighted average control delay for all intersection legs, similar to the level of service designation for signalized intersections. For two-way stop-controlled intersections, the LOS for the worst approach is used as the LOS performance measure.

Table 1 presents the relationship of average delay to level of service for both signalized and unsignalized intersections.

Table 1: Level of Service Definition for Intersections

Signalized Intersection Average Delay Per Vehicle (Seconds)	LOS	Description of Traffic Conditions	Unsignalized Intersection Average Delay Per Vehicle (Seconds)
≤10.0	A	Free flowing. Most vehicles do not have to stop.	≤10.0
>10.0 and ≤20.0	B	Minimal delays. Some vehicles have to stop, although waits are not bothersome.	>10.0 and ≤15.0
>20.0 and ≤35.0	C	Acceptable delays. Significant numbers of vehicles have to stop because of steady, high traffic volumes. Still, many pass without stopping.	>15.0 and ≤25.0
>35.0 and ≤55.0	D	Tolerable delays. Many vehicles have to stop. Drivers are aware of heavier traffic. Cars may have to wait through more than one red light. Queues begin to form, often on more than one approach.	>25.0 and ≤35.0
>55.0 and ≤80.0	E	Significant delays. Cars may have to wait through more than one red light. Long queues form, sometimes on several approaches.	>35.0 and ≤50.0
>80.0	F	Excessive delays. Intersection is jammed. Many cars have to wait through more than one red light, or more than 60 seconds. Traffic may back up into "up-stream" intersections.	>50.0

Source: Transportation Research Board, Highway Capacity Manual, Washington, D.C., 2010.

Definition of Acceptable Operations

The assessment of the project is based on the Local Coastal Program (LCP). Policy 2.44 states[4]:

> *In assessing the need for road expansion, consider Service Level D acceptable during commuter peak periods and Service Level E acceptable during recreation peak periods*.

Since a roadway segment's capacity is generally controlled by the downstream intersection, an intersection analysis is sufficient for assessing a project's impacts. The analysis in this report therefore considers project effects to be notable if:

- The project will cause an intersection to operate at a LOS that violates the overall standard LOS D in during the weekday AM or PM peak hour (LOS E in the weekend midday peak hour); or if
- An intersection is operating below the LOS standard without the project, but the addition of project-related trips increases the average control delay at the intersection by four seconds or more.[5]

The policy states that these thresholds should be considered when assessing the need for road expansion but does not require capacity increases as a result of conditions below standard.

ANALYSIS SCENARIOS

The evaluation presented in this report was conducted for the following time-of-day/day-of-week peak periods:

- Weekday AM peak hour: 7:00 to 9:00 AM (representing a commuter peak period);
- Weekday PM peak hour: 4:00 to 6:00 PM (representing a commuter peak period); and
- Saturday peak hour: 11:00 AM to 1:00 PM (representing a recreational peak period).

Data were collected (as described in the *Existing* Conditions description below) during each time period, and the hour with the highest vehicle volumes from each of these periods was used in the transportation analysis. The collected multimodal turning movement counts are attached in APPENDIX 1.

The three peak periods described were analyzed for the following analysis scenarios:

- **Existing Conditions:** Represents current conditions. Traffic volumes were developed by seasonal adjustment of data collected on Thursday, April 20, 2017, and Saturday April 22, 2017, in good weather during the school year. Because State Route 1 is a seasonal route, the peak hour traffic volumes collected in April were adjusted to be consistent with the typically busier summer months. The method used to increase the counts to be representative of summer traffic is described in the Existing Conditions Traffic Volumes section and provided in Appendix 2.
- **Existing Project Conditions:** Represents conditions upon implementation of the project. Traffic volumes were developed by combining the seasonally-adjusted existing traffic volumes with the project only volumes.
- **Future Conditions:** Represents near-term future traffic conditions representing conditions when the project would be anticipated to be complete. The Future conditions represent Existing

[4] County of San Mateo Local Coastal Program Policies 2013. Available at https://www.smcgov.org/planning/local-coastal-program. Accessed June 1, 2022.

[5] This threshold is applied per the County's 2013 Traffic Impact Study requirements, cited here as a way to evaluate an intersection that is already below the standard (available online at https://www.smcgov.org/media/46076/download?inline=).

conditions turning movement volumes plus other projects that have been approved or are in the entitlement process but not yet constructed at the time of the traffic counts.

Based on discussions with the San Mateo County Planning and Building Department, the following projects were identified for inclusion in the Future traffic volume. These projects were either approved but not constructed or were in the entitlement process at the time this analysis was conducted. The anticipated trip generation for these two projects was added to the existing seasonally adjusted traffic volumes. Additionally, these projects are of a sufficient size that their traffic may have more than a negligible effect on traffic operations.

- An RV park with 50 spaces and seven tent camping spaces, a single-story 832 square foot laundry and restroom facility, landscape, and drainage improvements; located at the corner of State Route 1 and Capistrano Road in Princeton (PLN2017-00320, associated with PRE2015-00019).
- Big Wave, a project that includes a 70,500 square-foot Wellness Center with housing for developmentally disabled adults and their aides, 161,263 square feet of office/industrial park, and free public parking for beach access and a gated boat storage yard. This project is located on Airport Street north of the Princeton/Pillar Point Harbor area in unincorporated San Mateo County. It has been approved but not constructed.

- **Future with Project Conditions:** Represents near-term traffic conditions with the addition of project traffic. Traffic volumes for the Future project conditions were developed by combining Future conditions volumes with the project only volumes.
- **Cumulative Conditions:** Represents the anticipated Cumulative conditions for the study intersections for the year 2040. The C/CAG-VTA San Mateo County Travel Demand Model was used to develop the future volume forecast for Cumulative Conditions. The model includes future development throughout the region. The 2040 cumulative forecasts are consistent with regional growth totals projected by the Association of Bay Area Governments (ABAG) Plan Bay Area.[6] Therefore, the traffic forecasts reflect both growth in Moss Beach and increases in traffic volumes on State Route 1 due to regional growth. Base year (Year 2013) and future year (Year 2040) forecasts were extracted from the model and linearly interpolated to develop growth between the traffic count year (2017) and the current model horizon year (2040).
- **Cumulative with Project conditions:** Represents the effect of the project on traffic operations under Cumulative conditions. Traffic volumes for the Cumulative with project conditions were developed using the same additive approach used for the Existing with project and Future with project volumes.

[6] https://mtc.ca.gov/our-work/plans-projects/plan-bay-area-2040

Analysis

ANALYSIS

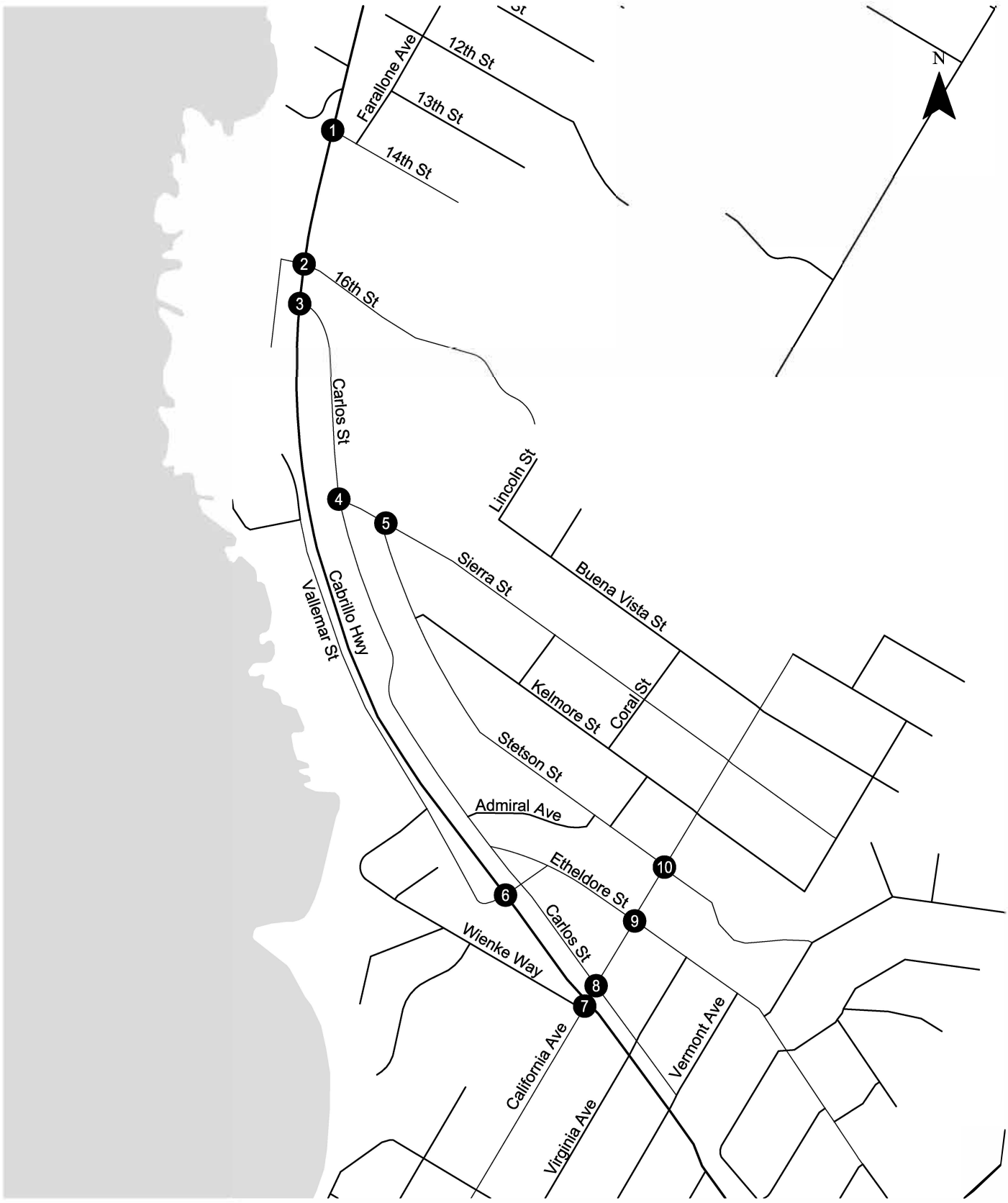
STUDY AREA & INTERSECTIONS

The purpose of the traffic analysis is to determine whether the project would have transportation-related environmental impacts as defined in the *Data and Analysis Approach* section. Based on discussions with County staff, the following ten intersections were identified to describe an appropriate project study area (Figure 3):

1. State Route 1 & 14th Street;
2. State Route 1 & 16th Street;
3. State Route 1 & Carlos Street;
4. Carlos Street & Sierra Street;
5. Sierra Street & Stetson Street;
6. State Route 1 & Etheldore Street / Vallemar Street;
7. State Route 1 & California Avenue;
8. Carlos Street & California Avenue;
9. California Avenue & Etheldore Street; and,
10. California Avenue & Stetson Street.

As described in the *Data and Analysis Approach* section, these intersections were analyzed in the weekday AM, weekday PM, and weekend midday peak periods for the following scenarios:

- Existing Conditions;
- Existing with Project Conditions;
- Future Conditions;
- Future with Project Conditions;
- Cumulative Conditions; and
- Cumulative with Project conditions.



Study Area and Study Intersections
Moss Beach, California

(##) - Study Intersections

Figure
3

H:\2012\20616 - Moss Beach Housing TIA\dwgs\Figs\20616_Fig01_revised_for_report.dwg Jan 10, 2018 - 2:19pm - malston Layout Tab: Fig 3 - Study Area

EXISTING CONDITIONS

ROADWAY NETWORK

Access to the project site is provided off Carlos Street north of Sierra Street. Carlos Street can either be directly accessed from State Route 1 to the north of the project or via State Route 1 south of the project via either Etheldore Street or California Avenue.

- ***State Route 1*** in the vicinity is a two-lane highway running north-south. State Route 1 provides the only access to Moss Beach, connecting it to destinations in the north such as San Francisco and to destinations to the south such as Half Moon Bay.
- ***Carlos Street*** is a narrow two-way local street that runs through Moss Beach parallel to State Route 1. Near the project site, Carlos Street has no pavement markings, on-street parking, sidewalks, or bicycle accommodations. Further south in the commercial area of Moss Beach near California Avenue, Carlos Street includes bicycle pavement markings, on-street parking and sidewalks on one side.
- ***Etheldore Street*** is a two-lane, two-way local street that connects Moss Beach to State Route 1. It extends from the study intersection with State Route 1 and Vallemar Street, through Moss Beach, to State Route 1 further south. Etheldore Street includes intermittent paved sidewalks on its south side and no sidewalks on its north side.
- ***California Avenue*** is a two-lane, two-way local street that crosses State Route 1 south of the project site, providing State Route 1 access to much of the residential area of Moss Beach. California Avenue in the study area includes paved sidewalks on its west side and no sidewalks on its east side.
- ***Stetson Street*** is a two-lane, two-way local street that extends from Sierra Street near the project site to Sunshine Valley Road and provides access across Moss Beach. Stetson Street in the study area includes paved sidewalks on its north side and no sidewalks on its south side.
- ***Sierra Street*** is a two-lane, two-way local street that extends from Carlos Street to Vermont Street and provides residential access across Moss Beach. In the study area, Sierra Street features paved sidewalks on its north side between Coral Street and California Avenue but no paved sidewalks on any other segments.

The 2011 San Mateo County Comprehensive Bicycle and Pedestrian Plan identified planned bikeways through Moss Beach including along Carlos Street but cites no existing bicycle facilities in the study area.

TRANSIT SERVICE

The project site is served by two bus routes (Routes 17 and 18) operated by SamTrans transit service. Service details and changes are the exclusive domain of Samtrans, not San Mateo County. A description of each route, with the closest stops to the project site, is provided below. All route variations are shown in Figure 4.

Route 17

SamTrans Route 17 follows two different northbound routes and two southbound routes.

Northbound

The weekday morning and weekend all-day northbound route include stops at California Avenue / Etheldore Street (0.47 miles from the project) and State Route 1 / 14th Street (0.23 miles from the project). The weekday afternoon/evening northbound route includes a stop at Etheldore Street / Sunshine Valley Road (0.62 miles from the project).

Collectively, these routes operate hourly from 5:30 a.m. to 9:00 p.m. on weekdays and every other hour from 5:13 a.m. to 7:58 p.m. on weekends.

Southbound

The weekday morning southbound route includes a stop at Etheldore Street / Sunshine Valley Road (0.62 miles from the project). The weekday afternoon/evening southbound route stops at State Route 1 / 16th Street (0.11 miles from the project) and California Avenue / Etheldore Street (0.47 miles from the project). Collectively, these routes operate hourly from 6:18 a.m. to 9:50 p.m. on weekdays and every other hour from 6:16 a.m. to 9:28 p.m. on weekends.

Route 18

SamTrans route 18 operates between Main Street / 7th Street in Montara and Moonridge Apartments near Half Moon Bay. The route travels north-south along Sunshine Valley Road and includes stops (in both directions) at Sunshine Valley Road / Etheldore Street (0.47 miles from the project). Route 18 operates two northbound buses in the morning, two northbound buses in the afternoon, three southbound buses in the morning, and two southbound buses in the afternoon.

Transit Service to Schools

SamTrans service would accommodate project students traveling to and from the project to either Manuel F. Cunha Intermediate School via Routes 17 and 18, or Half Moon Bay High School via Route 18.

Transit Stop Access

The nearest Route 17 bus stops are at the following locations:

- **Northbound:** North of the project on the east side of State Route 1 at State Route 1 / 14th Street (0.23 miles from the project). This stop is a widened concrete shoulder with an adjacent paved sidewalk, although there is no sidewalk network or infrastructure to provide walking access to/from the stop.
- **Southbound weekday AM:** South of the project at Etheldore Street / Sunshine Valley Road (0.62 miles from the project). The stop is along a gravel shoulder along Etheldore Street. The stop itself is not connected to any sidewalk network. Sidewalks are provided intermittently in Moss Beach between the Project site and this stop.
- **Southbound weekday PM and weekend:** North of the project on the west side of State Route 1 between Carlos Street and 16th Street (0.11 miles from the project) and at California Avenue / Etheldore Street (0.47 miles from the project). The former transit stop is a pole in an embankment alongside State Route 1 with a few feet of shoulder and is not served by a sidewalk, crossing, or any infrastructure to provide walking access to/from the stop. The latter transit stop is along a gravel shoulder along Etheldore Street. The stop itself is not connected to sidewalk, but a walking path with continuous sidewalk is available between the project site and this stop along Sierra, Stetson, Kelmore, and California Avenue.



SamTrans Service through Moss Beach
Routes 17 and 18

Figure **4**

KITTELSON & ASSOCIATES

Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet

EXISTING CONDITIONS TRAFFIC VOLUMES

Multimodal traffic volumes, lane configurations, and traffic controls for each study intersection were used to assess the existing conditions LOS and delay. Table 1 shows the findings of this analysis for the AM, PM, and Saturday peak hours. Detailed calculation worksheets showing operations for all intersection movements for the Existing conditions are provided in APPENDIX 3.

Seasonal Adjustment Methodology

Traffic counts were taken in April 2017 while local schools were in session. For traffic volumes along SR 1, Kittelson checked historical traffic counts to see if an upward adjustment would appropriately represent peak summer conditions.[7]

The available data showed the average two-way annual daily traffic volume on SR1 in the project vicinity to be 16,500 vehicles per day and the peak month daily vehicle volume to 17,600 vehicles per day. Kittelson used the ratio between the two (1.07) to inflate the observed April volumes. All analysis traffic volumes for through movements along SR1 were grown by 7 percent. Appendix 2 shows the correspondence with Caltrans on the appropriateness of this method.

Seasonally Adjusted Volumes

The existing intersection geometries and seasonally-adjusted existing volumes are shown in Figure 5 and Figure 6.

Comparison with 2022 Volumes

Traffic volumes were subsequently collected at the same intersections in October 2022 and compared to the (unadjusted) volumes collected for this analysis.[8]

Locations along State Route 1 experienced a decrease in weekday AM traffic of between 15 and 23 percent, a weekday PM decrease of 5 to 9 percent, and a Saturday midday peak hour decrease between 10 and 17 percent from 2017 to 2022. There has been a more significant decrease in travel for northbound Highway 1 than southbound Highway 1 for Saturday peak hour. For weekday afternoon peak hour, northbound travel did not experience a significant change from 2017; however, southbound travel decreased by around 16 percent. Both directions of travel have had significant decreases (14 to 18 percent) in the weekday AM peak hour.

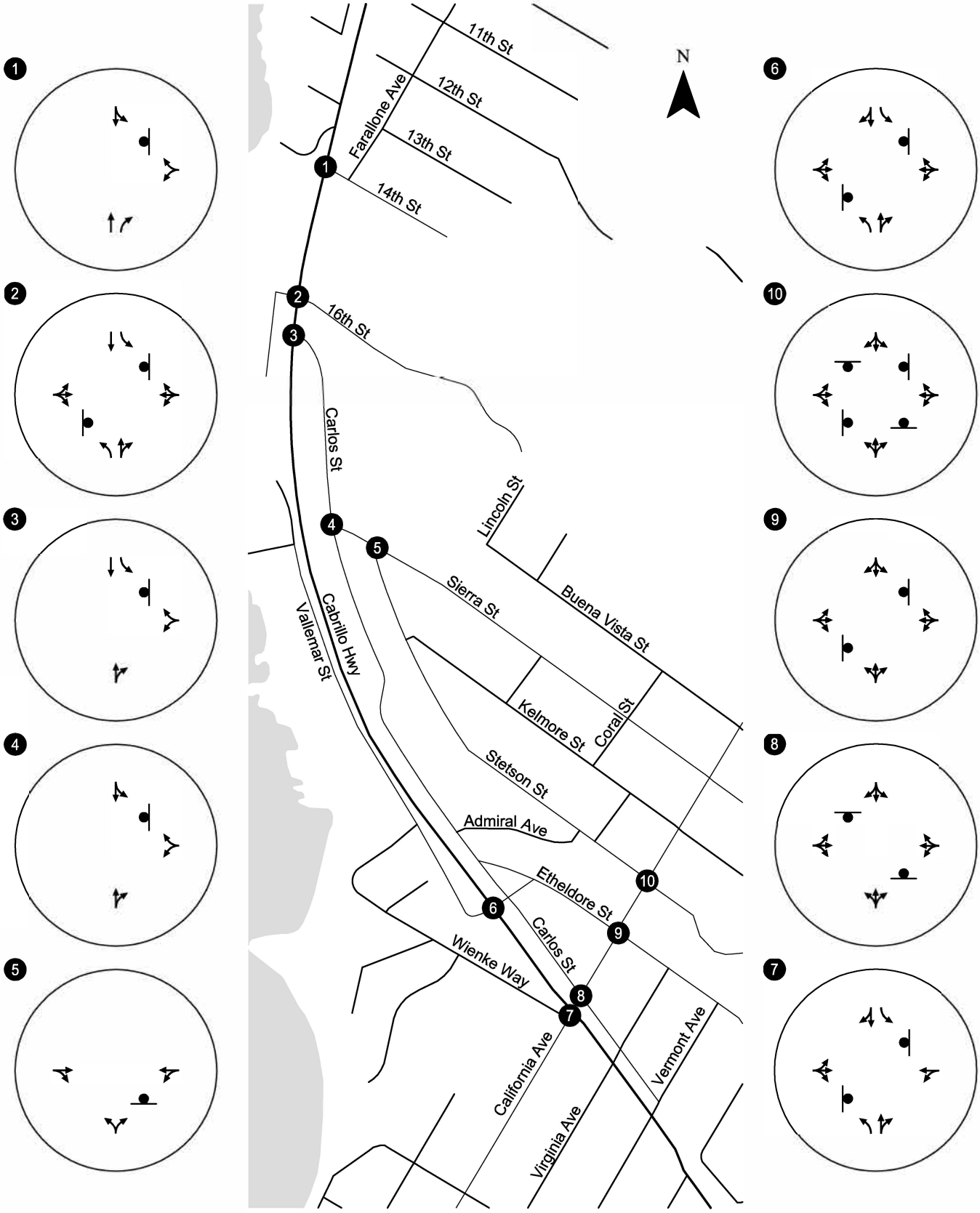
For local roads, the change in peak hour volumes varies by location. Locations along Sierra Street experienced approximately 50 percent higher weekday morning traffic volumes, while evening traffic volumes remained nearly constant, and Saturday midday peak hour increased between 12 and 19 percent. Locations along California Avenue experienced higher traffic volume for all evaluated peak hours, while the intersection of California Avenue and Carlos Street has experienced a decrease in Weekday morning volumes and Saturday peak hour volumes.

In general, the traffic volumes along State Route 1 (which are currently uncontrolled) generally govern the traffic operations: more traffic along the major street makes gap finding more difficult for drivers on a side

[7] Counts were obtained from the Caltrans Traffic Census Program website. The data used were from 2015 and are available at https://dot.ca.gov/programs/traffic-operations/census.

[8] More detail on these 2022 traffic volumes is available in the *Peer Review of Cypress Point Traffic Impact Analysis and Mitigation Plan* (Fehr & Peers, February 2023).

street with stop control. Therefore, given the decreases along State Route 1, the analysis team determined that the seasonally-adjusted volumes presented in this section are still relevant and appropriate for analysis.

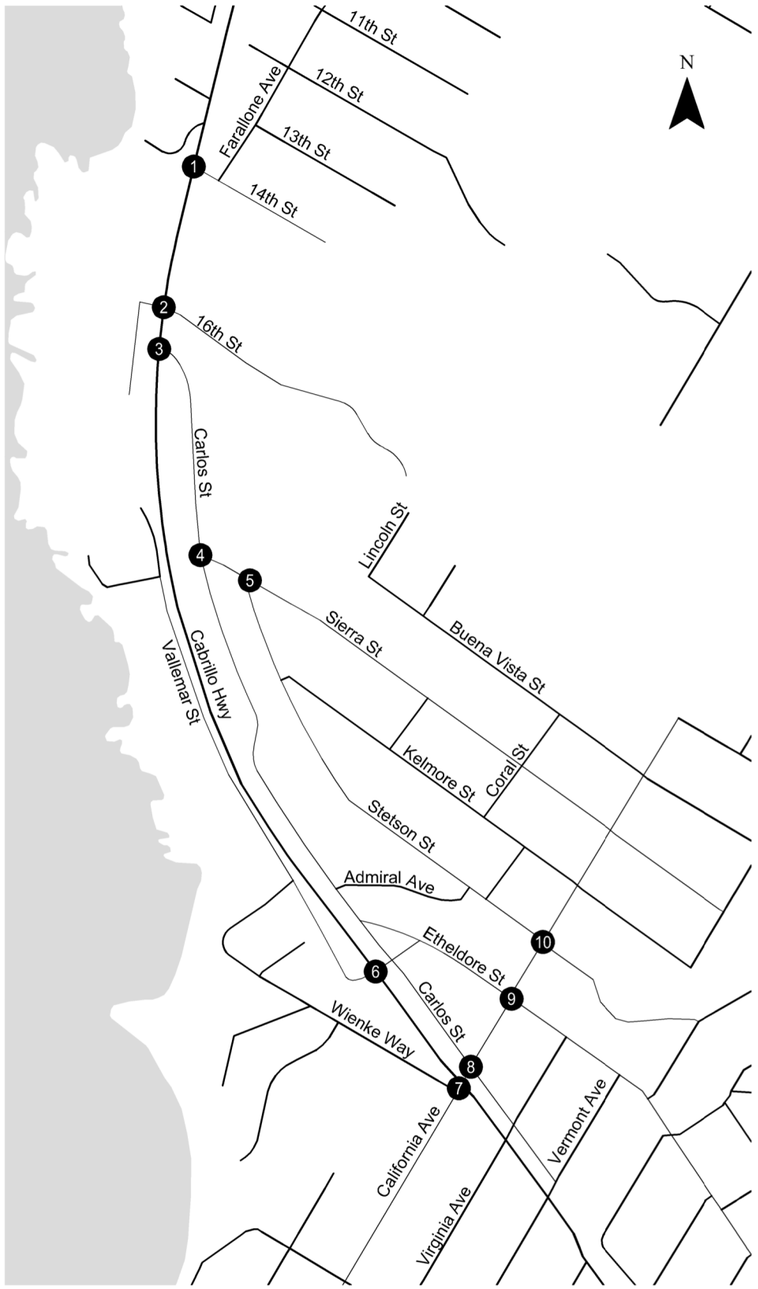


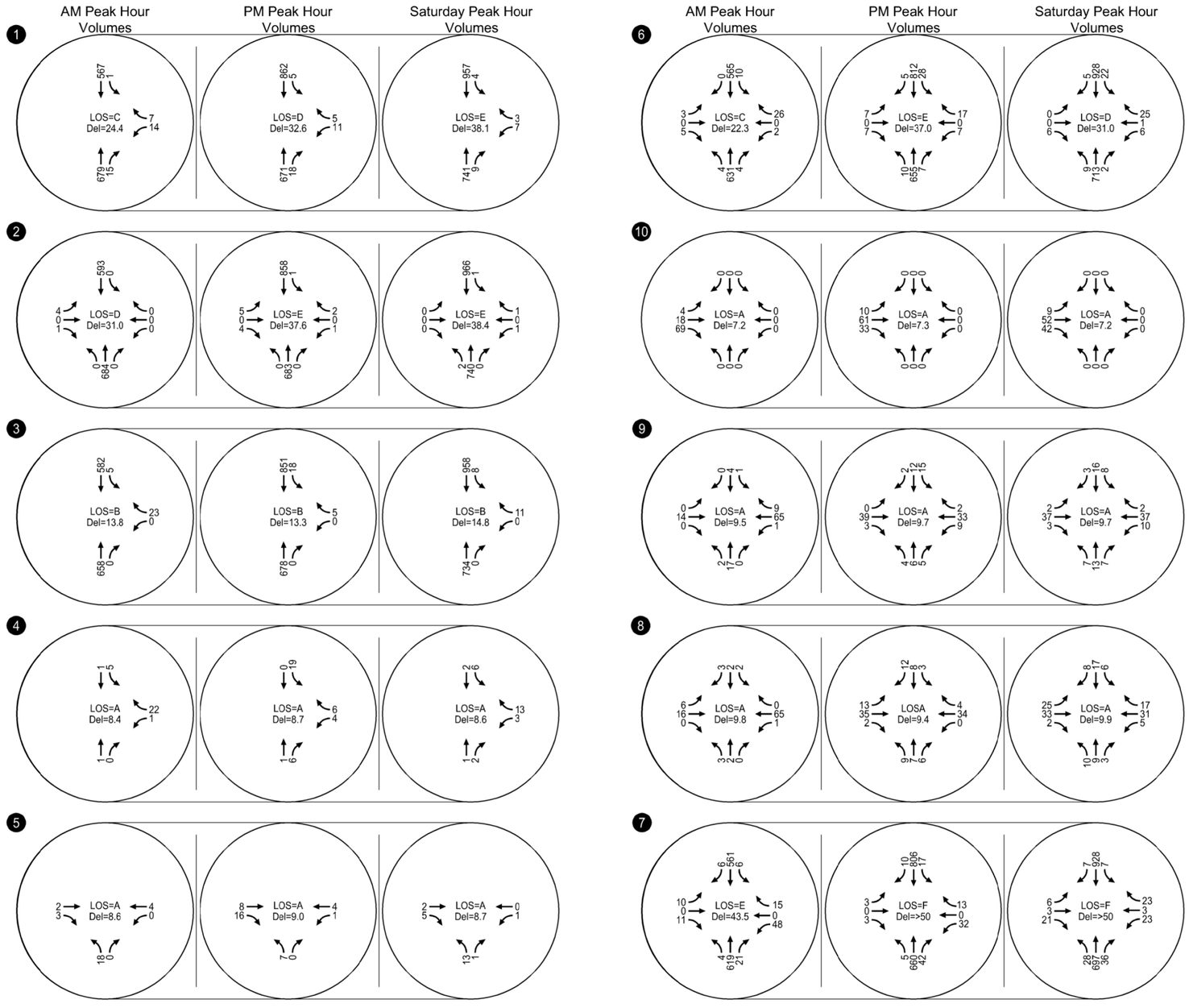
- STOP SIGN
- TRAFFIC SIGNAL

Existing Lane Configurations and Traffic Control Devices
Moss Beach, California

Figure 5

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CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = CRITICAL MOVEMENT LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = CRITICAL CRITICAL VOLUME-TO-CAPACITY RATIO

- STOP SIGN
- TRAFFIC SIGNAL

Existing Peak Hour Turning Movement Volumes and Operations
AM, PM, and Saturday Peak Hour
Moss Beach, California

Figure 6

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PROJECT VEHICLE TRIP GENERATION

TRIP GENERATION

Trip generation of the project is based on information compiled in the 9th Edition of the Institute of Transportation Engineers (ITE) *Trip Generation* manual.[9] The *Trip Generation* manual does not have trip generation data specific to affordable housing but does have several related uses including apartment, low-rise apartment, mid-rise apartment, and high-rise apartment. Of these land uses, the apartment land use (ITE 220) was used for this study because this land use had a larger sample size than the other related uses and had the higher trip generation rates, resulting in a more conservative estimation of trip generation.[10]

The trip generation rates used in this study and presented in the *Trip Generation* manual represent suburban or exurban land use contexts with minimal transit service and ridership. In this sense, these rates are suitable for the Moss Beach context. There are a number of transportation demand strategies that could be employed at this site that may reduce the number of trips associated with the project. For example, the project site plan may be designed to promote walking and bicycling, which would help to reduce short vehicle trips. However, some typical strategies may be limited in effectiveness given the land use context and the relatively small size of the project relative to larger employer-based TDM programs. For example, an on-site shuttle would not likely have an obvious nearby destination or route schedule.

As summarized in Table 2, the project would generate 473 daily trips, 37 weekday AM peak hour trips, 45 weekday PM peak hour trips, and 37 weekend Saturday midday peak hour trips. These and all trip numbers in this report describe one-way trips.

Table 2: project Trip Generation

Land Use	ITE Code	Unit	Size	Daily	Weekday AM Peak Hour			Weekday PM Peak Hour			Saturday Midday Peak Hour		
					Total	In	Out	Total	In	Out	Total	In	Out
Apartment	220	Dwelling Units	71	473	37	8	29	45	29	16	37	19	18

Source: ITE Trip Generation manual, 9th Edition; Kittelson & Associates, 2022

Although the community center onsite may occasionally be used for public events, it will primarily be used by project residents. Therefore, for the purposes of this analysis, the community center onsite is expected only to generate internal trips, not additional trips from outside the project.

Trip Generation Sources

At the time this analysis was conducted, the 9th Edition was the most current version of the ITE *Trip Generation Manual* and therefore the most appropriate source for trip generation information. ITE has subsequently released several updates and the 11th edition provides a more recently updated source of this information.

[9] Institute of Transportation Engineers. Trip Generation, 9th Edition, Washington, D.C. 2012

[10] The manual lists Land an average rate of 6.65 weekday trips per dwelling unit for land use ITE 220 (Apartment), 6.59 for ITE 221 (low-rise apartment), 4.20 for ITE 222 (High-Rise Apartment), and no reported daily rate for ITE 223 (Mid-Rise Apartment).

A comparison of a few methodologies from the 11th Edition Trip Generation Manual and a comparison of the trip generation rates by each method are presented in **Table 3.**

Table 3. Trip Generation Comparison

	AM Peak Hour			PM Peak Hour			Saturday Peak Hour			Number of Studies
	Trips	In	Out	Trips	In	Out	Trips	In	Out	
TIA Trip Generation – ITE 9th Edition[1]	37	8	29	45	29	16	37	19	18	AM: 78 PM: 90 Saturday: 14
ITE 11th Edition – Multi-Family Low-Rise[2]	45	11	34	51	32	19	29	15	14	AM: 49 PM: 59 Saturday: 1
ITE 11th Edition – Affordable Housing[3]	32	9	23	41	24	17	91	46	45	AM: 6 PM: 8 Saturday: 1

Notes:
1. ITE Trip Generation, 9th Edition (Land Use #220 – General Apartment) Adjacent Street Traffic Peak Hour, Linear equation
2. ITE Trip Generation, 11th Edition (Land Use #220 – Multi-Family Low-Rise) Adjacent Street Traffic Peak Hour, Fitted Curve Equation
3. ITE Trip Generation, 11th Edition (Land Use #223 – Affordable Housing) Adjacent Street Traffic Peak Hour, Fitted Curve Equation

Source: Fehr & Peers, 2022.

Based on the table, the 9th Edition rates are satisfactory for the analysis approach. The appropriate land use in 11th Edition shows slightly higher trip generation rates in the weekday AM and PM Peak Hours compared to the 9th Edition land uses (ranging from 13 to 22 percent) and lower Saturday peak hour trips. In contrast, the affordable housing land use in the 11th edition shows the opposite – fewer weekday AM and PM peak hour trips and drastically higher Saturday trips. (Both 11th edition Saturday observations are based on a single observation and should therefore not be used for this analysis.)

The Affordable Housing land use rates are based on a low number of observations (6 and 8 respectively) so may not necessarily be appropriate to use here. However, combined with other evidence that residents of affordable housing typically drive less (i.e., generate fewer driving trips) than market-rate residents, the 9th Edition rates already used appear to be appropriate in comparison to more recent data.[11] The trip generation analysis is based on the 9th Edition rates.

TRIP DISTRIBUTION AND ASSIGNMENT

The distribution of project trips was derived from existing travel volume data and from knowledge of local travel times. The recorded north/south distribution of traffic along State Route 1 was used to inform the direction that project traffic would be going to or coming from in order to access the project site. Access to State Route 1 from the project was assumed to be via the Carlos Street and State Route 1 intersections. The trip distribution is shown in Table 4. project only trips are shown in Figure 7.

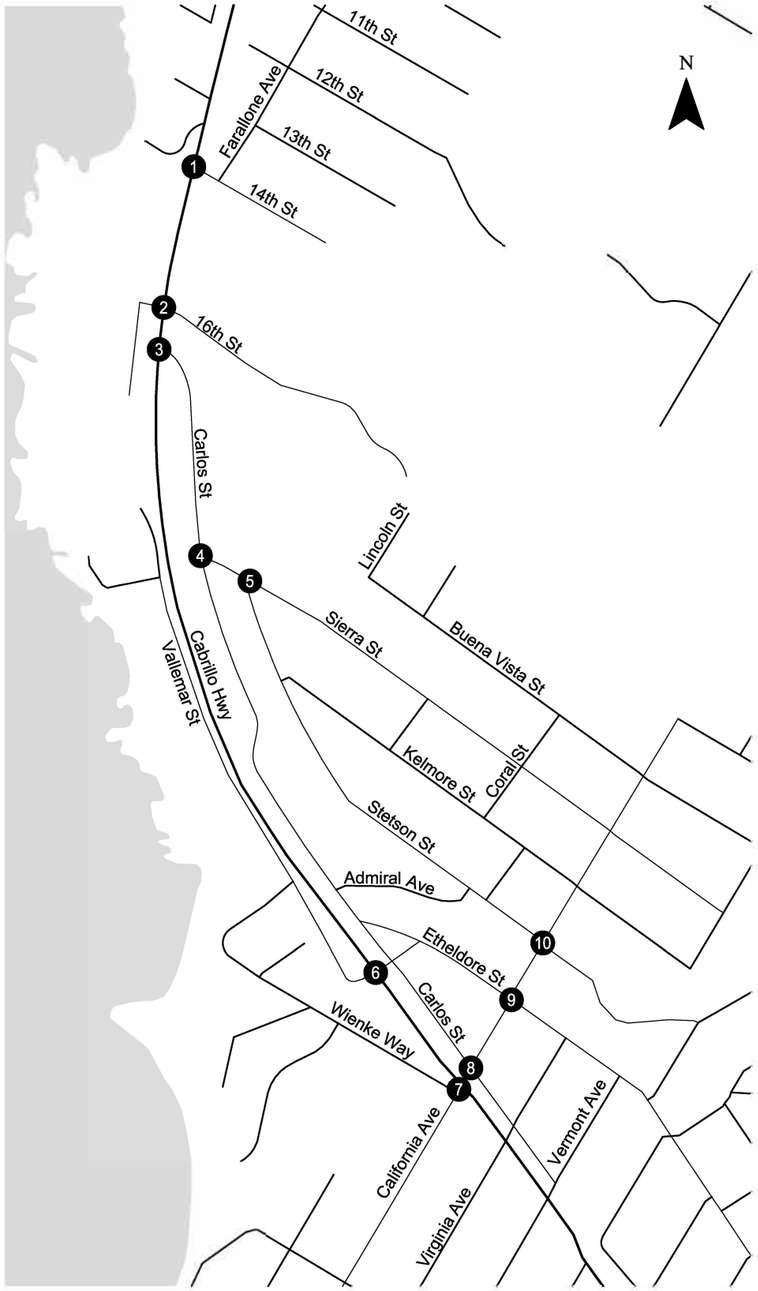
[11] The CAPCOA *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity* provides information on affordable housing in relation to driving and vehicle miles traveled production. It is available online at https://www.airquality.org/businesses/ceqa-land-use-planning/ghg-handbook-caleemod.

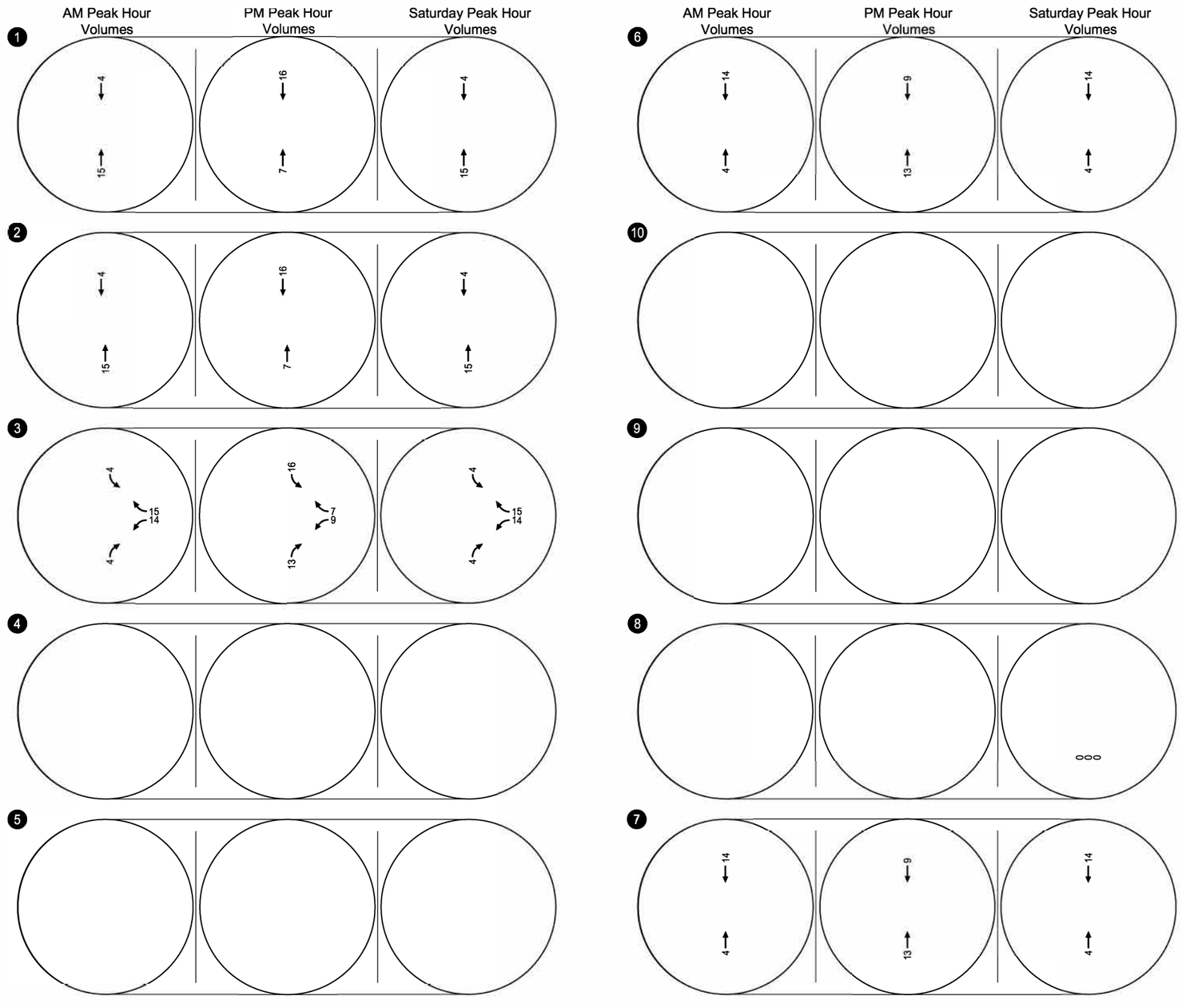
Table 4: project Trip Distribution along State Route 1

To/From project	Direction Along State Route 1	Weekday AM Peak Hour	Weekday PM Peak Hour	Saturday Midday Peak Hour
Outgoing (from project)	Northbound	52%	44%	44%
	Southbound	48%	56%	56%
Incoming (to project)	Northbound (from South)	50%	55%	58%
	Southbound (from North)	50%	45%	42%

Outgoing and incoming trips from each time period sum to 100%.

Source: Kittelson & Associates, 2022.





CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = CRITICAL MOVEMENT LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = CRITICAL CRITICAL VOLUME-TO-CAPACITY RATIO

Project Turning Movement Volumes
AM, PM, and Saturday Peak Hour
Moss Beach, California

Figure
7

KITTELSON & ASSOCIATES

H:\20\20616 - Moss Beach Housing TIA\dwgs\figs\20616_Fig01_revised_for_report.dwg Jan 10, 2018 - 3:04pm - malston Layout Tab: F6 PR

VMT ANALYSIS

As described in the *Data Analysis and Approach* section of this report, the project would represent a significant impact if it project would result in more than 11.56 daily home-based VMT per capita by residence. (This represents a 15% reduction from the baseline County average of 13.60 home-based trip VMT per resident.) It will be exempt from detailed VMT analysis if it meets County screening criteria.

One such screening criterion is for projects that provide 100% affordable housing. Per the County's Interim VMT Analysis Criteria[12] for Affordable Housing, projects that generate 100% affordable housing in infill areas typically generate lower VMT than market-rate housing.

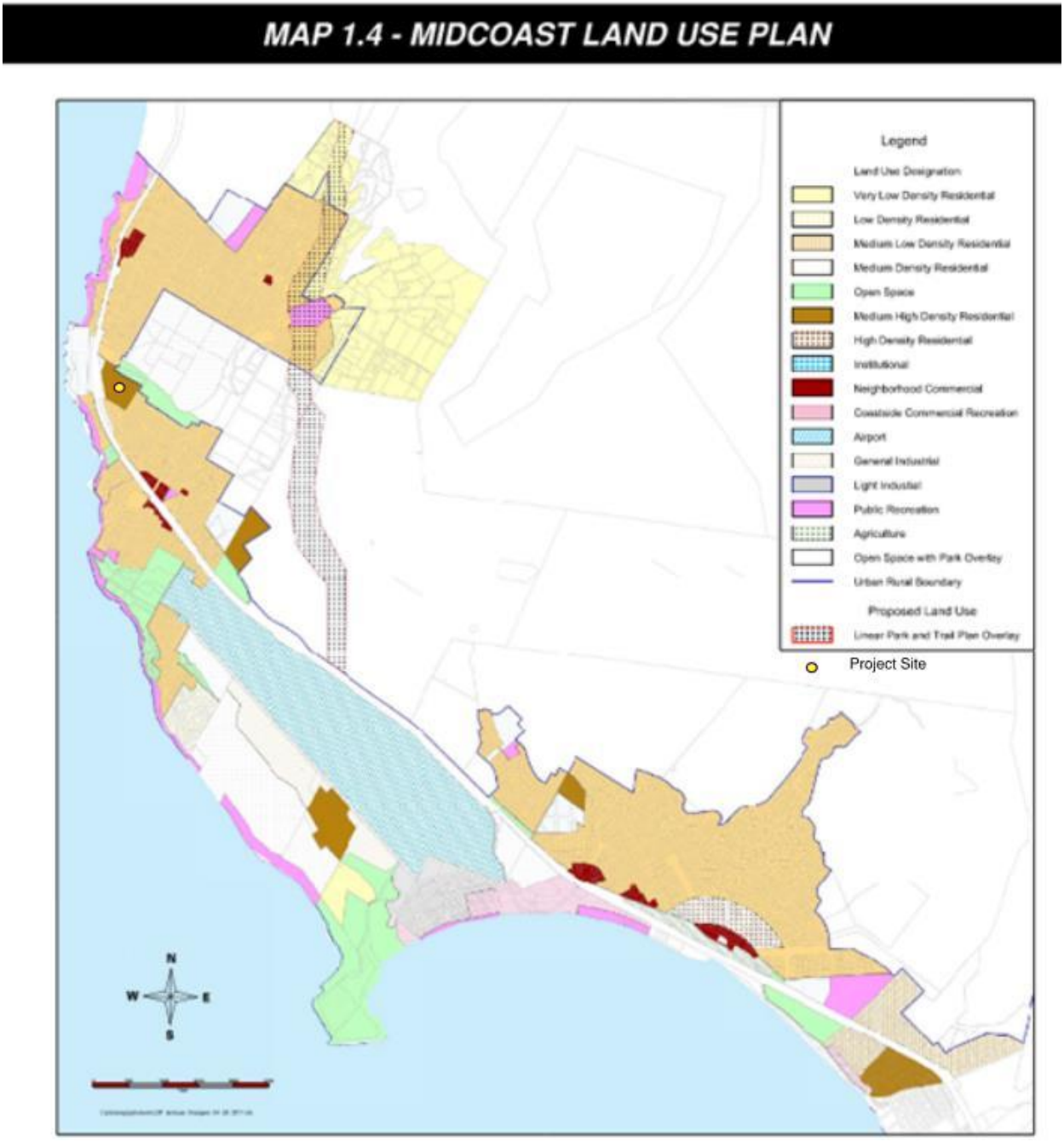
The site is defined as infill and medium density residential in the LCP (see Figure 8) and designated as a priority development site for affordable housing in the San Mateo County Local Coastal Program Policies document (San Mateo County Planning and Building Department 2013). The site is also designated as an affordable housing opportunity site under the San Mateo County Housing Element. (San Mateo County Planning and Building Department 2015).

The C/CAG VMT Estimation Tool shows that the average residential VMT for the Project area is 23.6 daily miles per capita. Using the 2020 baseline year, the Bay Area Regional Average home-based VMT per resident is 14.6, and a 15% reduction from the baseline County average would result in a threshold of 12.41 home-based VMT per resident.

As part of subsequent environmental review, the County may determine whether to rely on the screening option (which would assume a less-than-significant impact) or a more quantitative approach to VMT analysis. The latter may result in a **significant impact**, pending further analysis.

[12] "Change to Vehicle Miles Traveled as Metric to Determine Transportation Impacts under CEQA Analysis", Department of Public Works, County of San Mateo. September 2020.

Figure 8: Midcoast Land Use Plan Zoning



Source: San Mateo County Midcoast Land Use Area Plan



Site Access, Circulation & Parking

SITE ACCESS, CIRCULATION & PARKING

This section analyzes project site access, circulation, and parking. The project site would include a driveway along Carlos Street and 142 vehicle parking spots, with 5 electric vehicle parking spots in a loop surface parking lot.[13] The site would include racks providing for eight short-term bicycle parking spaces and 36 long-term (i.e., indoors, and secure) bicycle parking spaces. The project does not propose to provide any off-site vehicle or bicycle parking.

PARKING ASSESSMENT

This section evaluates the adequacy of parking for the project using two methods. It is first evaluated against San Mateo County zoning regulations on parking. It is also evaluated against parking demand, as estimated based on industry standards. Based on County zoning regulations, a 71-unit apartment complex is required to have 127 parking spaces as shown in Table 5. Therefore, the project provides 15 more parking spaces than required by San Mateo County.

Table 5: Parking Requirements for the project

Apartment Type	Number of Units	Parking Rate (Per Unit)	Parking Required
1 Bedroom	16	1.2	20
2 Bedroom	37	1.5	56
3 Bedroom	18	2	36
Guest Parking[1]		0.2	15
Total:			**127**

[1]*Guest parking at 1 space per 5 units*

Source: Kittelson & Associates, Inc. 2018; San Mateo County Zoning Regulations Chapter 3, Section 6119

An estimate of parking demand was performed using the *Parking Generation Manual* (4th edition) published by the Institute of Transportation Engineers (ITE). This manual is a standard transportation industry document that estimates the demand for parking based on studies conducted at similar sites. The land use in the ITE manual that is the most similar with the project is the Low/Mid-Rise Apartment (LU 221) since the Apartment (LU 220) is not available.

Based on the demand rates from previous studies compiled in the ITE Manual, the average demand for a 71 unit apartment complex would be about 88 parking spaces while the maximum observed demand would be about 138 parking spaces, as shown in Table 6. This demand includes demand from any guests as well as residents. With a parking supply of 142 spaces, the project is anticipated to have about 4 more parking spaces than the anticipated maximum demand.

Using both criteria, the amount of parking contained in the project is adequate to meet the demand.

[13] This number may change as required by updated code requirements; the project sponsor will coordinate with the County on any changes to requirements and required project description changes.

Table 6: Average Estimated Parking Demand for the project

Parking Demand	Number of Units	Demand Rate[1]	Parking Spaces Needed
Average	71	1.23	88
Maximum Observed		1.94	138

Source: Kittelson & Associates, Inc.
Demand based on ITE Parking Generation Manual, 4th Edition (LU 221)
[1]Demand rate in vehicles per apartment

ELECTRIC VEHICLE PARKING

Electric vehicle (EV) parking requirements are determined by the California Green Building Code[14], which was updated in 2022. The code requires 10 percent of spaces (15 total for this project) be EV-capable, 25 percent be equipped with low power charging receptacles (36 total for this project), and 5 percent be equipped with Level 2 EVSE (8 total for this project).

The project provides 5 parking spaces equipped with electric vehicle charging stations, which does not meet the CalGreen requirements. It is recommended that the project increase the number of EV parking spaces to meet CalGreen requirements. The project sponsor has indicated plans to update the project plans to comply with these requirements.

EMERGENCY ACCESS

Emergency access to the project would be provided by the driveway on Carlos Street. Additionally, there is an emergency vehicle access route provided from Lincoln Street. Given the two access points available for emergency vehicle ingress and egress, the project's proposed site plan is expected to provide adequate emergency vehicle access. This analysis assumes that the final design of all circulation improvements shall be required to adhere to all applicable County and other statutes and requirements, including, without limitation, those set forth in the California Fire Code and California Vehicle Code. Therefore, the project does not have an impact on emergency access.

PEDESTRIAN & BICYCLE ACCESS

Bicycle Access

A qualitative assessment was conducted to determine the project's potential impacts on bicyclists and bicycle facilities. San Mateo County's Bicycle and Pedestrian Master Plan (2011) includes planned Class I, Class II, and Class III bikeways in the vicinity of the project. These facilities include:

- Class I multi-use path near State Route 1 between Carlos Street and Main Street
- Class II bicycle lane along Carlos Street
- Class III bicycle route along State Route 1

The project does not conflict with existing or proposed bicycle facilities identified in the Bicycle and Pedestrian Master Plan because the project is not proposing to change roadway geometries in ways which would prevent the development of the proposed bicycle facilities. Therefore, the project does not have an impact on bicycle access.

[14] UpCodes. 2022. *California Green Building Standards Code 2022*. Available: https://up.codes/viewer/california/ca-green-code-2022/chapter/4/residential-mandatory-measures#4.106.4. Accessed December 5, 2022.

Pedestrian Access to Transit

The project may lead to an increase in pedestrians accessing the nearest bus stop which is located across State Route 1 near Carlos Street. This stop serves Route 17 for the weekday PM and weekend service, but there is no marked crosswalk across State Route 1 to access it. Additionally, there is inadequate corner sight distance at the intersection of Carlos Street and State Route 1 for pedestrians to see vehicles and drivers to see pedestrians.

The *Connect the Coastside* study, which was prepared by San Mateo County to evaluate transportation needs in this area, has proposed a change of traffic control at State Route 1 and 16th Street/Carlos Street in the vicinity of the southbound bus stop based on established needs. The County has subsequently initiated a PID to study such a change and is coordinating with Caltrans. Any such project would need Caltrans approval and therefore does not rest within the County's exclusive control.

Since the project will likely increase the pedestrian demand for crossing State Route 1 at an unmarked crossing location with inadequate sight distance, the project will increase the hazard for this crossing, resulting in an impact.

Pedestrian Access to Sidewalk Network

The proposed access driveway for the project is on Carlos Street, which does not provide pedestrian facilities such as sidewalks to connect the project to sidewalks on the north side of Sierra Street and the east side of Stetson Street. Since the project is anticipated to house more than 200 residents, it is likely to increase pedestrian activity in the area. Without a proper connection to the sidewalks on Sierra Street and Stetson Street, project residents would need to walk in the street, resulting in the potential for decreased pedestrian safety. Therefore, the impact is considered to be an impact.

Transit Service

The project site is served by two bus routes (Route 17 and Route 18) operated by SamTrans transit service (see Figure 4). The nearest Route 17 bus stops are at the following locations:

- Northbound: North of the project on the east side of State Route 1 at State Route 1 / 14th Street (0.23 miles from the project). This stop is a widened concrete shoulder with an adjacent paved sidewalk, although there is no sidewalk network or infrastructure to provide walking access to/from the stop.
- Southbound weekday AM: South of the project at Etheldore Street / Sunshine Valley Road (0.62 miles from the project). The stop is along a gravel shoulder along Etheldore Street. The stop itself is not connected to any sidewalk network. Sidewalks are provided intermittently in Moss Beach between the Project site and this stop.
- Southbound weekday PM and weekend: North of the project on the west side of State Route 1 between Carlos Street and 16th Street (0.11 miles from the project) and at California Avenue / Etheldore Street (0.47 miles from the project). The former transit stop is a pole in an embankment alongside State Route 1 with a few feet of shoulder and is not served by a sidewalk, crossing, or any infrastructure to provide walking access to/from the stop. The latter transit stop is along a gravel shoulder along Etheldore Street. The stop itself is not connected to sidewalk, but a walking path with continuous sidewalk is available between the project site and this stop along Sierra, Stetson, Kelmore, and California Avenue.

The nearest Route 18 bus stops in both directions are at Sunshine Valley Road / Etheldore Street (0.47 miles from the project).

Both of these routes primarily travel along State Route 1. Since the majority of State Route 1 traffic movements experience little or no delay, the project traffic is not anticipated to decrease the performance of public transit.

SPEED LIMITS AND SIGHT DISTANCE

The conceptual site plan for the project was reviewed to assess potential hazards due to project design or operations and potential incompatible land uses. The proposed land uses are generally compatible with existing uses in the project vicinity and would not result in undue hazards. Therefore, this assessment focuses on potential hazards due to design. The design topic considered was the project's impact on intersections with restricted sight distance for existing operating speeds per Caltrans *Highway Design Manual* standards.

Kittelson reviewed the study intersections that access State Route 1 to determine if any of these have restricted sight distance that does not meet Caltrans standards. The intersection of State Route 1 and Carlos Street was found to provide 305 feet of sight distance to the south, which is 246 feet less than what is required for an intersection with a 50-mph facility such as State Route 1, per Table 405.1A in the Caltrans *Highway Design Manual*.[15]

Additionally, a two-way left turn lane is present along State Route 1 exclusively between Carlos Street and 16th Street. Considering the need for deceleration before making a left turn from State Route 1 to either street, motorists making northbound left turns to 16th Street and those making southbound left turns to Carlos Street represent overlapping and conflicting uses of the lane. The addition of southbound left-turning project traffic from State Route 1 to Carlos Street would further contribute to potential conflict between the two movements.

Because this intersection would serve as the principal means of access for the project to and from State Route 1, the project would add traffic to both the movements with restricted sight distance and the overlapping left turns, resulting in a sight distance-related project impact.

[15] Note that the applicable section of State Route 1 has a posted speed limit of 45 miles per hour, which would indicate a design speed of 55 miles per hour, which is the applicable standard for corner sight distance per the Caltrans *Highway Design Manual*.



Conclusions and Mitigation Measures

CONCLUSIONS AND MITIGATION MEASURES

This section presents project-related impacts identified in this report and proposed mitigation measures to offset new vehicle trips generated by the project to the extent feasible.

VEHICLE MILES TRAVELED

As part of subsequent environmental review, the County may determine whether to rely on a potential screening option to evaluate the project's vehicle miles traveled (which would assume a less-than-significant impact) or a more quantitative approach to VMT analysis. The project may result in a significant impact, pending further analysis.

SIGHT DISTANCE AND SAFETY IMPACTS

Sight distance and safety impacts were identified related to the following.

Impact T-1: The project would substantially increase hazards by adding vehicle trips to an intersection with existing deficient sight distance (State Route 1 & Carlos Street [#3]).

The project would add traffic to the westbound approach at the intersection of Carlos Street and State Route 1, which has inadequate sight distance for seeing northbound vehicles on State Route 1. It would also cause potential conflict between project trips making a southbound left onto Carlos Street and non-project traffic making a northbound left into the Lighthouse since both movements share a very short left turn lane. This would cause a significant impact under all Project scenarios.

This intersection provides primary access to the project site from State Route 1. Project vehicles would have restricted sight distance when exiting onto State Route 1 making it difficult to judge adequate gap acceptance for safe entry onto State Route 1. To reduce this impact, implement the following mitigation measures.

Mitigation Measure T-1: Provide Additional Transportation Demand Management (TDM) Measures

The project includes a TDM plan (described in the Project Description section and in more detail in the checklist included in Appendix 9), which can be expected to reduce project trips.

As a mitigation measure, the project shall also construct sidewalk, crosswalk, bicycle route, and transit infrastructure improvements that would improve conditions within Moss Beach for pedestrians and bicyclists. The additional measures will include:

- **Carlos Street:** Add sidewalks on Carlos Street from the project entrance to Sierra Street.
- **Sierra Street:** Clear/plane existing sidewalk that fronts project site on Sierra Street from Carlos Street to Stetson Street.
- **Sierra Street/Stetson Street:** Add high visibility crosswalks with advanced yield markings and yield signs for pedestrians to cross Sierra Street to Stetson Street on the southeast corner. Add 1-way stop on northbound Stetson Street.
- **Stetson Street/Kelmore Street:** Add ramp with truncated domes on the northeast corner if feasible with fire station configuration and drainage. Add high-visibility crosswalk to cross Kelmore Street.
- **Stetson Street/California Avenue:** Add high-visibility crosswalk with advanced stop bar to cross Stetson Street (from northeast corner to northwest corner toward Etheldore Street).

- **California Avenue/Etheldore Street:** Add high-visibility crosswalks with advanced stop bars to access bus stops on the southeast and northwest corners.
- **California Avenue, south of Etheldore Street:** Add sidewalk on west side of California Avenue where missing to connect to downtown Moss Beach.
- Contributions toward accessible bus stops at **California Avenue / Etheldore Street** if feasible, including providing bus benches.
- Assist in implementation of the planned Class III Bikeways (per draft Unincorporated San Mateo County Active Transportation Plan) by providing sharrows on **Sierra Street between project site and California Avenue**, and on **California Avenue between Sierra Street and Carlos Street**.

Although a TDM plan and these additional measures would reduce the vehicle trip generation by promoting alternative modes of travel and lessen the impact, the effectiveness of a TDM plan cannot be guaranteed. Therefore, the impact remains.

Mitigation Measure T-2: Close Carlos Street between State Route 1 and the project to all but emergency vehicles.

The removal of traffic from this intersection would negate the need for improving intersection sight distance since drivers would no longer be allowed to turn onto or off of Carlos Street at this location. Project vehicle trips as well as existing trips at the intersection would instead be routed south along Carlos Street and Stetson Street to access State Route 1 at either Etheldore Street or California Avenue.

At the time of this writing, the County is working on a Caltrans Project Initiation Document (PID) as part of the Moss Beach State Route 1 Congestion & Safety Improvements Project. With this project, the County will determine feasibility for a traffic signal and roundabout at a combined State Route 1 / 16th Street / Carlos Street intersection. The County is working with Caltrans, but funding has not yet been identified. Implementation authority rests jointly with the County and Caltrans and is therefore out of the County's exclusive control. The closure recommended in this mitigation measure can therefore be considered a temporary solution intended to mitigate the identified impact until the County can successfully implement a change of traffic control. That future project would be consistent with Caltrans design standards, provide adequate sight distance for the resulting condition.

Additional Mitigation Measures

Two additional potential mitigation options were considered but rejected in favor of Mitigation Measure T-2.

- **Connecting Carlos Street with 16th Street instead of State Route 1.** In field review, 16th Street was found to provide sufficient corner sight distance. This option would reroute Carlos Street at State Route 1 into 16th Street instead, directing all inbound and outbound Carlos Street traffic to 16th Street. However, this option was considered infeasible for the following reasons:
  - A "Tee" intersection of 16th Street and Carlos Street in close proximity (less than one car length) to the existing stop-controlled intersection between State Route 1 and 16th Street would have the potential to create conflicts between vehicles turning from State Route 1 onto 16th Street and vehicles turning from Carlos Street onto 16th Street, especially given a difference in operating speeds for motorists turning from the highway compared to motorists driving along Carlos Street. In order to avoid conflicts, the County could need to obtain additional right of way to increase the distance between State Route 1 and a potential Carlos Street/16th Street intersection.
  - There is a notable grade difference between Carlos Street and 16th Street and providing a formal connection may not be reasonable geometrically. In order to create a reasonable grade for such a connection, the County would potentially need to obtain additional right of way.

  This option is the recommendation provided in the *Connect the Coastside* report, but feasibility and implementation concerns are being assessed as part of the project described above.

- **Grading the east side of State Route 1 to provide clear sight distance.** Given speeds along State Route 1, earthwork or tree clearing would be necessary to clear required sight distance to the south at Carlos Street. This would include cutting back trees and re-grading the berm between Highway 1 and Carlos Street. While clearing the land would provide adequate sight distance for the horizontal curvature of the road (see Figure 1), there is also a vertical curve due to elevation changes that may obstruct sight distance. Because Highway 1 crests south of the Carlos Street intersection, a driver may not be able to see vehicles on the other side of the crest of the curve. A detailed topographic map would be needed to determine if horizontal clearing, which may be prohibitively expensive and would require an encroachment permit from Caltrans, would provide adequate sight distance given the vertical curve.

Impact Conclusion

With the implementation of the recommended mitigation measures, the project impact would be reduced to **less than significant with mitigation.** Closing the intersection to general purpose traffic would eliminate the need to provide sight distance at the subject intersection. The project described above that is currently in the PID phase could successfully mitigate the impact as well. As described, it would require successful completion of the study, acquisition of project funding, and concurrence with Caltrans on a change of control at the intersection.

Impact T-2: The project may lead to an increase in pedestrians crossing State Route 1.

The increase in transit ridership expected as a result of the project may lead to more pedestrians crossing State Route 1 to access the bus stop on southbound State Route 1 at 16th Street. This may increase the potential risk for pedestrian/vehicle interactions on State Route 1 given that there are currently no marked pedestrian crossings across State Route 1 near Carlos Street to access this stop. Additionally, the limited sight distance at this location would not allow sufficient visibility for pedestrians to be seen by vehicles on State Route 1.

The proposed TDM plan would include the "M2 – Orientation, Education, Promotional Programs and/or Materials" measure. This measure offers new residents orientation and educational materials or programs. The educational material should include information on SamTrans routes and would direct project residents to use the bus stop at Etheldore Street and California Street instead of crossing SR1 for the same bus lines.

Implementing TDM strategies may introduce offsetting effects with respect to people crossing State Route 1 on foot. Some TDM strategies are aimed at reducing the overall need for travel (for example, by providing improved delivery services onsite to reduce the need for additional shopping trips). However, other strategies are aimed at shifting driving trips to alternative modes of travel (walking, biking, and riding transit). So, in aggregate, TDM strategies may simultaneously increase and reduce the demand for people crossing State Route 1 and cannot be guaranteed to mitigate this impact.

To reduce this impact, implement the following mitigation measures.

Mitigation Measure T-1: **Provide Additional TDM Measures**

In addition to the project's TDM plan, the project shall also construct sidewalks, crosswalk, bicycle route, and transit infrastructure improvements that would improve conditions within Moss Beach for pedestrians and bicyclists. These improvements would increase the propensity for residents to walk to and from the bus stop at California Avenue / Etheldore Street in Moss Beach but will not guarantee a reduction in the risk of people crossing to get to the bus stop on SR 1.

Other Mitigation Measures

The *Connect the Coastside* report recommends a change of control at State Route 1/Carlos Street (with a preliminary recommendation for a roundabout). This recommendation would provide an opportunity to include a pedestrian crossing alongside traffic control to give a safe crossing of SR1. As previously mentioned, the County is working on a Caltrans Project Initiation Document (PID) as part of the Moss Beach

State Route 1 Congestion & Safety Improvements Project. With this project, the County will determine feasibility for a traffic signal and roundabout at a combined State Route 1 / 16th Street / Carlos Street intersection. The County is working with Caltrans, but funding has not yet been identified. Implementation authority rests jointly with the County and Caltrans and is therefore out of the County's exclusive control.

A change of traffic control on SR1 is not exclusively within the County's control; it would require Caltrans concurrence.

Impact Conclusion

For reasons stated above, with the implementation of the recommended mitigation measures, the project impact would remain **significant and unavoidable.** The County project described above that is currently in PID phase could successfully mitigate the impact but as described would require successful completion of the study, acquisition of project funding, and concurrence with Caltrans on a change of control at the intersection.

Impact T-3: The project will increase walking along Carlos Street and to Moss beach where sidewalks gaps would increase pedestrian/vehicle interactions in the roadway.

To reduce this impact, implement the following mitigation measure.

Mitigation Measure T-1: Provide Additional Transportation Demand Management (TDM) Measures

In addition to the TDM elements required as part of the C/CAG TDM Checklist (included as Appendix 9), the project would also construct sidewalk, crosswalk, bicycle route, and transit infrastructure improvements described on page 37 that would improve conditions within Moss Beach for pedestrians and bicyclists.

Implementation of Mitigation Measure T-1 would improve pedestrian safety and separate people walking from motor vehicles and thereby promote a more welcoming walking environment while reducing the potential for pedestrian/vehicle interactions.

Impact Conclusion

For reasons stated above, with the implementation of the recommended mitigation measures, the project impact would be reduced to **less than significant with mitigation.**



Local Circulation and Traffic Operations

LOCAL CIRCULATION AND TRAFFIC OPERATIONS

This section described the local circulation and operational analysis conducted for informational purposes. Traffic Operations are compared to the LCP Policy 2.44 level of service standard previously described.

EXISTING CONDITIONS

For operational analysis, the existing conditions were analyzed based on the traffic volumes and conditions described in the Existing Conditions section on page 18.

EXISTING NO PROJECT CONDITIONS

As the table shows, Intersection **#7 State Route 1 & California Avenue/Wienke Way** operates below the standard in the weekday AM, weekday PM, and Saturday midday peak periods, and Intersections **#2 State Route 1 & 16th Street** and **#6 State Route 1 & Vallemar Street / Etheldore Street** operate below the standard in the weekday PM.

Table 7: Existing Conditions Intersection Operations Results

No	Location	Control	Existing Weekday AM		Existing Weekday PM		Existing Saturday Midday	
			Delay	LOS	Delay	LOS	Delay	LOS
1	State Route 1 & 14th Street	TWSC	24.4	C	32.6	D	38.1	E
2	State Route 1 & 16th Street	TWSC	31.0	D	**37.6**	**E**	38.4	E
3	State Route 1 & Carlos Street	TWSC	13.8	B	13.3	B	14.8	B
4	Carlos Street & Sierra Street	TWSC	8.4	A	8.7	A	8.6	A
5	Stetson Street & Sierra Street	TWSC	8.6	A	9.0	A	8.7	A
6	State Route 1 & Vallemar Street / Etheldore Street	TWSC	22.3	C	**37.0**	**E**	31.0	D
7	State Route 1 & California Avenue / Wienke Way	TWSC	**43.5**	**E**	**78.2**	**F**	**87.1**	**F**
8	Carlos Street & California Avenue	TWSC	9.8	A	9.4	A	9.9	A
9	Etheldore Street & California Avenue	TWSC	9.5	A	9.7	A	9.7	A
10	Stetson Street & California Avenue	AWSC	7.2	A	7.3	A	7.2	A

Note: Bold lettering indicates an intersection that does not meet the LCP LOS standard (LOS D overall and for critical movements during weekday peak hours, LOS E overall and for critical movements during weekend peak hours).

AWSC: All-Way Stop Control, TWSC: Two-Way Stop Control. LOS and delay reported for TWSC intersections is for the worst approach or movement.

Source: Highway Capacity Manual 2010; Kittelson & Associates, 2022

EXISTING WITH PROJECT CONDITIONS

Existing with Project turning movement volumes are shown in Figure 5 and Figure 6. Table 8, Table 9, and Table 10 show the Existing with Project intersection operations for the weekday AM, weekday PM, and Saturday midday peak hours, respectively. Detailed calculation worksheets for the Existing with Project conditions are provided in APPENDIX 4.

- **Intersection #7 State Route 1 and California Avenue/Wienke Way** operates below the LOS standard in Existing and Existing with Project conditions in the weekday AM, weekday PM, and Saturday midday peak hours. In the weekday PM and Saturday midday peak hours, the addition of project trips adds at least four seconds of average delay for the critical movement.

Table 8: Existing with Project Weekday AM Peak Hour Intersection Operations

No	Location	Control	Existing Weekday AM		Existing + Project Weekday AM	
			Delay	LOS	Delay	LOS
1	State Route 1 & 14th Street	TWSC	24.4	C	25.1	D
2	State Route 1 & 16th Street	TWSC	31.0	D	31.7	D
3	State Route 1 & Carlos Street	TWSC	13.8	B	19.9	C
4	Carlos Street & Sierra Street	TWSC	8.4	A	8.4	A
5	Stetson Street & Sierra Street	TWSC	8.6	A	8.6	A
6	State Route 1 & Vallemar Street / Etheldore Street	TWSC	22.3	C	22.7	C
7	State Route 1 & California Avenue / Wienke Way	TWSC	**43.5**	**E**	**45.6**	**E**
8	Carlos Street & California Avenue	TWSC	9.8	A	9.8	A
9	Etheldore Street & California Avenue	TWSC	9.5	A	9.5	A
10	Stetson Street & California Avenue	AWSC	7.2	A	7.2	A

*Note: **Bold lettering** indicates an intersection that does not meet the LCP LOS standard (LOS D overall and for critical movements during weekday peak hours, LOS E overall and for critical movements during weekend peak hours).*

AWSC: All-Way Stop Control, TWSC: Two-Way Stop Control. LOS and delay reported for TWSC intersections is for the worst approach or movement.

Source: Highway Capacity Manual 2010; Kittelson & Associates, 2022

Table 9: Existing with Project Weekday PM Peak Hour Intersection Operations

No	Location	Control	Existing Weekday PM		Existing + Project Weekday PM	
			Delay	LOS	Delay	LOS
1	State Route 1 & 14th Street	TWSC	32.6	D	33.7	D
2	State Route 1 & 16th Street	TWSC	**37.6**	**E**	**39.1**	**E**
3	State Route 1 & Carlos Street	TWSC	13.3	B	27.5	D
4	Carlos Street & Sierra Street	TWSC	8.7	A	8.7	A
5	Stetson Street & Sierra Street	TWSC	9.0	A	9.0	A
6	State Route 1 & Vallemar Street / Etheldore Street	TWSC	**37.0**	**E**	**38.2**	**E**
7	State Route 1 & California Avenue / Wienke Way	TWSC	**78.2**	**F**	**84.1**	**F**
8	Carlos Street & California Avenue	TWSC	9.4	A	9.4	A
9	Etheldore Street & California Avenue	TWSC	9.7	A	9.7	A
10	Stetson Street & California Avenue	AWSC	7.3	A	7.3	A

*Note: **Bold lettering** indicates an intersection that does not meet the LCP LOS standard (LOS D overall and for critical movements during weekday peak hours, LOS E overall and for critical movements during weekend peak hours). **Gray highlighted cells** indicate locations where the addition of project trips would either degrade operations to below the LOS standard or add at least four seconds of average delay to the critical movement at a location already operating below the LOS standard.*

AWSC: All-Way Stop Control, TWSC: Two-Way Stop Control. LOS and delay reported for TWSC intersections is for the worst approach or movement.

Source: Highway Capacity Manual 2010; Kittelson & Associates, 2022

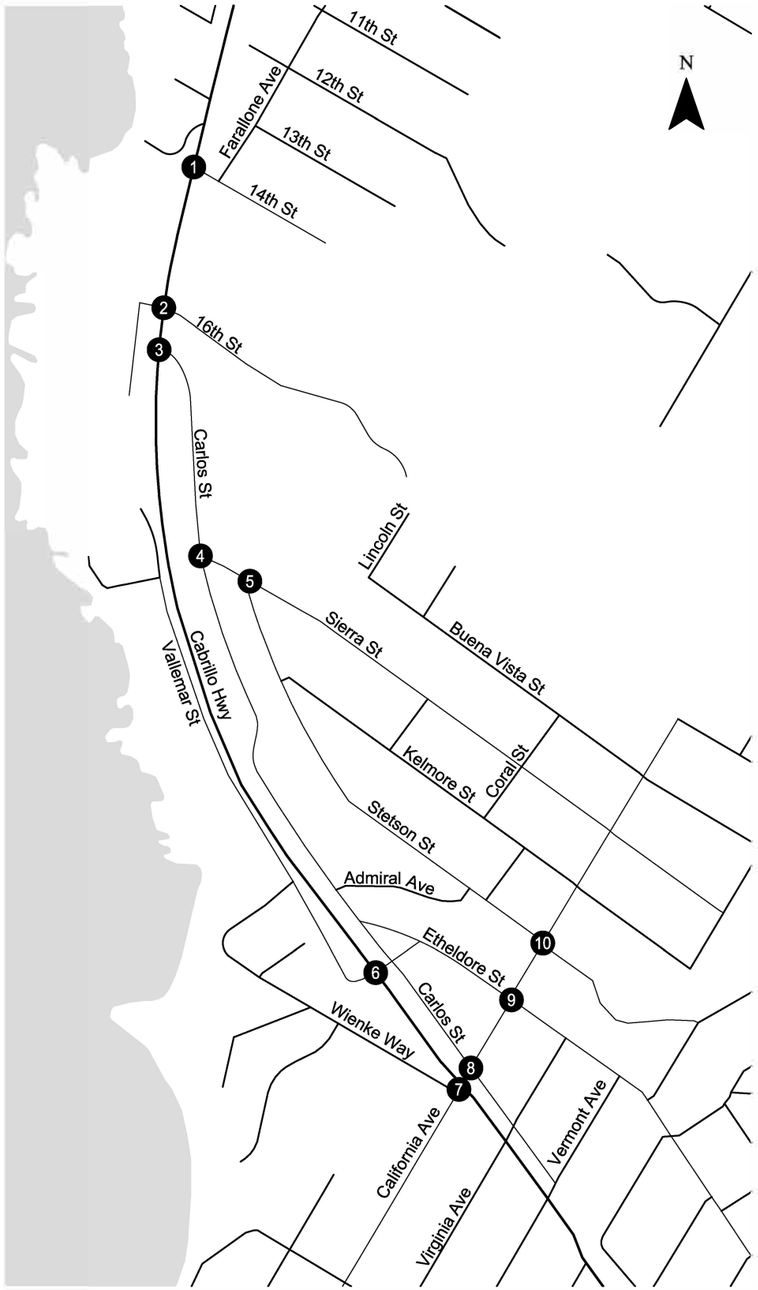
Table 10: Existing with Project Saturday Midday Peak Hour Intersection Operations

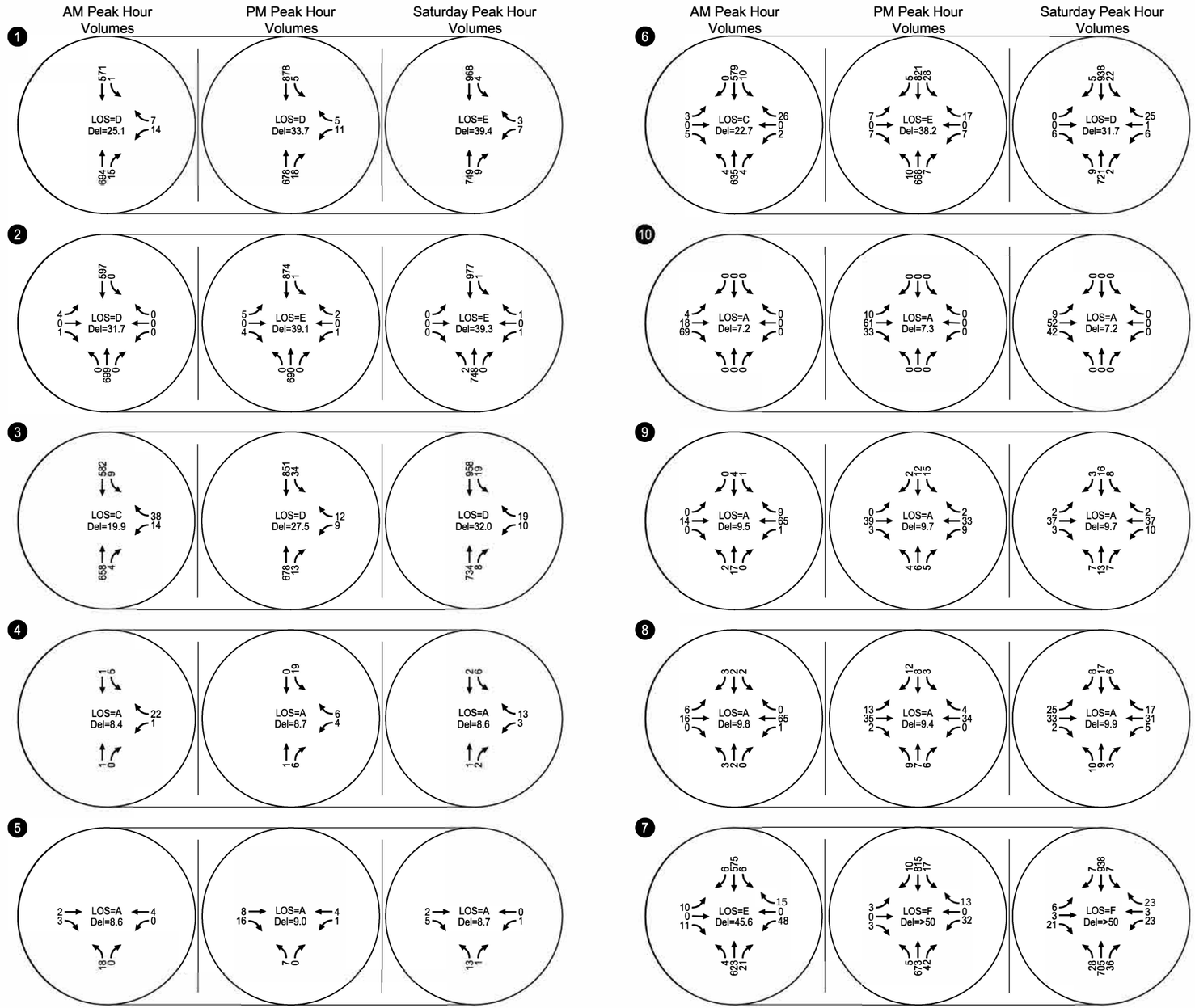
No	Location	Control	Existing Saturday Midday		Existing + Project Saturday Midday	
			Delay	LOS	Delay	LOS
1	State Route 1 & 14th Street	TWSC	38.1	E	39.4	E
2	State Route 1 & 16th Street	TWSC	38.4	E	39.3	E
3	State Route 1 & Carlos Street	TWSC	14.8	B	32.0	D
4	Carlos Street & Sierra Street	TWSC	8.6	A	8.6	A
5	Stetson Street & Sierra Street	TWSC	8.7	A	8.7	A
6	State Route 1 & Vallemar Street / Etheldore Street	TWSC	31.0	D	31.7	D
7	State Route 1 & California Avenue / Wienke Way	TWSC	**87.1**	**F**	**92.3**	**F**
8	Carlos Street & California Avenue	TWSC	9.9	A	9.9	A
9	Etheldore Street & California Avenue	TWSC	9.7	A	9.7	A
10	Stetson Street & California Avenue	AWSC	7.2	A	7.2	A

*Note: **Bold lettering** indicates an intersection that does not meet the LCP LOS standard (LOS D overall and for critical movements during weekday peak hours, LOS E overall and for critical movements during weekend peak hours). **Gray highlighted cells** indicate locations where the addition of project trips would either degrade operations to below the LOS standard or add at least four seconds of average delay to the critical movement at a location already operating below the LOS standard.*

AWSC: All-Way Stop Control, TWSC: Two-Way Stop Control. LOS and delay reported for TWSC intersections is for the worst approach or movement.

Source: Highway Capacity Manual 2010; Kittelson & Associates, 2022





CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = CRITICAL MOVEMENT LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = CRITICAL CRITICAL VOLUME-TO-CAPACITY RATIO

Existing with Project Turning Movement Volumes and Operations
AM, PM, and Saturday Peak Hour
Moss Beach, California

Figure
9

H:\20\20616 - Moss Beach Housing TIA\dwgs\figs\20616_Fig01_revised_for_report.dwg Jan 10, 2018 - 3:05pm - malston Layout Tab: F7 Ex+Pr

FUTURE CONDITIONS

This section describes near-term traffic conditions representing conditions when the project is anticipated to be complete. The Future conditions represent Existing conditions turning movement volumes plus other projects that have been approved or are in the entitlement process but not yet constructed at the time of the traffic counts.

FUTURE NO PROJECT CONDITIONS

The Future conditions turning movement volumes are shown in Figure 10. The Future operations at the study intersections are shown in Table 11. Detailed calculation worksheets for the Future Conditions are provided in APPENDIX 5.

Table 11: Future Conditions Intersection Operations Results

No	Location	Control	Future Weekday AM		Future Weekday PM		Future Saturday Midday	
			Delay	LOS	Delay	LOS	Delay	LOS
1	State Route 1 & 14th Street	TWSC	25.4	D	**38.5**	**E**	39.7	E
2	State Route 1 & 16th Street	TWSC	32.3	D	**45.2**	**E**	40.3	E
3	State Route 1 & Carlos Street	TWSC	14.0	B	14.1	B	15.0	C
4	Carlos Street & Sierra Street	TWSC	8.4	A	8.7	A	8.6	A
5	Stetson Street & Sierra Street	TWSC	8.6	A	9.0	A	8.7	A
6	State Route 1 & Vallemar Street / Etheldore Street	TWSC	23.2	C	**44.3**	**E**	32.3	D
7	State Route 1 & California Avenue / Wienke Way	TWSC	**47.4**	**E**	**112.6**	**F**	**96.1**	**F**
8	Carlos Street & California Avenue	TWSC	9.8	A	9.4	A	9.9	A
9	Etheldore Street & California Avenue	TWSC	9.5	A	9.7	A	9.7	A
10	Stetson Street & California Avenue	AWSC	7.2	A	7.3	A	7.2	A

*Note: **Bold lettering** indicates an intersection that does not meet the LCP LOS standard (LOS D overall and for critical movements during weekday peak hours, LOS E overall and for critical movements during weekend peak hours).*

AWSC: All-Way Stop Control, TWSC: Two-Way Stop Control. LOS and delay reported for TWSC intersections is for the worst approach or movement.

Source: Highway Capacity Manual 2010; Kittelson & Associates, 2022

FUTURE WITH PROJECT CONDITIONS

Table 12, Table 13, and Table 14 show the Future with Project intersection operations for the weekday AM, weekday PM, and Saturday midday peak hours, respectively. Detailed calculation worksheets for the Future with Project conditions are provided in APPENDIX 6.

- **Intersection #7 State Route 1 and California Avenue/Wienke Way** operates below the LOS standard in Future and Future with Project conditions in the weekday AM, weekday PM, and Saturday midway peak hours. In the weekday PM and Saturday midday peak hour, the addition of project trips adds at least four seconds of average delay for the critical movement.

Table 12: Future with Project Weekday AM Peak Hour Intersection Operations

No	Location	Control	Future Weekday AM		Future with Project Weekday AM	
			Delay	LOS	Delay	LOS
1	State Route 1 & 14th Street	TWSC	25.4	D	26.1	D
2	State Route 1 & 16th Street	TWSC	32.3	D	33.2	D
3	State Route 1 & Carlos Street	TWSC	14	B	20.7	C
4	Carlos Street & Sierra Street	TWSC	8.4	A	8.4	A
5	Stetson Street & Sierra Street	TWSC	8.6	A	8.6	A
6	State Route 1 & Vallemar Street / Etheldore Street	TWSC	23.2	C	23.6	C
7	State Route 1 & California Avenue / Wienke Way	TWSC	**47.4**	**E**	**49.9**	**E**
8	Carlos Street & California Avenue	TWSC	9.8	A	9.8	A
9	Etheldore Street & California Avenue	TWSC	9.5	A	9.5	A
10	Stetson Street & California Avenue	AWSC	7.2	A	7.2	A

*Note: **Bold lettering** indicates an intersection that does not meet the LCP LOS standard (LOS D overall and for critical movements during weekday peak hours, LOS E overall and for critical movements during weekend peak hours. **Gray highlighted cells** indicate locations where the addition of project trips would either degrade operations to below the LOS standard or add at least four seconds of average delay to the critical movement at a location already operating below the LOS standard.*

Source: Highway Capacity Manual 2010; Kittelson & Associates, 2022

Table 13: Future with Project Weekday PM Peak Hour Intersection Operations

No	Location	Control	Future Weekday PM		Future with Project Weekday PM	
			Delay	LOS	Delay	LOS
1	State Route 1 & 14th Street	TWSC	**38.5**	**E**	**39.8**	**E**
2	State Route 1 & 16th Street	TWSC	**45.2**	**E**	**47.6**	**E**
3	State Route 1 & Carlos Street	TWSC	14.1	B	32.2	D
4	Carlos Street & Sierra Street	TWSC	8.7	A	8.7	A
5	Stetson Street & Sierra Street	TWSC	9.0	A	9.0	A
6	State Route 1 & Vallemar Street / Etheldore Street	TWSC	**44.3**	**E**	**46.1**	**E**
7	State Route 1 & California Avenue / Wienke Way	TWSC	**112.6**	**F**	**124.2**	**F**
8	Carlos Street & California Avenue	TWSC	9.4	A	9.4	A
9	Etheldore Street & California Avenue	TWSC	9.7	A	9.7	A
10	Stetson Street & California Avenue	AWSC	7.3	A	7.3	A

*Note: **Bold lettering** indicates an intersection that does not meet the LCP LOS standard (LOS D overall and for critical movements during weekday peak hours, LOS E overall and for critical movements during weekend peak hours). **Gray highlighted cells** indicate locations where the addition of project trips would either degrade operations to below the LOS standard or add at least four seconds of average delay to the critical movement at a location already operating below the LOS standard.*

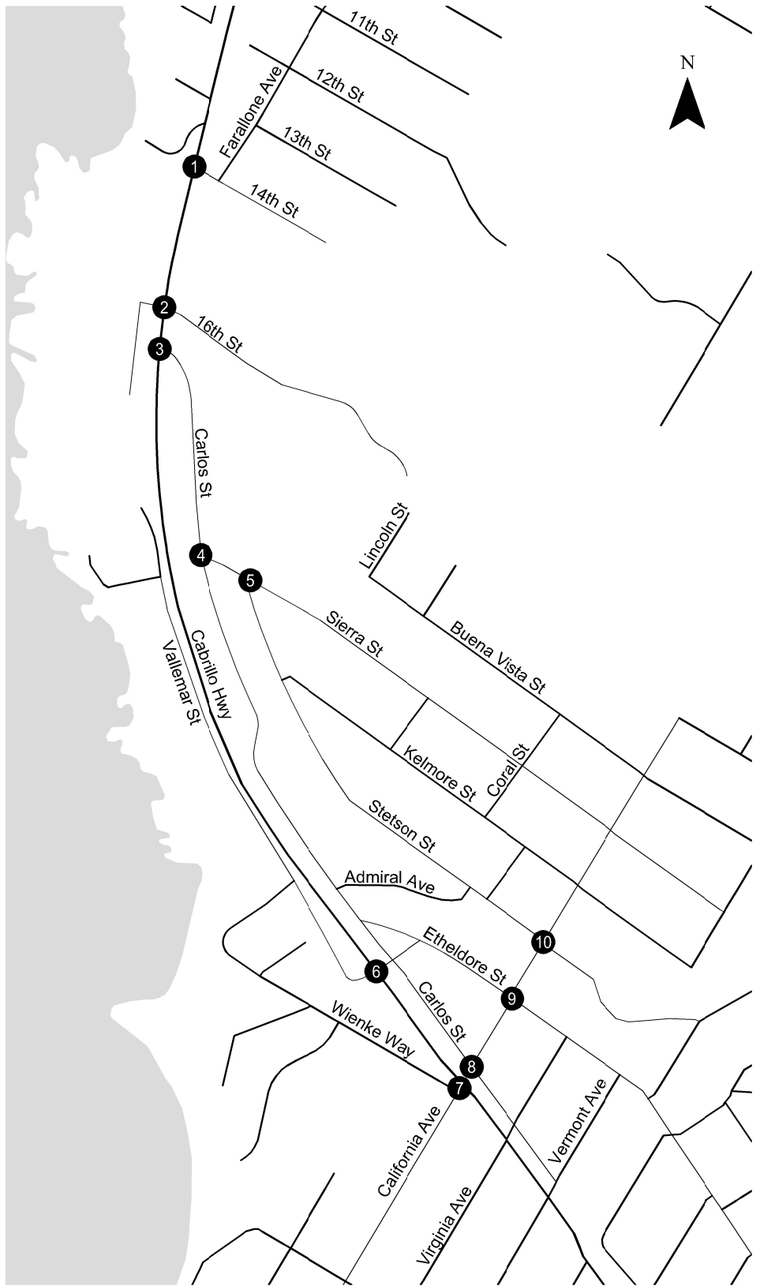
Source: Highway Capacity Manual 2010; Kittelson & Associates, 2022

Table 14: Future with Project Saturday Midday Peak Hour Intersection Operations

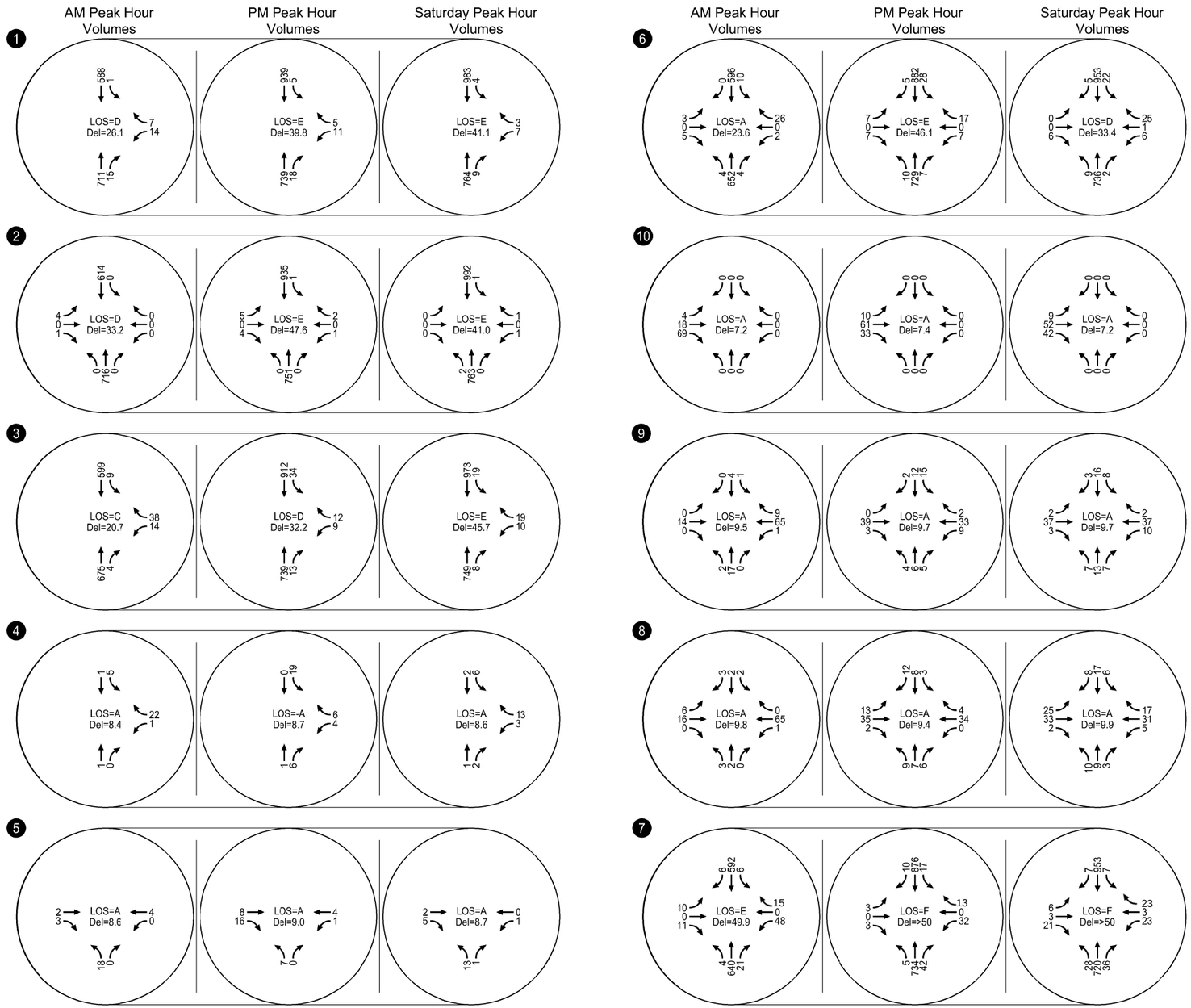
No	Location	Control	Future Saturday Midday		Future with Project Saturday Midday	
			Delay	LOS	Delay	LOS
1	State Route 1 & 14th Street	TWSC	39.7	E	41.1	E
2	State Route 1 & 16th Street	TWSC	40.3	E	41.0	E
3	State Route 1 & Carlos Street	TWSC	15.0	C	45.7	E
4	Carlos Street & Sierra Street	TWSC	8.6	A	8.6	A
5	Stetson Street & Sierra Street	TWSC	8.7	A	8.7	A
6	State Route 1 & Vallemar Street / Etheldore Street	TWSC	32.3	D	33.4	D
7	State Route 1 & California Avenue / Wienke Way	TWSC	**96.1**	**F**	**102.4**	**F**
8	Carlos Street & California Avenue	TWSC	9.9	A	9.9	A
9	Etheldore Street & California Avenue	TWSC	9.7	A	9.7	A
10	Stetson Street & California Avenue	AWSC	7.2	A	7.2	A

*Note: **Bold lettering** indicates an intersection that does not meet the LCP LOS standard (LOS D overall and for critical movements during weekday peak hours, LOS E overall and for critical movements during weekend peak hours). **Gray highlighted cells** indicate locations where the addition of project trips would either degrade operations to below the LOS standard or add at least four seconds of average delay to the critical movement at a location already operating below the LOS standard.*

Source: Highway Capacity Manual 2010; Kittelson & Associates, 2022



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = CRITICAL MOVEMENT LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
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V/C = CRITICAL CRITICAL VOLUME-TO-CAPACITY RATIO



- STOP SIGN
- TRAFFIC SIGNAL

Future with Project Turning Movement Volumes and Operations
AM, PM, and Saturday Peak Hour
Moss Beach, California

Figure
10

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CUMULATIVE CONDITIONS

This section presents the anticipated Cumulative conditions for the study intersections for the year 2040 and the effect the addition of the project trips would have on them.

CUMULATIVE NO PROJECT CONDITIONS

The Cumulative conditions turning movement volumes are shown in Figure 12. The Cumulative operations at the study intersections are shown in Table 15. Detailed calculation worksheets for the Future Conditions are provided in APPENDIX 7.

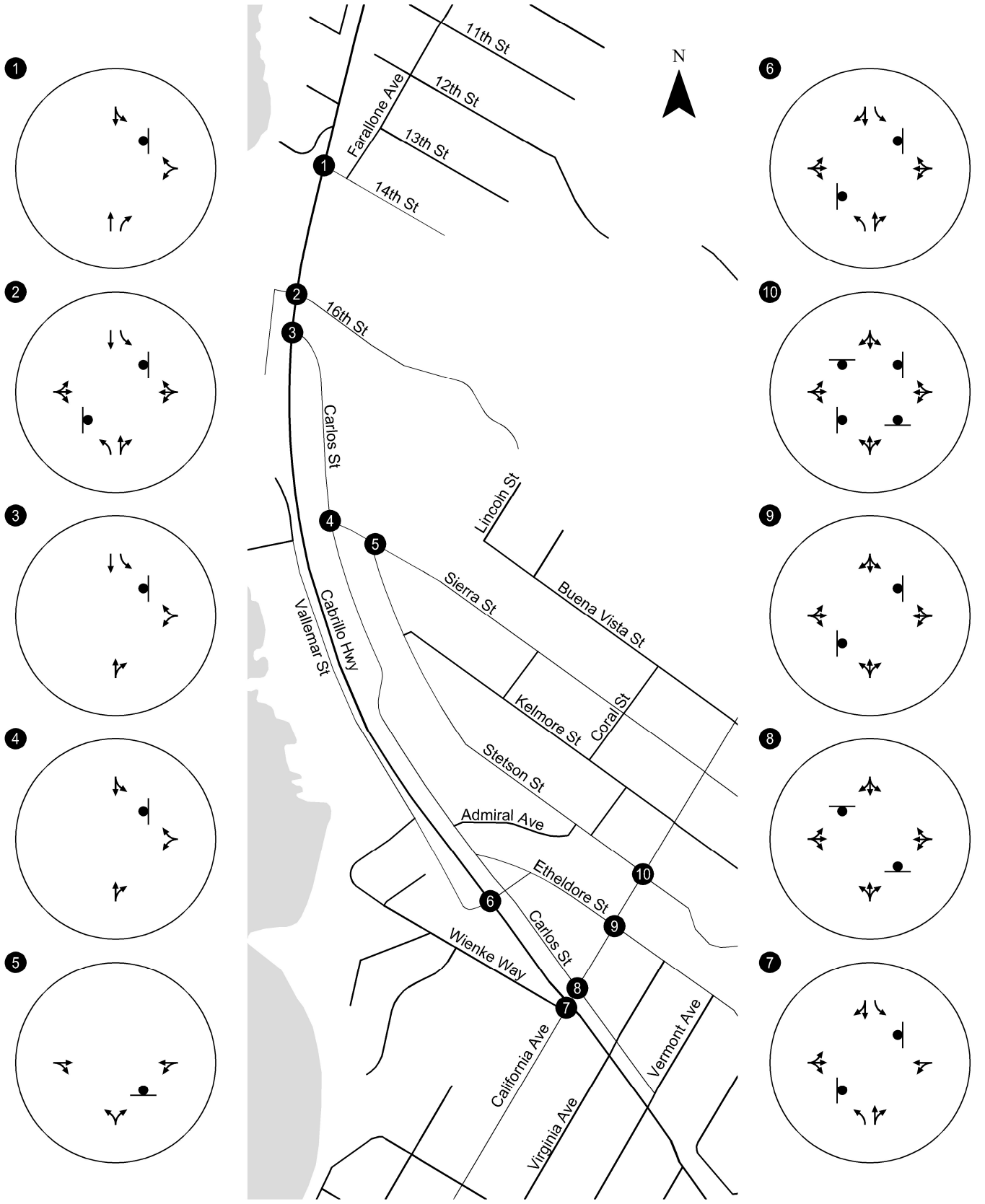
Table 15: Cumulative Conditions Intersection Operations Results

No	Location	Control	Cumulative Weekday AM		Cumulative Weekday PM		Cumulative Saturday Midday	
			Delay	LOS	Delay	LOS	Delay	LOS
1	State Route 1 & 14th Street	TWSC	**58.2**	**F**	**>80**	**F**	**59.8**	**F**
2	State Route 1 & 16th Street	TWSC	**74.7**	**F**	**>80**	**F**	**59.7**	**F**
3	State Route 1 & Carlos Street	TWSC	16.2	C	18.8	C	19.5	C
4	Carlos Street & Sierra Street	TWSC	8.5	A	8.8	A	8.6	A
5	Stetson Street & Sierra Street	TWSC	8.7	A	9.1	A	8.8	A
6	State Route 1 & Vallemar Street / Etheldore Street	TWSC	**52.3**	**F**	**>80**	**F**	34.1	D
7	State Route 1 & California Avenue / Wienke Way	TWSC	**>80**	**F**	**>80**	**F**	**>80**	**F**
8	Carlos Street & California Avenue	TWSC	10.0	B	9.7	A	10.2	B
9	Etheldore Street & California Avenue	TWSC	9.7	A	9.9	A	10.0	B
10	Stetson Street & California Avenue	AWSC	7.3	A	7.4	A	7.2	A

*Note: **Bold lettering** indicates an intersection that does not meet the LCP LOS standard (LOS D overall and for critical movements during weekday peak hours, LOS E overall and for critical movements during weekend peak hours).*

AWSC: All-Way Stop Control, TWSC: Two-Way Stop Control. LOS and delay reported for TWSC intersections is for the worst approach or movement.

Source: Highway Capacity Manual 2010; Kittelson & Associates, 2022



- STOP SIGN
- TRAFFIC SIGNAL

Cumulative Lane Configurations and Traffic Control Devices
Moss Beach, California

Figure 11

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CUMULATIVE WITH PROJECT CONDITIONS

This section discusses the effect of the project on traffic operations under Cumulative conditions. Traffic volumes for the Cumulative with Project condition were developed using the same additive approach used for the Existing with Project and Future with Project volumes. The turning movement volumes resulting from adding the project trips to the Cumulative conditions volumes are shown in Figure 12.

Table 16, Table 17, and Table 18 show the Cumulative with Project intersection operations for the weekday AM, weekday PM, and Saturday midday peak hours, respectively. Detailed calculation worksheets for the Cumulative with Project conditions are provided in APPENDIX 8. Based on the criteria previously described the project increase delay beyond the identified thresholds at the following locations:

- **Intersection #2: State Route 1 and 16th Street** operates below the LOS standard in Cumulative no Project conditions in the weekday AM, weekday PM, and Saturday midday peak hours. The addition of project trips increases delay for the critical movement at the intersection already exceeding the LOS standard by at least 4 seconds per vehicle during the weekday PM peak hour.
- **Intersection #3: State Route 1 and Carlos Street** operates within the LOS standards in Cumulative no Project conditions. The addition of project trips causes the intersection to degrade below the LOS standard during the weekday AM and weekday PM peak hour.[16]
- **Intersection #6: State Route 1 and Vallemar Street/Etheldore Street** operates below the LOS standard in Cumulative no Project conditions in the weekday AM and weekday PM peak hours. The addition of project trips increases delay for the critical movement at the intersection already exceeding the LOS standard by at least 4 seconds per vehicle during the weekday PM peak hour.
- **Intersection #7: State Route 1 and California Avenue/Wienke Way** operated below the LOS standard in Cumulative no Project conditions in the weekday AM, weekday PM, and Saturday midday peak hours. The addition of project trips increases delay for the critical movement at the intersection already exceeding the LOS standard by at least 4 seconds in the weekday AM, weekday PM, and Saturday midday peak hours.

[16] The County is currently studying a project that would remove this intersection and provide an alternative intersection geometry, configuration and traffic control. For more information, see the Impact T-1 discussion in the Sight Distance and Safety Impacts section beginning on page 37.

Table 16: Cumulative with Project Weekday AM Peak Hour Intersection Operations

No	Location	Control	Cumulative Weekday AM		Cumulative Weekday AM + Project	
			Delay	LOS	Delay	LOS
1	State Route 1 & 14th Street	TWSC	**58.2**	**F**	**60.6**	**F**
2	State Route 1 & 16th Street	TWSC	**74.7**	**F**	**77.5**	**F**
3	State Route 1 & Carlos Street	TWSC	16.2	C	**36.7**	**E**
4	Carlos Street & Sierra Street	TWSC	8.5	A	8.5	A
5	Stetson Street & Sierra Street	TWSC	8.7	A	8.7	A
6	State Route 1 & Vallemar Street / Etheldore Street	TWSC	**>80**	**F**	**>80**	**F**
7	State Route 1 & California Avenue / Wienke Way	TWSC	**>80**	F	**>80**	F
8	Carlos Street & California Avenue	TWSC	10.0	B	10.0	B
9	Etheldore Street & California Avenue	TWSC	9.7	A	9.7	A
10	Stetson Street & California Avenue	AWSC	7.3	A	7.3	A

*Note: **Bold lettering** indicates an intersection that does not meet the LCP LOS standard (LOS D overall and for critical movements during weekday peak hours, LOS E overall and for critical movements during weekend peak hours). **Gray highlighted cells** indicate locations where the addition of project trips would either degrade operations to below the LOS standard or add at least four seconds of average delay to the critical movement at a location already operating below the LOS standard.*

Source: Highway Capacity Manual 2010; Kittelson & Associates, 2022

Table 17: Cumulative with Project Weekday PM Peak Hour Intersection Operations

No	Location	Control	Cumulative Weekday PM		Cumulative Weekday PM + Project	
			Delay	LOS	Delay	LOS
1	State Route 1 & 14th Street	TWSC	**88.6**	**F**	**92.5**	**F**
2	State Route 1 & 16th Street	TWSC	**105.3**	**F**	**114.2**	**F**
3	State Route 1 & Carlos Street	TWSC	18.8	C	**64.2**	**F**
4	Carlos Street & Sierra Street	TWSC	8.8	A	8.8	A
5	Stetson Street & Sierra Street	TWSC	9.1	A	9.1	A
6	State Route 1 & Vallemar Street / Etheldore Street	TWSC	**106.3**	**F**	**112.0**	**F**
7	State Route 1 & California Avenue / Wienke Way	TWSC	**>80**	**F**	**>80**	**F**
8	Carlos Street & California Avenue	TWSC	9.7	A	9.7	A
9	Etheldore Street & California Avenue	TWSC	9.9	A	9.9	A
10	Stetson Street & California Avenue	AWSC	7.4	A	7.4	A

*Note: **Bold lettering** indicates an intersection that does not meet the LCP LOS standard (LOS D overall and for critical movements during weekday peak hours, LOS E overall and for critical movements during weekend peak hours). **Gray highlighted cells** indicate locations where the addition of project trips would either degrade operations to below the LOS standard or add at least four seconds of average delay to the critical movement at a location already operating below the LOS standard.*

AWSC: All-Way Stop Control, TWSC: Two-Way Stop Control. LOS and delay reported for TWSC intersections is for the worst approach or movement.

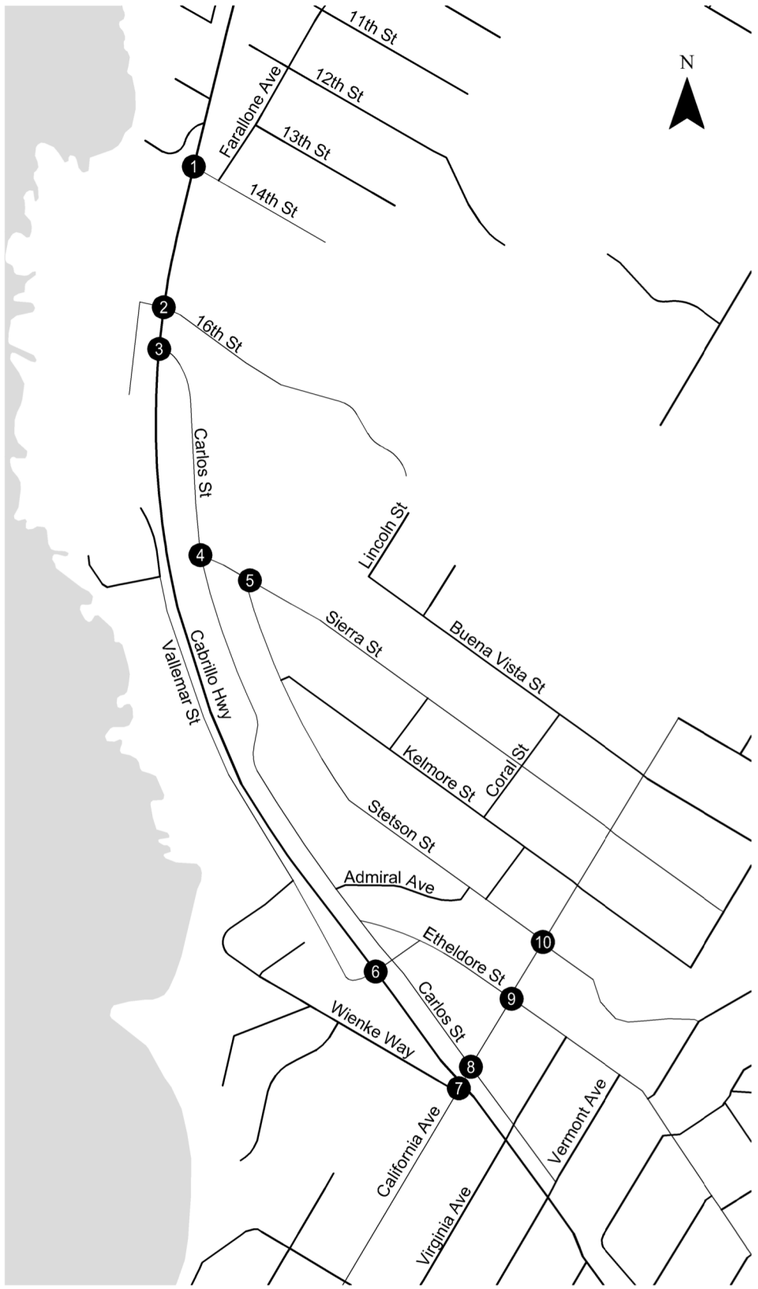
Source: Highway Capacity Manual 2010; Kittelson & Associates, 2022

Table 18: Cumulative with Project Saturday Midday Peak Hour Intersection Operations

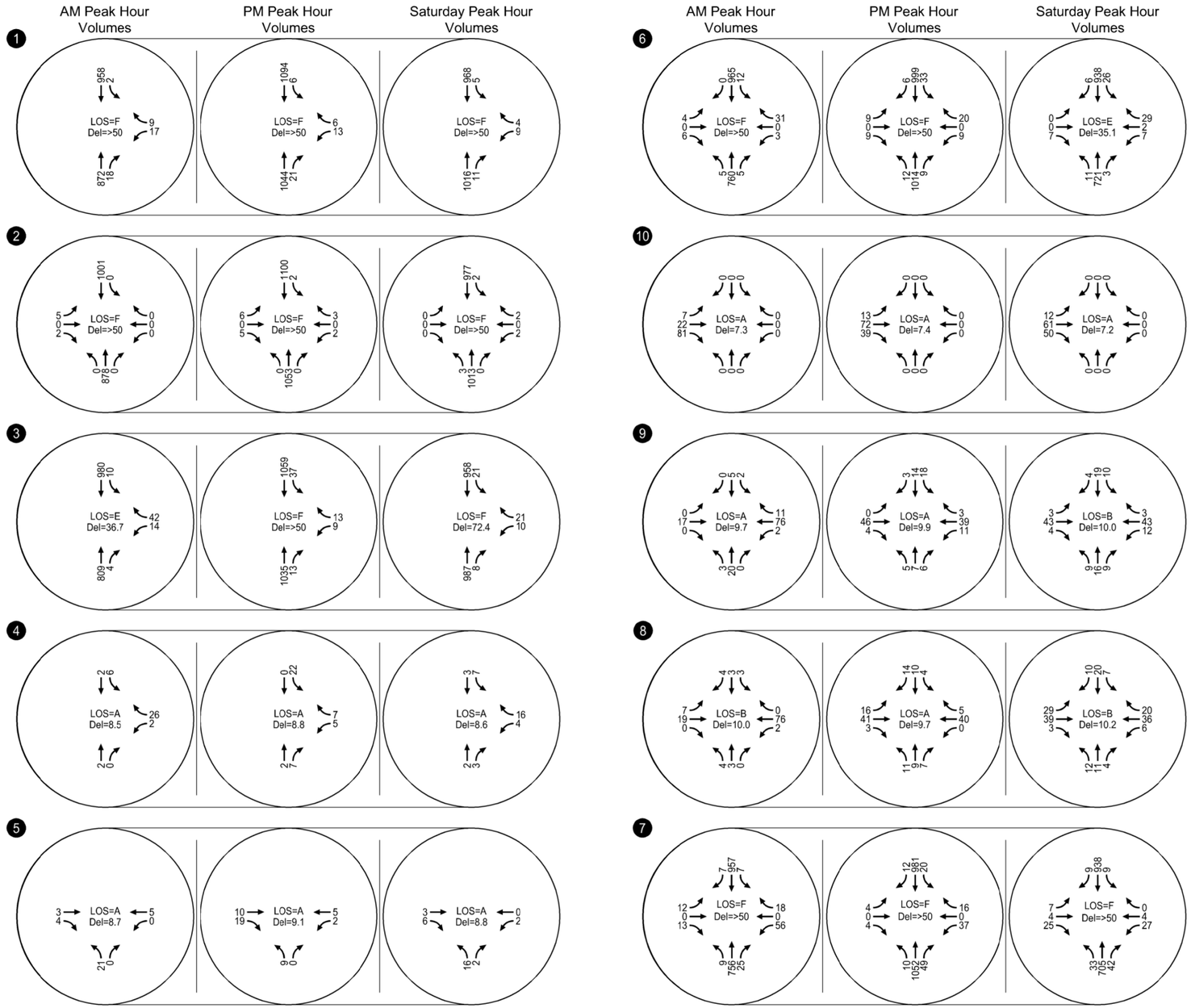
No	Location	Control	Cumulative Saturday Midday		Cumulative Saturday Midday + Project	
			Delay	LOS	Delay	LOS
1	State Route 1 & 14th Street	TWSC	**59.8**	**F**	**60.6**	**F**
2	State Route 1 & 16th Street	TWSC	**59.7**	**F**	**61.4**	**F**
3	State Route 1 & Carlos Street	TWSC	19.5	C	49.1	E
4	Carlos Street & Sierra Street	TWSC	8.6	A	8.6	A
5	Stetson Street & Sierra Street	TWSC	8.8	A	8.8	A
6	State Route 1 & Vallemar Street / Etheldore Street	TWSC	34.1	D	35.1	E
7	State Route 1 & California Avenue / Wienke Way	Signal	**>80**	**F**	**>80**	**F**
8	Carlos Street & California Avenue	TWSC	10.2	B	10.2	B
9	Etheldore Street & California Avenue	TWSC	10.0	B	10.0	B
10	Stetson Street & California Avenue	AWSC	7.2	A	7.2	A

*Note: **Bold lettering** indicates an intersection that does not meet the LCP LOS standard (LOS D overall and for critical movements during weekday peak hours, LOS E overall and for critical movements during weekend peak hours). **Gray highlighted cells** indicate locations where the addition of project trips would either degrade operations to below the LOS standard or add at least four seconds of average delay to the critical movement at a location already operating below the LOS standard.*

Source: Highway Capacity Manual 2010; Kittelson & Associates, 2022



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V/C = CRITICAL CRITICAL VOLUME-TO-CAPACITY RATIO



- STOP SIGN
- TRAFFIC SIGNAL

Cumulative with Project Turning Movement Volumes and Operations
AM, PM, and Saturday Peak Hour
Moss Beach, California

Figure 12

KITTELSON & ASSOCIATES

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THRESHOLD COMPARISON

As explained in the Definition of Acceptable Operations section on page 13, this report references LOS standards from LCP Policy 2.44. Those standards consider LOS D acceptable in the weekday AM or PM peak hour and LOS E acceptable in the weekend midday peak hour.

San Mateo County provides different LOS thresholds in a 2014 *Traffic Impact Study Requirements* document[17], which considers the minimum acceptable LOS to be LOS C overall, with, "no individual movement operating at less than 'D'," though it notes that "On occasion, level of service 'D' may be allowed for peak periods in dense urban conditions per County's discretion."

Upon review, the County indicated that the LCP Policy 2.44 was the appropriate and applicable threshold for this analysis, given that the TIS Requirements are not adopted as official policy and are not mandatory.

Applying this stricter threshold would have changed the effects identified for some identified intersections at certain times of day/analysis scenarios. The additionally identified scenarios include:

- **Existing plus project conditions:** no change in results
- **Future plus project conditions:** one additional effect identified (intersection #3 in Saturday midday peak hour conditions)
- **Cumulative plus project conditions:** two additional effects identified -- intersection #3 and #6 in Saturday midday peak hour conditions

The recommended operations improvements (identified in the next section) would not change.

RECOMMENDED OPERATIONS IMPROVEMENTS

This section includes recommendations that relate to the local circulation and operations effects of the proposed project.

Intersection 7: The additional traffic generated by project-related trips would result in an increase in delay for the critical movement at the intersection of State Route 1 and California Avenue/Wienke Way (#7).

This effect was identified in the following analysis scenarios:

- **Existing with project:** The addition of project trips causes the delay for the critical movement to increase by more than 4 seconds during the weekday PM and Saturday midday peak hours for an intersection already operating below the LCP LOS standard.
- **Future with project conditions:** The addition of project trips causes the delay for the critical movement to increase by more than 4 seconds during the weekday PM and Saturday midday peak hours for an intersection already operating below the LCP LOS standard.
- **Cumulative with project conditions:** The addition of project trips increases delay for the critical movement at the intersection already exceeding the LOS standard by at least 4 seconds in the weekday AM, weekday PM, and Saturday midday peak hours.

Improvement Measure T-1: Provide Additional TDM Measures, proposed and described as Mitigation Measure T-1 in the Conclusions and Mitigation Measures section beginning on page 37, would be expected to reduce project trips. Although a TDM plan would reduce the vehicle trip generation and reduce the effect, the effectiveness of a TDM plan cannot be guaranteed. Implementation of Mitigation

[17] County of San Mateo. Traffic Impact Study Requirements. December 9, 2014

Measure T-1 would reduce project-related vehicle trips but would not completely offset project-related trips and would not guarantee a reduction of these operations-related effects.

Improvement Measure T-1: Convert State Route 1 & California Avenue/Wienke Way to a Traffic Signal or Roundabout.

San Mateo County would work with Caltrans to convert the intersection control from two-way stop control into a roundabout or signalized intersection. The exact intersection control will be determined at the conclusion of an Intersection Control Evaluation (ICE) study as required by Caltrans. The ICE study would be performed as part of the design phase for changing the intersection control.

The intersection was modeled as a five-leg signalized intersection and as a single-lane roundabout to assess the mitigation measure. Conversion to either form of traffic control would improve the operation of this intersection to LOS A or LOS B, within identified LOS standards, during all analyzed time periods and scenarios.

In October 2021, the County published the final draft of its *Connect the Coastside* report, which serves as the San Mateo County Midcoast Comprehensive Transportation Management Plan. The report includes a suite of project, policy, and program recommendations to address current and future transportation needs.

The study recommends a change of traffic control at this intersection (with a preliminary recommendation of a multilane roundabout), and the project is listed as "near-term" a project (0 to 7 years). A more detailed analysis would be performed as part of an intersection control evaluation (ICE) during the design phase to select whether a roundabout or signal is preferred. The project is not funded.

Although this mitigation measure with conversion to a signalized intersection would lessen this effect, this intersection is under the jurisdiction of Caltrans. Thus, San Mateo County would need to obtain an encroachment permit from Caltrans. Implementation authority does not rest exclusively with the County.

Intersection 1: The additional traffic generated by project-related trips would result in an increase in delay for the critical movement at the intersection of State Route 1 and 16th Street (#1).

The addition of project trips causes the delay for the critical movement to increase by more than 4 seconds during the weekday PM peak hour in the Cumulative with project scenario for an intersection already operating below the identified LOS standard.

Improvement Measure T-1: Provide Additional TDM Measures, proposed and described as Mitigation Measure T-1 in the Conclusions and Mitigation Measures section beginning on page 37, would be expected to reduce project trips. Although a TDM plan would reduce the vehicle trip generation and reduce the effect, the effectiveness of a TDM plan cannot be guaranteed. Implementation of Mitigation Measure T-1 would reduce project-related vehicle trips but would not completely offset project-related trips and would not guarantee a reduction of these operations-related effects. Additional improvement measures were considered including signalization, left turn restrictions, and the addition of left turn lanes. However, these options were determined to not be feasible for the following reasons:

- **Signalization.** The intersection of 16th Street and State Route 1 does not meet the peak hour signal warrant (APPENDIX 10); therefore, signalization is not warranted.
- **Left Turn Restrictions.** Restricting the westbound left turn out of 16th Street and State Route 1 during the peak periods and reassigning them to the right turn movement would reduce the delay to below the threshold. However, Caltrans has indicated that they would not allow this type of restriction, making this option infeasible.
- **Additional Turn Lanes.** Adding exclusive left turn lane on westbound approach at the intersection would separate the left and right turning traffic reducing queues and delay. However, separating the left and through/right lanes was not sufficient to eliminate the effect since the left turn lanes still have a delay that is at least 4 seconds higher than the no Project conditions.

Intersection 3: The additional traffic generated by project-related trips would result in an increase in delay for the critical movement at the intersection of State Route 1 and Carlos Street (#3).

This additional delay was identified in the Cumulative with project weekday AM and weekday PM peak hours. This intersection would serve as the main access point to the project from State Route 1. To reduce this additional delay, improvement measures would be the same as the mitigation measures recommended for Impact T-1 beginning on page 37 (Mitigation Measure T-1 and Mitigation Measure T-2).

The closure proposed in Mitigation Measure T-2 would make a discussion of operations at the subject intersection irrelevant since existing and Project traffic would instead be routed south along Carlos Street and Stetson Street to access State Route 1 at either Etheldore Street or California Avenue.

However, traffic redistribution associated with this closure was modeled and found to result in a secondary significant impact at the intersection of Etheldore Street and State Route 1 where the critical movement delay fell below the relevant LOS threshold in the Existing with Project weekday PM scenario, Near-Term with Project weekday AM and Saturday midday scenarios, and the Cumulative with Project Saturday midway scenario. Table 16 shows the scenarios for which additional effects would occur. Improvement measures for Intersection 6 are discussed in the next section.

Table 19: Cumulative with Project Weekday AM Peak Hour Intersection Operations

No	Location	Control	No Project		With Project		With Project and Rerouted Traffic	
			Delay	LOS	Delay	LOS	Delay	LOS
1	Existing Weekday PM	TWSC	**37.0**	**E**	**38.2**	**E**	**41.5**	**E**
3	Near-Term Weekday PM	TWSC	44.3	E	**46.1**	**E**	**50.8**	**F**
4	Near-Term Saturday Midday	TWSC	32.3	D	33.4	D	**54.6**	**F**
5	Cumulative Saturday Midday	TWSC	34.1	D	35.1	E	**58**	**F**

*Note: **Bold lettering** indicates an intersection that does not meet the LCP LOS standard (LOS D overall and for critical movements during weekday peak hours, LOS E overall and for critical movements during weekend peak hours). **Gray highlighted cells** indicate locations where the addition of project trips would either degrade operations to below the LOS standard or add at least four seconds of average delay to the critical movement at a location already operating below the LOS standard.*

Source: Highway Capacity Manual 2010; Kittelson & Associates, 2022

Intersection 6: The additional traffic generated by project-related trips would result in an increase in delay for the critical movement at the intersection of State Route 1 and Vallemar/Etheldore Street (#6).

This increase was identified in the Cumulative with project weekday AM and PM peak hours. This intersection would serve as the main access point to the project from State Route 1. To reduce this additional delay, the following improvement measures are proposed.

Improvement Measure T-1: Provide Additional TDM Measures, proposed and described as Mitigation Measure T-1 in the Conclusions and Mitigation Measures section beginning on page 37, would be expected to reduce project trips. Although a TDM plan would reduce the vehicle trip generation and reduce the effect, the effectiveness of a TDM plan cannot be guaranteed. Implementation of Mitigation Measure T-1 would reduce project-related vehicle trips but would not completely offset project-related trips and would not guarantee a reduction of these operations-related effects.

Additional improvement measures were considered including signalization, left turn restrictions, and the addition of left turn lanes. However, these options were determined to not be feasible for the following reasons:

- **Signalization.** The intersection of Etheldore Street and State Route 1 does not meet the peak hour signal warrant (APPENDIX 10), therefore, signalization is not warranted.

- **Left Turn Restrictions.** Restricting the eastbound and westbound left turns out of Etheldore Street and State Route 1 during the peak periods and reassigning them to the intersection of California Avenue/Wienke Way and State Route 1 would reduce the delay to below the identified threshold. However, Caltrans has indicated that they would not allow this type of restriction, making this option infeasible.
- **Additional Turn Lanes.** Adding exclusive left turn lanes on the eastbound and westbound approaches at the intersection would separate the left and right turning traffic reducing queues and delay. However, separating the left and through/right lanes was not sufficient to reduce the delay since the left turn lanes still have a delay that is at least 4 seconds higher than in the No project conditions.

APPENDIX

APPENDIX 1.

TURNING MOVEMENT COUNTS

Type of peak hour being reported: Intersection Peak

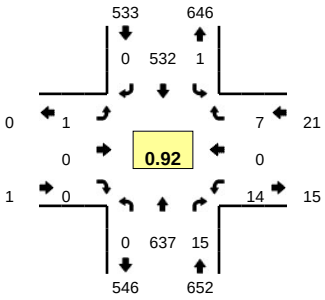
Method for determining peak hour: Total Entering Volume

LOCATION: Cabrillo Hwy (Hwy 1) -- 14th St

CITY/STATE: Montara, CA

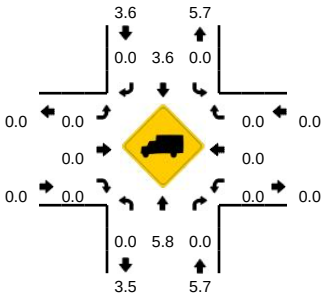
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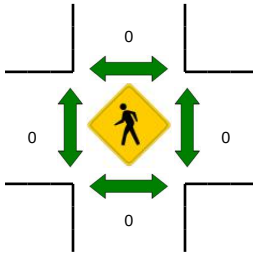
DATE: Thu, Apr 20 2017



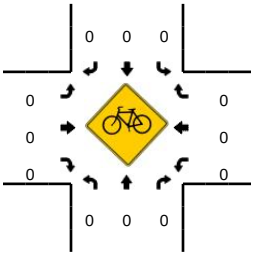
Peak-Hour: 7:45 AM -- 8:45 AM

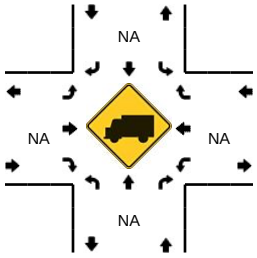
Peak 15-Min: 8:10 AM -- 8:25 AM

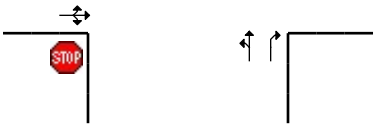


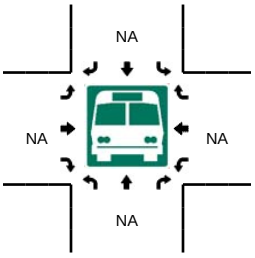












5-Min Count Period Beginning At	Cabrillo Hwy (Hwy 1) (Northbound)				Cabrillo Hwy (Hwy 1) (Southbound)				14th St (Eastbound)				14th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	59	0	0	0	23	0	0	0	0	0	0	0	0	1	0	83	
7:05 AM	0	50	0	0	0	22	0	0	0	0	0	0	1	0	0	0	73	
7:10 AM	0	49	0	0	0	33	0	0	0	0	0	0	2	0	4	0	88	
7:15 AM	0	57	0	0	0	24	0	0	0	0	0	0	0	0	0	0	81	
7:20 AM	0	62	0	0	0	26	0	0	0	0	0	0	2	0	1	0	91	
7:25 AM	0	47	0	0	0	30	0	0	0	0	0	0	1	0	0	0	78	
7:30 AM	0	55	0	0	0	21	0	0	0	0	0	0	2	0	1	0	79	
7:35 AM	0	51	0	0	0	37	0	0	0	0	0	0	4	0	0	0	92	
7:40 AM	0	60	0	0	0	38	0	0	0	0	0	0	0	0	2	0	100	
7:45 AM	0	55	0	0	0	46	0	0	0	0	0	0	0	0	0	0	101	
7:50 AM	0	59	1	0	0	52	0	0	1	0	0	0	3	0	0	0	116	
7:55 AM	0	48	0	0	0	34	0	0	0	0	0	0	2	0	2	0	86	1068
8:00 AM	0	50	1	0	0	22	0	0	0	0	0	0	1	0	0	0	74	1059
8:05 AM	0	42	0	0	0	39	0	0	0	0	0	0	4	0	0	0	85	1071
8:10 AM	0	55	4	0	0	42	0	0	0	0	0	0	0	0	1	0	102	1085
8:15 AM	0	66	0	0	0	41	0	0	0	0	0	0	0	0	0	0	107	1111
8:20 AM	0	73	1	0	0	44	0	0	0	0	0	0	0	0	1	0	119	1139
8:25 AM	0	49	4	0	0	42	0	0	0	0	0	0	1	0	1	0	97	1158
8:30 AM	0	38	1	0	0	48	0	1	0	0	0	0	0	0	0	0	88	1167
8:35 AM	0	50	1	0	0	65	0	0	0	0	0	0	3	0	1	0	120	1195
8:40 AM	0	52	2	0	0	57	0	0	0	0	0	0	0	0	1	0	112	1207
8:45 AM	0	37	1	0	0	31	0	0	0	0	0	0	1	0	0	0	70	1176
8:50 AM	0	40	1	0	0	38	0	0	0	0	0	0	0	0	0	0	79	1139
8:55 AM	0	39	0	0	0	39	0	0	0	0	0	0	1	0	0	0	79	1132

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	776	20	0	0	508	0	0	0	0	0	0	0	0	8	0	1312
Heavy Trucks	0	40	0		0	4	0		0	0	0		0	0	0		44
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/1/2017 4:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Cabrillo Hwy (Hwy 1) -- 14th St

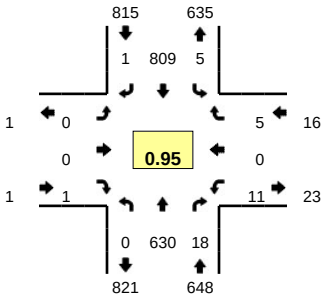
CITY/STATE: Montara, CA

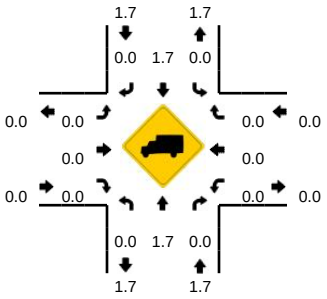
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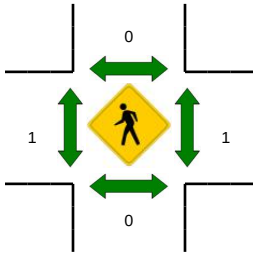
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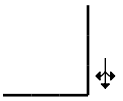
Peak-Hour: 4:45 PM -- 5:45 PM

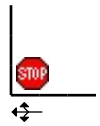
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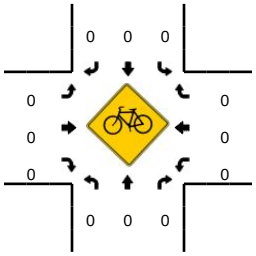


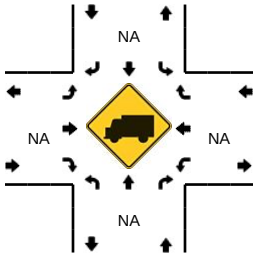


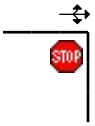


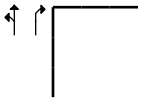


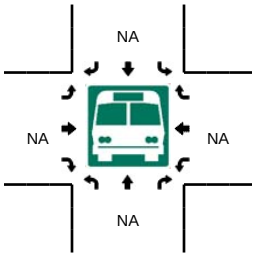












5-Min Count Period Beginning At	Cabrillo Hwy (Hwy 1) (Northbound)				Cabrillo Hwy (Hwy 1) (Southbound)				14th St (Eastbound)				14th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	69	2	0	0	69	0	0	0	0	0	0	3	0	1	0	144	
4:05 PM	0	53	2	0	0	69	0	0	0	0	0	0	0	0	0	0	124	
4:10 PM	0	47	3	0	1	51	0	0	0	0	0	0	0	0	0	0	102	
4:15 PM	1	56	1	0	1	72	0	0	0	0	0	0	0	0	0	0	131	
4:20 PM	0	55	0	0	1	51	0	0	1	0	0	0	3	0	0	0	111	
4:25 PM	0	55	1	0	0	62	0	0	0	0	0	0	1	0	0	0	119	
4:30 PM	1	51	1	0	1	49	0	0	1	0	0	0	0	0	0	0	104	
4:35 PM	0	55	0	0	0	68	0	0	0	0	0	0	0	0	0	0	123	
4:40 PM	0	43	1	0	0	54	0	0	0	0	0	0	0	0	1	0	99	
4:45 PM	0	49	1	0	0	86	0	0	0	0	0	0	1	0	1	0	138	
4:50 PM	0	51	2	0	1	62	0	0	0	0	0	0	0	0	2	0	118	
4:55 PM	0	45	2	0	2	79	0	0	0	0	0	0	0	0	0	0	128	1441
5:00 PM	0	61	1	0	0	65	0	0	0	0	0	0	2	0	0	0	129	1426
5:05 PM	0	60	2	0	0	70	0	0	0	0	0	0	2	0	0	0	134	1436
5:10 PM	0	42	0	0	0	57	0	0	0	0	0	0	1	0	2	0	102	1436
5:15 PM	0	57	2	0	0	66	0	0	0	0	1	0	1	0	0	0	127	1432
5:20 PM	0	53	0	0	1	65	0	0	0	0	0	0	1	0	0	0	120	1441
5:25 PM	0	53	1	0	0	75	0	0	0	0	0	0	0	0	0	0	129	1451
5:30 PM	0	48	3	0	0	49	0	0	0	0	0	0	0	0	0	0	100	1447
5:35 PM	0	58	2	0	0	77	1	0	0	0	0	0	2	0	0	0	140	1464
5:40 PM	0	53	2	0	1	58	0	0	0	0	0	0	1	0	0	0	115	1480
5:45 PM	0	41	1	0	1	54	0	0	0	0	0	0	0	0	0	0	97	1439
5:50 PM	1	49	2	0	0	67	0	0	0	0	0	0	0	0	0	0	119	1440
5:55 PM	1	55	6	0	0	71	0	0	0	0	0	0	1	0	0	0	134	1446

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	664	20	0	8	856	0	0	0	0	0	0	16	0	0	0	1564
Heavy Trucks	0	20	0		0	8	0		0	0	0		0	0	0		28
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/1/2017 4:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

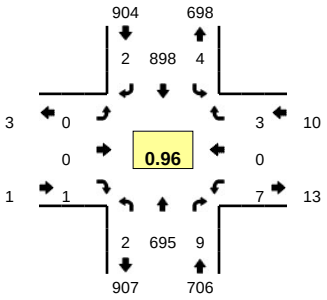
Method for determining peak hour: Total Entering Volume

LOCATION: Cabrillo Hwy (Hwy 1) -- 14th St

CITY/STATE: Montara, CA

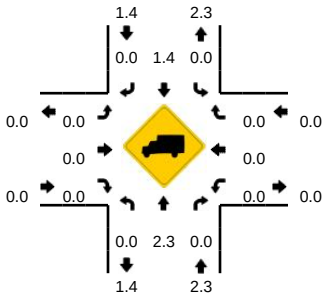
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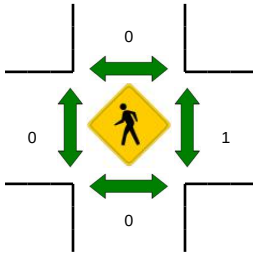
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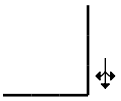


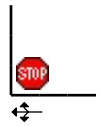
Peak-Hour: 11:55 AM -- 12:55 PM

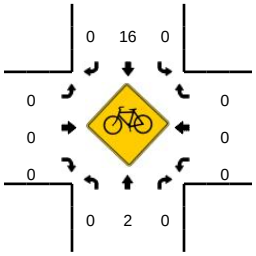
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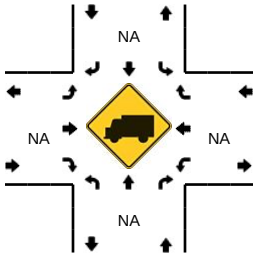


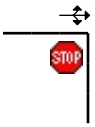


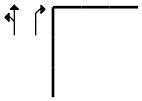


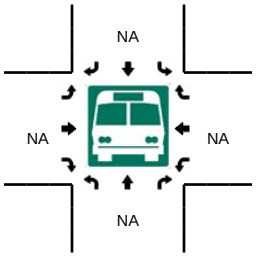












5-Min Count Period Beginning At	Cabrillo Hwy (Hwy 1) (Northbound)				Cabrillo Hwy (Hwy 1) (Southbound)				14th St (Eastbound)				14th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	53	0	0	0	62	0	0	0	0	0	0	1	0	0	0	116	
11:05 AM	0	50	1	0	0	76	0	0	0	0	0	0	3	0	0	0	130	
11:10 AM	0	59	1	0	0	72	0	0	0	0	0	0	0	0	0	0	132	
11:15 AM	0	60	2	0	0	61	1	0	0	0	0	0	2	0	1	0	127	
11:20 AM	0	50	1	0	0	82	0	0	1	0	0	0	1	0	0	0	135	
11:25 AM	0	70	2	0	0	73	0	0	0	0	0	0	0	0	0	0	145	
11:30 AM	0	37	0	0	0	82	0	0	0	0	0	0	0	0	1	0	120	
11:35 AM	0	58	0	0	0	73	0	0	0	0	0	0	0	0	0	0	131	
11:40 AM	0	37	1	0	0	89	0	0	0	0	0	0	1	0	0	0	128	
11:45 AM	0	45	0	0	0	71	0	0	0	0	0	0	1	0	0	0	117	
11:50 AM	0	41	0	0	0	72	0	0	0	0	0	0	0	0	1	0	114	
11:55 AM	0	50	1	0	0	89	0	0	0	0	0	0	0	0	0	0	140	1535
12:00 PM	0	69	1	0	2	86	0	0	0	0	0	0	1	0	0	0	159	1578
12:05 PM	0	42	1	0	0	81	0	0	0	0	0	0	0	0	0	0	124	1572
12:10 PM	0	59	1	0	1	71	0	0	0	0	0	0	0	0	0	0	132	1572
12:15 PM	0	61	2	0	1	77	0	0	0	0	0	0	0	0	0	0	141	1586
12:20 PM	0	58	0	0	0	79	0	0	0	0	0	0	0	0	0	0	137	1588
12:25 PM	0	55	0	0	0	72	0	0	0	0	0	0	2	0	1	0	130	1573
12:30 PM	0	72	0	0	0	54	0	0	0	0	0	0	1	0	1	0	128	1581
12:35 PM	0	49	1	0	0	75	1	0	0	0	0	0	1	0	0	0	127	1577
12:40 PM	1	53	2	0	0	64	1	0	0	0	1	0	1	0	0	0	123	1572
12:45 PM	0	64	0	1	0	69	0	0	0	0	0	0	0	0	0	0	134	1589
12:50 PM	0	63	0	0	0	81	0	0	0	0	0	0	1	0	1	0	146	1621
12:55 PM	0	53	0	0	0	62	0	0	1	0	0	0	2	0	0	0	118	1599

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	644	12	0	8	1024	0	0	0	0	0	0	4	0	0	0	1692
Heavy Trucks	0	12	0		0	4	0		0	0	0		0	0	0		16
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	5	0		0	0	0		0	0	0		5
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/17/2017 6:04 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Cabrillo Hwy (Hwy 1) -- 16th St

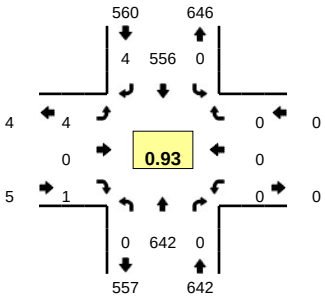
CITY/STATE: Montara, CA

QC JOB #: 14384604

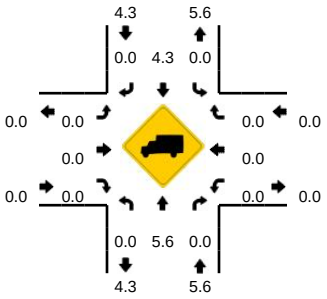
DATE: Thu, Apr 20 2017

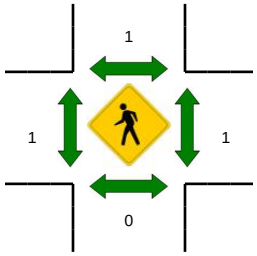
Peak-Hour: 7:45 AM -- 8:45 AM

Peak 15-Min: 8:10 AM -- 8:25 AM

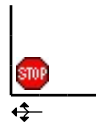


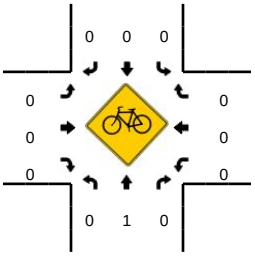


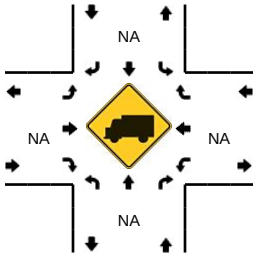


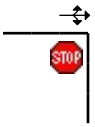


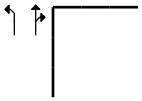


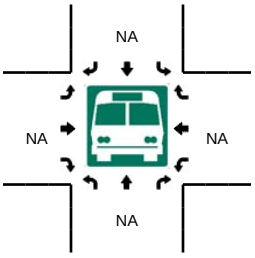












5-Min Count Period Beginning At	Cabrillo Hwy (Hwy 1) (Northbound)				Cabrillo Hwy (Hwy 1) (Southbound)				16th St (Eastbound)				16th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	58	0	0	0	21	0	0	0	0	0	0	0	0	0	0	79	
7:05 AM	0	55	0	0	0	24	1	0	0	0	0	0	0	0	0	0	80	
7:10 AM	0	47	0	0	0	35	0	0	0	0	0	0	0	0	0	0	82	
7:15 AM	0	55	0	0	0	25	0	0	0	0	0	0	0	0	0	0	80	
7:20 AM	0	43	0	0	0	25	0	0	0	0	0	0	0	0	0	0	68	
7:25 AM	2	46	0	0	0	31	0	0	0	0	0	0	0	0	0	0	79	
7:30 AM	0	53	0	0	0	22	0	0	1	0	0	0	0	0	0	0	76	
7:35 AM	0	51	0	0	0	45	0	0	1	0	0	0	1	0	0	0	98	
7:40 AM	0	56	0	0	0	35	0	0	0	0	0	0	0	0	0	0	91	
7:45 AM	0	58	0	0	0	49	1	0	0	0	0	0	0	0	0	0	108	
7:50 AM	0	57	0	0	0	57	1	0	3	0	0	0	0	0	0	0	118	
7:55 AM	0	48	0	0	0	35	0	0	0	0	0	0	0	0	0	0	83	1042
8:00 AM	0	48	0	0	0	23	0	0	0	0	1	0	0	0	0	0	72	1035
8:05 AM	0	44	0	0	0	44	0	0	0	0	0	0	0	0	0	0	88	1043
8:10 AM	0	59	0	0	0	45	0	0	0	0	0	0	0	0	0	0	104	1065
8:15 AM	0	62	0	0	0	42	0	0	0	0	0	0	0	0	0	0	104	1089
8:20 AM	0	71	0	0	0	43	1	0	0	0	0	0	0	0	0	0	115	1136
8:25 AM	0	56	0	0	0	45	0	0	0	0	0	0	0	0	0	0	101	1158
8:30 AM	0	35	0	0	0	46	1	0	0	0	0	0	0	0	0	0	82	1164
8:35 AM	0	50	0	0	0	71	0	0	1	0	0	0	0	0	0	0	122	1188
8:40 AM	0	54	0	0	0	56	0	0	0	0	0	0	0	0	0	0	110	1207
8:45 AM	0	33	0	0	0	33	1	0	0	0	0	0	0	0	0	0	67	1166
8:50 AM	0	45	0	0	0	41	1	0	0	0	0	0	0	0	0	0	87	1135
8:55 AM	0	36	0	0	0	40	0	0	1	0	0	0	1	0	1	0	79	1131

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	768	0	0	0	520	4	0	0	0	0	0	0	0	0	0	1292
Heavy Trucks	0	44	0		0	8	0		0	0	0		0	0	0		52
Pedestrians		0				0				0				0			0
Bicycles	0	1	0		0	0	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/1/2017 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Cabrillo Hwy (Hwy 1) -- 16th St

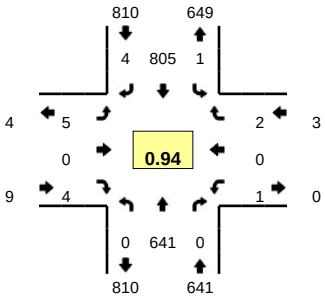
CITY/STATE: Montara, CA

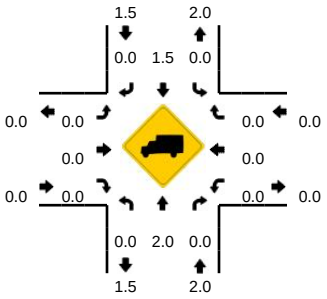
QC JOB #: 14384605

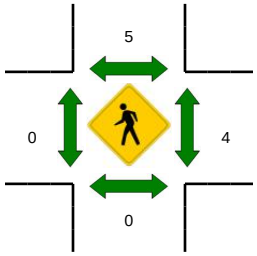
DATE: Thu, Apr 20 2017

Peak-Hour: 4:45 PM -- 5:45 PM

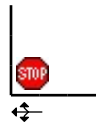
Peak 15-Min: 4:55 PM -- 5:10 PM

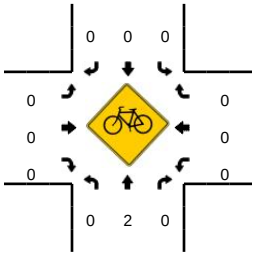


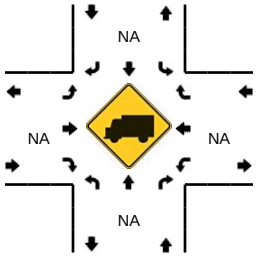


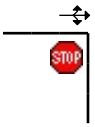


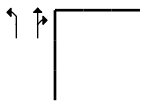


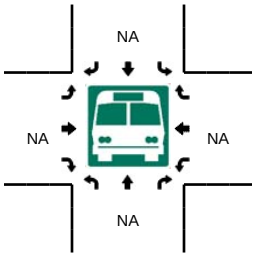












5-Min Count Period Beginning At	Cabrillo Hwy (Hwy 1) (Northbound)				Cabrillo Hwy (Hwy 1) (Southbound)				16th St (Eastbound)				16th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	58	0	0	0	70	0	0	2	0	2	0	0	0	0	0	132	
4:05 PM	0	53	0	0	0	71	0	0	0	0	1	0	0	0	0	0	125	
4:10 PM	1	50	0	0	0	48	0	0	0	0	0	0	0	0	0	0	99	
4:15 PM	0	56	0	0	0	72	2	0	1	0	0	0	0	0	0	0	131	
4:20 PM	0	56	0	0	0	55	1	0	0	0	0	0	0	0	0	0	112	
4:25 PM	0	55	0	0	0	58	1	0	0	0	0	0	0	0	0	0	114	
4:30 PM	1	53	0	0	0	53	0	0	4	0	0	0	0	0	0	0	111	
4:35 PM	0	49	1	0	0	64	0	0	0	0	0	0	0	0	0	0	114	
4:40 PM	0	45	0	0	0	61	0	0	0	0	0	0	0	0	0	0	106	
4:45 PM	0	55	0	0	0	79	0	0	0	0	0	0	0	0	1	0	135	
4:50 PM	0	45	0	0	0	62	0	0	0	0	0	0	0	0	0	0	107	
4:55 PM	0	45	0	0	0	82	0	0	0	0	0	0	0	0	0	0	127	1413
5:00 PM	0	68	0	0	0	64	1	0	1	0	0	0	0	0	0	0	134	1415
5:05 PM	0	52	0	0	0	70	2	1	2	0	0	0	0	0	0	0	127	1417
5:10 PM	0	51	0	0	0	59	0	0	0	0	2	0	0	0	0	0	112	1430
5:15 PM	0	53	0	0	0	64	1	0	0	0	0	0	0	0	0	0	118	1417
5:20 PM	0	56	0	0	0	67	0	0	0	0	1	0	0	0	0	0	124	1429
5:25 PM	0	49	0	0	0	76	0	0	1	0	0	0	0	0	0	0	126	1441
5:30 PM	0	52	0	0	0	49	0	0	1	0	0	0	1	0	1	0	104	1434
5:35 PM	0	62	0	0	0	74	0	0	0	0	1	0	0	0	0	0	137	1457
5:40 PM	0	53	0	0	0	59	0	0	0	0	0	0	0	0	0	0	112	1463
5:45 PM	0	37	0	0	0	57	0	0	0	0	0	0	0	0	0	0	94	1422
5:50 PM	0	53	0	0	0	65	0	0	0	0	0	0	0	0	0	0	118	1433
5:55 PM	0	62	0	0	1	73	1	0	0	0	0	0	0	0	0	0	137	1443

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	660	0	0	0	864	12	4	12	0	0	0	0	0	0	0	1552
Heavy Trucks	0	28	0		0	8	0		0	0	0		0	0	0		36
Pedestrians		0				12				0				4			16
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/1/2017 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

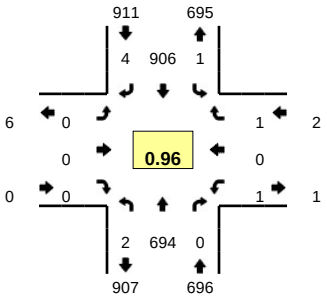
Method for determining peak hour: Total Entering Volume

LOCATION: Cabrillo Hwy (Hwy 1) -- 16th St

CITY/STATE: Montara, CA

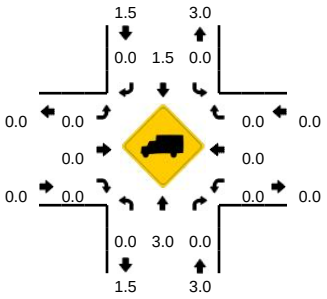
QC JOB #: 14384606

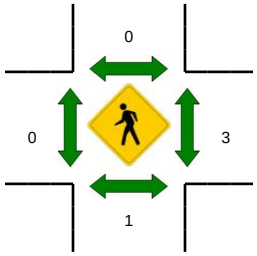
DATE: Sat, Apr 22 2017



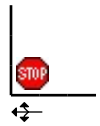
Peak-Hour: 11:55 AM -- 12:55 PM

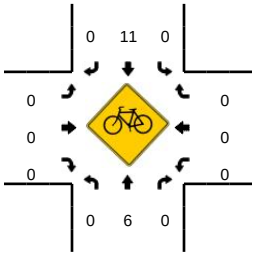
Peak 15-Min: 12:10 PM -- 12:25 PM

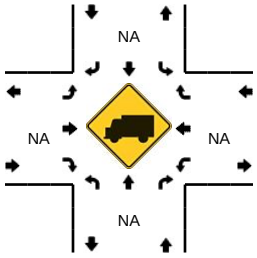


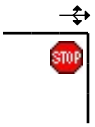


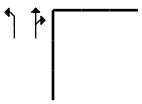


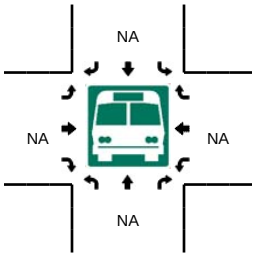












5-Min Count Period Beginning At	Cabrillo Hwy (Hwy 1) (Northbound)				Cabrillo Hwy (Hwy 1) (Southbound)				16th St (Eastbound)				16th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	54	0	0	0	67	0	0	0	0	0	0	0	0	0	0	121	
11:05 AM	0	59	0	0	0	77	0	0	0	0	0	0	0	0	0	0	136	
11:10 AM	0	53	0	0	0	75	0	0	0	0	0	0	0	0	0	0	128	
11:15 AM	0	62	0	0	0	62	0	0	0	0	0	0	0	0	0	0	124	
11:20 AM	0	49	0	0	0	84	1	0	0	0	0	0	0	0	0	0	134	
11:25 AM	0	69	0	0	0	71	0	0	0	0	1	0	0	0	0	0	141	
11:30 AM	0	44	0	0	0	82	2	0	0	0	1	0	0	0	0	0	129	
11:35 AM	0	51	0	0	0	75	0	0	0	0	0	0	0	0	0	0	126	
11:40 AM	1	38	0	0	0	88	0	0	1	0	1	0	1	0	0	0	130	
11:45 AM	0	43	0	0	0	73	0	0	0	0	0	0	0	0	0	0	116	
11:50 AM	0	45	0	0	0	70	0	0	1	0	0	0	0	0	0	0	116	
11:55 AM	0	48	0	0	0	93	0	0	0	0	0	0	0	0	0	0	141	1542
12:00 PM	0	68	0	0	0	81	0	0	0	0	0	0	0	0	0	0	149	1570
12:05 PM	0	42	0	0	1	82	0	0	0	0	0	0	0	0	0	0	125	1559
12:10 PM	1	68	0	0	0	72	0	0	0	0	0	0	0	0	0	0	141	1572
12:15 PM	0	58	0	0	0	80	0	0	0	0	0	0	0	0	0	0	138	1586
12:20 PM	0	60	0	0	0	78	0	0	0	0	0	0	0	0	0	0	138	1590
12:25 PM	0	54	0	0	0	74	0	0	0	0	0	0	0	0	0	0	128	1577
12:30 PM	1	69	0	0	0	55	0	0	0	0	0	0	0	0	0	0	125	1573
12:35 PM	0	47	0	0	0	76	0	0	0	0	0	0	0	0	0	0	123	1570
12:40 PM	0	51	0	0	0	63	1	0	0	0	0	0	0	0	1	0	116	1556
12:45 PM	0	70	0	0	0	71	2	0	0	0	0	0	1	0	0	0	144	1584
12:50 PM	0	59	0	0	0	81	1	0	0	0	0	0	0	0	0	0	141	1609
12:55 PM	1	56	0	0	0	67	0	0	0	0	2	0	0	0	0	0	126	1594

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	744	0	0	0	920	0	0	0	0	0	0	0	0	0	0	1668
Heavy Trucks	0	12	0		0	8	0		0	0	0		0	0	0		20
Pedestrians		0				0				0				0			0
Bicycles	0	3	0		0	1	0		0	0	0		0	0	0		4
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/17/2017 6:04 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

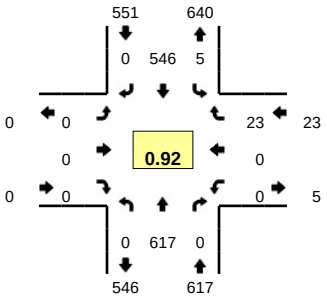
Method for determining peak hour: Total Entering Volume

LOCATION: Cabrillo Hwy (Hwy 1) -- Carlos St

CITY/STATE: Montara, CA

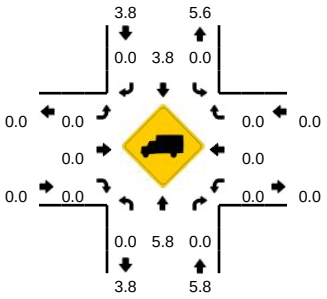
QC JOB #: 14384601

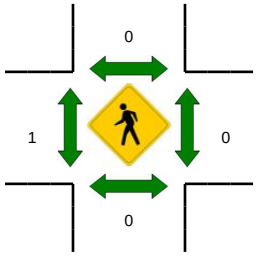
DATE: Thu, Apr 20 2017

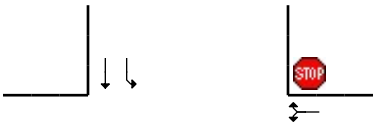


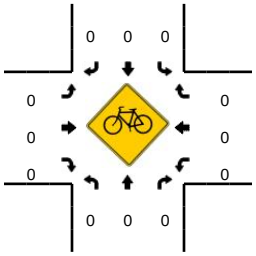
Peak-Hour: 7:45 AM -- 8:45 AM

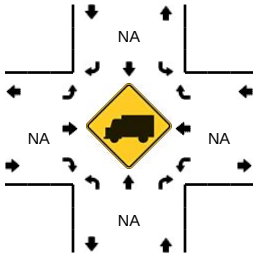
Peak 15-Min: 8:10 AM -- 8:25 AM



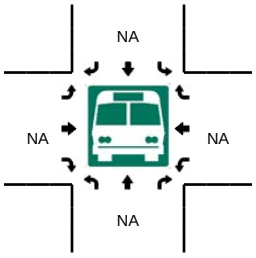












5-Min Count Period Beginning At	Cabrillo Hwy (Hwy 1) (Northbound)				Cabrillo Hwy (Hwy 1) (Southbound)				Carlos St (Eastbound)				Carlos St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	55	0	0	0	23	0	0	0	0	0	0	0	0	4	0	82	
7:05 AM	0	50	0	0	1	23	0	0	0	0	0	0	0	0	0	0	74	
7:10 AM	0	49	0	0	0	33	0	0	0	0	0	0	0	0	0	0	82	
7:15 AM	0	53	0	0	1	25	0	0	0	0	0	0	0	0	3	0	82	
7:20 AM	0	62	0	0	0	28	0	0	0	0	0	0	0	0	2	0	92	
7:25 AM	0	44	0	0	0	27	0	0	0	0	0	0	0	0	3	0	74	
7:30 AM	0	54	0	0	1	23	0	0	0	0	0	0	0	0	0	0	78	
7:35 AM	0	50	0	0	1	40	0	0	0	0	0	0	0	0	0	0	91	
7:40 AM	0	59	0	0	0	39	0	0	0	0	0	0	0	0	1	0	99	
7:45 AM	0	53	0	0	0	46	0	0	0	0	0	0	0	0	1	0	100	
7:50 AM	0	57	0	0	1	57	0	0	0	0	0	0	0	0	2	0	117	
7:55 AM	0	44	0	0	0	36	0	0	0	0	0	0	0	0	2	0	82	1053
8:00 AM	0	50	0	0	0	24	0	0	0	0	0	0	0	0	1	0	75	1046
8:05 AM	0	38	0	0	0	42	0	0	0	0	0	0	0	0	3	0	83	1055
8:10 AM	0	56	0	0	0	41	0	0	0	0	0	0	0	0	3	0	100	1073
8:15 AM	0	64	0	0	0	45	0	0	0	0	0	0	0	0	1	0	110	1101
8:20 AM	0	71	0	0	2	40	0	0	0	0	0	0	0	0	1	0	114	1123
8:25 AM	0	49	0	0	0	42	0	0	0	0	0	0	0	0	5	0	96	1145
8:30 AM	0	37	0	0	0	50	0	0	0	0	0	0	0	0	1	0	88	1155
8:35 AM	0	51	0	0	2	67	0	0	0	0	0	0	0	0	0	0	120	1184
8:40 AM	0	47	0	0	0	56	0	0	0	0	0	0	0	0	3	0	106	1191
8:45 AM	0	39	0	0	0	37	0	0	0	0	0	0	0	0	0	0	76	1167
8:50 AM	0	40	0	0	0	40	0	0	0	0	0	0	0	0	0	0	80	1130
8:55 AM	0	37	0	0	0	39	0	0	0	0	0	0	0	0	0	0	76	1124

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	764	0	0	8	504	0	0	0	0	0	0	0	0	20	0	1296
Heavy Trucks	0	44	0		0	8	0		0	0	0		0	0	0		52
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/1/2017 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

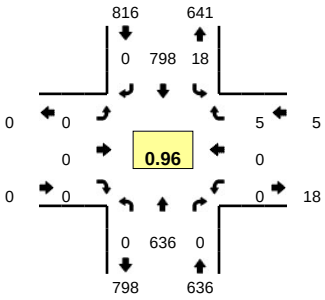
Method for determining peak hour: Total Entering Volume

LOCATION: Cabrillo Hwy (Hwy 1) -- Carlos St

QC JOB #: 14384602

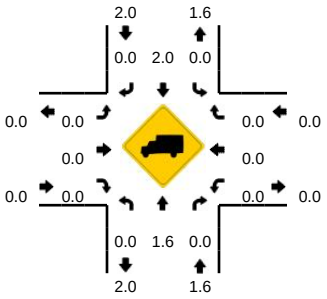
CITY/STATE: Montara, CA

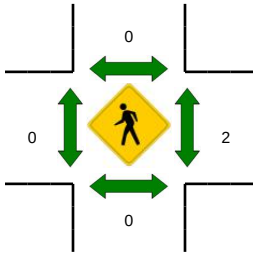
DATE: Thu, Apr 20 2017

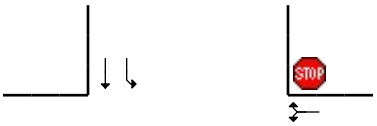


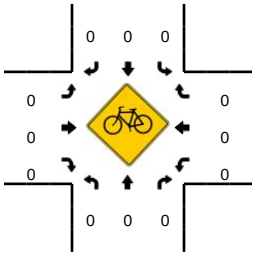
Peak-Hour: 4:45 PM -- 5:45 PM

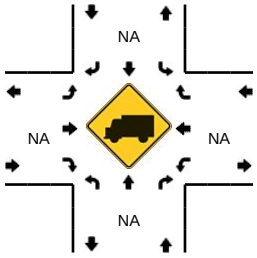
Peak 15-Min: 4:55 PM -- 5:10 PM



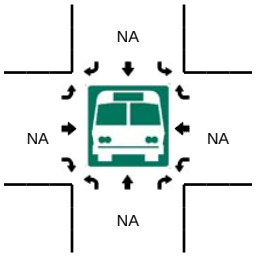












5-Min Count Period Beginning At	Cabrillo Hwy (Hwy 1) (Northbound)				Cabrillo Hwy (Hwy 1) (Southbound)				Carlos St (Eastbound)				Carlos St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	66	0	0	0	76	0	0	0	0	0	0	0	0	1	0	143	
4:05 PM	0	53	0	0	2	69	0	0	0	0	0	0	0	0	1	0	125	
4:10 PM	0	51	0	0	0	47	0	0	0	0	0	0	0	0	0	0	98	
4:15 PM	0	57	0	0	1	70	0	0	0	0	0	0	0	0	0	0	128	
4:20 PM	0	53	0	0	1	44	0	0	0	0	0	0	0	0	1	0	99	
4:25 PM	0	57	0	0	0	73	0	0	0	0	0	0	0	0	0	0	130	
4:30 PM	0	50	0	0	1	44	0	0	0	0	0	0	0	0	1	0	96	
4:35 PM	0	56	0	0	1	70	0	0	0	0	0	0	0	0	0	0	127	
4:40 PM	0	42	0	0	0	58	0	0	0	0	0	0	0	0	0	0	100	
4:45 PM	0	50	0	0	2	76	0	0	0	0	0	0	0	0	0	0	128	
4:50 PM	0	52	0	0	3	61	0	0	0	0	0	0	0	0	0	0	116	
4:55 PM	0	47	0	0	0	79	0	0	0	0	0	0	0	0	0	0	126	1416
5:00 PM	0	62	0	0	1	62	0	0	0	0	0	0	0	0	0	0	125	1398
5:05 PM	0	59	0	0	3	65	0	0	0	0	0	0	0	0	0	0	127	1400
5:10 PM	0	39	0	0	2	57	0	0	0	0	0	0	0	0	2	0	100	1402
5:15 PM	0	59	0	0	1	68	0	0	0	0	0	0	0	0	0	0	128	1402
5:20 PM	0	49	0	0	1	70	0	0	0	0	0	0	0	0	1	0	121	1424
5:25 PM	0	56	0	0	3	68	0	0	0	0	0	0	0	0	0	0	127	1421
5:30 PM	0	49	0	0	1	54	0	0	0	0	0	0	0	0	0	0	104	1429
5:35 PM	0	59	0	0	1	79	0	0	0	0	0	0	0	0	2	0	141	1443
5:40 PM	0	55	0	0	0	59	0	0	0	0	0	0	0	0	0	0	114	1457
5:45 PM	0	42	0	0	3	53	0	0	0	0	0	0	0	0	0	0	98	1427
5:50 PM	0	48	0	0	2	56	0	0	0	0	0	0	0	0	3	0	109	1420
5:55 PM	0	62	0	0	3	75	0	0	0	0	0	0	0	0	1	0	141	1435

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	672	0	0	16	824	0	0	0	0	0	0	0	0	0	0	1512
Heavy Trucks	0	16	0		0	12	0		0	0	0		0	0	0		28
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/1/2017 4:15 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

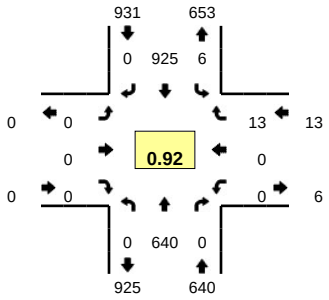
Method for determining peak hour: Total Entering Volume

LOCATION: Cabrillo Hwy (Hwy 1) -- Carlos St

QC JOB #: 14384603

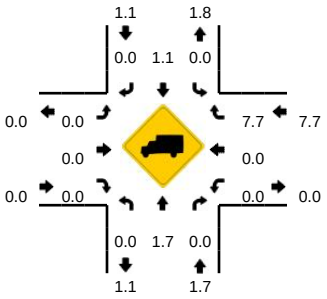
CITY/STATE: Montara, CA

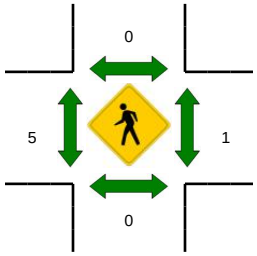
DATE: Sat, Apr 22 2017

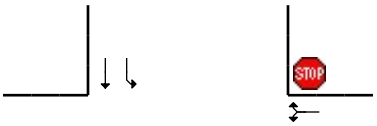


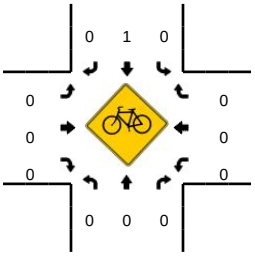
Peak-Hour: 11:35 AM -- 12:35 PM

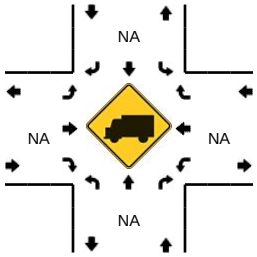
Peak 15-Min: 12:15 PM -- 12:30 PM



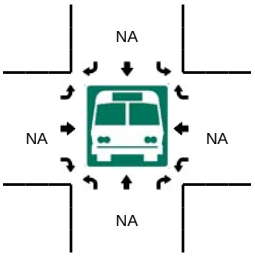












5-Min Count Period Beginning At	Cabrillo Hwy (Hwy 1) (Northbound)				Cabrillo Hwy (Hwy 1) (Southbound)				Carlos St (Eastbound)				Carlos St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	50	0	0	2	61	0	0	0	0	0	0	0	0	1	0	114	
11:05 AM	0	57	0	0	0	82	0	0	0	0	0	0	0	0	0	0	139	
11:10 AM	0	60	0	0	0	74	0	0	0	0	0	0	0	0	0	0	134	
11:15 AM	0	54	0	0	0	64	0	0	0	0	0	0	0	0	0	0	118	
11:20 AM	0	56	0	0	0	84	0	0	0	0	0	0	0	0	1	0	141	
11:25 AM	0	69	0	0	1	64	0	0	0	0	0	0	0	0	0	0	134	
11:30 AM	0	39	0	0	0	82	0	0	0	0	0	0	0	0	1	0	122	
11:35 AM	0	51	0	0	0	80	0	0	0	0	0	0	0	0	1	0	132	
11:40 AM	0	42	0	0	1	80	0	0	0	0	0	0	0	0	0	0	123	
11:45 AM	0	47	0	0	0	84	0	0	0	0	0	0	0	0	1	0	132	
11:50 AM	0	38	0	0	0	68	0	0	0	0	0	0	0	0	2	0	108	
11:55 AM	0	47	0	0	2	79	0	0	0	0	0	0	0	0	1	0	129	1526
12:00 PM	0	62	0	0	0	88	0	0	0	0	0	0	0	0	2	0	152	1564
12:05 PM	0	47	0	0	0	83	0	0	0	0	0	0	0	0	0	0	130	1555
12:10 PM	0	49	0	0	0	71	0	0	0	0	0	0	0	0	1	0	121	1542
12:15 PM	0	79	0	0	2	75	0	0	0	0	0	0	0	0	1	0	157	1581
12:20 PM	0	42	0	0	0	79	0	0	0	0	0	0	0	0	0	0	121	1561
12:25 PM	0	61	0	0	1	89	0	0	0	0	0	0	0	0	1	0	152	1579
12:30 PM	0	75	0	0	0	49	0	0	0	0	0	0	0	0	3	0	127	1584
12:35 PM	0	45	0	0	0	70	0	0	0	0	0	0	0	0	2	0	117	1569
12:40 PM	0	57	0	0	1	49	0	0	0	0	0	0	0	0	0	0	107	1553
12:45 PM	0	63	0	0	1	62	0	0	0	0	0	0	0	0	0	0	126	1547
12:50 PM	0	62	0	0	1	75	0	0	0	0	0	0	0	0	0	0	138	1577
12:55 PM	0	59	0	0	1	60	0	0	0	0	0	0	0	0	0	0	120	1568

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	728	0	0	12	972	0	0	0	0	0	0	0	0	8	0	1720
Heavy Trucks	0	4	0		0	8	0		0	0	0		0	0	0		12
Pedestrians		0				0				0				4			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/17/2017 6:04 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Carlos St -- Sierra St

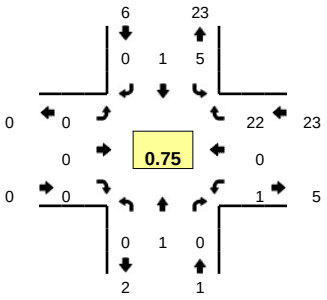
CITY/STATE: San Mateo, CA

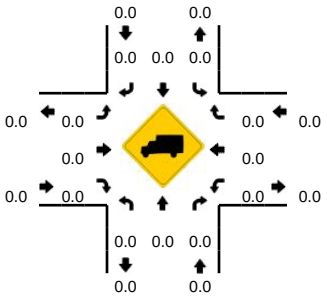
QC JOB #: 14384619

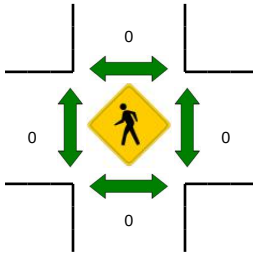
DATE: Thu, Apr 20 2017

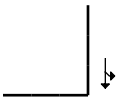
Peak-Hour: 7:45 AM -- 8:45 AM

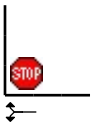
Peak 15-Min: 8:15 AM -- 8:30 AM

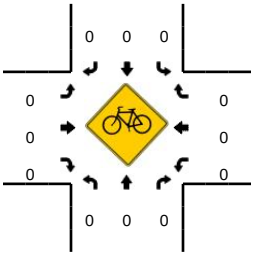


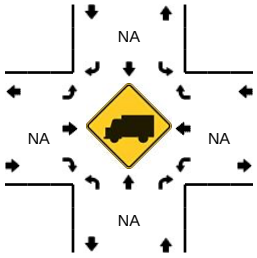




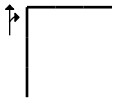


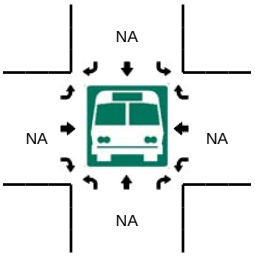












5-Min Count Period Beginning At	Carlos St (Northbound)				Carlos St (Southbound)				Sierra St (Eastbound)				Sierra St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	
7:05 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2	
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	4	
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	
7:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	
7:35 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
7:40 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
7:50 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	0	4	
7:55 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	26
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	23
8:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	24
8:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	27
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	24
8:20 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2	0	4	26
8:25 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	0	5	28
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	28
8:35 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	28
8:40 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	4	30
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29
8:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
8:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	8	0	0	0	0	0	0	0	4	0	28	0	40
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/1/2017 4:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Carlos St -- Sierra St

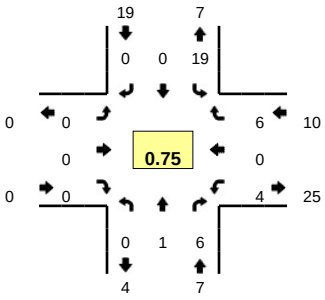
CITY/STATE: San Mateo, CA

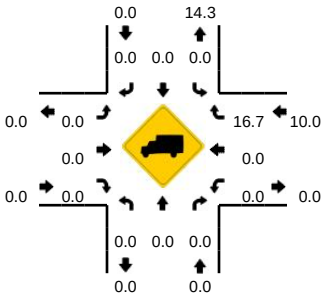
QC JOB #: 14384620

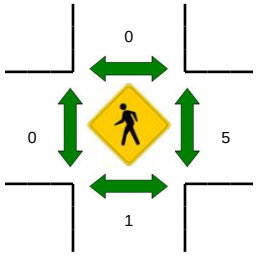
DATE: Thu, Apr 20 2017

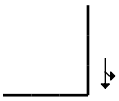
Peak-Hour: 5:00 PM -- 6:00 PM

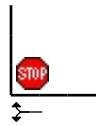
Peak 15-Min: 5:40 PM -- 5:55 PM

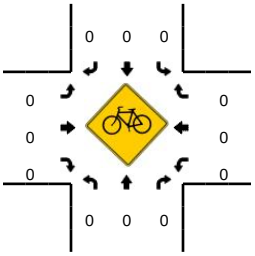


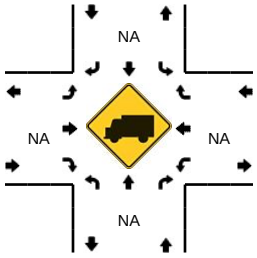




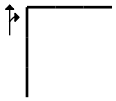


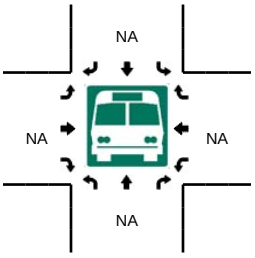












5-Min Count Period Beginning At	Carlos St (Northbound)				Carlos St (Southbound)				Sierra St (Eastbound)				Sierra St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
4:05 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	3	
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
4:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	3	
4:35 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
4:40 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
4:45 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	
4:50 PM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3	
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	19
5:00 PM	0	0	2	0	1	0	0	0	0	0	0	0	1	0	0	0	4	22
5:05 PM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3	22
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	24
5:15 PM	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	0	4	27
5:20 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	3	28
5:25 PM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3	31
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	29
5:35 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2	30
5:40 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	30
5:45 PM	0	0	1	0	3	0	0	0	0	0	0	0	0	0	1	0	5	33
5:50 PM	0	0	1	0	2	0	0	0	0	0	0	0	0	0	2	0	5	35
5:55 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	36

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	4	12	0	20	0	0	0	0	0	0	0	0	0	12	0	48
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	4		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/1/2017 4:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Carlos St -- Sierra St

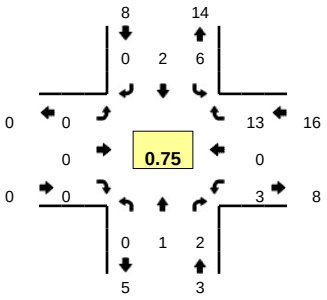
CITY/STATE: San Mateo, CA

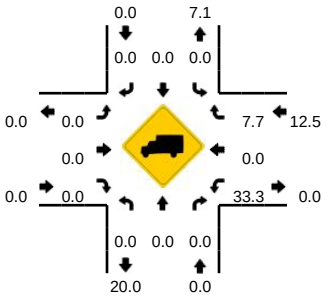
QC JOB #: 14384621

DATE: Sat, Apr 22 2017

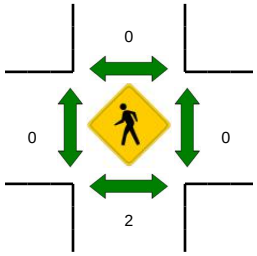
Peak-Hour: 11:50 AM -- 12:50 PM

Peak 15-Min: 12:25 PM -- 12:40 PM

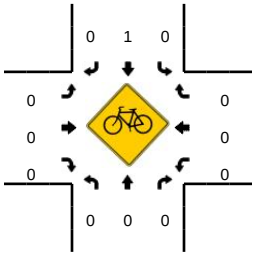


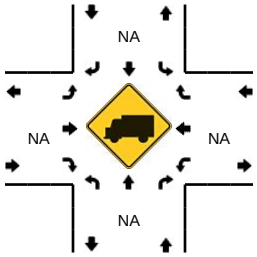


Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

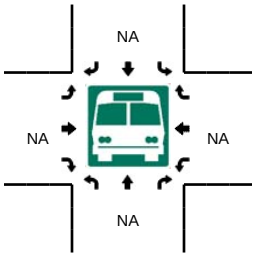












5-Min Count Period Beginning At	Carlos St (Northbound)				Carlos St (Southbound)				Sierra St (Eastbound)				Sierra St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	3	0	1	0	6	
11:05 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	
11:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:20 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	
11:25 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
11:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
11:40 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
11:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	
11:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
11:55 AM	0	0	0	0	2	0	0	0	0	0	0	0	1	0	1	0	4	22
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	19
12:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
12:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	18
12:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	1	0	1	0	4	22
12:20 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	21
12:25 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2	21
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	24
12:35 PM	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	26
12:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
12:45 PM	0	0	0	0	2	0	0	0	0	0	0	0	1	0	1	0	4	27
12:50 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	27
12:55 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	24

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	4	8	0	0	4	0	0	0	0	0	0	0	0	20	0	36
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/17/2017 6:04 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Stetson St -- Sierra St

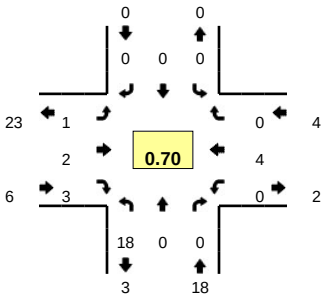
CITY/STATE: Moss Beach, CA

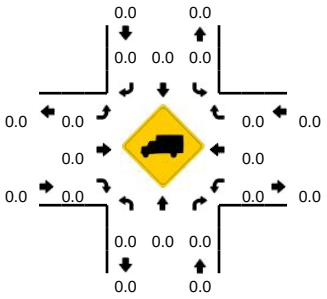
QC JOB #: 14384616

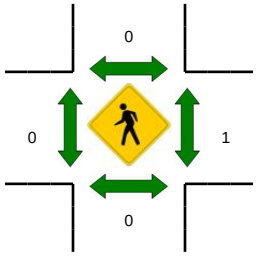
DATE: Thu, Apr 20 2017

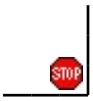
Peak-Hour: 7:45 AM -- 8:45 AM

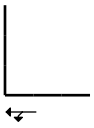
Peak 15-Min: 8:15 AM -- 8:30 AM

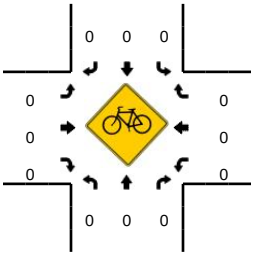


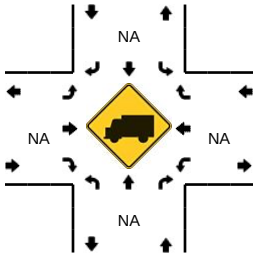


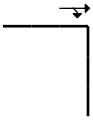


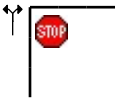


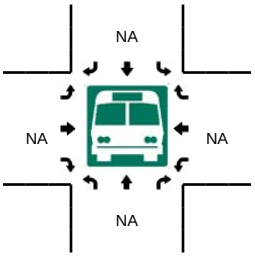












5-Min Count Period Beginning At	Stetson St (Northbound)				Stetson St (Southbound)				Sierra St (Eastbound)				Sierra St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	4	
7:05 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
7:15 AM	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	3	
7:20 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
7:25 AM	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
7:35 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
7:40 AM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	
7:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
7:50 AM	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	3	
7:55 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	24
8:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	21
8:05 AM	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	22
8:10 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3	24
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	22
8:20 AM	2	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	4	24
8:25 AM	4	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	5	26
8:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	26
8:35 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	26
8:40 AM	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4	28
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27
8:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
8:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	0	0	0	0	0	0	0	0	4	4	4	0	4	0	0	40
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				4			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/1/2017 4:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Stetson St -- Sierra St

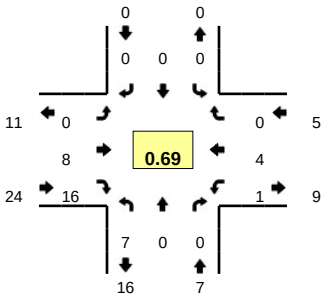
CITY/STATE: Moss Beach, CA

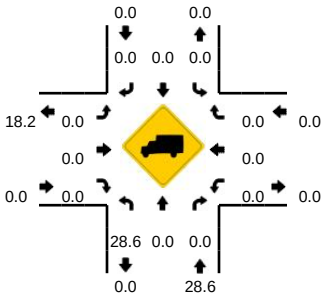
QC JOB #: 14384617

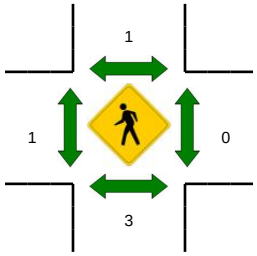
DATE: Thu, Apr 20 2017

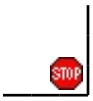
Peak-Hour: 5:00 PM -- 6:00 PM

Peak 15-Min: 5:45 PM -- 6:00 PM

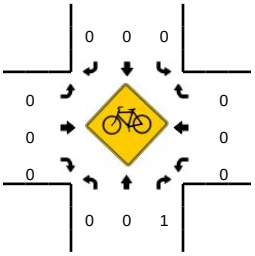


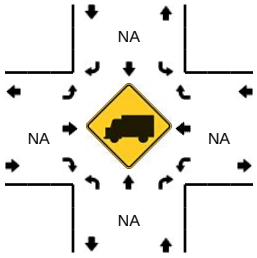


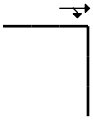


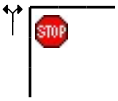


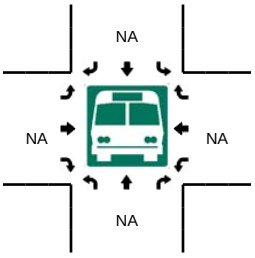












5-Min Count Period Beginning At	Stetson St (Northbound)				Stetson St (Southbound)				Sierra St (Eastbound)				Sierra St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
4:05 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	3	
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
4:20 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3	
4:35 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
4:40 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	
4:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	
4:50 PM	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	3	
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	19
5:00 PM	0	0	0	0	0	0	0	0	0	2	1	0	0	1	0	0	4	22
5:05 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	22
5:10 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	24
5:15 PM	0	0	0	0	0	0	0	0	0	1	2	0	0	1	0	0	4	27
5:20 PM	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	3	28
5:25 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	31
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	29
5:35 PM	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	30
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	29
5:45 PM	2	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	6	33
5:50 PM	2	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	5	35
5:55 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	36

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	0	0	0	0	0	0	0	0	12	24	0	0	0	0	0	52
Heavy Trucks	8	0	0		0	0	0		0	0	0		0	0	0		8
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/1/2017 4:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Stetson St -- Sierra St

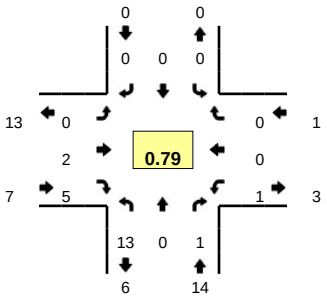
CITY/STATE: Moss Beach, CA

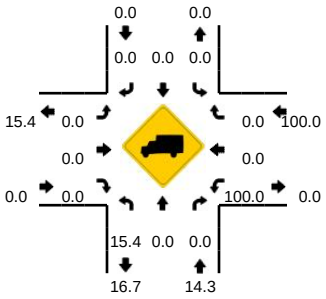
QC JOB #: 14384618

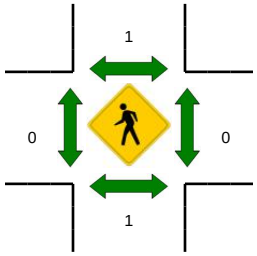
DATE: Sat, Apr 22 2017

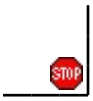
Peak-Hour: 11:40 AM -- 12:40 PM

Peak 15-Min: 11:50 AM -- 12:05 PM

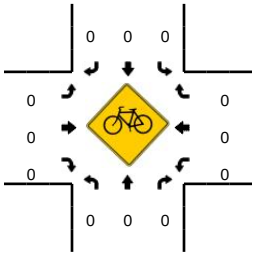


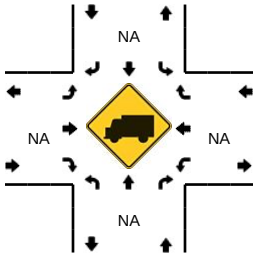


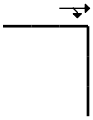


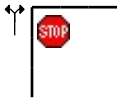


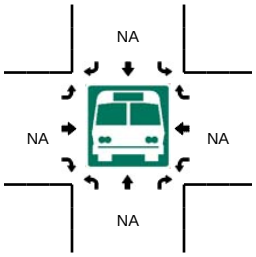












5-Min Count Period Beginning At	Stetson St (Northbound)				Stetson St (Southbound)				Sierra St (Eastbound)				Sierra St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3	
11:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
11:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:20 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
11:25 AM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:35 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
11:40 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
11:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
11:50 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
11:55 AM	1	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	4	15
12:00 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	14
12:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	14
12:10 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15
12:15 PM	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	4	19
12:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
12:25 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	18
12:30 PM	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	21
12:35 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	22
12:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
12:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	22
12:50 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	22
12:55 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	19

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	0	4	0	0	0	0	0	0	0	8	0	0	0	0	0	28
Heavy Trucks	4	0	0		0	0	0		0	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/17/2017 6:04 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

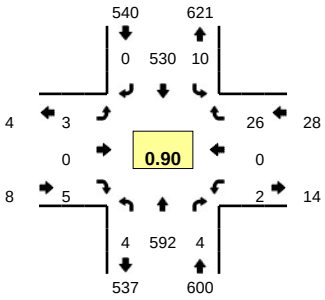
Method for determining peak hour: Total Entering Volume

LOCATION: Cabrillo Hwy (Hwy 1) -- Vallemar St/Etheldore St

QC JOB #: 14384628

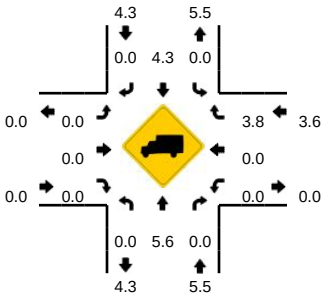
CITY/STATE: San Mateo, CA

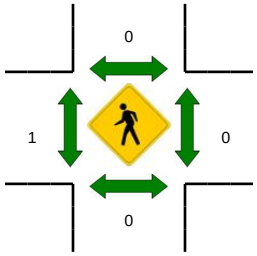
DATE: Thu, Apr 20 2017

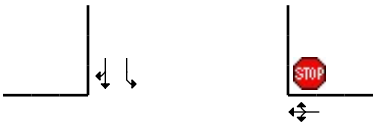


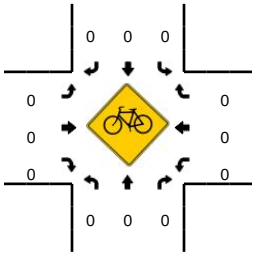
Peak-Hour: 7:45 AM -- 8:45 AM

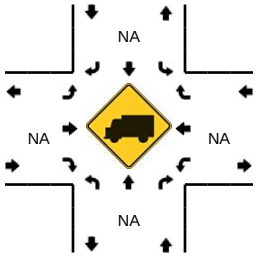
Peak 15-Min: 8:10 AM -- 8:25 AM

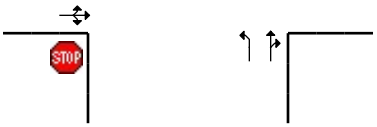


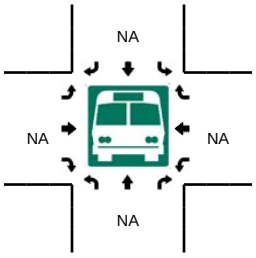












5-Min Count Period Beginning At	Cabrillo Hwy (Hwy 1) (Northbound)				Cabrillo Hwy (Hwy 1) (Southbound)				Vallemar St/Etheldore St (Eastbound)				Vallemar St/Etheldore St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	49	0	0	1	21	1	0	0	0	1	0	0	0	4	0	78	
7:05 AM	0	53	0	0	0	25	0	0	0	0	1	0	0	0	2	0	81	
7:10 AM	0	44	0	0	0	30	0	0	0	0	0	0	2	0	0	0	76	
7:15 AM	0	49	1	0	1	25	0	0	0	0	0	0	0	0	5	0	81	
7:20 AM	0	55	0	0	0	29	0	0	3	0	0	0	1	0	4	0	92	
7:25 AM	0	42	0	0	0	24	0	0	0	0	1	0	0	0	2	0	69	
7:30 AM	0	50	0	0	2	27	1	0	1	0	2	0	1	0	2	0	86	
7:35 AM	0	48	0	0	0	29	0	0	0	0	1	0	0	0	3	0	81	
7:40 AM	1	52	0	0	0	43	0	0	1	0	0	0	0	0	4	0	101	
7:45 AM	0	53	2	0	0	50	0	0	2	0	0	0	0	0	2	0	109	
7:50 AM	0	51	0	0	1	47	0	0	0	0	0	0	0	0	2	0	101	
7:55 AM	0	43	1	0	1	41	0	0	0	0	1	0	0	0	2	0	89	1044
8:00 AM	0	49	0	0	0	26	0	0	0	0	0	0	0	0	1	0	76	1042
8:05 AM	0	40	0	0	1	34	0	0	0	0	1	0	0	0	0	0	76	1037
8:10 AM	1	51	0	0	2	43	0	0	0	0	0	0	1	0	4	0	102	1063
8:15 AM	1	58	0	0	2	46	0	0	0	0	0	0	0	0	5	0	112	1094
8:20 AM	1	68	0	0	2	38	0	0	1	0	0	0	0	0	3	0	113	1115
8:25 AM	0	49	1	0	0	41	0	0	0	0	1	0	1	0	1	0	94	1140
8:30 AM	0	34	0	0	1	46	0	0	0	0	0	0	0	0	1	0	82	1136
8:35 AM	0	48	0	0	0	65	0	0	0	0	2	0	0	0	1	0	116	1171
8:40 AM	1	48	0	0	0	53	0	0	0	0	0	0	0	0	4	0	106	1176
8:45 AM	0	31	0	0	1	43	0	0	1	0	1	0	0	0	1	0	78	1145
8:50 AM	0	43	0	0	1	34	1	0	0	0	0	0	0	0	1	0	80	1124
8:55 AM	0	32	0	0	0	44	0	0	0	0	1	0	0	0	3	0	80	1115

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	708	0	0	24	508	0	0	4	0	0	0	4	0	48	0	1308
Heavy Trucks	0	40	0		0	12	0		0	0	0		0	0	0		52
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/1/2017 4:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

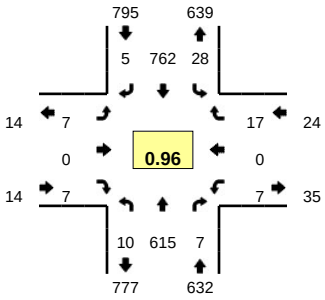
Method for determining peak hour: Total Entering Volume

LOCATION: Cabrillo Hwy (Hwy 1) -- Vallemar St/Etheldore St

QC JOB #: 14384629

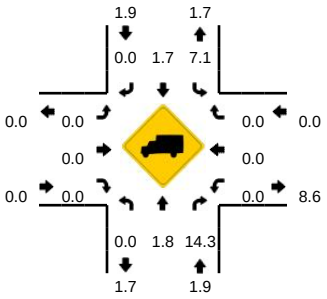
CITY/STATE: San Mateo, CA

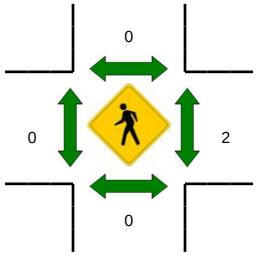
DATE: Thu, Apr 20 2017

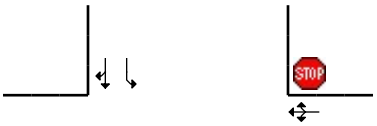


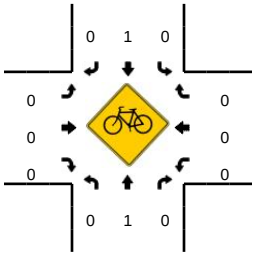
Peak-Hour: 4:45 PM -- 5:45 PM

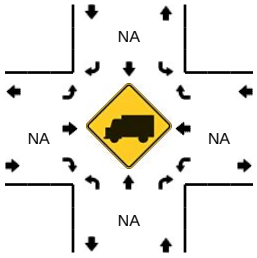
Peak 15-Min: 4:50 PM -- 5:05 PM

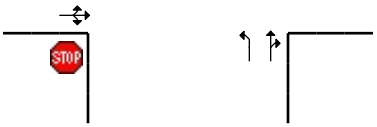


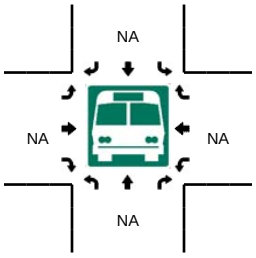












5-Min Count Period Beginning At	Cabrillo Hwy (Hwy 1) (Northbound)				Cabrillo Hwy (Hwy 1) (Southbound)				Vallemar St/Etheldore St (Eastbound)				Vallemar St/Etheldore St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	20	0	0	0	30	0	0	0	0	0	0	0	0	0	0	50	
4:05 PM	1	53	0	0	3	67	0	0	0	0	0	0	0	0	1	0	125	
4:10 PM	1	50	1	0	2	53	0	0	0	0	0	0	0	0	2	0	109	
4:15 PM	0	53	1	0	2	62	0	0	0	0	0	0	0	0	2	0	120	
4:20 PM	0	56	1	0	0	54	0	0	0	0	1	0	1	0	0	0	113	
4:25 PM	0	54	2	0	4	65	1	0	0	0	0	0	0	0	1	0	127	
4:30 PM	0	50	2	0	1	45	1	0	0	0	0	0	0	1	1	0	101	
4:35 PM	0	52	0	0	1	57	1	0	0	0	2	0	0	0	1	0	114	
4:40 PM	0	44	1	0	2	66	0	0	0	0	0	0	0	0	0	0	113	
4:45 PM	2	51	0	0	4	62	0	0	0	0	1	0	1	0	2	0	123	
4:50 PM	1	47	1	0	3	56	1	0	0	0	1	0	1	0	2	0	113	
4:55 PM	2	44	1	1	4	75	0	0	1	0	0	0	1	0	2	0	131	1339
5:00 PM	1	62	0	0	0	69	0	0	0	0	1	0	0	0	6	0	139	1428
5:05 PM	0	53	2	0	1	51	1	0	0	0	0	0	0	0	0	0	108	1411
5:10 PM	0	47	1	0	2	68	0	0	0	0	1	0	0	0	0	0	119	1421
5:15 PM	1	52	0	0	5	61	0	0	2	0	1	0	1	0	1	0	124	1425
5:20 PM	1	51	0	0	1	52	1	0	2	0	0	0	1	0	1	0	110	1422
5:25 PM	0	49	0	0	4	78	1	0	0	0	1	0	1	0	1	0	135	1430
5:30 PM	1	49	0	0	2	55	0	0	0	0	0	0	0	0	0	0	107	1436
5:35 PM	0	58	2	0	1	73	0	0	1	0	1	0	1	0	1	0	138	1460
5:40 PM	0	52	0	0	1	62	1	0	1	0	0	0	0	0	1	0	118	1465
5:45 PM	0	37	1	0	3	45	0	0	0	0	0	0	0	0	2	0	88	1430
5:50 PM	0	49	0	0	4	53	0	0	1	0	0	0	0	0	2	0	109	1426
5:55 PM	0	62	0	0	2	71	0	0	0	0	0	0	0	0	0	0	135	1430

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	612	8	4	28	800	4	0	4	0	8	0	8	0	40	0	1532
Heavy Trucks	0	24	0		0	12	0		0	0	0		0	0	0		36
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/1/2017 4:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

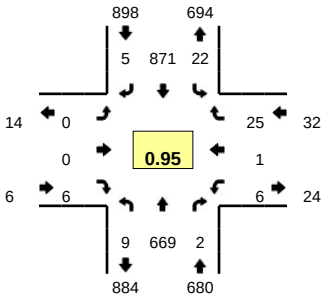
Method for determining peak hour: Total Entering Volume

LOCATION: Cabrillo Hwy(Hwy 1) -- Vallemar St/Etheldore St

QC JOB #: 14384630

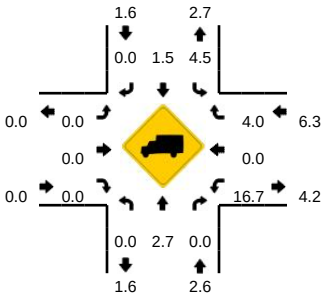
CITY/STATE: San Mateo, CA

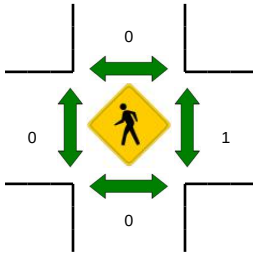
DATE: Sat, Apr 22 2017

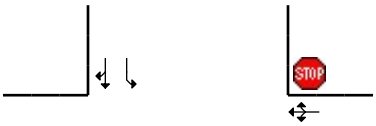


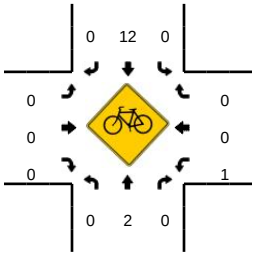
Peak-Hour: 11:55 AM -- 12:55 PM

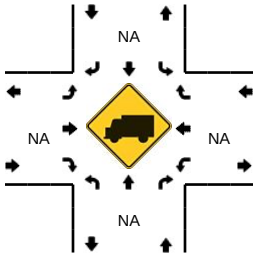
Peak 15-Min: 12:15 PM -- 12:30 PM

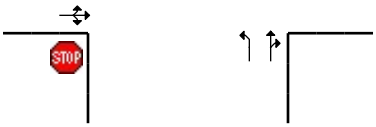


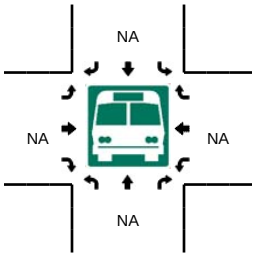












5-Min Count Period Beginning At	Cabrillo Hwy(Hwy 1) (Northbound)				Cabrillo Hwy(Hwy 1) (Southbound)				Vallemar St/Etheldore St (Eastbound)				Vallemar St/Etheldore St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	1	50	0	0	2	58	2	0	0	0	2	0	1	1	1	0	118	
11:05 AM	0	59	0	0	0	80	0	0	0	0	0	0	2	0	3	0	144	
11:10 AM	0	51	0	0	2	73	0	0	0	0	0	0	2	0	2	0	130	
11:15 AM	0	56	1	0	0	63	0	0	0	0	1	0	1	0	3	0	125	
11:20 AM	1	47	0	0	2	83	0	0	0	0	0	0	0	0	2	0	135	
11:25 AM	1	65	0	0	2	61	0	0	2	0	0	0	1	0	3	0	135	
11:30 AM	1	38	0	0	3	77	1	0	0	0	1	0	1	0	2	0	124	
11:35 AM	0	52	0	0	1	78	0	0	0	0	0	0	0	0	0	0	131	
11:40 AM	0	39	3	0	1	74	0	0	0	0	1	0	0	0	1	0	119	
11:45 AM	0	39	0	0	2	81	0	0	0	0	0	0	0	0	5	0	127	
11:50 AM	0	39	1	0	3	69	0	0	0	1	0	0	0	0	2	0	115	
11:55 AM	0	46	0	0	3	74	0	0	0	0	0	0	1	0	2	0	126	1529
12:00 PM	1	64	0	0	2	88	0	0	0	0	0	0	1	0	2	0	158	1569
12:05 PM	1	41	0	0	2	81	0	0	0	0	0	0	1	0	2	0	128	1553
12:10 PM	1	64	0	0	3	64	0	0	0	0	1	0	0	0	2	0	135	1558
12:15 PM	0	56	1	0	1	76	1	0	0	0	0	0	0	0	2	0	137	1570
12:20 PM	2	59	0	0	1	77	0	0	0	0	1	0	1	0	3	0	144	1579
12:25 PM	1	50	0	1	2	89	0	0	0	0	1	0	0	0	0	0	144	1588
12:30 PM	0	68	0	0	0	47	0	0	0	0	0	0	0	0	2	0	117	1581
12:35 PM	0	48	0	0	1	68	0	0	0	0	0	0	0	0	2	0	119	1569
12:40 PM	0	49	0	0	2	76	3	0	0	0	0	0	1	0	2	0	133	1583
12:45 PM	2	67	0	0	0	61	0	0	0	0	2	0	1	0	2	0	135	1591
12:50 PM	0	57	1	0	5	70	1	0	0	0	1	0	0	1	4	0	140	1616
12:55 PM	0	55	0	0	0	57	0	0	0	0	1	0	0	1	0	0	114	1604

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	660	4	4	16	968	4	0	0	0	8	0	4	0	20	0	1700
Heavy Trucks	0	24	0		0	16	0		0	0	0		4	0	0		44
Pedestrians		0				0				0				0			0
Bicycles	0	1	0		0	0	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/17/2017 6:04 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

Location: California Ave & Cabrillo Hwy
Date: 4/20/2017
Site Code: 14384625

	Cabrillo Hwy (Hwy 1) Southbound					California Ave Westbound					Cabrillo Hwy (Hwy 1) Northbound					California Ave Eastbound					Wienke Way Southeastbound				
Location:	Right to Wienke Way	Right	Thru	Left	U-Turn	Right	Thru to Wienke Way	Thru	Left	U-Turn	Right	Thru	Left to Wienke Way	Left	U-Turn	Right	Thru	Left	Left to Wienke Way	U-Turn	Right to California Ave	Right to Cabrillo Hwy (Hwy 1)	Thru to California Ave	Left to Cabrillo Hwy (Hwy 1)	U-Turn
7:00 AM	0	0	23	0	0	3	0	0	2	0	0	49	0	0	0	0	0	0	0	0	0	0	0	0	0
7:05 AM	0	0	26	0	0	4	0	0	2	0	0	47	0	0	0	0	0	1	0	0	0	1	0	0	0
7:10 AM	0	0	32	0	0	1	0	0	5	0	1	42	1	0	0	2	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	26	0	0	0	0	0	3	0	0	49	0	0	0	0	0	0	0	0	0	3	0	0	0
7:20 AM	0	0	26	0	0	1	0	0	3	0	0	55	0	1	0	0	0	0	0	0	0	0	0	0	0
7:25 AM	0	0	28	0	0	1	0	0	5	0	0	43	0	0	0	1	0	0	0	0	0	1	0	0	0
7:30 AM	0	0	29	0	0	1	0	0	8	0	3	46	0	0	0	1	0	2	0	0	0	2	0	0	0
7:35 AM	0	0	31	1	0	1	0	0	3	0	1	47	1	0	0	0	0	0	0	0	0	0	0	0	0
7:40 AM	0	0	43	0	0	4	0	0	6	0	0	50	1	1	0	0	0	0	0	0	0	0	1	0	0
7:45 AM	0	0	45	2	0	0	0	0	6	0	2	52	1	0	0	0	0	0	0	0	0	1	0	0	0
7:50 AM	0	0	45	1	0	1	0	0	4	0	1	54	0	0	0	1	0	0	0	0	0	1	0	0	0
7:55 AM	0	1	42	0	0	2	0	0	3	0	2	41	1	0	0	0	0	1	0	0	0	2	0	0	0
8:00 AM	0	0	28	0	0	1	0	0	4	0	1	48	1	0	0	1	0	0	0	0	0	0	0	0	0
8:05 AM	0	0	34	0	0	0	0	0	3	0	1	35	1	0	0	1	0	2	0	0	0	0	0	1	0
8:10 AM	0	0	43	0	0	1	0	0	6	0	4	50	0	1	0	2	0	1	0	0	0	0	0	0	0
8:15 AM	0	0	45	1	0	2	0	0	4	0	1	59	0	0	0	1	0	0	0	0	1	0	0	0	0
8:20 AM	0	0	34	0	0	1	0	0	1	0	0	67	2	1	0	1	0	2	0	0	0	1	0	0	0
8:25 AM	0	1	45	1	0	2	0	0	5	0	1	45	1	0	0	1	0	1	0	0	0	0	0	1	0
8:30 AM	0	0	46	0	0	2	0	0	3	0	1	32	0	0	0	0	0	0	0	0	0	0	0	1	0
8:35 AM	0	0	60	1	0	2	0	0	4	0	3	46	0	2	0	2	0	2	0	0	0	0	0	0	0
8:40 AM	0	3	54	0	0	1	0	0	5	0	4	45	0	0	0	1	0	1	0	0	0	0	0	0	0
8:45 AM	0	0	44	0	0	0	0	0	4	0	1	33	1	1	0	2	0	0	0	0	0	2	0	0	0
8:50 AM	0	1	35	1	0	1	0	0	4	0	0	40	2	1	0	2	0	0	0	0	0	0	0	2	0
8:55 AM	0	0	42	2	0	1	0	0	5	0	2	31	0	0	0	1	0	0	0	0	0	0	0	0	0
Total	**0**	**6**	**906**	**10**	**0**	**33**	**0**	**0**	**98**	**0**	**29**	**1106**	**13**	**8**	**0**	**20**	**0**	**13**	**0**	**0**	**1**	**14**	**1**	**6**	**0**

Peak Hour: 7:45 AM - 8:45 AM
Peak 15: 8:30 AM - 8:45 AM
PHF: 0.929348

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

Location: California Ave & Cabrillo Hwy
Date: 4/20/2017
Site Code: 14384625

	Cabrillo Hwy (Hwy 1) Southbound					California Ave Westbound					Cabrillo Hwy (Hwy 1) Northbound					California Ave Eastbound					Wienke Way Southeastbound				
Location:	Right to Wienke Way	Right	Thru	Left	U-Turn	Right	Thru to Wienke Way	Thru	Left	U-Turn	Right	Thru	Left to Wienke Way	Left	U-Turn	Right	Thru	Left	Left to Wienke Way	U-Turn	Right to California Ave	Right to Cabrillo Hwy (Hwy 1)	Thru to California Ave	Left to Cabrillo Hwy (Hwy 1)	U-Turn
7:00 AM	0	0	20	0	0	3	0	0	2	0	0	47	0	0	0	0	0	0	0	0	0	0	0	0	0
7:05 AM	0	0	24	0	0	4	0	0	2	0	0	45	0	0	0	0	0	1	0	0	0	1	0	0	0
7:10 AM	0	0	32	0	0	1	0	0	5	0	1	39	1	0	0	2	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	24	0	0	0	0	0	3	0	0	49	0	0	0	0	0	0	0	0	0	3	0	0	0
7:20 AM	0	0	25	0	0	1	0	0	3	0	0	51	0	1	0	0	0	0	0	0	0	0	0	0	0
7:25 AM	0	0	27	0	0	1	0	0	5	0	0	42	0	0	0	1	0	0	0	0	0	1	0	0	0
7:30 AM	0	0	28	0	0	1	0	0	8	0	3	45	0	0	0	1	0	2	0	0	0	2	0	0	0
7:35 AM	0	0	30	1	0	1	0	0	3	0	1	42	1	0	0	0	0	0	0	0	0	0	0	0	0
7:40 AM	0	0	43	0	0	3	0	0	6	0	0	49	1	1	0	0	0	0	0	0	0	0	1	0	0
7:45 AM	0	0	43	2	0	0	0	0	6	0	2	46	1	0	0	0	0	0	0	0	0	1	0	0	0
7:50 AM	0	0	45	1	0	1	0	0	4	0	1	47	0	0	0	1	0	0	0	0	0	1	0	0	0
7:55 AM	0	1	41	0	0	2	0	0	3	0	2	37	1	0	0	0	0	1	0	0	0	2	0	0	0
8:00 AM	0	0	28	0	0	1	0	0	4	0	1	45	1	0	0	1	0	0	0	0	0	0	0	0	0
8:05 AM	0	0	34	0	0	0	0	0	3	0	1	30	1	0	0	1	0	2	0	0	0	0	0	1	0
8:10 AM	0	0	43	0	0	1	0	0	6	0	4	45	0	1	0	2	0	1	0	0	0	0	0	0	0
8:15 AM	0	0	43	1	0	2	0	0	4	0	1	56	0	0	0	1	0	0	0	0	1	0	0	0	0
8:20 AM	0	0	34	0	0	1	0	0	1	0	0	61	2	1	0	1	0	2	0	0	0	1	0	0	0
8:25 AM	0	1	40	1	0	2	0	0	5	0	1	42	1	0	0	1	0	1	0	0	0	0	0	1	0
8:30 AM	0	0	40	0	0	2	0	0	3	0	1	31	0	0	0	0	0	0	0	0	0	0	0	1	0
8:35 AM	0	0	57	1	0	2	0	0	4	0	3	45	0	2	0	2	0	2	0	0	0	0	0	0	0
8:40 AM	0	3	52	0	0	1	0	0	5	0	4	43	0	0	0	1	0	1	0	0	0	0	0	0	0
8:45 AM	0	0	42	0	0	0	0	0	4	0	1	31	1	1	0	2	0	0	0	0	0	2	0	0	0
8:50 AM	0	1	32	1	0	1	0	0	4	0	0	40	2	1	0	2	0	0	0	0	0	0	0	2	0
8:55 AM	0	0	41	2	0	1	0	0	5	0	2	29	0	0	0	1	0	0	0	0	0	0	0	0	0
Total	**0**	**6**	**868**	**10**	**0**	**32**	**0**	**0**	**98**	**0**	**29**	**1037**	**13**	**8**	**0**	**20**	**0**	**13**	**0**	**0**	**1**	**14**	**1**	**6**	**0**

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

Location: California Ave & Cabrillo Hwy
Date: 4/20/2017
Site Code: 14384625

	Cabrillo Hwy (Hwy 1) Southbound					California Ave Westbound					Cabrillo Hwy (Hwy 1) Northbound					California Ave Eastbound					Wienke Way Southeastbound				
Location:	Right to Wienke Way	Right	Thru	Left		Right	Thru to Wienke Way	Thru	Left		Right	Thru	Left to Wienke Way	Left		Right	Thru	Left	Left to Wienke Way		Right to California Ave	Right to Cabrillo Hwy (Hwy 1)	Thru to California Ave	Left to Cabrillo Hwy (Hwy 1)	
7:00 AM	0	0	3	0		0	0	0	0		0	2	0	0		0	0	0	0		0	0	0	0	
7:05 AM	0	0	2	0		0	0	0	0		0	2	0	0		0	0	0	0		0	0	0	0	
7:10 AM	0	0	0	0		0	0	0	0		0	3	0	0		0	0	0	0		0	0	0	0	
7:15 AM	0	0	2	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0	
7:20 AM	0	0	1	0		0	0	0	0		0	4	0	0		0	0	0	0		0	0	0	0	
7:25 AM	0	0	1	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
7:30 AM	0	0	1	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
7:35 AM	0	0	1	0		0	0	0	0		0	5	0	0		0	0	0	0		0	0	0	0	
7:40 AM	0	0	0	0		1	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
7:45 AM	0	0	2	0		0	0	0	0		0	6	0	0		0	0	0	0		0	0	0	0	
7:50 AM	0	0	0	0		0	0	0	0		0	7	0	0		0	0	0	0		0	0	0	0	
7:55 AM	0	0	1	0		0	0	0	0		0	4	0	0		0	0	0	0		0	0	0	0	
8:00 AM	0	0	0	0		0	0	0	0		0	3	0	0		0	0	0	0		0	0	0	0	
8:05 AM	0	0	0	0		0	0	0	0		0	5	0	0		0	0	0	0		0	0	0	0	
8:10 AM	0	0	0	0		0	0	0	0		0	5	0	0		0	0	0	0		0	0	0	0	
8:15 AM	0	0	2	0		0	0	0	0		0	3	0	0		0	0	0	0		0	0	0	0	
8:20 AM	0	0	0	0		0	0	0	0		0	6	0	0		0	0	0	0		0	0	0	0	
8:25 AM	0	0	5	0		0	0	0	0		0	3	0	0		0	0	0	0		0	0	0	0	
8:30 AM	0	0	6	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
8:35 AM	0	0	3	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
8:40 AM	0	0	2	0		0	0	0	0		0	2	0	0		0	0	0	0		0	0	0	0	
8:45 AM	0	0	2	0		0	0	0	0		0	2	0	0		0	0	0	0		0	0	0	0	
8:50 AM	0	0	3	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0	
8:55 AM	0	0	1	0		0	0	0	0		0	2	0	0		0	0	0	0		0	0	0	0	
Total	**0**	**0**	**38**	**0**		**1**	**0**	**0**	**0**		**0**	**69**	**0**	**0**		**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0**	

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

Location: California Ave & Cabrillo Hwy
Date: 4/20/2017
Site Code: 14384625

	Cabrillo Hwy (Hwy 1) Southbound					California Ave Westbound					Cabrillo Hwy (Hwy 1) Northbound					California Ave Eastbound					Wienke Way Southeastbound				
Location:	Right to Wienke Way	Right	Thru	Left	Peds	Right	Thru to Wienke Way	Thru	Left	Peds	Right	Thru	Left to Wienke Way	Left	Peds	Right	Thru	Left	Left to Wienke Way	Peds	Right to California Ave	Right to Cabrillo Hwy (Hwy 1)	Thru to California Ave	Left to Cabrillo Hwy (Hwy 1)	Peds
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0
7:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
7:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
8:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0
8:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
8:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0
8:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0
8:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
8:50 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
8:55 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Total	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**20**	**0**	**13**	**0**	**1**	**0**	**0**	**0**	**0**	**1**

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

Location: California Ave & Cabrillo Hwy
Date: 4/20/2017
Site Code: 14384626

	Cabrillo Hwy (Hwy 1) Southbound					California Ave Westbound					Cabrillo Hwy (Hwy 1) Northbound					California Ave Eastbound					Wienke Way Southeastbound				
Location:	Right to Wienke Way	Right	Thru	Left	U-Turn	Right	Thru to Wienke Way	Thru	Left	U-Turn	Right	Thru	Left to Wienke Way	Left	U-Turn	Right	Thru	Left	Left to Wienke Way	U-Turn	Right to California Ave	Right to Cabrillo Hwy (Hwy 1)	Thru to California Ave	Left to Cabrillo Hwy (Hwy 1)	U-Turn
4:00 PM	0	0	68	4	0	1	0	0	4	0	5	51	1	1	0	0	0	3	0	0	0	0	0	0	0
4:05 PM	0	0	64	0	0	0	0	0	1	0	3	53	3	0	0	0	0	0	0	0	0	0	0	0	0
4:10 PM	0	0	52	1	0	3	0	0	2	0	5	51	0	1	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	1	0	57	2	0	0	0	0	1	0	3	54	0	1	0	4	1	0	0	0	0	0	0	0	0
4:20 PM	0	1	56	1	0	1	0	0	2	0	4	55	1	3	0	1	0	1	0	0	1	1	0	0	0
4:25 PM	1	0	61	0	0	3	0	0	4	0	1	53	0	3	0	0	0	1	0	0	0	0	0	0	0
4:30 PM	0	1	47	1	0	1	0	0	3	0	5	49	1	1	0	1	0	1	0	0	0	2	0	2	0
4:35 PM	0	0	57	1	0	0	0	0	3	0	3	53	0	1	0	0	0	0	0	0	0	1	0	0	0
4:40 PM	0	0	63	0	0	1	0	0	1	0	3	44	1	0	0	0	0	0	0	0	0	1	0	0	0
4:45 PM	0	1	63	1	0	2	0	0	3	0	4	48	1	1	0	0	0	0	0	0	0	0	0	0	0
4:50 PM	0	2	60	3	0	1	0	0	6	0	4	47	0	0	0	0	0	0	0	0	0	0	0	1	0
4:55 PM	1	0	62	3	0	1	0	0	0	0	8	45	0	0	0	0	0	1	0	0	1	0	0	0	0
5:00 PM	0	0	68	2	0	1	0	0	1	0	1	60	1	0	0	0	0	0	0	0	0	0	0	0	0
5:05 PM	0	0	55	1	0	2	0	0	2	0	2	54	0	0	0	1	0	0	0	0	0	0	0	0	0
5:10 PM	0	0	71	0	0	0	0	0	2	0	1	46	2	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	58	2	0	2	0	0	4	0	4	53	0	2	0	1	0	0	0	0	0	0	0	0	0
5:20 PM	0	3	52	1	0	3	0	0	5	0	4	48	0	0	0	0	0	0	0	0	0	0	0	0	0
5:25 PM	0	0	72	2	0	0	0	0	3	0	1	50	0	1	0	1	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	59	0	0	0	1	0	1	0	3	48	1	1	0	0	0	1	0	0	0	0	0	0	0
5:35 PM	0	2	77	2	0	0	0	0	0	0	1	62	1	0	0	0	0	0	0	0	0	1	0	0	0
5:40 PM	0	1	59	0	0	0	0	0	5	0	9	51	1	0	0	0	0	1	0	0	0	0	0	0	0
5:45 PM	0	0	45	0	0	0	0	1	2	0	9	37	1	0	0	0	0	2	0	0	1	1	0	0	0
5:50 PM	0	0	50	0	0	0	0	0	4	0	3	48	0	0	0	0	0	0	0	0	0	0	0	0	0
5:55 PM	0	0	69	0	0	1	0	0	2	0	3	59	1	0	0	0	0	0	0	0	1	1	0	0	0
Total	**3**	**12**	**1445**	**27**	**0**	**23**	**1**	**1**	**61**	**0**	**89**	**1219**	**16**	**16**	**0**	**9**	**1**	**11**	**0**	**0**	**4**	**8**	**0**	**3**	**0**

Peak Hour: 4:45 PM - 5:45 PM
Peak 15: 5:30 PM - 5:45 PM
PHF: 0.907609

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

Location: California Ave & Cabrillo Hwy
Date: 4/20/2017
Site Code: 14384626

	Cabrillo Hwy (Hwy 1) Southbound					California Ave Westbound					Cabrillo Hwy (Hwy 1) Northbound					California Ave Eastbound					Wienke Way Southeastbound				
Location:	Right to Wienke Way	Right	Thru	Left	U-Turn	Right	Thru to Wienke Way	Thru	Left	U-Turn	Right	Thru	Left to Wienke Way	Left	U-Turn	Right	Thru	Left	Left to Wienke Way	U-Turn	Right to California Ave	Right to Cabrillo Hwy (Hwy 1)	Thru to California Ave	Left to Cabrillo Hwy (Hwy 1)	U-Turn
4:00 PM	0	0	67	4	0	1	0	0	4	0	5	50	1	1	0	0	0	3	0	0	0	0	0	0	0
4:05 PM	0	0	61	0	0	0	0	0	1	0	3	51	3	0	0	0	0	0	0	0	0	0	0	0	0
4:10 PM	0	0	49	1	0	3	0	0	2	0	5	50	0	1	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	1	0	57	2	0	0	0	0	1	0	3	53	0	1	0	4	1	0	0	0	0	0	0	0	0
4:20 PM	0	1	53	1	0	1	0	0	2	0	4	52	1	3	0	1	0	1	0	0	0	1	0	0	0
4:25 PM	1	0	61	0	0	3	0	0	4	0	1	52	0	3	0	0	0	1	0	0	0	0	0	0	0
4:30 PM	0	1	45	1	0	1	0	0	3	0	5	49	1	1	0	1	0	1	0	0	0	2	0	2	0
4:35 PM	0	0	53	1	0	0	0	0	3	0	3	52	0	1	0	0	0	0	0	0	0	1	0	0	0
4:40 PM	0	0	62	0	0	1	0	0	1	0	3	41	1	0	0	0	0	0	0	0	0	1	0	0	0
4:45 PM	0	1	61	1	0	2	0	0	3	0	4	47	1	1	0	0	0	0	0	0	0	0	0	0	0
4:50 PM	0	2	58	3	0	1	0	0	6	0	4	44	0	0	0	0	0	0	0	0	0	0	0	1	0
4:55 PM	1	0	62	3	0	1	0	0	0	0	7	45	0	0	0	0	0	1	0	0	1	0	0	0	0
5:00 PM	0	0	65	2	0	1	0	0	1	0	1	57	1	0	0	0	0	0	0	0	0	0	0	0	0
5:05 PM	0	0	55	1	0	2	0	0	2	0	2	52	0	0	0	1	0	0	0	0	0	0	0	0	0
5:10 PM	0	0	70	0	0	0	0	0	2	0	1	45	2	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	58	2	0	2	0	0	4	0	4	53	0	2	0	1	0	0	0	0	0	0	0	0	0
5:20 PM	0	3	51	1	0	3	0	0	5	0	4	47	0	0	0	0	0	0	0	0	0	0	0	0	0
5:25 PM	0	0	70	2	0	0	0	0	2	0	1	49	0	1	0	1	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	58	0	0	0	1	0	0	0	3	48	1	1	0	0	0	1	0	0	0	0	0	0	0
5:35 PM	0	2	76	2	0	0	0	0	0	0	1	62	1	0	0	0	0	0	0	0	0	1	0	0	0
5:40 PM	0	1	57	0	0	0	0	0	5	0	9	51	1	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	45	0	0	0	0	1	2	0	9	36	1	0	0	0	0	2	0	0	1	1	0	0	0
5:50 PM	0	0	50	0	0	0	0	0	4	0	3	47	0	0	0	0	0	0	0	0	0	0	0	0	0
5:55 PM	0	0	69	0	0	1	0	0	2	0	3	59	1	0	0	0	0	0	0	0	1	1	0	0	0
Total	**3**	**12**	**1413**	**27**	**0**	**23**	**1**	**1**	**59**	**0**	**88**	**1192**	**16**	**16**	**0**	**9**	**1**	**10**	**0**	**0**	**3**	**8**	**0**	**3**	**0**

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

Location: California Ave & Cabrillo Hwy
Date: 4/20/2017
Site Code: 14384626

	Cabrillo Hwy (Hwy 1) Southbound					California Ave Westbound					Cabrillo Hwy (Hwy 1) Northbound					California Ave Eastbound					Wienke Way Southeastbound				
Location:	Right to Wienke Way	Right	Thru	Left		Right	Thru to Wienke Way	Thru	Left		Right	Thru	Left to Wienke Way	Left		Right	Thru	Left	Left to Wienke Way		Right to California Ave	Right to Cabrillo Hwy (Hwy 1)	Thru to California Ave	Left to Cabrillo Hwy (Hwy 1)	
4:00 PM	0	0	1	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
4:05 PM	0	0	3	0		0	0	0	0		0	2	0	0		0	0	0	0		0	0	0	0	
4:10 PM	0	0	3	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
4:15 PM	0	0	0	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
4:20 PM	0	0	3	0		0	0	0	0		0	3	0	0		0	0	0	0		1	0	0	0	
4:25 PM	0	0	0	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
4:30 PM	0	0	2	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0	
4:35 PM	0	0	4	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
4:40 PM	0	0	1	0		0	0	0	0		0	3	0	0		0	0	0	0		0	0	0	0	
4:45 PM	0	0	2	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
4:50 PM	0	0	2	0		0	0	0	0		0	3	0	0		0	0	0	0		0	0	0	0	
4:55 PM	0	0	0	0		0	0	0	0		1	0	0	0		0	0	0	0		0	0	0	0	
5:00 PM	0	0	3	0		0	0	0	0		0	3	0	0		0	0	0	0		0	0	0	0	
5:05 PM	0	0	0	0		0	0	0	0		0	2	0	0		0	0	0	0		0	0	0	0	
5:10 PM	0	0	1	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
5:15 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0	
5:20 PM	0	0	1	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
5:25 PM	0	0	2	0		0	0	0	1		0	1	0	0		0	0	0	0		0	0	0	0	
5:30 PM	0	0	1	0		0	0	0	1		0	0	0	0		0	0	0	0		0	0	0	0	
5:35 PM	0	0	1	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0	
5:40 PM	0	0	2	0		0	0	0	0		0	0	0	0		0	0	1	0		0	0	0	0	
5:45 PM	0	0	0	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
5:50 PM	0	0	0	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
5:55 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0	
Total	**0**	**0**	**32**	**0**		**0**	**0**	**0**	**2**		**1**	**27**	**0**	**0**		**0**	**0**	**1**	**0**		**1**	**0**	**0**	**0**	

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

Location: California Ave & Cabrillo Hwy
Date: 4/20/2017
Site Code: 14384626

	Cabrillo Hwy (Hwy 1) Southbound					California Ave Westbound					Cabrillo Hwy (Hwy 1) Northbound					California Ave Eastbound					Wienke Way Southeastbound				
Location:	Right to Wienke Way	Right	Thru	Left	Peds	Right	Thru to Wienke Way	Thru	Left	Peds	Right	Thru	Left to Wienke Way	Left	Peds	Right	Thru	Left	Left to Wienke Way	Peds	Right to California Ave	Right to Cabrillo Hwy (Hwy 1)	Thru to California Ave	Left to Cabrillo Hwy (Hwy 1)	Peds
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:10 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
4:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
4:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0
5:50 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

Location: California Ave & Cabrillo Hwy
Date: 4/22/2017
Site Code: 14384627

	Cabrillo Hwy (Hwy 1) Southbound					California Ave Westbound					Cabrillo Hwy (Hwy 1) Northbound					California Ave Eastbound					Wienke Way Southeastbound				
Location:	Right to Wienke Way	Right	Thru	Left	U-Turn	Right	Thru to Wienke Way	Thru	Left	U-Turn	Right	Thru	Left to Wienke Way	Left	U-Turn	Right	Thru	Left	Left to Wienke Way	U-Turn	Right to California Ave	Right to Cabrillo Hwy (Hwy 1)	Thru to California Ave	Left to Cabrillo Hwy (Hwy 1)	U-Turn
11:00 AM	1	0	66	0	0	1	0	1	1	0	2	49	1	1	0	1	0	1	0	0	1	0	0	0	0
11:05 AM	1	2	76	1	0	1	0	1	3	0	3	53	0	2	0	0	1	0	0	0	1	2	0	0	0
11:10 AM	0	0	74	1	0	4	0	0	3	0	3	47	0	0	0	1	0	1	0	0	0	0	0	0	0
11:15 AM	0	0	64	1	0	1	0	0	0	0	6	58	0	4	0	2	1	1	0	0	0	0	1	0	0
11:20 AM	0	0	83	1	0	1	0	0	1	0	3	46	1	1	0	1	0	1	0	0	0	1	0	0	0
11:25 AM	1	0	59	0	0	1	0	0	2	0	4	64	0	2	0	0	0	2	0	0	0	1	0	0	0
11:30 AM	0	1	79	1	0	3	0	0	1	0	4	31	1	1	0	2	0	0	0	0	0	1	0	0	0
11:35 AM	1	0	75	0	0	1	0	0	6	0	5	52	0	0	0	2	0	1	0	0	1	2	0	0	0
11:40 AM	0	0	75	1	0	0	0	0	4	0	9	40	1	2	0	2	0	1	1	0	0	1	0	0	0
11:45 AM	0	0	79	0	0	1	0	0	3	0	4	38	0	0	0	2	0	0	0	0	0	1	0	0	0
11:50 AM	0	0	70	1	0	0	0	0	0	0	4	40	0	1	0	0	0	0	0	0	0	1	0	0	0
11:55 AM	0	1	73	1	0	2	1	1	2	0	2	48	1	1	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	87	0	0	5	0	0	1	0	3	54	0	0	0	4	0	1	0	0	0	2	0	1	0
12:05 PM	1	0	82	1	0	2	0	0	3	0	4	40	0	0	0	0	0	0	0	0	0	0	0	0	0
12:10 PM	1	1	67	0	0	1	0	1	1	0	1	63	0	4	0	2	0	1	0	0	0	2	0	0	0
12:15 PM	0	1	70	1	0	2	0	0	2	0	0	57	0	4	1	2	0	0	0	0	0	0	0	0	0
12:20 PM	0	0	76	0	0	0	0	0	1	0	3	61	0	3	0	3	0	0	1	0	0	0	0	0	0
12:25 PM	1	1	91	1	0	1	0	0	4	0	4	51	0	3	0	1	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	51	0	0	1	0	0	1	0	2	65	1	3	0	1	0	1	0	0	0	1	0	0	0
12:35 PM	0	0	69	0	0	1	0	0	1	0	5	46	0	3	0	1	2	1	0	0	0	0	1	0	0
12:40 PM	0	1	69	0	0	2	0	1	5	0	4	47	0	3	0	3	0	0	0	0	0	2	0	2	0
12:45 PM	0	1	65	1	0	5	0	0	1	0	5	62	0	4	1	1	1	0	0	0	0	0	0	0	0
12:50 PM	2	1	64	1	0	0	0	0	1	0	3	58	0	0	0	3	0	1	0	0	0	0	0	0	0
12:55 PM	0	0	61	1	0	1	0	0	0	0	2	53	1	0	0	0	0	0	0	0	0	1	0	0	0
Total	**9**	**10**	**1725**	**14**	**0**	**37**	**1**	**5**	**47**	**0**	**85**	**1223**	**7**	**42**	**2**	**34**	**5**	**13**	**2**	**0**	**3**	**18**	**2**	**3**	**0**

Peak Hour: 11:55 AM - 12:55 PM
Peak 15: 12:40 PM - 12:55 PM
PHF: 0.952381

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

Location: California Ave & Cabrillo Hwy
Date: 4/22/2017
Site Code: 14384627

	Cabrillo Hwy (Hwy 1) Southbound					California Ave Westbound					Cabrillo Hwy (Hwy 1) Northbound					California Ave Eastbound					Wienke Way Southeastbound				
Location:	Right to Wienke Way	Right	Thru	Left	U-Turn	Right	Thru to Wienke Way	Thru	Left	U-Turn	Right	Thru	Left to Wienke Way	Left	U-Turn	Right	Thru	Left	Left to Wienke Way	U-Turn	Right to California Ave	Right to Cabrillo Hwy (Hwy 1)	Thru to California Ave	Left to Cabrillo Hwy (Hwy 1)	U-Turn
11:00 AM	1	0	64	0	0	1	0	1	1	0	2	49	1	1	0	1	0	1	0	0	1	0	0	0	0
11:05 AM	0	2	76	1	0	1	0	1	3	0	3	53	0	2	0	0	1	0	0	0	0	2	0	0	0
11:10 AM	0	0	72	1	0	4	0	0	3	0	3	45	0	0	0	1	0	1	0	0	0	0	0	0	0
11:15 AM	0	0	63	1	0	1	0	0	0	0	6	57	0	4	0	2	1	1	0	0	0	0	1	0	0
11:20 AM	0	0	82	1	0	1	0	0	1	0	3	45	1	1	0	1	0	1	0	0	0	1	0	0	0
11:25 AM	1	0	59	0	0	1	0	0	2	0	4	63	0	2	0	0	0	2	0	0	0	1	0	0	0
11:30 AM	0	1	77	1	0	3	0	0	1	0	4	31	1	1	0	2	0	0	0	0	0	1	0	0	0
11:35 AM	1	0	72	0	0	1	0	0	6	0	5	51	0	0	0	2	0	1	0	0	1	2	0	0	0
11:40 AM	0	0	75	1	0	0	0	0	4	0	9	40	1	2	0	2	0	1	1	0	0	1	0	0	0
11:45 AM	0	0	79	0	0	1	0	0	3	0	4	37	0	0	0	2	0	0	0	0	0	1	0	0	0
11:50 AM	0	0	66	1	0	0	0	0	0	0	4	39	0	1	0	0	0	0	0	0	0	1	0	0	0
11:55 AM	0	1	73	1	0	2	1	1	2	0	2	47	1	1	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	87	0	0	5	0	0	1	0	3	54	0	0	0	4	0	1	0	0	0	2	0	1	0
12:05 PM	1	0	82	1	0	2	0	0	3	0	4	40	0	0	0	0	0	0	0	0	0	0	0	0	0
12:10 PM	1	1	66	0	0	1	0	1	1	0	1	63	0	4	0	2	0	1	0	0	0	2	0	0	0
12:15 PM	0	1	69	1	0	2	0	0	2	0	0	57	0	4	1	2	0	0	0	0	0	0	0	0	0
12:20 PM	0	0	74	0	0	0	0	0	1	0	3	60	0	3	0	3	0	0	1	0	0	0	0	0	0
12:25 PM	1	1	89	1	0	1	0	0	4	0	4	48	0	3	0	1	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	48	0	0	1	0	0	1	0	2	63	1	3	0	1	0	1	0	0	0	1	0	0	0
12:35 PM	0	0	65	0	0	1	0	0	1	0	5	45	0	3	0	1	2	1	0	0	0	0	1	0	0
12:40 PM	0	1	68	0	0	2	0	1	5	0	4	45	0	3	0	3	0	0	0	0	0	2	0	2	0
12:45 PM	0	1	64	1	0	5	0	0	1	0	5	59	0	4	1	1	1	0	0	0	0	0	0	0	0
12:50 PM	2	1	64	1	0	0	0	0	1	0	3	57	0	0	0	3	0	1	0	0	0	0	0	0	0
12:55 PM	0	0	57	1	0	1	0	0	0	0	2	53	1	0	0	0	0	0	0	0	0	1	0	0	0
Total	**8**	**10**	**1691**	**14**	**0**	**37**	**1**	**5**	**47**	**0**	**85**	**1201**	**7**	**42**	**2**	**34**	**5**	**13**	**2**	**0**	**2**	**18**	**2**	**3**	**0**

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

Location: California Ave & Cabrillo Hwy
Date: 4/22/2017
Site Code: 14384627

	Cabrillo Hwy (Hwy 1) Southbound					California Ave Westbound					Cabrillo Hwy (Hwy 1) Northbound					California Ave Eastbound					Wienke Way Southeastbound				
Location:	Right to Wienke Way	Right	Thru	Left		Right	Thru to Wienke Way	Thru	Left		Right	Thru	Left to Wienke Way	Left		Right	Thru	Left	Left to Wienke Way		Right to California Ave	Right to Cabrillo Hwy (Hwy 1)	Thru to California Ave	Left to Cabrillo Hwy (Hwy 1)	
11:00 AM	0	0	2	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0	
11:05 AM	1	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		1	0	0	0	
11:10 AM	0	0	2	0		0	0	0	0		0	2	0	0		0	0	0	0		0	0	0	0	
11:15 AM	0	0	1	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
11:20 AM	0	0	1	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
11:25 AM	0	0	0	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
11:30 AM	0	0	2	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0	
11:35 AM	0	0	3	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
11:40 AM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0	
11:45 AM	0	0	0	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
11:50 AM	0	0	4	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
11:55 AM	0	0	0	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
12:00 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0	
12:05 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0	
12:10 PM	0	0	1	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0	
12:15 PM	0	0	1	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0	
12:20 PM	0	0	2	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
12:25 PM	0	0	2	0		0	0	0	0		0	3	0	0		0	0	0	0		0	0	0	0	
12:30 PM	0	0	3	0		0	0	0	0		0	2	0	0		0	0	0	0		0	0	0	0	
12:35 PM	0	0	4	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
12:40 PM	0	0	1	0		0	0	0	0		0	2	0	0		0	0	0	0		0	0	0	0	
12:45 PM	0	0	1	0		0	0	0	0		0	3	0	0		0	0	0	0		0	0	0	0	
12:50 PM	0	0	0	0		0	0	0	0		0	1	0	0		0	0	0	0		0	0	0	0	
12:55 PM	0	0	4	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0	
Total	**1**	**0**	**34**	**0**		**0**	**0**	**0**	**0**		**0**	**22**	**0**	**0**		**0**	**0**	**0**	**0**		**1**	**0**	**0**	**0**	

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

Location: California Ave & Cabrillo Hwy
Date: 4/22/2017
Site Code: 14384627

	Cabrillo Hwy (Hwy 1) Southbound					California Ave Westbound					Cabrillo Hwy (Hwy 1) Northbound					California Ave Eastbound					Wienke Way Southeastbound				
Location:	Right to Wienke Way	Right	Thru	Left	Peds	Right	Thru to Wienke Way	Thru	Left	Peds	Right	Thru	Left to Wienke Way	Left	Peds	Right	Thru	Left	Left to Wienke Way	Peds	Right to California Ave	Right to Cabrillo Hwy (Hwy 1)	Thru to California Ave	Left to Cabrillo Hwy (Hwy 1)	Peds
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:05 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
11:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:40 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
11:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:50 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:55 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
12:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
12:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:40 PM	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:55 PM	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	**0**	**0**	**17**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Carlos St -- California Ave

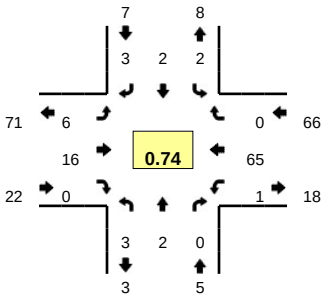
CITY/STATE: San Mateo, CA

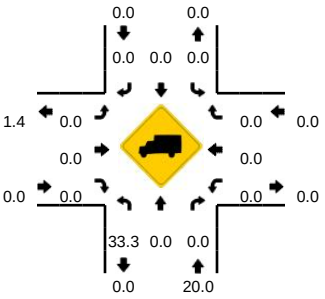
QC JOB #: 14384622

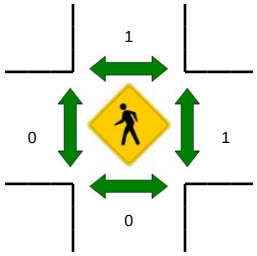
DATE: Thu, Apr 20 2017

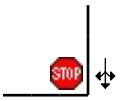
Peak-Hour: 7:25 AM -- 8:25 AM

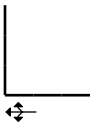
Peak 15-Min: 7:30 AM -- 7:45 AM

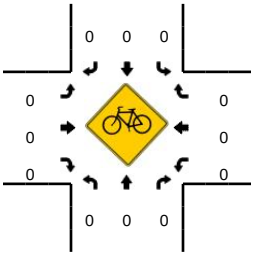


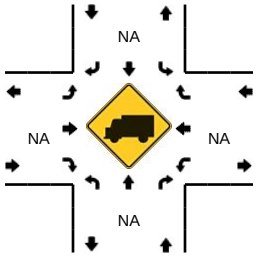


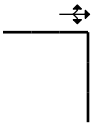


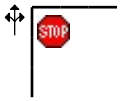


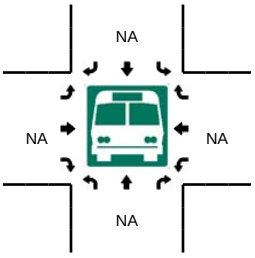












5-Min Count Period Beginning At	Carlos St (Northbound)				Carlos St (Southbound)				California Ave (Eastbound)				California Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	7	
7:10 AM	0	0	0	0	0	0	0	0	1	0	0	0	1	5	0	0	7	
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	3	0	0	4	
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	
7:25 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	6	0	0	7	
7:30 AM	0	0	0	0	1	0	0	0	1	2	0	0	0	9	0	0	13	
7:35 AM	0	1	0	0	0	0	0	0	0	1	0	0	0	5	0	0	7	
7:40 AM	2	0	0	0	0	0	0	0	0	2	0	0	0	10	0	0	14	
7:45 AM	0	0	0	0	1	0	0	0	0	2	0	0	0	5	0	0	8	
7:50 AM	0	0	0	0	0	0	1	0	1	1	0	0	0	3	0	0	6	
7:55 AM	0	1	0	0	0	0	0	0	1	1	0	0	0	4	0	0	7	86
8:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	5	0	0	7	91
8:05 AM	0	0	0	0	0	0	1	0	1	1	0	0	0	5	0	0	8	92
8:10 AM	0	0	0	0	0	0	0	0	0	3	0	0	1	6	0	0	10	95
8:15 AM	1	0	0	0	0	1	0	0	1	1	0	0	0	2	0	0	6	97
8:20 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	5	0	0	7	100
8:25 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	5	0	0	6	99
8:30 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	5	0	0	7	93
8:35 AM	0	1	0	0	0	0	2	0	2	4	0	0	0	5	0	0	14	100
8:40 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	5	0	0	7	93
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	1	0	4	89
8:50 AM	0	0	0	0	0	0	2	0	0	1	0	0	0	5	0	0	8	91
8:55 AM	0	1	0	0	0	0	1	0	2	4	0	0	0	5	1	0	14	98

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	4	0	0	4	0	0	0	4	20	0	0	0	96	0	0	136
Heavy Trucks	4	0	0		0	0	0		0	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/1/2017 4:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

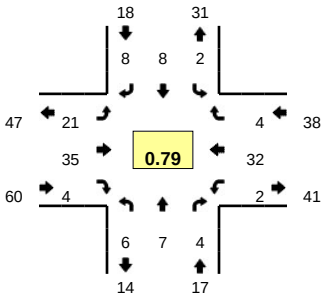
Method for determining peak hour: Total Entering Volume

LOCATION: Carlos St -- California Ave

CITY/STATE: San Mateo, CA

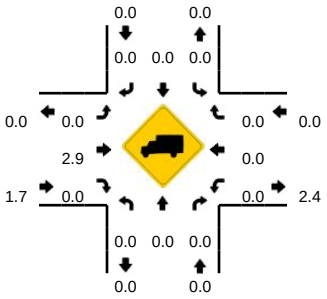
QC JOB #: 14384623

DATE: Thu, Apr 20 2017

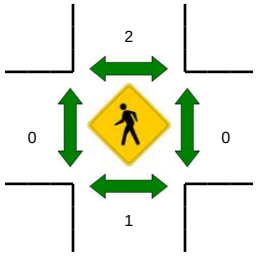


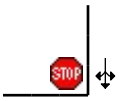
Peak-Hour: 4:00 PM -- 5:00 PM

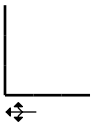
Peak 15-Min: 4:45 PM -- 5:00 PM

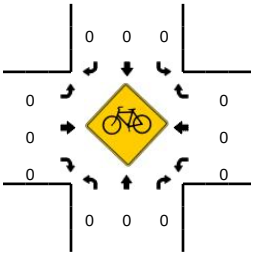


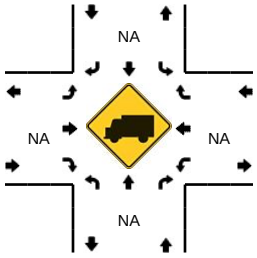


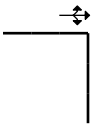


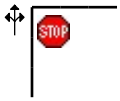


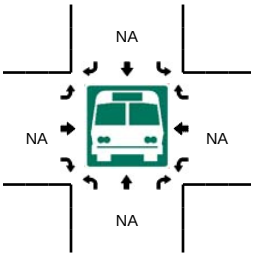












5-Min Count Period Beginning At	Carlos St (Northbound)				Carlos St (Southbound)				California Ave (Eastbound)				California Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	0	0	0	0	1	0	0	0	5	1	0	1	4	0	0	13	
4:05 PM	0	0	0	0	1	0	1	0	4	1	0	0	1	0	0	0	8	
4:10 PM	1	0	1	0	0	0	0	0	3	1	0	0	0	4	0	0	10	
4:15 PM	0	1	1	0	0	2	0	0	3	3	1	0	0	1	0	0	12	
4:20 PM	0	0	0	0	0	0	0	0	1	3	0	0	0	2	0	0	6	
4:25 PM	0	1	0	0	1	0	3	0	0	1	0	0	0	4	0	0	10	
4:30 PM	0	2	1	0	0	2	1	0	2	3	1	0	0	4	1	0	17	
4:35 PM	0	0	0	0	0	0	0	0	1	2	0	0	0	2	0	0	5	
4:40 PM	2	0	0	0	0	1	0	0	1	2	0	0	0	2	2	0	10	
4:45 PM	2	1	0	0	0	0	0	0	0	6	1	1	0	4	0	0	15	
4:50 PM	0	2	1	0	0	0	2	0	1	2	0	0	0	3	0	0	11	
4:55 PM	0	0	0	0	0	2	1	0	4	6	0	0	0	2	1	0	16	133
5:00 PM	2	0	0	0	1	2	0	0	0	1	0	0	0	1	0	0	7	127
5:05 PM	0	0	2	0	0	0	1	0	0	4	0	0	0	2	0	0	9	128
5:10 PM	0	1	0	0	0	0	0	0	1	0	0	0	0	3	0	0	5	123
5:15 PM	0	0	1	0	1	1	2	0	1	5	0	0	0	4	0	0	15	126
5:20 PM	3	0	1	0	0	0	2	0	1	3	0	0	0	3	0	0	13	133
5:25 PM	1	0	0	0	1	0	0	0	0	3	0	0	1	1	0	0	7	130
5:30 PM	0	0	1	0	0	1	1	0	2	1	0	0	0	0	0	0	6	119
5:35 PM	0	0	0	0	0	0	1	0	2	3	0	0	0	0	0	0	6	120
5:40 PM	0	1	0	0	0	0	0	0	4	6	0	0	0	4	0	0	15	125
5:45 PM	0	0	0	0	1	1	1	0	0	7	0	0	0	2	1	0	13	123
5:50 PM	0	0	0	0	0	1	1	0	0	1	0	0	0	4	0	0	7	119
5:55 PM	1	0	1	0	0	1	1	0	2	3	0	0	0	0	0	0	9	112

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	12	4	0	0	8	12	0	20	56	4	4	0	36	4	0	168
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	0	0		4
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/1/2017 4:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Carlos St -- California Ave

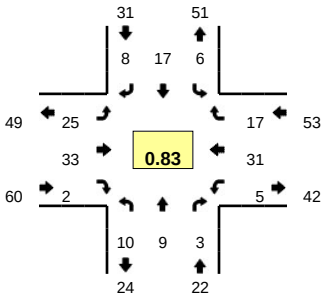
CITY/STATE: San Mateo, CA

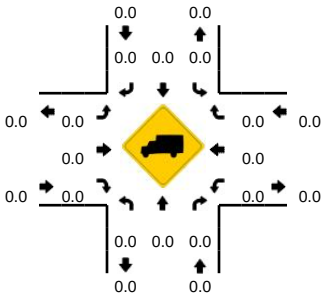
QC JOB #: 14384624

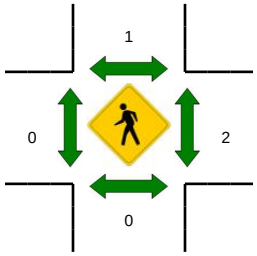
DATE: Sat, Apr 22 2017

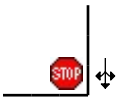
Peak-Hour: 11:10 AM -- 12:10 PM

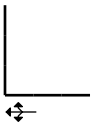
Peak 15-Min: 11:35 AM -- 11:50 AM

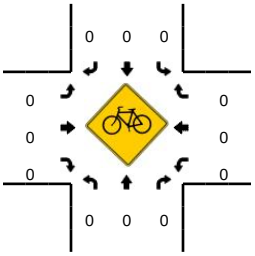


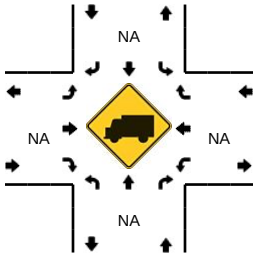


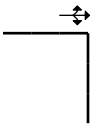


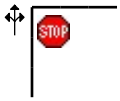


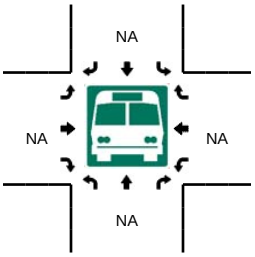












5-Min Count Period Beginning At	Carlos St (Northbound)				Carlos St (Southbound)				California Ave (Eastbound)				California Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	0	0	0	1	0	3	0	1	2	0	0	0	2	0	0	9	
11:05 AM	2	1	0	0	0	1	1	0	0	3	0	0	0	1	1	0	10	
11:10 AM	1	0	0	0	0	0	0	0	3	4	0	0	0	5	4	0	17	
11:15 AM	1	0	0	0	0	3	0	0	3	2	0	0	0	0	0	0	9	
11:20 AM	0	3	0	0	0	1	0	0	0	4	0	0	0	3	1	0	12	
11:25 AM	0	0	0	0	1	1	1	0	2	2	0	0	0	1	1	0	9	
11:30 AM	3	1	0	0	0	1	2	0	3	4	0	0	0	1	1	0	16	
11:35 AM	1	0	0	0	0	1	1	0	4	4	0	0	0	4	1	0	16	
11:40 AM	0	2	0	0	1	1	2	0	2	3	0	0	1	3	1	0	16	
11:45 AM	0	1	2	0	0	3	0	0	3	3	0	0	1	1	4	0	18	
11:50 AM	0	1	0	0	2	3	0	0	0	2	1	0	0	1	2	0	12	
11:55 AM	1	0	0	0	1	0	1	0	2	0	1	0	0	3	1	0	10	154
12:00 PM	3	1	1	0	1	2	1	0	1	2	0	0	2	4	1	0	19	164
12:05 PM	0	0	0	0	0	1	0	0	2	3	0	0	1	5	0	0	12	166
12:10 PM	0	0	1	0	0	0	1	0	0	1	0	0	0	1	0	1	5	154
12:15 PM	0	2	1	0	0	0	1	0	1	1	0	0	0	3	0	0	9	154
12:20 PM	1	0	0	0	0	0	0	0	2	4	0	0	0	2	0	0	9	151
12:25 PM	0	1	0	0	0	1	0	0	0	2	0	0	0	2	0	0	6	148
12:30 PM	1	0	0	0	0	0	0	0	0	2	0	0	1	2	0	0	6	138
12:35 PM	1	1	1	0	1	0	0	0	5	3	1	0	0	2	0	0	15	137
12:40 PM	0	1	1	0	1	0	1	0	1	2	0	0	0	8	0	0	15	136
12:45 PM	2	0	0	0	1	0	1	0	1	5	1	0	0	0	0	0	11	129
12:50 PM	0	0	0	0	0	0	0	0	3	0	1	0	0	1	0	0	5	122
12:55 PM	0	0	0	0	0	0	1	0	1	1	0	0	0	0	1	0	4	116

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	12	8	0	4	20	12	0	36	40	0	0	8	32	24	0	200
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				4				0				4			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/17/2017 6:04 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

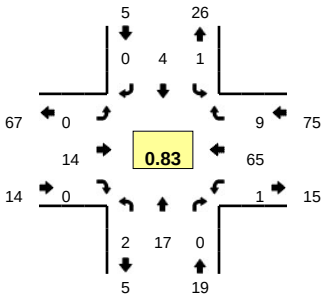
LOCATION: Etheldore St -- California Ave

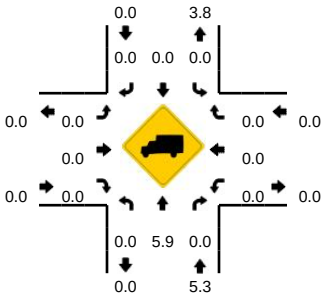
QC JOB #: 14384610

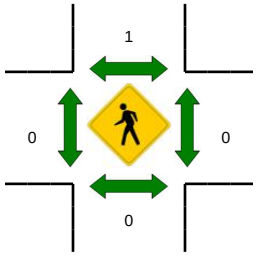
CITY/STATE: Moss Beach, CA

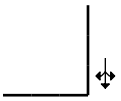
DATE: Thu, Apr 20 2017

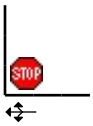
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

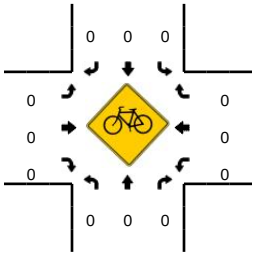


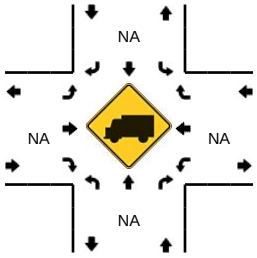


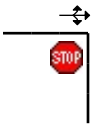


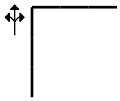


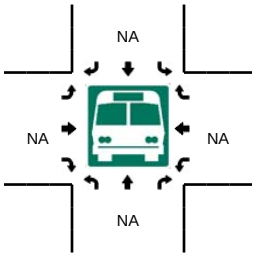












5-Min Count Period Beginning At	Etheldore St (Northbound)				Etheldore St (Southbound)				California Ave (Eastbound)				California Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	1	0	0	0	1	1	0	0	0	0	0	0	2	2	0	7	
7:05 AM	1	1	0	0	0	0	0	0	0	0	0	0	0	5	0	0	7	
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	
7:15 AM	0	4	0	0	0	1	0	0	0	0	0	0	0	3	2	0	10	
7:20 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	4	1	0	6	
7:25 AM	1	2	0	0	0	0	0	0	0	0	0	0	0	8	1	0	12	
7:30 AM	0	1	0	0	0	0	0	0	0	3	0	0	0	6	1	0	11	
7:35 AM	0	2	0	0	0	0	0	0	0	1	0	0	0	5	0	0	8	
7:40 AM	0	2	0	0	0	0	0	0	0	2	0	0	0	10	1	0	15	
7:45 AM	0	1	0	0	0	1	0	0	0	2	0	0	0	5	1	0	10	
7:50 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	3	1	0	6	
7:55 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	4	1	0	6	104
8:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	5	0	0	6	103
8:05 AM	0	1	0	0	0	0	0	0	0	1	0	0	0	5	0	0	7	103
8:10 AM	1	3	0	0	0	1	0	0	0	3	0	0	1	7	0	0	16	113
8:15 AM	0	1	0	0	0	1	0	0	0	0	1	0	0	1	2	0	6	109
8:20 AM	1	1	0	0	1	0	0	0	0	1	0	0	0	6	0	0	10	113
8:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	105
8:30 AM	0	1	0	0	1	0	0	0	0	1	0	0	1	6	0	0	10	104
8:35 AM	0	3	0	0	0	0	1	0	0	4	0	0	0	3	1	0	12	108
8:40 AM	2	1	0	0	0	0	1	0	0	0	0	0	0	2	0	0	6	99
8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	3	0	0	4	93
8:50 AM	0	2	1	0	0	0	0	0	0	1	0	0	0	7	0	0	11	98
8:55 AM	0	1	0	0	0	0	0	0	0	2	0	0	0	4	0	0	7	99

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	20	0	0	0	0	0	0	0	24	0	0	0	84	8	0	136
Heavy Trucks	0	4	0		0	0	0		0	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/1/2017 4:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Etheldore St -- California Ave

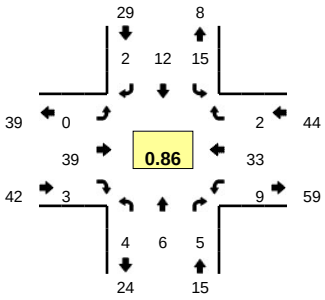
CITY/STATE: Moss Beach, CA

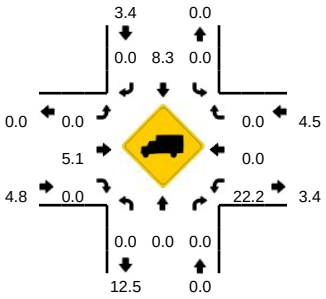
QC JOB #: 14384611

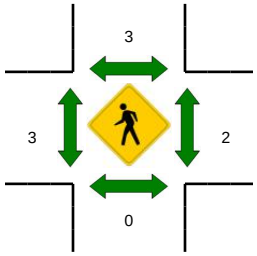
DATE: Thu, Apr 20 2017

Peak-Hour: 4:25 PM -- 5:25 PM

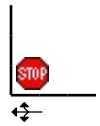
Peak 15-Min: 5:10 PM -- 5:25 PM

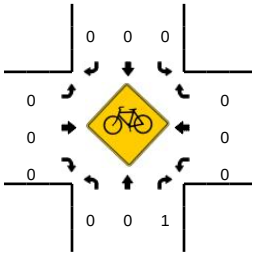


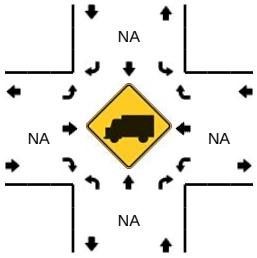


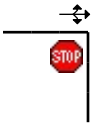


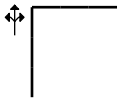


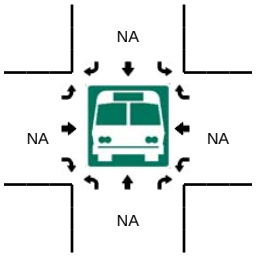












5-Min Count Period Beginning At	Etheldore St (Northbound)				Etheldore St (Southbound)				California Ave (Eastbound)				California Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	1	0	1	0	0	0	0	5	0	0	0	4	0	0	11	
4:05 PM	0	1	1	0	0	1	0	0	0	2	0	0	0	1	0	0	6	
4:10 PM	1	0	1	0	1	1	0	0	1	2	0	0	1	3	0	0	11	
4:15 PM	0	1	0	0	1	3	0	0	0	4	0	0	0	1	0	0	10	
4:20 PM	1	1	0	0	0	0	0	0	0	2	1	0	0	1	0	0	6	
4:25 PM	0	1	0	0	0	3	0	0	0	2	0	0	1	4	0	0	11	
4:30 PM	0	0	0	0	0	1	0	0	0	2	1	0	1	7	0	0	12	
4:35 PM	0	0	1	0	1	2	0	0	0	2	0	0	1	0	0	0	7	
4:40 PM	2	0	0	0	1	0	0	0	0	2	0	0	0	3	0	0	8	
4:45 PM	1	0	1	0	3	1	1	0	0	5	0	0	0	2	0	0	14	
4:50 PM	0	1	0	0	0	2	0	0	0	3	0	0	0	3	0	0	9	
4:55 PM	1	0	0	0	1	0	0	0	0	6	0	0	0	2	0	0	10	115
5:00 PM	0	2	1	0	1	1	0	0	0	2	0	0	0	1	2	0	10	114
5:05 PM	0	0	1	0	1	1	0	0	0	6	1	0	0	1	0	0	11	119
5:10 PM	0	0	0	0	3	0	1	0	0	0	0	0	0	4	0	0	8	116
5:15 PM	0	0	0	0	2	0	0	0	0	5	1	0	3	2	0	0	13	119
5:20 PM	0	2	1	0	2	1	0	0	0	4	0	0	3	4	0	0	17	130
5:25 PM	0	0	2	0	0	1	0	0	0	4	0	0	1	1	0	0	9	128
5:30 PM	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	3	119
5:35 PM	0	1	0	0	1	2	0	0	0	1	0	0	0	0	0	0	5	117
5:40 PM	0	0	0	0	1	0	0	0	0	6	0	0	0	3	0	0	10	119
5:45 PM	1	2	0	0	1	1	0	0	0	5	1	0	1	2	0	0	14	119
5:50 PM	0	0	0	0	0	1	0	0	0	2	0	0	1	4	0	0	8	118
5:55 PM	0	0	0	0	1	1	0	0	0	3	1	0	0	0	0	0	6	114

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	8	4	0	28	4	4	0	0	36	4	0	24	40	0	0	152
Heavy Trucks	0	0	0		0	0	0		0	4	0		8	0	0		12
Pedestrians		0				0				12				0			12
Bicycles	0	0	1		0	0	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/1/2017 4:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

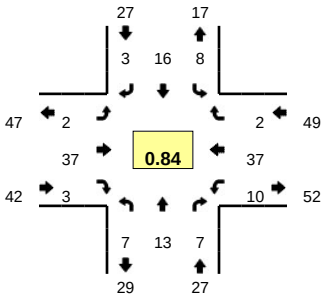
LOCATION: Etheldore St -- California Ave

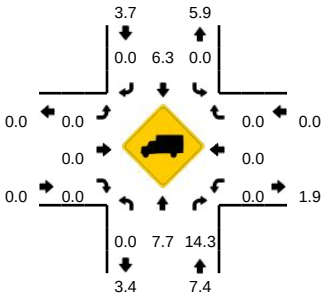
QC JOB #: 14384612

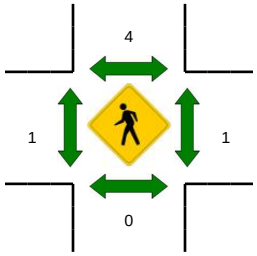
CITY/STATE: Moss Beach, CA

DATE: Sat, Apr 22 2017

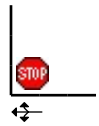
Peak-Hour: 11:45 AM -- 12:45 PM
Peak 15-Min: 12:00 PM -- 12:15 PM

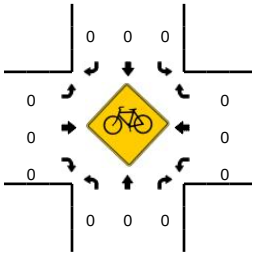


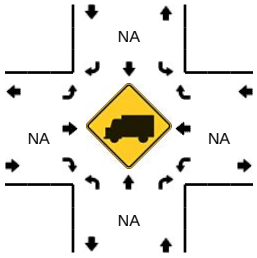


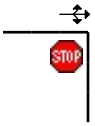


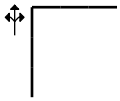


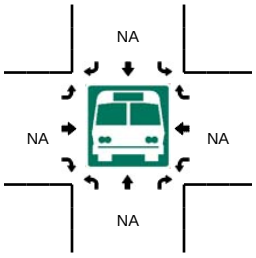












5-Min Count Period Beginning At	Etheldore St (Northbound)				Etheldore St (Southbound)				California Ave (Eastbound)				California Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	2	0	0	0	0	0	0	0	3	0	0	0	2	0	0	7	
11:05 AM	1	3	0	0	0	0	0	0	0	2	0	0	0	3	0	0	9	
11:10 AM	2	0	0	0	2	1	0	0	0	4	0	0	0	5	1	0	15	
11:15 AM	0	1	0	0	2	1	0	0	0	2	0	0	0	1	0	0	7	
11:20 AM	0	0	0	0	0	1	0	0	0	4	0	0	1	4	0	0	10	
11:25 AM	0	1	1	0	0	1	0	0	0	2	1	0	1	2	0	0	9	
11:30 AM	0	1	1	0	1	0	0	0	0	4	0	0	0	2	1	0	10	
11:35 AM	0	0	0	0	1	0	0	0	0	4	0	0	0	5	0	0	10	
11:40 AM	0	1	0	0	0	1	1	0	0	4	0	0	2	4	0	0	13	
11:45 AM	3	1	0	0	0	3	0	0	1	4	0	0	0	4	0	0	16	
11:50 AM	1	0	2	0	0	3	0	0	0	4	0	0	1	1	0	0	12	
11:55 AM	0	1	0	0	0	1	0	0	0	0	1	0	0	5	0	0	8	126
12:00 PM	2	2	1	0	2	2	2	0	0	4	0	0	1	2	1	0	19	138
12:05 PM	0	1	0	0	0	1	0	0	0	4	0	0	1	6	0	0	13	142
12:10 PM	0	2	1	0	3	1	0	0	0	2	1	0	0	1	0	0	11	138
12:15 PM	0	1	0	0	0	3	0	0	0	2	0	0	3	3	0	0	12	143
12:20 PM	0	2	2	0	0	0	0	0	0	3	0	0	1	2	0	0	10	143
12:25 PM	0	0	0	0	1	2	0	0	1	3	0	0	1	2	0	0	10	144
12:30 PM	0	2	0	0	0	0	0	0	0	2	0	0	1	3	0	0	8	142
12:35 PM	0	1	1	0	1	0	1	0	0	5	0	0	0	2	0	0	11	143
12:40 PM	1	0	0	0	1	0	0	0	0	4	1	0	1	6	1	0	15	145
12:45 PM	0	3	1	0	0	1	0	0	0	5	0	0	1	0	1	0	12	141
12:50 PM	0	1	0	0	0	4	1	0	0	0	0	0	0	0	0	0	6	135
12:55 PM	0	1	2	0	0	0	0	0	0	0	0	0	0	1	0	0	4	131

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	20	8	0	20	16	8	0	0	40	4	0	8	36	4	0	172
Heavy Trucks	0	0	4		0	0	0		0	0	0		0	0	0		4
Pedestrians		0				8				0				4			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/17/2017 6:04 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Stetson St -- California Ave

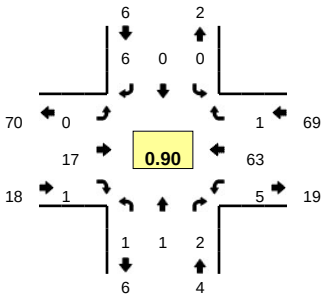
CITY/STATE: Moss Beach, CA

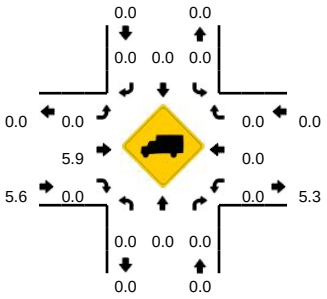
QC JOB #: 14384613

DATE: Thu, Apr 20 2017

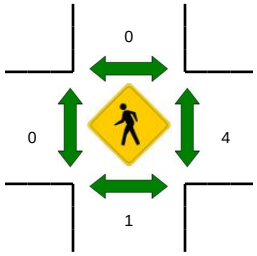
Peak-Hour: 7:30 AM -- 8:30 AM

Peak 15-Min: 7:35 AM -- 7:50 AM

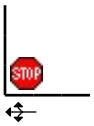


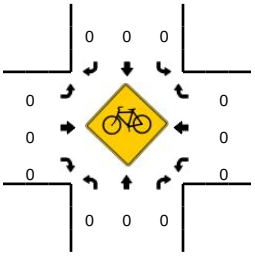


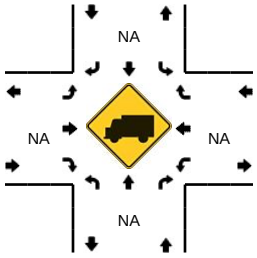
Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

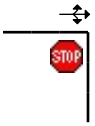


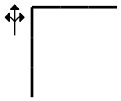


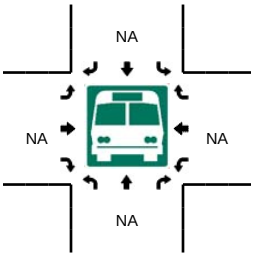












5-Min Count Period Beginning At	Stetson St (Northbound)				Stetson St (Southbound)				California Ave (Eastbound)				California Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	5	0	0	6	
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	
7:10 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	10	
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	
7:25 AM	1	0	1	0	0	0	0	0	0	0	0	0	0	7	0	0	9	
7:30 AM	0	0	0	0	0	0	2	0	0	1	0	0	0	5	0	0	8	
7:35 AM	0	0	0	0	0	0	0	0	0	2	1	0	0	5	0	0	8	
7:40 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	9	
7:45 AM	0	0	0	0	0	0	1	0	0	3	0	0	0	5	1	0	10	
7:50 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	6	0	0	8	
7:55 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	6	0	0	8	88
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	86
8:05 AM	0	0	0	0	0	0	1	0	0	2	0	0	0	3	0	0	6	87
8:10 AM	0	0	1	0	0	0	1	0	0	2	0	0	1	6	0	0	11	95
8:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	2	5	0	0	9	94
8:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0	5	95
8:25 AM	0	1	1	0	0	0	0	0	0	2	0	0	0	7	0	0	11	97
8:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	5	0	0	6	95
8:35 AM	0	0	2	0	0	0	0	0	1	2	0	0	0	4	0	0	9	96
8:40 AM	2	0	0	0	0	0	1	0	0	3	0	0	0	1	0	0	7	94
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	87
8:50 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	4	0	0	6	85
8:55 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	4	0	0	6	83

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	0	0	0	0	4	0	0	20	4	0	0	72	4	0	108
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/1/2017 4:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

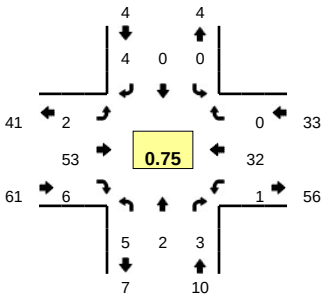
LOCATION: Stetson St -- California Ave

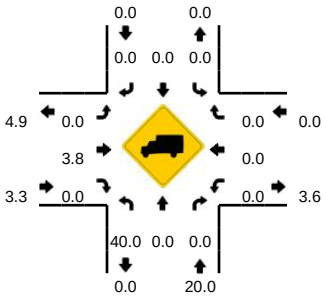
QC JOB #: 14384614

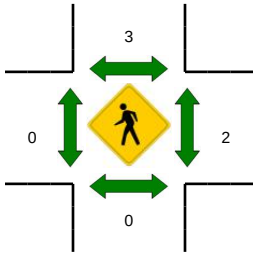
CITY/STATE: Moss Beach, CA

DATE: Thu, Apr 20 2017

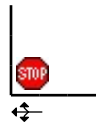
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

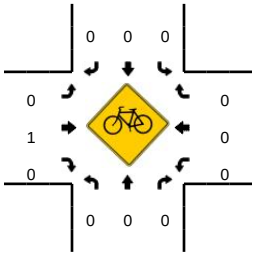


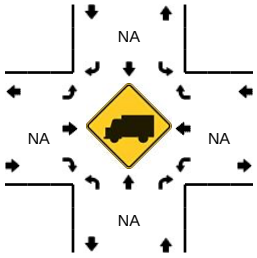


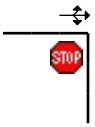


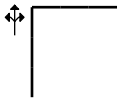


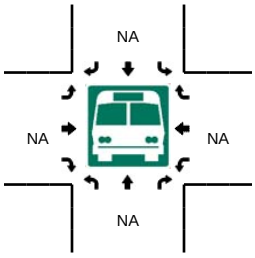












5-Min Count Period Beginning At	Stetson St (Northbound)				Stetson St (Southbound)				California Ave (Eastbound)				California Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	1	0	3	6	0	0	0	1	0	0	11	
4:05 PM	0	0	0	0	0	1	1	0	0	5	0	0	0	3	0	0	10	
4:10 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3	
4:15 PM	1	1	0	0	0	0	0	0	0	6	0	0	0	1	0	0	9	
4:20 PM	0	0	0	0	0	0	0	0	1	2	0	0	0	2	0	0	5	
4:25 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	5	0	0	7	
4:30 PM	1	1	0	0	0	0	1	0	1	2	0	0	0	3	0	0	9	
4:35 PM	0	0	0	0	0	0	1	0	0	3	0	0	0	2	0	0	6	
4:40 PM	1	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	5	
4:45 PM	0	0	0	0	0	0	0	0	0	5	1	0	0	2	0	0	8	
4:50 PM	1	0	1	0	0	0	1	0	0	7	1	0	1	2	0	0	14	
4:55 PM	0	0	1	0	0	0	0	0	0	3	0	0	0	1	0	0	5	92
5:00 PM	0	1	0	0	0	0	0	0	1	5	1	0	0	3	0	0	11	92
5:05 PM	0	0	0	0	0	0	0	0	0	6	0	0	0	2	0	0	8	90
5:10 PM	0	0	0	0	0	0	0	0	0	4	1	0	0	1	0	0	6	93
5:15 PM	1	0	0	0	0	0	0	0	0	5	2	0	0	4	0	0	12	96
5:20 PM	1	0	1	0	0	0	1	0	0	2	0	0	0	6	0	0	11	102
5:25 PM	0	0	0	0	0	0	0	0	0	9	0	0	0	4	0	0	13	108
5:30 PM	0	0	0	0	0	0	0	0	1	3	0	0	1	0	0	0	5	104
5:35 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	101
5:40 PM	1	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	5	101
5:45 PM	0	0	0	0	0	0	0	0	0	8	0	0	0	3	0	0	11	104
5:50 PM	0	0	1	0	0	0	2	0	1	4	0	0	0	1	0	0	9	99
5:55 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	4	98

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	0	4	0	0	0	4	0	0	64	8	0	0	56	0	0	144
Heavy Trucks	8	0	0		0	0	0		0	4	0		0	0	0		12
Pedestrians		0				0				0				8			8
Bicycles	0	0	0		0	0	0		0	1	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/1/2017 4:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Stetson St -- California Ave

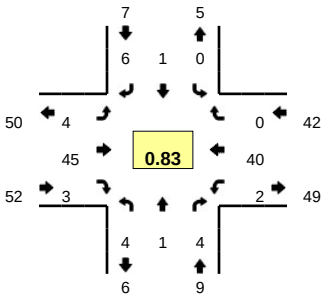
CITY/STATE: Moss Beach, CA

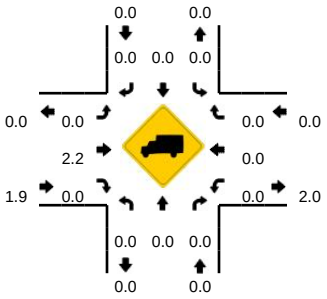
QC JOB #: 14384615

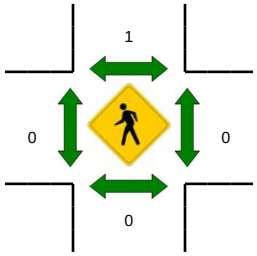
DATE: Sat, Apr 22 2017

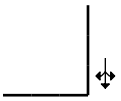
Peak-Hour: 11:10 AM -- 12:10 PM

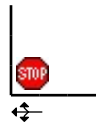
Peak 15-Min: 11:35 AM -- 11:50 AM

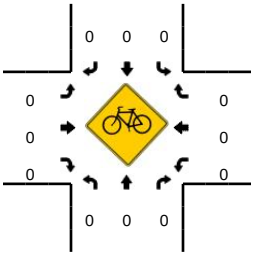


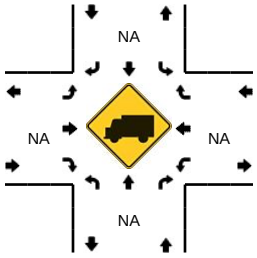


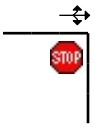


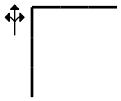


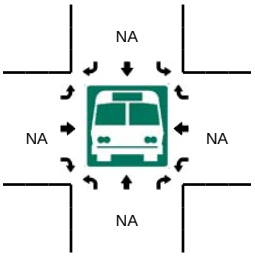












5-Min Count Period Beginning At	Stetson St (Northbound)				Stetson St (Southbound)				California Ave (Eastbound)				California Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	3	
11:05 AM	0	0	1	0	0	0	0	0	0	3	0	0	0	1	0	0	5	
11:10 AM	0	0	1	0	0	0	1	0	0	3	0	0	0	6	0	0	11	
11:15 AM	1	0	0	0	0	0	0	0	1	4	0	0	0	1	0	0	7	
11:20 AM	0	0	1	0	0	0	0	0	0	6	0	0	0	4	0	0	11	
11:25 AM	1	0	0	0	0	0	1	0	0	3	0	0	0	2	0	0	7	
11:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	1	1	0	0	4	
11:35 AM	0	0	0	0	0	0	3	0	2	5	0	0	0	4	0	0	14	
11:40 AM	1	0	1	0	0	0	0	0	1	5	0	0	0	3	0	0	11	
11:45 AM	1	0	0	0	0	1	0	0	0	2	1	0	0	3	0	0	8	
11:50 AM	0	1	1	0	0	0	0	0	0	5	0	0	0	3	0	0	10	
11:55 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	4	0	0	9	100
12:00 PM	0	0	0	0	0	0	0	0	0	3	1	0	1	4	0	0	9	106
12:05 PM	0	0	0	0	0	0	0	0	0	3	1	0	0	5	0	0	9	110
12:10 PM	1	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	7	106
12:15 PM	0	0	0	0	0	0	1	0	0	4	0	0	0	2	0	0	7	106
12:20 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	6	101
12:25 PM	1	0	1	0	0	0	0	0	1	5	0	0	0	5	0	0	13	107
12:30 PM	0	0	0	0	0	0	0	0	0	2	1	0	0	2	0	0	5	108
12:35 PM	0	0	0	0	0	0	0	0	0	3	1	0	0	3	0	0	7	101
12:40 PM	0	0	0	0	0	0	0	0	0	7	0	0	0	6	0	0	13	103
12:45 PM	0	0	0	0	0	0	0	0	1	4	0	0	0	3	0	0	8	103
12:50 PM	0	0	0	0	0	0	0	0	1	2	0	0	0	3	0	0	6	99
12:55 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	91

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	0	4	0	0	4	12	0	12	48	4	0	0	40	0	0	132
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/17/2017 6:04 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

APPENDIX 2.

SEASONAL TURNING MOVEMENT COUNT ADJUSTMENTS

Mike Alston

From: Nowinski, Bill@DOT <bill.nowinski@dot.ca.gov>
Sent: Monday, October 23, 2017 9:20 AM
To: Mike Alston; Pribyl, Cindy L@DOT
Cc: Aaron Elias
Subject: RE: Highway 1 Peak Month ADT

Hello Mike,

The method you described would get you the best estimate for this area.
Due to road closures due to fires and flooding our data is based on estimates from the surrounding areas.
The ratio should give you the best results.

Bill Nowinski
Caltrans, District 5
Traffic Census-south
805-748-4437

From: Mike Alston [mailto:malston@kittelson.com]
Sent: Friday, October 20, 2017 12:56 PM
To: Pribyl, Cindy L@DOT <cindy.pribyl@dot.ca.gov>
Cc: Aaron Elias <aelias@kittelson.com>; Nowinski, Bill@DOT <bill.nowinski@dot.ca.gov>
Subject: RE: Highway 1 Peak Month ADT

Great, thank you Cindy.

Mike Alston
Transportation Analyst

Kittelson & Associates, Inc.
Transportation Engineering / Planning
510.433.8076 (direct)

From: Pribyl, Cindy L@DOT [mailto:cindy.pribyl@dot.ca.gov]
Sent: Friday, October 20, 2017 12:49 PM
To: Mike Alston
Cc: Aaron Elias; Nowinski, Bill@DOT
Subject: RE: Highway 1 Peak Month ADT

Hi Mike

I am forwarding your email to the Caltrans local District 5 Traffic Census Staff member Bill Nowinski. I am not familiar with this area's traffic patterns.

Bill is out in the field most days, but he does check his email account.

From: Mike Alston [mailto:malston@kittelson.com]
Sent: Friday, October 20, 2017 12:45 PM
To: Pribyl, Cindy L@DOT <cindy.pribyl@dot.ca.gov>
Cc: Aaron Elias <aelias@kittelson.com>
Subject: Highway 1 Peak Month ADT

Hi Cindy,

I am working on a transportation impact study in Moss Beach, California and am hoping you can provide me with some context on what's available on the Caltrans website.

Specifically, I am looking at the PDF "2015 Traffic Volumes on California State Highways."
(http://www.dot.ca.gov/trafficops/census/docs/2015_aadt_volumes.pdf)

For this project, Kittelson & Associates has Highway 1 traffic counts conducted in April 2017 but have been advised that we should find a conversion factor to represent the peak summer conditions. Based on what's in the PDF, I suspect our best option currently would be to use a ratio between **AADT** and the **Peak Month** to inflate them. (our counts as AADT, and our desired summer count number as peak month).

I am writing to ask you if you have any more granular information—specific months, for example, or any other seasonal/time trend related data. In particular, I am looking at SR1 in Caltrans District 4, San Mateo County, and the Vallemar/Etheldore Streets location (postmile 35.334).

Any guidance or more detailed information you could provide in this matter would be greatly appreciated.

Thank you,
Mike Alston

Mike Alston
Transportation Analyst

Kittelson & Associates, Inc.
Transportation Engineering / Planning
155 Grand Avenue, Suite 900
Oakland, California 94612
510.839.1742
510.433.8076 (direct)



Streetwise Twitter Facebook

APPENDIX 3.

EXISTING OPERATIONS RESULTS

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	7	679	15	1	567
Future Vol, veh/h	14	7	679	15	1	567
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	125	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	6	0	0	4
Mvmt Flow	15	8	738	16	1	616

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1356	738	0	0	738	0
Stage 1	738	-	-	-	-	-
Stage 2	618	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	166	421	-	-	877	-
Stage 1	476	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	166	421	-	-	877	-
Mov Cap-2 Maneuver	166	-	-	-	-	-
Stage 1	476	-	-	-	-	-
Stage 2	541	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	208	877	-
HCM Lane V/C Ratio	-	-	0.11	0.001	-
HCM Control Delay (s)	-	-	24.4	9.1	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	1	0	0	0	0	684	0	0	593	4
Future Vol, veh/h	4	0	1	0	0	0	0	684	0	0	593	4
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	65	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	6	0	0	4	0
Mvmt Flow	4	0	1	0	0	0	0	735	0	0	638	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1377	1377	641	1376	1379	737	643	0	0	736	0	0
Stage 1	641	641	-	736	736	-	-	-	-	-	-	-
Stage 2	736	736	-	640	643	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	123	146	478	124	146	422	951	-	-	879	-	-
Stage 1	466	473	-	414	428	-	-	-	-	-	-	-
Stage 2	414	428	-	467	472	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	123	146	478	124	146	421	951	-	-	878	-	-
Mov Cap-2 Maneuver	123	146	-	124	146	-	-	-	-	-	-	-
Stage 1	466	473	-	414	428	-	-	-	-	-	-	-
Stage 2	414	428	-	466	472	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	31	0	0	0
HCM LOS	D	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	951	-	-	144	-	878	-	-
HCM Lane V/C Ratio	-	-	-	0.037	-	-	-	-
HCM Control Delay (s)	0	-	-	31	0	0	-	-
HCM Lane LOS	A	-	-	D	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	23	658	0	5	582
Future Vol, veh/h	0	23	658	0	5	582
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	6	0	0	4
Mvmt Flow	0	25	715	0	5	633

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1358	715	0	0	715	0
Stage 1	715	-	-	-	-	-
Stage 2	643	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	166	434	-	-	895	-
Stage 1	488	-	-	-	-	-
Stage 2	527	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	165	434	-	-	895	-
Mov Cap-2 Maneuver	165	-	-	-	-	-
Stage 1	488	-	-	-	-	-
Stage 2	524	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.8	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	434	895	-
HCM Lane V/C Ratio	-	-	0.058	0.006	-
HCM Control Delay (s)	-	-	13.8	9	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	7.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	22	1	0	5	1
Future Vol, veh/h	1	22	1	0	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	29	1	0	7	1

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	16	1	0	0	1	0
Stage 1	1	-	-	-	-	-
Stage 2	15	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	1008	1090	-	-	1635	-
Stage 1	1028	-	-	-	-	-
Stage 2	1013	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1004	1090	-	-	1635	-
Mov Cap-2 Maneuver	1004	-	-	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	1009	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1086	1635	-
HCM Lane V/C Ratio	-	-	0.028	0.004	-
HCM Control Delay (s)	-	-	8.4	7.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2	3	0	4	18	0
Future Vol, veh/h	2	3	0	4	18	0
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	4	0	6	26	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	7	0	11	6
Stage 1	-	-	-	-	5	-
Stage 2	-	-	-	-	6	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1627	-	1014	1083
Stage 1	-	-	-	-	1023	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1625	-	1014	1082
Mov Cap-2 Maneuver	-	-	-	-	1014	-
Stage 1	-	-	-	-	1023	-
Stage 2	-	-	-	-	1022	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1014	-	-	1625	-
HCM Lane V/C Ratio	0.025	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑			↑	
Traffic Vol, veh/h	3	0	5	2	0	26	4	631	4	10	565	0
Future Vol, veh/h	3	0	5	2	0	26	4	631	4	10	565	0
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	4	0	6	0	0	4	0
Mvmt Flow	3	0	6	2	0	29	4	701	4	11	628	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1378	1365	629	1365	1363	703	629	0	0	706	0	0
Stage 1	651	651	-	712	712	-	-	-	-	-	-	-
Stage 2	727	714	-	653	651	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.24	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.336	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	123	149	486	126	149	434	963	-	-	902	-	-
Stage 1	461	468	-	427	439	-	-	-	-	-	-	-
Stage 2	419	438	-	460	468	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	113	146	486	123	146	434	963	-	-	902	-	-
Mov Cap-2 Maneuver	113	146	-	123	146	-	-	-	-	-	-	-
Stage 1	459	462	-	425	437	-	-	-	-	-	-	-
Stage 2	389	436	-	449	462	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.3	15.7	0.1	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	963	-	-	217	368	902	-	-
HCM Lane V/C Ratio	0.005	-	-	0.041	0.085	0.012	-	-
HCM Control Delay (s)	8.8	-	-	22.3	15.7	9	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.3	0	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	0	11	48	0	15	4	619	21	6	561	6
Future Vol, veh/h	10	0	11	48	0	15	4	619	21	6	561	6
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	80	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	12	52	0	16	4	666	23	6	603	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1314	1317	607	1310	1309	677	611	0	0	688	0	0
Stage 1	620	620	-	685	685	-	-	-	-	-	-	-
Stage 2	694	697	-	625	624	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	135	157	496	136	159	453	968	-	-	906	-	-
Stage 1	476	480	-	438	448	-	-	-	-	-	-	-
Stage 2	433	443	-	473	478	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	129	155	496	132	157	453	968	-	-	906	-	-
Mov Cap-2 Maneuver	129	155	-	132	157	-	-	-	-	-	-	-
Stage 1	474	476	-	436	446	-	-	-	-	-	-	-
Stage 2	416	441	-	459	474	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.1	43.5	0.1	0.1
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	968	-	-	211	159	906	-	-
HCM Lane V/C Ratio	0.004	-	-	0.107	0.426	0.007	-	-
HCM Control Delay (s)	8.7	-	-	24.1	43.5	9	-	-
HCM Lane LOS	A	-	-	C	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	1.9	0	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	16	0	1	65	0	3	2	0	2	2	3
Future Vol, veh/h	6	16	0	1	65	0	3	2	0	2	2	3
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	0	0	0	0	0	0	33	0	0	0	0	0
Mvmt Flow	8	22	0	1	88	0	4	3	0	3	3	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	89	0	0	22	0	0	132	130	23	132	130	89
Stage 1	-	-	-	-	-	-	38	38	-	92	92	-
Stage 2	-	-	-	-	-	-	94	92	-	40	38	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.43	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.43	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.43	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.797	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1519	-	-	1607	-	-	773	764	1060	845	764	975
Stage 1	-	-	-	-	-	-	904	867	-	920	823	-
Stage 2	-	-	-	-	-	-	842	823	-	980	867	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1519	-	-	1605	-	-	764	759	1059	837	759	974
Mov Cap-2 Maneuver	-	-	-	-	-	-	764	759	-	837	759	-
Stage 1	-	-	-	-	-	-	899	863	-	915	821	-
Stage 2	-	-	-	-	-	-	835	821	-	971	863	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0.1	9.8	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	762	1519	-	-	1605	-	-	864
HCM Lane V/C Ratio	0.009	0.005	-	-	0.001	-	-	0.011
HCM Control Delay (s)	9.8	7.4	0	-	7.2	0	-	9.2
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	14	0	1	65	9	2	17	0	1	4	0
Future Vol, veh/h	0	14	0	1	65	9	2	17	0	1	4	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	0	6	0	0	0	0
Mvmt Flow	0	17	0	1	78	11	2	20	0	1	5	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	78	32	5	41	32	21	5	0	0	20	0	0
Stage 1	7	7	-	25	25	-	-	-	-	-	-	-
Stage 2	71	25	-	16	7	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	916	865	1084	968	865	1062	1630	-	-	1609	-	-
Stage 1	1020	894	-	998	878	-	-	-	-	-	-	-
Stage 2	944	878	-	1009	894	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	842	863	1084	952	863	1061	1630	-	-	1607	-	-
Mov Cap-2 Maneuver	842	863	-	952	863	-	-	-	-	-	-	-
Stage 1	1019	893	-	997	877	-	-	-	-	-	-	-
Stage 2	849	877	-	989	893	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	9.5	0.8	1.4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1630	-	-	863	884	1607	-	-
HCM Lane V/C Ratio	0.001	-	-	0.02	0.102	0.001	-	-
HCM Control Delay (s)	7.2	0	-	9.3	9.5	7.2	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.3	0	-	-

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	0	17	1	0	5	63	1	0	1	1	2
Future Vol, veh/h	0	0	17	1	0	5	63	1	0	1	1	2
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	0	6	0	2	0	0	0	2	0	0	0
Mvmt Flow	0	0	19	1	0	6	70	1	0	1	1	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.2	7.3	6.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	0%	7%	0%
Vol Thru, %	25%	94%	91%	0%
Vol Right, %	50%	6%	1%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	18	69	6
LT Vol	1	0	5	0
Through Vol	1	17	63	0
RT Vol	2	1	1	6
Lane Flow Rate	4	20	77	7
Geometry Grp	1	1	1	1
Degree of Util (X)	0.005	0.022	0.084	0.006
Departure Headway (Hd)	3.823	4.045	3.94	3.47
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	932	887	913	1026
Service Time	1.861	2.061	1.946	1.51
HCM Lane V/C Ratio	0.004	0.023	0.084	0.007
HCM Control Delay	6.9	7.2	7.3	6.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.1	0.3	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	0	6
Future Vol, veh/h	0	0	0	6
Peak Hour Factor	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	0	7
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	6.5
HCM LOS	A

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	6	7	638	567	0
Future Vol, veh/h	3	6	7	638	567	0
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	6	8	686	610	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1312	611	611	0	-	0
Stage 1	611	-	-	-	-	-
Stage 2	701	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	175	494	968	-	-	-
Stage 1	542	-	-	-	-	-
Stage 2	492	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	172	494	968	-	-	-
Mov Cap-2 Maneuver	172	-	-	-	-	-
Stage 1	541	-	-	-	-	-
Stage 2	485	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.2	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	968	-	304	-	-
HCM Lane V/C Ratio	0.008	-	0.032	-	-
HCM Control Delay (s)	8.7	0	17.2	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	5	671	18	5	862
Future Vol, veh/h	11	5	671	18	5	862
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	125	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	12	5	706	19	5	907

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1625	707	0	0	707	0
Stage 1	707	-	-	-	-	-
Stage 2	918	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	114	439	-	-	901	-
Stage 1	493	-	-	-	-	-
Stage 2	392	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	113	439	-	-	901	-
Mov Cap-2 Maneuver	113	-	-	-	-	-
Stage 1	493	-	-	-	-	-
Stage 2	388	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	32.6	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	147	901	-
HCM Lane V/C Ratio	-	-	0.115	0.006	-
HCM Control Delay (s)	-	-	32.6	9	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↰	↱		↰	↑	
Traffic Vol, veh/h	5	0	4	1	0	2	0	683	0	1	858	4
Future Vol, veh/h	5	0	4	1	0	2	0	683	0	1	858	4
Conflicting Peds, #/hr	5	0	0	0	0	5	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	65	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	1	0
Mvmt Flow	5	0	4	1	0	2	0	727	0	1	913	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1650	1648	915	1650	1650	736	917	0	0	731	0	0
Stage 1	917	917	-	731	731	-	-	-	-	-	-	-
Stage 2	733	731	-	919	919	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	80	100	333	80	100	422	752	-	-	883	-	-
Stage 1	329	354	-	416	430	-	-	-	-	-	-	-
Stage 2	415	430	-	328	353	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	79	100	333	79	100	418	752	-	-	879	-	-
Mov Cap-2 Maneuver	79	100	-	79	100	-	-	-	-	-	-	-
Stage 1	329	354	-	414	428	-	-	-	-	-	-	-
Stage 2	411	428	-	323	353	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	37.6	26.3	0	0
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	752	-	-	120	172	879	-	-
HCM Lane V/C Ratio	-	-	-	0.08	0.019	0.001	-	-
HCM Control Delay (s)	0	-	-	37.6	26.3	9.1	-	-
HCM Lane LOS	A	-	-	E	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	5	678	0	18	851
Future Vol, veh/h	0	5	678	0	18	851
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	0	5	706	0	19	886

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1632	708	0	0	708	0
Stage 1	708	-	-	-	-	-
Stage 2	924	-	-	-	-	-
Critical Hdwy	7.1	6.2	-	-	4.1	-
Critical Hdwy Stg 1	6.1	-	-	-	-	-
Critical Hdwy Stg 2	6.1	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	82	438	-	-	900	-
Stage 1	429	-	-	-	-	-
Stage 2	326	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	81	437	-	-	900	-
Mov Cap-2 Maneuver	81	-	-	-	-	-
Stage 1	429	-	-	-	-	-
Stage 2	319	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.3	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	437	900	-
HCM Lane V/C Ratio	-	-	0.012	0.021	-
HCM Control Delay (s)	-	-	13.3	9.1	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0.1	-

Intersection	
Int Delay, s/veh	6.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	6	1	6	19	0
Future Vol, veh/h	4	6	1	6	19	0
Conflicting Peds, #/hr	1	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	17	0	0	0	0
Mvmt Flow	5	8	1	8	25	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	62	10	0	0	14	0
Stage 1	10	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.4	6.37	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.453	-	-	2.2	-
Pot Cap-1 Maneuver	949	1029	-	-	1617	-
Stage 1	1018	-	-	-	-	-
Stage 2	976	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	929	1024	-	-	1617	-
Mov Cap-2 Maneuver	929	-	-	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	960	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	7.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	984	1617	-
HCM Lane V/C Ratio	-	-	0.014	0.016	-
HCM Control Delay (s)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	8	16	1	4	7	0
Future Vol, veh/h	8	16	1	4	7	0
Conflicting Peds, #/hr	0	3	3	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	69	69	69	69
Heavy Vehicles, %	0	0	0	0	29	0
Mvmt Flow	12	23	1	6	10	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	38	0	36	26
Stage 1	-	-	-	-	26	-
Stage 2	-	-	-	-	10	-
Critical Hdwy	-	-	4.1	-	6.69	6.2
Critical Hdwy Stg 1	-	-	-	-	5.69	-
Critical Hdwy Stg 2	-	-	-	-	5.69	-
Follow-up Hdwy	-	-	2.2	-	3.761	3.3
Pot Cap-1 Maneuver	-	-	1585	-	912	1056
Stage 1	-	-	-	-	931	-
Stage 2	-	-	-	-	947	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1585	-	908	1053
Mov Cap-2 Maneuver	-	-	-	-	908	-
Stage 1	-	-	-	-	928	-
Stage 2	-	-	-	-	945	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	908	-	-	1585	-
HCM Lane V/C Ratio	0.011	-	-	0.001	-
HCM Control Delay (s)	9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑			↑	
Traffic Vol, veh/h	7	0	7	7	0	17	10	655	7	28	812	5
Future Vol, veh/h	7	0	7	7	0	17	10	655	7	28	812	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	2	14	7	2	0
Mvmt Flow	7	0	7	7	0	18	10	682	7	29	846	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1623	1619	848	1619	1618	688	851	0	0	692	0	0
Stage 1	907	907	-	709	709	-	-	-	-	-	-	-
Stage 2	716	712	-	910	909	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.17	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.263	-	-
Pot Cap-1 Maneuver	83	104	364	84	104	450	796	-	-	880	-	-
Stage 1	333	357	-	428	440	-	-	-	-	-	-	-
Stage 2	424	439	-	332	357	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	77	99	364	79	99	449	796	-	-	880	-	-
Mov Cap-2 Maneuver	77	99	-	79	99	-	-	-	-	-	-	-
Stage 1	329	345	-	422	434	-	-	-	-	-	-	-
Stage 2	402	433	-	315	345	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	37	26.8	0.1	0.3
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	796	-	-	127	190	880	-	-
HCM Lane V/C Ratio	0.013	-	-	0.115	0.132	0.033	-	-
HCM Control Delay (s)	9.6	-	-	37	26.8	9.2	-	-
HCM Lane LOS	A	-	-	E	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	3	32	0	13	5	660	42	17	806	10
Future Vol, veh/h	3	0	3	32	0	13	5	660	42	17	806	10
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	80	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	3	35	0	14	5	725	46	19	886	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1697	1712	892	1689	1694	749	898	0	0	771	0	0
Stage 1	930	930	-	759	759	-	-	-	-	-	-	-
Stage 2	767	782	-	930	935	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	73	90	341	74	93	412	756	-	-	844	-	-
Stage 1	321	346	-	399	415	-	-	-	-	-	-	-
Stage 2	395	405	-	321	344	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	69	87	341	72	90	412	756	-	-	843	-	-
Mov Cap-2 Maneuver	69	87	-	72	90	-	-	-	-	-	-	-
Stage 1	319	338	-	396	412	-	-	-	-	-	-	-
Stage 2	378	402	-	311	336	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	38.2	78.2	0.1	0.2
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	756	-	-	115	95	843	-	-
HCM Lane V/C Ratio	0.007	-	-	0.057	0.521	0.022	-	-
HCM Control Delay (s)	9.8	-	-	38.2	78.2	9.4	-	-
HCM Lane LOS	A	-	-	E	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	2.3	0.1	-	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	35	2	0	34	4	9	7	6	3	8	12
Future Vol, veh/h	13	35	2	0	34	4	9	7	6	3	8	12
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	0	3	0	0	0	0	0	0	0	33	0	0
Mvmt Flow	16	44	3	0	43	5	11	9	8	4	10	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	48	0	0	48	0	0	137	127	47	133	127	46
Stage 1	-	-	-	-	-	-	79	79	-	46	46	-
Stage 2	-	-	-	-	-	-	58	48	-	87	81	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.43	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.43	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.797	4	3.3
Pot Cap-1 Maneuver	1572	-	-	1572	-	-	838	767	1028	772	767	1029
Stage 1	-	-	-	-	-	-	935	833	-	895	861	-
Stage 2	-	-	-	-	-	-	959	859	-	849	832	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1572	-	-	1572	-	-	810	759	1027	754	759	1029
Mov Cap-2 Maneuver	-	-	-	-	-	-	810	759	-	754	759	-
Stage 1	-	-	-	-	-	-	925	824	-	886	861	-
Stage 2	-	-	-	-	-	-	934	859	-	825	823	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0	9.4	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	840	1572	-	-	1572	-	-	879
HCM Lane V/C Ratio	0.033	0.01	-	-	-	-	-	0.033
HCM Control Delay (s)	9.4	7.3	0	-	0	-	-	9.2
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	39	3	9	33	2	4	6	5	15	12	2
Future Vol, veh/h	0	39	3	9	33	2	4	6	5	15	12	2
Conflicting Peds, #/hr	3	0	0	0	0	3	3	0	2	2	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	5	0	22	0	0	0	0	0	0	8	0
Mvmt Flow	0	45	3	10	38	2	5	7	6	17	14	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	96	77	18	95	75	15	19	0	0	15	0	0
Stage 1	53	53	-	21	21	-	-	-	-	-	-	-
Stage 2	43	24	-	74	54	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.55	6.2	7.32	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.55	-	6.32	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.55	-	6.32	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.045	3.3	3.698	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	891	808	1066	842	819	1070	1611	-	-	1616	-	-
Stage 1	965	845	-	948	882	-	-	-	-	-	-	-
Stage 2	976	869	-	888	854	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	843	793	1063	793	804	1065	1611	-	-	1611	-	-
Mov Cap-2 Maneuver	843	793	-	793	804	-	-	-	-	-	-	-
Stage 1	959	833	-	943	878	-	-	-	-	-	-	-
Stage 2	926	865	-	828	842	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	9.7	1.9	3.8
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1611	-	-	808	811	1611	-	-
HCM Lane V/C Ratio	0.003	-	-	0.06	0.063	0.011	-	-
HCM Control Delay (s)	7.2	0	-	9.7	9.7	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	2	53	6	0	1	32	0	0	5	2	3
Future Vol, veh/h	0	2	53	6	0	1	32	0	0	5	2	3
Peak Hour Factor	0.92	0.75	0.75	0.75	0.92	0.75	0.75	0.75	0.92	0.75	0.75	0.75
Heavy Vehicles, %	2	0	4	0	2	0	0	0	2	40	0	0
Mvmt Flow	0	3	71	8	0	1	43	0	0	7	3	4
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.3	7.2	7.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	50%	3%	3%	0%
Vol Thru, %	20%	87%	97%	0%
Vol Right, %	30%	10%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	61	33	4
LT Vol	5	2	1	0
Through Vol	2	53	32	0
RT Vol	3	6	0	4
Lane Flow Rate	13	81	44	5
Geometry Grp	1	1	1	1
Degree of Util (X)	0.017	0.088	0.049	0.005
Departure Headway (Hd)	4.721	3.914	4	3.525
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	755	917	895	1006
Service Time	2.771	1.932	2.023	1.579
HCM Lane V/C Ratio	0.017	0.088	0.049	0.005
HCM Control Delay	7.9	7.3	7.2	6.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.3	0.2	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	0	4
Future Vol, veh/h	0	0	0	4
Peak Hour Factor	0.92	0.75	0.75	0.75
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	0	5
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	6.6
HCM LOS	A

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	2	8	691	835	1
Future Vol, veh/h	1	2	8	691	835	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	2	9	759	918	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1695	918	919	0	-	0
Stage 1	918	-	-	-	-	-
Stage 2	777	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	102	329	743	-	-	-
Stage 1	389	-	-	-	-	-
Stage 2	453	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	100	329	743	-	-	-
Mov Cap-2 Maneuver	100	-	-	-	-	-
Stage 1	389	-	-	-	-	-
Stage 2	443	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.6	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	743	-	187	-	-
HCM Lane V/C Ratio	0.012	-	0.018	-	-
HCM Control Delay (s)	9.9	0	24.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	3	741	9	4	957
Future Vol, veh/h	7	3	741	9	4	957
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	125	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	1
Mvmt Flow	7	3	772	9	4	997

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1778	773	0	0	773	0
Stage 1	773	-	-	-	-	-
Stage 2	1005	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	92	402	-	-	851	-
Stage 1	459	-	-	-	-	-
Stage 2	357	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	91	402	-	-	851	-
Mov Cap-2 Maneuver	91	-	-	-	-	-
Stage 1	459	-	-	-	-	-
Stage 2	353	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	38.1	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	119	851	-
HCM Lane V/C Ratio	-	-	0.088	0.005	-
HCM Control Delay (s)	-	-	38.1	9.3	0
HCM Lane LOS	-	-	E	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	1	0	1	2	740	0	1	966	4
Future Vol, veh/h	0	0	0	1	0	1	2	740	0	1	966	4
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	65	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	2	0
Mvmt Flow	0	0	0	1	0	1	2	771	0	1	1006	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1786	1788	1009	1789	1791	774	1010	0	0	774	0	0
Stage 1	1010	1010	-	778	778	-	-	-	-	-	-	-
Stage 2	776	778	-	1011	1013	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	64	82	294	64	82	402	694	-	-	851	-	-
Stage 1	292	320	-	392	410	-	-	-	-	-	-	-
Stage 2	393	410	-	291	319	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	64	81	294	64	81	401	693	-	-	851	-	-
Mov Cap-2 Maneuver	64	81	-	64	81	-	-	-	-	-	-	-
Stage 1	291	320	-	390	408	-	-	-	-	-	-	-
Stage 2	391	408	-	290	319	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	38.4	0	0
HCM LOS	A	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	693	-	-	-	110	851	-	-
HCM Lane V/C Ratio	0.003	-	-	-	0.019	0.001	-	-
HCM Control Delay (s)	10.2	-	-	0	38.4	9.2	-	-
HCM Lane LOS	B	-	-	A	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	11	734	0	8	958
Future Vol, veh/h	0	11	734	0	8	958
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	9	2	0	0	1
Mvmt Flow	0	12	789	0	9	1030

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1837	790	0	0	790	0
Stage 1	790	-	-	-	-	-
Stage 2	1047	-	-	-	-	-
Critical Hdwy	6.4	6.29	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.381	-	-	2.2	-
Pot Cap-1 Maneuver	84	379	-	-	839	-
Stage 1	451	-	-	-	-	-
Stage 2	341	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	83	379	-	-	839	-
Mov Cap-2 Maneuver	83	-	-	-	-	-
Stage 1	451	-	-	-	-	-
Stage 2	337	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.8	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	379	839	-
HCM Lane V/C Ratio	-	-	0.031	0.01	-
HCM Control Delay (s)	-	-	14.8	9.3	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	6.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	13	1	2	6	2
Future Vol, veh/h	3	13	1	2	6	2
Conflicting Peds, #/hr	2	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	33	8	0	0	0	0
Mvmt Flow	4	17	1	3	8	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	24	3	0	0	4	0
Stage 1	3	-	-	-	-	-
Stage 2	21	-	-	-	-	-
Critical Hdwy	6.73	6.28	-	-	4.1	-
Critical Hdwy Stg 1	5.73	-	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-	-
Follow-up Hdwy	3.797	3.372	-	-	2.2	-
Pot Cap-1 Maneuver	918	1064	-	-	1631	-
Stage 1	945	-	-	-	-	-
Stage 2	927	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	912	1064	-	-	1631	-
Mov Cap-2 Maneuver	912	-	-	-	-	-
Stage 1	945	-	-	-	-	-
Stage 2	921	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	5.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1032	1631	-
HCM Lane V/C Ratio	-	-	0.021	0.005	-
HCM Control Delay (s)	-	-	8.6	7.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	5.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2	5	1	0	13	1
Future Vol, veh/h	2	5	1	0	13	1
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	0	0	100	0	15	0
Mvmt Flow	3	6	1	0	16	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	10	0	10	7
Stage 1	-	-	-	-	7	-
Stage 2	-	-	-	-	3	-
Critical Hdwy	-	-	5.1	-	6.55	6.2
Critical Hdwy Stg 1	-	-	-	-	5.55	-
Critical Hdwy Stg 2	-	-	-	-	5.55	-
Follow-up Hdwy	-	-	3.1	-	3.635	3.3
Pot Cap-1 Maneuver	-	-	1150	-	977	1081
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	987	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1150	-	975	1080
Mov Cap-2 Maneuver	-	-	-	-	975	-
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	986	-

Approach	EB	WB	NB
HCM Control Delay, s	0	8.1	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	982	-	-	1150	-
HCM Lane V/C Ratio	0.018	-	-	0.001	-
HCM Control Delay (s)	8.7	-	-	8.1	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↑			↑	
Traffic Vol, veh/h	0	0	6	6	1	25	9	713	2	22	928	5
Future Vol, veh/h	0	0	6	6	1	25	9	713	2	22	928	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	17	0	4	0	3	0	5	1	0
Mvmt Flow	0	0	6	6	1	26	9	751	2	23	977	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1810	1799	979	1801	1800	753	982	0	0	754	0	0
Stage 1	1026	1026	-	772	772	-	-	-	-	-	-	-
Stage 2	784	773	-	1029	1028	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.27	6.5	6.24	4.1	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.653	4	3.336	2.2	-	-	2.245	-	-
Pot Cap-1 Maneuver	62	81	306	57	81	406	711	-	-	843	-	-
Stage 1	286	315	-	370	412	-	-	-	-	-	-	-
Stage 2	389	412	-	265	314	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	56	78	306	54	78	406	711	-	-	843	-	-
Mov Cap-2 Maneuver	56	78	-	54	78	-	-	-	-	-	-	-
Stage 1	282	306	-	365	406	-	-	-	-	-	-	-
Stage 2	358	406	-	252	305	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17	31	0.1	0.2
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	711	-	-	306	172	843	-	-
HCM Lane V/C Ratio	0.013	-	-	0.021	0.196	0.027	-	-
HCM Control Delay (s)	10.1	-	-	17	31	9.4	-	-
HCM Lane LOS	B	-	-	C	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.7	0.1	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	3	21	23	3	23	28	697	36	7	928	7
Future Vol, veh/h	6	3	21	23	3	23	28	697	36	7	928	7
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	80	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	3	22	24	3	24	29	734	38	7	977	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1821	1826	981	1820	1811	754	984	0	0	772	0	0
Stage 1	995	995	-	812	812	-	-	-	-	-	-	-
Stage 2	826	831	-	1008	999	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	60	77	303	60	79	409	702	-	-	843	-	-
Stage 1	295	323	-	373	392	-	-	-	-	-	-	-
Stage 2	366	384	-	290	321	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	53	73	303	52	75	409	702	-	-	842	-	-
Mov Cap-2 Maneuver	53	73	-	52	75	-	-	-	-	-	-	-
Stage 1	283	320	-	358	376	-	-	-	-	-	-	-
Stage 2	327	368	-	264	318	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	40	87.1	0.4	0.1
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	702	-	-	134	91	842	-	-
HCM Lane V/C Ratio	0.042	-	-	0.236	0.567	0.009	-	-
HCM Control Delay (s)	10.4	-	-	40	87.1	9.3	-	-
HCM Lane LOS	B	-	-	E	F	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9	2.6	0	-	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	33	2	5	31	17	10	9	3	6	17	8
Future Vol, veh/h	25	33	2	5	31	17	10	9	3	6	17	8
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	30	40	2	6	37	20	12	11	4	7	20	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	59	0	0	42	0	0	176	172	43	171	163	49
Stage 1	-	-	-	-	-	-	101	101	-	61	61	-
Stage 2	-	-	-	-	-	-	75	71	-	110	102	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1558	-	-	1580	-	-	791	725	1033	797	733	1025
Stage 1	-	-	-	-	-	-	910	815	-	955	848	-
Stage 2	-	-	-	-	-	-	939	840	-	900	815	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1558	-	-	1577	-	-	752	707	1031	768	715	1024
Mov Cap-2 Maneuver	-	-	-	-	-	-	752	707	-	768	715	-
Stage 1	-	-	-	-	-	-	892	799	-	935	844	-
Stage 2	-	-	-	-	-	-	904	836	-	865	799	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.1	0.7	9.9	9.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	760	1558	-	-	1577	-	-	787
HCM Lane V/C Ratio	0.035	0.019	-	-	0.004	-	-	0.047
HCM Control Delay (s)	9.9	7.4	0	-	7.3	0	-	9.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	37	3	10	37	2	7	13	7	8	16	3
Future Vol, veh/h	2	37	3	10	37	2	7	13	7	8	16	3
Conflicting Peds, #/hr	4	0	0	0	0	4	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	0	8	14	0	6	0
Mvmt Flow	2	44	4	12	44	2	8	15	8	10	19	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	105	82	22	101	80	25	24	0	0	25	0	0
Stage 1	41	41	-	37	37	-	-	-	-	-	-	-
Stage 2	64	41	-	64	43	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	880	812	1061	885	814	1057	1604	-	-	1603	-	-
Stage 1	979	865	-	984	868	-	-	-	-	-	-	-
Stage 2	952	865	-	952	863	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	830	802	1060	837	804	1052	1604	-	-	1597	-	-
Mov Cap-2 Maneuver	830	802	-	837	804	-	-	-	-	-	-	-
Stage 1	973	859	-	978	863	-	-	-	-	-	-	-
Stage 2	893	860	-	895	857	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	9.7	1.9	2.2
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1604	-	-	818	818	1597	-	-
HCM Lane V/C Ratio	0.005	-	-	0.061	0.071	0.006	-	-
HCM Control Delay (s)	7.3	0	-	9.7	9.7	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	4	45	3	0	2	40	0	0	4	1	4
Future Vol, veh/h	0	4	45	3	0	2	40	0	0	4	1	4
Peak Hour Factor	0.92	0.83	0.83	0.83	0.92	0.83	0.83	0.83	0.92	0.83	0.83	0.83
Heavy Vehicles, %	2	0	2	0	2	0	0	0	2	0	0	0
Mvmt Flow	0	5	54	4	0	2	48	0	0	5	1	5
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.3	7.2	7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	44%	8%	5%	0%
Vol Thru, %	11%	87%	95%	14%
Vol Right, %	44%	6%	0%	86%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	52	42	7
LT Vol	4	4	2	0
Through Vol	1	45	40	1
RT Vol	4	3	0	6
Lane Flow Rate	11	63	51	8
Geometry Grp	1	1	1	1
Degree of Util (X)	0.012	0.069	0.056	0.008
Departure Headway (Hd)	3.924	3.952	3.99	3.59
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	907	908	899	990
Service Time	1.971	1.967	2.007	1.638
HCM Lane V/C Ratio	0.012	0.069	0.057	0.008
HCM Control Delay	7	7.3	7.2	6.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.2	0.2	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	1	6
Future Vol, veh/h	0	0	1	6
Peak Hour Factor	0.92	0.83	0.83	0.83
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	1	7
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	6.7
HCM LOS	A

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	8	4	724	935	5
Future Vol, veh/h	3	8	4	724	935	5
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	8	4	762	984	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1759	988	990	0	-	0
Stage 1	988	-	-	-	-	-
Stage 2	771	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	93	300	698	-	-	-
Stage 1	361	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	92	300	698	-	-	-
Mov Cap-2 Maneuver	92	-	-	-	-	-
Stage 1	361	-	-	-	-	-
Stage 2	451	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.6	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	698	-	186	-	-
HCM Lane V/C Ratio	0.006	-	0.062	-	-
HCM Control Delay (s)	10.2	0	25.6	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

APPENDIX 4.

EXISTING WITH PROJECT OPERATIONS RESULTS

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	7	694	15	1	571
Future Vol, veh/h	14	7	694	15	1	571
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	125	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	6	0	0	4
Mvmt Flow	15	8	754	16	1	621

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1377	754	0	0	754	0
Stage 1	754	-	-	-	-	-
Stage 2	623	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	161	412	-	-	865	-
Stage 1	468	-	-	-	-	-
Stage 2	539	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	161	412	-	-	865	-
Mov Cap-2 Maneuver	161	-	-	-	-	-
Stage 1	468	-	-	-	-	-
Stage 2	538	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.1	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	202	865	-
HCM Lane V/C Ratio	-	-	0.113	0.001	-
HCM Control Delay (s)	-	-	25.1	9.2	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	1	0	0	0	0	699	0	0	597	4
Future Vol, veh/h	4	0	1	0	0	0	0	699	0	0	597	4
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	65	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	6	0	0	4	0
Mvmt Flow	4	0	1	0	0	0	0	752	0	0	642	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1398	1398	645	1398	1400	754	647	0	0	753	0	0
Stage 1	645	645	-	753	753	-	-	-	-	-	-	-
Stage 2	753	753	-	645	647	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	119	142	476	119	142	412	948	-	-	866	-	-
Stage 1	464	471	-	405	420	-	-	-	-	-	-	-
Stage 2	405	420	-	464	470	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	119	142	476	119	142	411	948	-	-	865	-	-
Mov Cap-2 Maneuver	119	142	-	119	142	-	-	-	-	-	-	-
Stage 1	464	471	-	405	420	-	-	-	-	-	-	-
Stage 2	405	420	-	463	470	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	31.7	0	0	0
HCM LOS	D	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	948	-	-	140	-	865	-	-
HCM Lane V/C Ratio	-	-	-	0.038	-	-	-	-
HCM Control Delay (s)	0	-	-	31.7	0	0	-	-
HCM Lane LOS	A	-	-	D	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	38	658	4	9	582
Future Vol, veh/h	14	38	658	4	9	582
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	6	0	0	4
Mvmt Flow	15	41	715	4	10	633

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1369	717	0	0	720	0
Stage 1	717	-	-	-	-	-
Stage 2	652	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	163	433	-	-	891	-
Stage 1	487	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	161	433	-	-	891	-
Mov Cap-2 Maneuver	161	-	-	-	-	-
Stage 1	487	-	-	-	-	-
Stage 2	516	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.9	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	298	891	-
HCM Lane V/C Ratio	-	-	0.19	0.011	-
HCM Control Delay (s)	-	-	19.9	9.1	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0	-

Intersection	
Int Delay, s/veh	7.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	22	1	0	5	1
Future Vol, veh/h	1	22	1	0	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	29	1	0	7	1

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	16	1	0	0	1	0
Stage 1	1	-	-	-	-	-
Stage 2	15	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	1008	1090	-	-	1635	-
Stage 1	1028	-	-	-	-	-
Stage 2	1013	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1004	1090	-	-	1635	-
Mov Cap-2 Maneuver	1004	-	-	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	1009	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1086	1635	-
HCM Lane V/C Ratio	-	-	0.028	0.004	-
HCM Control Delay (s)	-	-	8.4	7.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2	3	0	4	18	0
Future Vol, veh/h	2	3	0	4	18	0
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	4	0	6	26	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	7	0	11	6
Stage 1	-	-	-	-	5	-
Stage 2	-	-	-	-	6	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1627	-	1014	1083
Stage 1	-	-	-	-	1023	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1625	-	1014	1082
Mov Cap-2 Maneuver	-	-	-	-	1014	-
Stage 1	-	-	-	-	1023	-
Stage 2	-	-	-	-	1022	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1014	-	-	1625	-
HCM Lane V/C Ratio	0.025	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑			↑	
Traffic Vol, veh/h	3	0	5	2	0	26	4	635	4	10	579	0
Future Vol, veh/h	3	0	5	2	0	26	4	635	4	10	579	0
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	4	0	6	0	0	4	0
Mvmt Flow	3	0	6	2	0	29	4	706	4	11	643	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1398	1386	644	1385	1384	708	644	0	0	710	0	0
Stage 1	667	667	-	717	717	-	-	-	-	-	-	-
Stage 2	731	719	-	668	667	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.24	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.336	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	119	144	476	122	145	431	951	-	-	899	-	-
Stage 1	451	460	-	424	437	-	-	-	-	-	-	-
Stage 2	416	436	-	451	460	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	110	142	476	119	142	431	951	-	-	899	-	-
Mov Cap-2 Maneuver	110	142	-	119	142	-	-	-	-	-	-	-
Stage 1	449	454	-	422	435	-	-	-	-	-	-	-
Stage 2	386	434	-	440	454	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.7	15.8	0.1	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	951	-	-	212	363	899	-	-
HCM Lane V/C Ratio	0.005	-	-	0.042	0.086	0.012	-	-
HCM Control Delay (s)	8.8	-	-	22.7	15.8	9.1	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.3	0	-	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	0	11	48	0	15	4	623	21	6	575	6
Future Vol, veh/h	10	0	11	48	0	15	4	623	21	6	575	6
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	80	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	12	52	0	16	4	670	23	6	618	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1333	1336	623	1330	1329	681	626	0	0	692	0	0
Stage 1	635	635	-	690	690	-	-	-	-	-	-	-
Stage 2	698	701	-	640	639	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	131	153	486	132	155	450	956	-	-	903	-	-
Stage 1	467	472	-	435	446	-	-	-	-	-	-	-
Stage 2	431	441	-	464	470	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	125	151	486	128	153	450	956	-	-	903	-	-
Mov Cap-2 Maneuver	125	151	-	128	153	-	-	-	-	-	-	-
Stage 1	465	468	-	433	444	-	-	-	-	-	-	-
Stage 2	414	439	-	450	466	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.7	45.6	0.1	0.1
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	956	-	-	205	154	903	-	-
HCM Lane V/C Ratio	0.004	-	-	0.11	0.44	0.007	-	-
HCM Control Delay (s)	8.8	-	-	24.7	45.6	9	-	-
HCM Lane LOS	A	-	-	C	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	2	0	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	16	0	1	65	0	3	2	0	2	2	3
Future Vol, veh/h	6	16	0	1	65	0	3	2	0	2	2	3
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	0	0	0	0	0	0	33	0	0	0	0	0
Mvmt Flow	8	22	0	1	88	0	4	3	0	3	3	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	89	0	0	22	0	0	132	130	23	132	130	89
Stage 1	-	-	-	-	-	-	38	38	-	92	92	-
Stage 2	-	-	-	-	-	-	94	92	-	40	38	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.43	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.43	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.43	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.797	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1519	-	-	1607	-	-	773	764	1060	845	764	975
Stage 1	-	-	-	-	-	-	904	867	-	920	823	-
Stage 2	-	-	-	-	-	-	842	823	-	980	867	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1519	-	-	1605	-	-	764	759	1059	837	759	974
Mov Cap-2 Maneuver	-	-	-	-	-	-	764	759	-	837	759	-
Stage 1	-	-	-	-	-	-	899	863	-	915	821	-
Stage 2	-	-	-	-	-	-	835	821	-	971	863	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0.1	9.8	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	762	1519	-	-	1605	-	-	864
HCM Lane V/C Ratio	0.009	0.005	-	-	0.001	-	-	0.011
HCM Control Delay (s)	9.8	7.4	0	-	7.2	0	-	9.2
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	14	0	1	65	9	2	17	0	1	4	0
Future Vol, veh/h	0	14	0	1	65	9	2	17	0	1	4	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	0	6	0	0	0	0
Mvmt Flow	0	17	0	1	78	11	2	20	0	1	5	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	78	32	5	41	32	21	5	0	0	20	0	0
Stage 1	7	7	-	25	25	-	-	-	-	-	-	-
Stage 2	71	25	-	16	7	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	916	865	1084	968	865	1062	1630	-	-	1609	-	-
Stage 1	1020	894	-	998	878	-	-	-	-	-	-	-
Stage 2	944	878	-	1009	894	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	842	863	1084	952	863	1061	1630	-	-	1607	-	-
Mov Cap-2 Maneuver	842	863	-	952	863	-	-	-	-	-	-	-
Stage 1	1019	893	-	997	877	-	-	-	-	-	-	-
Stage 2	849	877	-	989	893	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	9.5	0.8	1.4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1630	-	-	863	884	1607	-	-
HCM Lane V/C Ratio	0.001	-	-	0.02	0.102	0.001	-	-
HCM Control Delay (s)	7.2	0	-	9.3	9.5	7.2	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.3	0	-	-

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations			↕				↕				↕	
Traffic Vol, veh/h	0	0	17	1	0	5	63	1	0	1	1	2
Future Vol, veh/h	0	0	17	1	0	5	63	1	0	1	1	2
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	0	6	0	2	0	0	0	2	0	0	0
Mvmt Flow	0	0	19	1	0	6	70	1	0	1	1	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.2	7.3	6.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	0%	7%	0%
Vol Thru, %	25%	94%	91%	0%
Vol Right, %	50%	6%	1%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	18	69	6
LT Vol	1	0	5	0
Through Vol	1	17	63	0
RT Vol	2	1	1	6
Lane Flow Rate	4	20	77	7
Geometry Grp	1	1	1	1
Degree of Util (X)	0.005	0.022	0.084	0.006
Departure Headway (Hd)	3.823	4.045	3.94	3.47
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	932	887	913	1026
Service Time	1.861	2.061	1.946	1.51
HCM Lane V/C Ratio	0.004	0.023	0.084	0.007
HCM Control Delay	6.9	7.2	7.3	6.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.1	0.3	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	0	6
Future Vol, veh/h	0	0	0	6
Peak Hour Factor	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	0	7
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	6.5
HCM LOS	A

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	6	7	642	581	0
Future Vol, veh/h	3	6	7	642	581	0
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	6	8	690	625	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1331	626	626	0	-	0
Stage 1	626	-	-	-	-	-
Stage 2	705	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	170	484	956	-	-	-
Stage 1	533	-	-	-	-	-
Stage 2	490	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	167	484	956	-	-	-
Mov Cap-2 Maneuver	167	-	-	-	-	-
Stage 1	532	-	-	-	-	-
Stage 2	483	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.6	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	956	-	296	-	-
HCM Lane V/C Ratio	0.008	-	0.033	-	-
HCM Control Delay (s)	8.8	0	17.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	5	678	18	5	878
Future Vol, veh/h	11	5	678	18	5	878
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	125	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	12	5	714	19	5	924

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1650	715	0	0	715	0
Stage 1	715	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	110	434	-	-	895	-
Stage 1	488	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	109	434	-	-	895	-
Mov Cap-2 Maneuver	109	-	-	-	-	-
Stage 1	488	-	-	-	-	-
Stage 2	381	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	33.7	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	142	895	-
HCM Lane V/C Ratio	-	-	0.119	0.006	-
HCM Control Delay (s)	-	-	33.7	9	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↰	↱		↰	↑	
Traffic Vol, veh/h	5	0	4	1	0	2	0	690	0	1	874	4
Future Vol, veh/h	5	0	4	1	0	2	0	690	0	1	874	4
Conflicting Peds, #/hr	5	0	0	0	0	5	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	65	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	1	0
Mvmt Flow	5	0	4	1	0	2	0	734	0	1	930	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1674	1672	932	1674	1674	743	934	0	0	738	0	0
Stage 1	934	934	-	738	738	-	-	-	-	-	-	-
Stage 2	740	738	-	936	936	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	77	97	326	77	97	418	741	-	-	877	-	-
Stage 1	322	347	-	413	427	-	-	-	-	-	-	-
Stage 2	412	427	-	321	346	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	76	97	326	76	97	414	741	-	-	873	-	-
Mov Cap-2 Maneuver	76	97	-	76	97	-	-	-	-	-	-	-
Stage 1	322	347	-	411	425	-	-	-	-	-	-	-
Stage 2	408	425	-	316	346	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	39.1	27	0	0
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	741	-	-	115	167	873	-	-
HCM Lane V/C Ratio	-	-	-	0.083	0.019	0.001	-	-
HCM Control Delay (s)	0	-	-	39.1	27	9.1	-	-
HCM Lane LOS	A	-	-	E	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	12	678	13	34	851
Future Vol, veh/h	9	12	678	13	34	851
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	9	13	706	14	35	886

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1672	715	0	0	722	0
Stage 1	715	-	-	-	-	-
Stage 2	957	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	107	434	-	-	889	-
Stage 1	488	-	-	-	-	-
Stage 2	376	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	103	433	-	-	889	-
Mov Cap-2 Maneuver	103	-	-	-	-	-
Stage 1	487	-	-	-	-	-
Stage 2	361	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	27.5	0	0.4
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	182	889	-
HCM Lane V/C Ratio	-	-	0.12	0.04	-
HCM Control Delay (s)	-	-	27.5	9.2	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Intersection	
Int Delay, s/veh	6.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	6	1	6	19	0
Future Vol, veh/h	4	6	1	6	19	0
Conflicting Peds, #/hr	1	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	17	0	0	0	0
Mvmt Flow	5	8	1	8	25	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	62	10	0	0	14	0
Stage 1	10	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.4	6.37	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.453	-	-	2.2	-
Pot Cap-1 Maneuver	949	1029	-	-	1617	-
Stage 1	1018	-	-	-	-	-
Stage 2	976	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	929	1024	-	-	1617	-
Mov Cap-2 Maneuver	929	-	-	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	960	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	7.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	984	1617	-
HCM Lane V/C Ratio	-	-	0.014	0.016	-
HCM Control Delay (s)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	8	16	1	4	7	0
Future Vol, veh/h	8	16	1	4	7	0
Conflicting Peds, #/hr	0	3	3	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	69	69	69	69
Heavy Vehicles, %	0	0	0	0	29	0
Mvmt Flow	12	23	1	6	10	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	38	0	36	26
Stage 1	-	-	-	-	26	-
Stage 2	-	-	-	-	10	-
Critical Hdwy	-	-	4.1	-	6.69	6.2
Critical Hdwy Stg 1	-	-	-	-	5.69	-
Critical Hdwy Stg 2	-	-	-	-	5.69	-
Follow-up Hdwy	-	-	2.2	-	3.761	3.3
Pot Cap-1 Maneuver	-	-	1585	-	912	1056
Stage 1	-	-	-	-	931	-
Stage 2	-	-	-	-	947	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1585	-	908	1053
Mov Cap-2 Maneuver	-	-	-	-	908	-
Stage 1	-	-	-	-	928	-
Stage 2	-	-	-	-	945	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	908	-	-	1585	-
HCM Lane V/C Ratio	0.011	-	-	0.001	-
HCM Control Delay (s)	9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑			↑	
Traffic Vol, veh/h	7	0	7	7	0	17	10	668	7	28	821	5
Future Vol, veh/h	7	0	7	7	0	17	10	668	7	28	821	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	2	14	7	2	0
Mvmt Flow	7	0	7	7	0	18	10	696	7	29	855	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1645	1642	858	1642	1641	701	860	0	0	705	0	0
Stage 1	916	916	-	722	722	-	-	-	-	-	-	-
Stage 2	729	726	-	920	919	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.17	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.263	-	-
Pot Cap-1 Maneuver	80	101	359	81	101	442	790	-	-	870	-	-
Stage 1	329	354	-	421	434	-	-	-	-	-	-	-
Stage 2	417	433	-	327	353	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	74	96	359	76	96	441	790	-	-	870	-	-
Mov Cap-2 Maneuver	74	96	-	76	96	-	-	-	-	-	-	-
Stage 1	325	342	-	415	428	-	-	-	-	-	-	-
Stage 2	395	427	-	310	341	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	38.2	27.6	0.1	0.3
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	790	-	-	123	184	870	-	-
HCM Lane V/C Ratio	0.013	-	-	0.119	0.136	0.034	-	-
HCM Control Delay (s)	9.6	-	-	38.2	27.6	9.3	-	-
HCM Lane LOS	A	-	-	E	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.5	0.1	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	3	32	0	13	5	673	42	17	815	10
Future Vol, veh/h	3	0	3	32	0	13	5	673	42	17	815	10
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	80	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	3	35	0	14	5	740	46	19	896	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1721	1736	902	1714	1719	764	908	0	0	786	0	0
Stage 1	939	939	-	774	774	-	-	-	-	-	-	-
Stage 2	782	797	-	940	945	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	70	87	336	71	90	404	750	-	-	833	-	-
Stage 1	317	343	-	391	408	-	-	-	-	-	-	-
Stage 2	387	399	-	316	340	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	66	84	336	69	87	404	750	-	-	832	-	-
Mov Cap-2 Maneuver	66	84	-	69	87	-	-	-	-	-	-	-
Stage 1	315	335	-	388	405	-	-	-	-	-	-	-
Stage 2	370	396	-	306	332	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	39.8	84.1	0.1	0.2
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	750	-	-	110	91	832	-	-
HCM Lane V/C Ratio	0.007	-	-	0.06	0.543	0.022	-	-
HCM Control Delay (s)	9.8	-	-	39.8	84.1	9.4	-	-
HCM Lane LOS	A	-	-	E	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	2.4	0.1	-	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	35	2	0	34	4	9	7	6	3	8	12
Future Vol, veh/h	13	35	2	0	34	4	9	7	6	3	8	12
Conflicting Peds, #/hr	2	0	1	1	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	0	3	0	0	0	0	0	0	0	33	0	0
Mvmt Flow	16	44	3	0	43	5	11	9	8	4	10	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	50	0	0	48	0	0	137	129	47	135	129	48
Stage 1	-	-	-	-	-	-	79	79	-	48	48	-
Stage 2	-	-	-	-	-	-	58	50	-	87	81	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.43	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.43	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.797	4	3.3
Pot Cap-1 Maneuver	1570	-	-	1572	-	-	838	765	1028	770	765	1027
Stage 1	-	-	-	-	-	-	935	833	-	892	859	-
Stage 2	-	-	-	-	-	-	959	857	-	849	832	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1570	-	-	1572	-	-	810	755	1027	750	755	1025
Mov Cap-2 Maneuver	-	-	-	-	-	-	810	755	-	750	755	-
Stage 1	-	-	-	-	-	-	925	824	-	881	857	-
Stage 2	-	-	-	-	-	-	934	855	-	825	823	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0	9.4	9.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	839	1570	-	-	1572	-	-	874
HCM Lane V/C Ratio	0.033	0.01	-	-	-	-	-	0.033
HCM Control Delay (s)	9.4	7.3	0	-	0	-	-	9.3
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	39	3	9	33	2	4	6	5	15	12	2
Future Vol, veh/h	0	39	3	9	33	2	4	6	5	15	12	2
Conflicting Peds, #/hr	3	0	0	0	0	3	3	0	2	2	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	5	0	22	0	0	0	0	0	0	8	0
Mvmt Flow	0	45	3	10	38	2	5	7	6	17	14	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	96	77	18	95	75	15	19	0	0	15	0	0
Stage 1	53	53	-	21	21	-	-	-	-	-	-	-
Stage 2	43	24	-	74	54	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.55	6.2	7.32	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.55	-	6.32	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.55	-	6.32	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.045	3.3	3.698	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	891	808	1066	842	819	1070	1611	-	-	1616	-	-
Stage 1	965	845	-	948	882	-	-	-	-	-	-	-
Stage 2	976	869	-	888	854	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	843	793	1063	793	804	1065	1611	-	-	1611	-	-
Mov Cap-2 Maneuver	843	793	-	793	804	-	-	-	-	-	-	-
Stage 1	959	833	-	943	878	-	-	-	-	-	-	-
Stage 2	926	865	-	828	842	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	9.7	1.9	3.8
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1611	-	-	808	811	1611	-	-
HCM Lane V/C Ratio	0.003	-	-	0.06	0.063	0.011	-	-
HCM Control Delay (s)	7.2	0	-	9.7	9.7	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	2	53	6	0	1	32	0	0	5	2	3
Future Vol, veh/h	0	2	53	6	0	1	32	0	0	5	2	3
Peak Hour Factor	0.92	0.75	0.75	0.75	0.92	0.75	0.75	0.75	0.92	0.75	0.75	0.75
Heavy Vehicles, %	2	0	4	0	2	0	0	0	2	40	0	0
Mvmt Flow	0	3	71	8	0	1	43	0	0	7	3	4
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.3	7.2	7.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	50%	3%	3%	0%
Vol Thru, %	20%	87%	97%	0%
Vol Right, %	30%	10%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	61	33	4
LT Vol	5	2	1	0
Through Vol	2	53	32	0
RT Vol	3	6	0	4
Lane Flow Rate	13	81	44	5
Geometry Grp	1	1	1	1
Degree of Util (X)	0.017	0.088	0.049	0.005
Departure Headway (Hd)	4.721	3.914	4	3.525
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	755	917	895	1006
Service Time	2.771	1.932	2.023	1.579
HCM Lane V/C Ratio	0.017	0.088	0.049	0.005
HCM Control Delay	7.9	7.3	7.2	6.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.3	0.2	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	0	4
Future Vol, veh/h	0	0	0	4
Peak Hour Factor	0.92	0.75	0.75	0.75
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	0	5
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	6.6
HCM LOS	A

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	2	8	704	844	1
Future Vol, veh/h	1	2	8	704	844	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	2	9	774	927	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1719	928	929	0	-	0
Stage 1	928	-	-	-	-	-
Stage 2	791	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	99	325	736	-	-	-
Stage 1	385	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	97	325	736	-	-	-
Mov Cap-2 Maneuver	97	-	-	-	-	-
Stage 1	385	-	-	-	-	-
Stage 2	438	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.1	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	736	-	182	-	-
HCM Lane V/C Ratio	0.012	-	0.018	-	-
HCM Control Delay (s)	9.9	0	25.1	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	3	749	9	4	968
Future Vol, veh/h	7	3	749	9	4	968
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	125	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	1
Mvmt Flow	7	3	780	9	4	1008

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1798	781	0	0	781	0
Stage 1	781	-	-	-	-	-
Stage 2	1017	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	89	398	-	-	845	-
Stage 1	455	-	-	-	-	-
Stage 2	352	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	88	398	-	-	845	-
Mov Cap-2 Maneuver	88	-	-	-	-	-
Stage 1	455	-	-	-	-	-
Stage 2	348	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	39.4	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	115	845	-
HCM Lane V/C Ratio	-	-	0.091	0.005	-
HCM Control Delay (s)	-	-	39.4	9.3	0
HCM Lane LOS	-	-	E	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	1	0	1	2	748	0	1	977	4
Future Vol, veh/h	0	0	0	1	0	1	2	748	0	1	977	4
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	65	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	2	0
Mvmt Flow	0	0	0	1	0	1	2	779	0	1	1018	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1806	1808	1021	1809	1810	782	1022	0	0	782	0	0
Stage 1	1022	1022	-	786	786	-	-	-	-	-	-	-
Stage 2	784	786	-	1023	1024	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	62	80	289	62	80	397	687	-	-	845	-	-
Stage 1	287	316	-	388	406	-	-	-	-	-	-	-
Stage 2	389	406	-	287	315	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	62	79	289	62	79	396	686	-	-	845	-	-
Mov Cap-2 Maneuver	62	79	-	62	79	-	-	-	-	-	-	-
Stage 1	286	316	-	386	404	-	-	-	-	-	-	-
Stage 2	387	404	-	286	315	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	39.3	0	0
HCM LOS	A	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	686	-	-	-	107	845	-	-
HCM Lane V/C Ratio	0.003	-	-	-	0.019	0.001	-	-
HCM Control Delay (s)	10.3	-	-	0	39.3	9.3	-	-
HCM Lane LOS	B	-	-	A	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	19	734	8	19	958
Future Vol, veh/h	10	19	734	8	19	958
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	9	2	0	0	1
Mvmt Flow	11	20	789	9	20	1030

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1866	795	0	0	799	0
Stage 1	795	-	-	-	-	-
Stage 2	1071	-	-	-	-	-
Critical Hdwy	6.4	6.29	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.381	-	-	2.2	-
Pot Cap-1 Maneuver	81	377	-	-	833	-
Stage 1	448	-	-	-	-	-
Stage 2	332	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	79	377	-	-	833	-
Mov Cap-2 Maneuver	79	-	-	-	-	-
Stage 1	448	-	-	-	-	-
Stage 2	324	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	32	0	0.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	164	833	-
HCM Lane V/C Ratio	-	-	0.19	0.025	-
HCM Control Delay (s)	-	-	32	9.4	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.1	-

Intersection	
Int Delay, s/veh	6.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	13	1	2	6	2
Future Vol, veh/h	3	13	1	2	6	2
Conflicting Peds, #/hr	2	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	33	8	0	0	0	0
Mvmt Flow	4	17	1	3	8	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	24	3	0	0	4	0
Stage 1	3	-	-	-	-	-
Stage 2	21	-	-	-	-	-
Critical Hdwy	6.73	6.28	-	-	4.1	-
Critical Hdwy Stg 1	5.73	-	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-	-
Follow-up Hdwy	3.797	3.372	-	-	2.2	-
Pot Cap-1 Maneuver	918	1064	-	-	1631	-
Stage 1	945	-	-	-	-	-
Stage 2	927	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	912	1064	-	-	1631	-
Mov Cap-2 Maneuver	912	-	-	-	-	-
Stage 1	945	-	-	-	-	-
Stage 2	921	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	5.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1032	1631	-
HCM Lane V/C Ratio	-	-	0.021	0.005	-
HCM Control Delay (s)	-	-	8.6	7.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	5.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2	5	1	0	13	1
Future Vol, veh/h	2	5	1	0	13	1
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	0	0	100	0	15	0
Mvmt Flow	3	6	1	0	16	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	10	0	10	7
Stage 1	-	-	-	-	7	-
Stage 2	-	-	-	-	3	-
Critical Hdwy	-	-	5.1	-	6.55	6.2
Critical Hdwy Stg 1	-	-	-	-	5.55	-
Critical Hdwy Stg 2	-	-	-	-	5.55	-
Follow-up Hdwy	-	-	3.1	-	3.635	3.3
Pot Cap-1 Maneuver	-	-	1150	-	977	1081
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	987	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1150	-	975	1080
Mov Cap-2 Maneuver	-	-	-	-	975	-
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	986	-

Approach	EB	WB	NB
HCM Control Delay, s	0	8.1	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	982	-	-	1150	-
HCM Lane V/C Ratio	0.018	-	-	0.001	-
HCM Control Delay (s)	8.7	-	-	8.1	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑			↑	
Traffic Vol, veh/h	0	0	6	6	1	25	9	721	2	22	938	5
Future Vol, veh/h	0	0	6	6	1	25	9	721	2	22	938	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	17	0	4	0	3	0	5	1	0
Mvmt Flow	0	0	6	6	1	26	9	759	2	23	987	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1829	1817	990	1819	1819	761	993	0	0	762	0	0
Stage 1	1036	1036	-	780	780	-	-	-	-	-	-	-
Stage 2	793	781	-	1039	1039	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.27	6.5	6.24	4.1	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.653	4	3.336	2.2	-	-	2.245	-	-
Pot Cap-1 Maneuver	60	79	302	55	79	402	704	-	-	837	-	-
Stage 1	282	311	-	367	409	-	-	-	-	-	-	-
Stage 2	385	408	-	261	310	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	54	76	302	52	76	402	704	-	-	837	-	-
Mov Cap-2 Maneuver	54	76	-	52	76	-	-	-	-	-	-	-
Stage 1	278	302	-	362	403	-	-	-	-	-	-	-
Stage 2	354	402	-	249	301	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.2	31.7	0.1	0.2
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	704	-	-	302	168	837	-	-
HCM Lane V/C Ratio	0.013	-	-	0.021	0.201	0.028	-	-
HCM Control Delay (s)	10.2	-	-	17.2	31.7	9.4	-	-
HCM Lane LOS	B	-	-	C	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.7	0.1	-	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	3	21	23	3	23	28	705	36	7	938	7
Future Vol, veh/h	6	3	21	23	3	23	28	705	36	7	938	7
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	80	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	3	22	24	3	24	29	742	38	7	987	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1841	1845	991	1838	1829	762	995	0	0	780	0	0
Stage 1	1006	1006	-	820	820	-	-	-	-	-	-	-
Stage 2	835	839	-	1018	1009	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	58	75	299	58	77	405	695	-	-	837	-	-
Stage 1	291	319	-	369	389	-	-	-	-	-	-	-
Stage 2	362	381	-	286	318	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	51	71	299	50	73	405	695	-	-	836	-	-
Mov Cap-2 Maneuver	51	71	-	50	73	-	-	-	-	-	-	-
Stage 1	279	316	-	354	373	-	-	-	-	-	-	-
Stage 2	323	365	-	260	315	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	41.4	92.3	0.4	0.1
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	695	-	-	130	88	836	-	-
HCM Lane V/C Ratio	0.042	-	-	0.243	0.586	0.009	-	-
HCM Control Delay (s)	10.4	-	-	41.4	92.3	9.3	-	-
HCM Lane LOS	B	-	-	E	F	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9	2.7	0	-	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	33	2	5	31	17	10	9	3	6	17	8
Future Vol, veh/h	25	33	2	5	31	17	10	9	3	6	17	8
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	30	40	2	6	37	20	12	11	4	7	20	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	59	0	0	42	0	0	176	172	43	171	163	49
Stage 1	-	-	-	-	-	-	101	101	-	61	61	-
Stage 2	-	-	-	-	-	-	75	71	-	110	102	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1558	-	-	1580	-	-	791	725	1033	797	733	1025
Stage 1	-	-	-	-	-	-	910	815	-	955	848	-
Stage 2	-	-	-	-	-	-	939	840	-	900	815	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1558	-	-	1577	-	-	752	707	1031	768	715	1024
Mov Cap-2 Maneuver	-	-	-	-	-	-	752	707	-	768	715	-
Stage 1	-	-	-	-	-	-	892	799	-	935	844	-
Stage 2	-	-	-	-	-	-	904	836	-	865	799	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.1	0.7	9.9	9.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	760	1558	-	-	1577	-	-	787
HCM Lane V/C Ratio	0.035	0.019	-	-	0.004	-	-	0.047
HCM Control Delay (s)	9.9	7.4	0	-	7.3	0	-	9.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	37	3	10	37	2	7	13	7	8	16	3
Future Vol, veh/h	2	37	3	10	37	2	7	13	7	8	16	3
Conflicting Peds, #/hr	4	0	0	0	0	4	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	0	8	14	0	6	0
Mvmt Flow	2	44	4	12	44	2	8	15	8	10	19	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	105	82	22	101	80	25	24	0	0	25	0	0
Stage 1	41	41	-	37	37	-	-	-	-	-	-	-
Stage 2	64	41	-	64	43	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	880	812	1061	885	814	1057	1604	-	-	1603	-	-
Stage 1	979	865	-	984	868	-	-	-	-	-	-	-
Stage 2	952	865	-	952	863	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	830	802	1060	837	804	1052	1604	-	-	1597	-	-
Mov Cap-2 Maneuver	830	802	-	837	804	-	-	-	-	-	-	-
Stage 1	973	859	-	978	863	-	-	-	-	-	-	-
Stage 2	893	860	-	895	857	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	9.7	1.9	2.2
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1604	-	-	818	818	1597	-	-
HCM Lane V/C Ratio	0.005	-	-	0.061	0.071	0.006	-	-
HCM Control Delay (s)	7.3	0	-	9.7	9.7	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	4	45	3	0	2	40	0	0	4	1	4
Future Vol, veh/h	0	4	45	3	0	2	40	0	0	4	1	4
Peak Hour Factor	0.92	0.83	0.83	0.83	0.92	0.83	0.83	0.83	0.92	0.83	0.83	0.83
Heavy Vehicles, %	2	0	2	0	2	0	0	0	2	0	0	0
Mvmt Flow	0	5	54	4	0	2	48	0	0	5	1	5
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.3	7.2	7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	44%	8%	5%	0%
Vol Thru, %	11%	87%	95%	14%
Vol Right, %	44%	6%	0%	86%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	52	42	7
LT Vol	4	4	2	0
Through Vol	1	45	40	1
RT Vol	4	3	0	6
Lane Flow Rate	11	63	51	8
Geometry Grp	1	1	1	1
Degree of Util (X)	0.012	0.069	0.056	0.008
Departure Headway (Hd)	3.924	3.952	3.99	3.59
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	907	908	899	990
Service Time	1.971	1.967	2.007	1.638
HCM Lane V/C Ratio	0.012	0.069	0.057	0.008
HCM Control Delay	7	7.3	7.2	6.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.2	0.2	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	1	6
Future Vol, veh/h	0	0	1	6
Peak Hour Factor	0.92	0.83	0.83	0.83
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	1	7
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	6.7
HCM LOS	A

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	8	4	732	945	5
Future Vol, veh/h	3	8	4	732	945	5
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	8	4	771	995	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1777	998	1001	0	-	0
Stage 1	998	-	-	-	-	-
Stage 2	779	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	91	296	692	-	-	-
Stage 1	357	-	-	-	-	-
Stage 2	452	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	90	296	692	-	-	-
Mov Cap-2 Maneuver	90	-	-	-	-	-
Stage 1	357	-	-	-	-	-
Stage 2	447	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	26.1	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	692	-	182	-	-
HCM Lane V/C Ratio	0.006	-	0.064	-	-
HCM Control Delay (s)	10.2	0	26.1	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

APPENDIX 5.

FUTURE OPERATIONS RESULTS

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	7	696	15	1	584
Future Vol, veh/h	14	7	696	15	1	584
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	125	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	6	0	0	4
Mvmt Flow	15	8	757	16	1	635

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1394	757	0	0	757	0
Stage 1	757	-	-	-	-	-
Stage 2	637	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	158	411	-	-	863	-
Stage 1	467	-	-	-	-	-
Stage 2	531	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	158	411	-	-	863	-
Mov Cap-2 Maneuver	158	-	-	-	-	-
Stage 1	467	-	-	-	-	-
Stage 2	530	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.4	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	199	863	-
HCM Lane V/C Ratio	-	-	0.115	0.001	-
HCM Control Delay (s)	-	-	25.4	9.2	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	1	0	0	0	0	701	0	0	610	4
Future Vol, veh/h	4	0	1	0	0	0	0	701	0	0	610	4
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	65	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	6	0	0	4	0
Mvmt Flow	4	0	1	0	0	0	0	754	0	0	656	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1414	1414	659	1414	1416	756	661	0	0	755	0	0
Stage 1	659	659	-	755	755	-	-	-	-	-	-	-
Stage 2	755	755	-	659	661	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	116	139	467	116	139	411	937	-	-	865	-	-
Stage 1	456	464	-	404	420	-	-	-	-	-	-	-
Stage 2	404	420	-	456	463	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	116	139	467	116	139	410	937	-	-	864	-	-
Mov Cap-2 Maneuver	116	139	-	116	139	-	-	-	-	-	-	-
Stage 1	456	464	-	404	420	-	-	-	-	-	-	-
Stage 2	404	420	-	455	463	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	32.3	0	0	0
HCM LOS	D	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	937	-	-	137	-	864	-	-
HCM Lane V/C Ratio	-	-	-	0.039	-	-	-	-
HCM Control Delay (s)	0	-	-	32.3	0	0	-	-
HCM Lane LOS	A	-	-	D	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	23	675	0	5	599
Future Vol, veh/h	0	23	675	0	5	599
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	6	0	0	4
Mvmt Flow	0	25	734	0	5	651

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1396	734	0	0	734	0
Stage 1	734	-	-	-	-	-
Stage 2	662	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	157	423	-	-	880	-
Stage 1	478	-	-	-	-	-
Stage 2	517	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	156	423	-	-	880	-
Mov Cap-2 Maneuver	156	-	-	-	-	-
Stage 1	478	-	-	-	-	-
Stage 2	514	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	423	880	-
HCM Lane V/C Ratio	-	-	0.059	0.006	-
HCM Control Delay (s)	-	-	14	9.1	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	7.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	22	1	0	5	1
Future Vol, veh/h	1	22	1	0	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	29	1	0	7	1

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	16	1	0	0	1	0
Stage 1	1	-	-	-	-	-
Stage 2	15	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	1008	1090	-	-	1635	-
Stage 1	1028	-	-	-	-	-
Stage 2	1013	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1004	1090	-	-	1635	-
Mov Cap-2 Maneuver	1004	-	-	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	1009	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1086	1635	-
HCM Lane V/C Ratio	-	-	0.028	0.004	-
HCM Control Delay (s)	-	-	8.4	7.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2	3	0	4	18	0
Future Vol, veh/h	2	3	0	4	18	0
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	4	0	6	26	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	7	0	11	6
Stage 1	-	-	-	-	5	-
Stage 2	-	-	-	-	6	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1627	-	1014	1083
Stage 1	-	-	-	-	1023	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1625	-	1014	1082
Mov Cap-2 Maneuver	-	-	-	-	1014	-
Stage 1	-	-	-	-	1023	-
Stage 2	-	-	-	-	1022	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1014	-	-	1625	-
HCM Lane V/C Ratio	0.025	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↑			↑	
Traffic Vol, veh/h	3	0	5	2	0	26	4	648	4	10	582	0
Future Vol, veh/h	3	0	5	2	0	26	4	648	4	10	582	0
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	4	0	6	0	0	4	0
Mvmt Flow	3	0	6	2	0	29	4	720	4	11	647	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1416	1403	648	1403	1401	722	648	0	0	724	0	0
Stage 1	670	670	-	731	731	-	-	-	-	-	-	-
Stage 2	746	733	-	672	670	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.24	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.336	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	116	141	474	118	141	423	947	-	-	888	-	-
Stage 1	450	459	-	416	430	-	-	-	-	-	-	-
Stage 2	409	429	-	449	459	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	107	139	474	115	139	423	947	-	-	888	-	-
Mov Cap-2 Maneuver	107	139	-	115	139	-	-	-	-	-	-	-
Stage 1	448	453	-	414	428	-	-	-	-	-	-	-
Stage 2	379	427	-	438	453	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.2	16.1	0.1	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	947	-	-	207	355	888	-	-
HCM Lane V/C Ratio	0.005	-	-	0.043	0.088	0.013	-	-
HCM Control Delay (s)	8.8	-	-	23.2	16.1	9.1	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.3	0	-	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	0	11	48	0	15	4	636	21	6	578	6
Future Vol, veh/h	10	0	11	48	0	15	4	636	21	6	578	6
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	80	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	12	52	0	16	4	684	23	6	622	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1351	1354	626	1348	1346	695	629	0	0	706	0	0
Stage 1	639	639	-	704	704	-	-	-	-	-	-	-
Stage 2	712	715	-	644	642	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	127	150	484	128	151	442	953	-	-	892	-	-
Stage 1	464	470	-	428	440	-	-	-	-	-	-	-
Stage 2	423	434	-	461	469	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	121	148	484	124	149	442	953	-	-	892	-	-
Mov Cap-2 Maneuver	121	148	-	124	149	-	-	-	-	-	-	-
Stage 1	462	466	-	426	438	-	-	-	-	-	-	-
Stage 2	406	432	-	447	465	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.4	47.4	0.1	0.1
HCM LOS	D	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	953	-	-	199	150	892	-	-
HCM Lane V/C Ratio	0.005	-	-	0.113	0.452	0.007	-	-
HCM Control Delay (s)	8.8	-	-	25.4	47.4	9.1	-	-
HCM Lane LOS	A	-	-	D	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	2.1	0	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	16	0	1	65	0	3	2	0	2	2	3
Future Vol, veh/h	6	16	0	1	65	0	3	2	0	2	2	3
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	0	0	0	0	0	0	33	0	0	0	0	0
Mvmt Flow	8	22	0	1	88	0	4	3	0	3	3	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	89	0	0	22	0	0	132	130	23	132	130	89
Stage 1	-	-	-	-	-	-	38	38	-	92	92	-
Stage 2	-	-	-	-	-	-	94	92	-	40	38	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.43	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.43	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.43	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.797	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1519	-	-	1607	-	-	773	764	1060	845	764	975
Stage 1	-	-	-	-	-	-	904	867	-	920	823	-
Stage 2	-	-	-	-	-	-	842	823	-	980	867	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1519	-	-	1605	-	-	764	759	1059	837	759	974
Mov Cap-2 Maneuver	-	-	-	-	-	-	764	759	-	837	759	-
Stage 1	-	-	-	-	-	-	899	863	-	915	821	-
Stage 2	-	-	-	-	-	-	835	821	-	971	863	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0.1	9.8	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	762	1519	-	-	1605	-	-	864
HCM Lane V/C Ratio	0.009	0.005	-	-	0.001	-	-	0.011
HCM Control Delay (s)	9.8	7.4	0	-	7.2	0	-	9.2
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	14	0	1	65	9	2	17	0	1	4	0
Future Vol, veh/h	0	14	0	1	65	9	2	17	0	1	4	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	0	6	0	0	0	0
Mvmt Flow	0	17	0	1	78	11	2	20	0	1	5	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	78	32	5	41	32	21	5	0	0	20	0	0
Stage 1	7	7	-	25	25	-	-	-	-	-	-	-
Stage 2	71	25	-	16	7	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	916	865	1084	968	865	1062	1630	-	-	1609	-	-
Stage 1	1020	894	-	998	878	-	-	-	-	-	-	-
Stage 2	944	878	-	1009	894	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	842	863	1084	952	863	1061	1630	-	-	1607	-	-
Mov Cap-2 Maneuver	842	863	-	952	863	-	-	-	-	-	-	-
Stage 1	1019	893	-	997	877	-	-	-	-	-	-	-
Stage 2	849	877	-	989	893	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	9.5	0.8	1.4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1630	-	-	863	884	1607	-	-
HCM Lane V/C Ratio	0.001	-	-	0.02	0.102	0.001	-	-
HCM Control Delay (s)	7.2	0	-	9.3	9.5	7.2	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.3	0	-	-

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	0	17	1	0	5	63	1	0	1	1	2
Future Vol, veh/h	0	0	17	1	0	5	63	1	0	1	1	2
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	0	6	0	2	0	0	0	2	0	0	0
Mvmt Flow	0	0	19	1	0	6	70	1	0	1	1	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.2	7.3	6.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	0%	7%	0%
Vol Thru, %	25%	94%	91%	0%
Vol Right, %	50%	6%	1%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	18	69	6
LT Vol	1	0	5	0
Through Vol	1	17	63	0
RT Vol	2	1	1	6
Lane Flow Rate	4	20	77	7
Geometry Grp	1	1	1	1
Degree of Util (X)	0.005	0.022	0.084	0.006
Departure Headway (Hd)	3.823	4.045	3.94	3.47
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	932	887	913	1026
Service Time	1.861	2.061	1.946	1.51
HCM Lane V/C Ratio	0.004	0.023	0.084	0.007
HCM Control Delay	6.9	7.2	7.3	6.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.1	0.3	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	0	6
Future Vol, veh/h	0	0	0	6
Peak Hour Factor	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	0	7
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	6.5
HCM LOS	A

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	6	7	655	584	0
Future Vol, veh/h	3	6	7	655	584	0
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	6	8	704	628	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1348	629	629	0	-	0
Stage 1	629	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	166	482	953	-	-	-
Stage 1	531	-	-	-	-	-
Stage 2	483	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	163	482	953	-	-	-
Mov Cap-2 Maneuver	163	-	-	-	-	-
Stage 1	530	-	-	-	-	-
Stage 2	476	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.8	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	953	-	292	-	-
HCM Lane V/C Ratio	0.008	-	0.033	-	-
HCM Control Delay (s)	8.8	0	17.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	5	732	18	5	923
Future Vol, veh/h	11	5	732	18	5	923
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	125	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	12	5	771	19	5	972

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1754	772	0	0	772	0
Stage 1	772	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	95	403	-	-	852	-
Stage 1	459	-	-	-	-	-
Stage 2	366	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	94	403	-	-	852	-
Mov Cap-2 Maneuver	94	-	-	-	-	-
Stage 1	459	-	-	-	-	-
Stage 2	361	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	38.5	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	124	852	-
HCM Lane V/C Ratio	-	-	0.136	0.006	-
HCM Control Delay (s)	-	-	38.5	9.3	0
HCM Lane LOS	-	-	E	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↰	↱		↰	↑	
Traffic Vol, veh/h	5	0	4	1	0	2	0	744	0	1	919	4
Future Vol, veh/h	5	0	4	1	0	2	0	744	0	1	919	4
Conflicting Peds, #/hr	5	0	0	0	0	5	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	65	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	1	0
Mvmt Flow	5	0	4	1	0	2	0	791	0	1	978	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1780	1777	980	1779	1779	800	982	0	0	795	0	0
Stage 1	982	982	-	795	795	-	-	-	-	-	-	-
Stage 2	798	795	-	984	984	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	65	83	306	65	83	388	711	-	-	835	-	-
Stage 1	302	330	-	384	402	-	-	-	-	-	-	-
Stage 2	382	402	-	302	329	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	64	83	306	64	83	385	711	-	-	831	-	-
Mov Cap-2 Maneuver	64	83	-	64	83	-	-	-	-	-	-	-
Stage 1	302	330	-	383	400	-	-	-	-	-	-	-
Stage 2	378	400	-	297	329	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	45.2	30.6	0	0
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	711	-	-	99	144	831	-	-
HCM Lane V/C Ratio	-	-	-	0.097	0.022	0.001	-	-
HCM Control Delay (s)	0	-	-	45.2	30.6	9.3	-	-
HCM Lane LOS	A	-	-	E	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	5	739	0	18	912
Future Vol, veh/h	0	5	739	0	18	912
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	0	5	770	0	19	950

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1760	772	0	0	772	0
Stage 1	772	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	94	403	-	-	852	-
Stage 1	459	-	-	-	-	-
Stage 2	364	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	92	402	-	-	852	-
Mov Cap-2 Maneuver	92	-	-	-	-	-
Stage 1	458	-	-	-	-	-
Stage 2	356	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.1	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	402	852	-
HCM Lane V/C Ratio	-	-	0.013	0.022	-
HCM Control Delay (s)	-	-	14.1	9.3	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0.1	-

Intersection	
Int Delay, s/veh	6.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	6	1	6	19	0
Future Vol, veh/h	4	6	1	6	19	0
Conflicting Peds, #/hr	1	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	17	0	0	0	0
Mvmt Flow	5	8	1	8	25	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	62	10	0	0	14	0
Stage 1	10	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.4	6.37	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.453	-	-	2.2	-
Pot Cap-1 Maneuver	949	1029	-	-	1617	-
Stage 1	1018	-	-	-	-	-
Stage 2	976	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	929	1024	-	-	1617	-
Mov Cap-2 Maneuver	929	-	-	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	960	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	7.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	984	1617	-
HCM Lane V/C Ratio	-	-	0.014	0.016	-
HCM Control Delay (s)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	8	16	1	4	7	0
Future Vol, veh/h	8	16	1	4	7	0
Conflicting Peds, #/hr	0	3	3	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	69	69	69	69
Heavy Vehicles, %	0	0	0	0	29	0
Mvmt Flow	12	23	1	6	10	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	38	0	36	26
Stage 1	-	-	-	-	26	-
Stage 2	-	-	-	-	10	-
Critical Hdwy	-	-	4.1	-	7.39	6.2
Critical Hdwy Stg 1	-	-	-	-	6.39	-
Critical Hdwy Stg 2	-	-	-	-	6.39	-
Follow-up Hdwy	-	-	2.2	-	3.761	3.3
Pot Cap-1 Maneuver	-	-	1585	-	906	1056
Stage 1	-	-	-	-	926	-
Stage 2	-	-	-	-	945	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1585	-	902	1053
Mov Cap-2 Maneuver	-	-	-	-	902	-
Stage 1	-	-	-	-	926	-
Stage 2	-	-	-	-	943	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	902	-	-	1585	-
HCM Lane V/C Ratio	0.011	-	-	0.001	-
HCM Control Delay (s)	9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑			↑	
Traffic Vol, veh/h	7	0	7	7	0	17	10	716	7	28	873	5
Future Vol, veh/h	7	0	7	7	0	17	10	716	7	28	873	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	2	14	7	2	0
Mvmt Flow	7	0	7	7	0	18	10	746	7	29	909	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1749	1746	912	1746	1745	751	915	0	0	755	0	0
Stage 1	970	970	-	772	772	-	-	-	-	-	-	-
Stage 2	779	776	-	974	973	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.17	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.263	-	-
Pot Cap-1 Maneuver	68	87	335	68	87	414	754	-	-	833	-	-
Stage 1	307	334	-	395	412	-	-	-	-	-	-	-
Stage 2	392	410	-	305	333	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	63	83	335	64	83	413	754	-	-	833	-	-
Mov Cap-2 Maneuver	63	83	-	64	83	-	-	-	-	-	-	-
Stage 1	303	322	-	389	406	-	-	-	-	-	-	-
Stage 2	370	404	-	288	321	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	44.3	31.8	0.1	0.3
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	754	-	-	106	159	833	-	-
HCM Lane V/C Ratio	0.014	-	-	0.138	0.157	0.035	-	-
HCM Control Delay (s)	9.8	-	-	44.3	31.8	9.5	-	-
HCM Lane LOS	A	-	-	E	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.5	0.1	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	3	32	0	13	5	721	42	17	867	10
Future Vol, veh/h	3	0	3	32	0	13	5	721	42	17	867	10
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	80	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	3	35	0	14	5	792	46	19	953	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1832	1846	959	1823	1828	816	965	0	0	838	0	0
Stage 1	997	997	-	826	826	-	-	-	-	-	-	-
Stage 2	835	849	-	997	1002	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	59	75	312	60	77	377	714	-	-	796	-	-
Stage 1	294	322	-	366	387	-	-	-	-	-	-	-
Stage 2	362	377	-	294	320	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	55	73	312	58	75	377	714	-	-	795	-	-
Mov Cap-2 Maneuver	55	73	-	58	75	-	-	-	-	-	-	-
Stage 1	292	314	-	363	384	-	-	-	-	-	-	-
Stage 2	346	374	-	284	312	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	46.2	112.6	0.1	0.2
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	714	-	-	94	77	795	-	-
HCM Lane V/C Ratio	0.008	-	-	0.07	0.642	0.023	-	-
HCM Control Delay (s)	10.1	-	-	46.2	112.6	9.6	-	-
HCM Lane LOS	B	-	-	E	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	2.9	0.1	-	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	35	2	0	34	4	9	7	6	3	8	12
Future Vol, veh/h	13	35	2	0	34	4	9	7	6	3	8	12
Conflicting Peds, #/hr	2	0	1	1	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	0	3	0	0	0	0	0	0	0	33	0	0
Mvmt Flow	16	44	3	0	43	5	11	9	8	4	10	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	50	0	0	48	0	0	137	129	47	135	129	48
Stage 1	-	-	-	-	-	-	79	79	-	48	48	-
Stage 2	-	-	-	-	-	-	58	50	-	87	81	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.43	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.43	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.797	4	3.3
Pot Cap-1 Maneuver	1570	-	-	1572	-	-	838	765	1028	770	765	1027
Stage 1	-	-	-	-	-	-	935	833	-	892	859	-
Stage 2	-	-	-	-	-	-	959	857	-	849	832	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1570	-	-	1572	-	-	810	755	1027	750	755	1025
Mov Cap-2 Maneuver	-	-	-	-	-	-	810	755	-	750	755	-
Stage 1	-	-	-	-	-	-	925	824	-	881	857	-
Stage 2	-	-	-	-	-	-	934	855	-	825	823	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0	9.4	9.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	839	1570	-	-	1572	-	-	874
HCM Lane V/C Ratio	0.033	0.01	-	-	-	-	-	0.033
HCM Control Delay (s)	9.4	7.3	0	-	0	-	-	9.3
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	39	3	9	33	2	4	6	5	15	12	2
Future Vol, veh/h	0	39	3	9	33	2	4	6	5	15	12	2
Conflicting Peds, #/hr	3	0	0	0	0	3	3	0	2	2	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	5	0	22	0	0	0	0	0	0	8	0
Mvmt Flow	0	45	3	10	38	2	5	7	6	17	14	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	96	77	18	95	75	15	19	0	0	15	0	0
Stage 1	53	53	-	21	21	-	-	-	-	-	-	-
Stage 2	43	24	-	74	54	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.55	6.2	7.32	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.55	-	6.32	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.55	-	6.32	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.045	3.3	3.698	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	891	808	1066	842	819	1070	1611	-	-	1616	-	-
Stage 1	965	845	-	948	882	-	-	-	-	-	-	-
Stage 2	976	869	-	888	854	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	843	793	1063	793	804	1065	1611	-	-	1611	-	-
Mov Cap-2 Maneuver	843	793	-	793	804	-	-	-	-	-	-	-
Stage 1	959	833	-	943	878	-	-	-	-	-	-	-
Stage 2	926	865	-	828	842	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	9.7	1.9	3.8
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1611	-	-	808	811	1611	-	-
HCM Lane V/C Ratio	0.003	-	-	0.06	0.063	0.011	-	-
HCM Control Delay (s)	7.2	0	-	9.7	9.7	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	2	53	6	0	1	32	0	0	5	2	3
Future Vol, veh/h	0	2	53	6	0	1	32	0	0	5	2	3
Peak Hour Factor	0.92	0.75	0.75	0.75	0.92	0.75	0.75	0.75	0.92	0.75	0.75	0.75
Heavy Vehicles, %	2	0	4	0	2	0	0	0	2	40	0	0
Mvmt Flow	0	3	71	8	0	1	43	0	0	7	3	4
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.3	7.2	7.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	50%	3%	3%	0%
Vol Thru, %	20%	87%	97%	0%
Vol Right, %	30%	10%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	61	33	4
LT Vol	5	2	1	0
Through Vol	2	53	32	0
RT Vol	3	6	0	4
Lane Flow Rate	13	81	44	5
Geometry Grp	1	1	1	1
Degree of Util (X)	0.017	0.088	0.049	0.005
Departure Headway (Hd)	4.721	3.914	4	3.525
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	755	917	895	1006
Service Time	2.771	1.932	2.023	1.579
HCM Lane V/C Ratio	0.017	0.088	0.049	0.005
HCM Control Delay	7.9	7.3	7.2	6.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.3	0.2	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	0	4
Future Vol, veh/h	0	0	0	4
Peak Hour Factor	0.92	0.75	0.75	0.75
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	0	5
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	6.6
HCM LOS	A

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	2	8	752	896	1
Future Vol, veh/h	1	2	8	752	896	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	2	9	826	985	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1829	985	986	0	-	0
Stage 1	985	-	-	-	-	-
Stage 2	844	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	84	301	701	-	-	-
Stage 1	362	-	-	-	-	-
Stage 2	422	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	82	301	701	-	-	-
Mov Cap-2 Maneuver	82	-	-	-	-	-
Stage 1	362	-	-	-	-	-
Stage 2	412	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.1	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	701	-	159	-	-
HCM Lane V/C Ratio	0.013	-	0.021	-	-
HCM Control Delay (s)	10.2	0	28.1	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	3	756	9	4	972
Future Vol, veh/h	7	3	756	9	4	972
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	125	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	1
Mvmt Flow	7	3	788	9	4	1013

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1810	789	0	0	789	0
Stage 1	789	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	88	394	-	-	840	-
Stage 1	451	-	-	-	-	-
Stage 2	351	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	87	394	-	-	840	-
Mov Cap-2 Maneuver	87	-	-	-	-	-
Stage 1	451	-	-	-	-	-
Stage 2	347	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	39.7	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	114	840	-
HCM Lane V/C Ratio	-	-	0.091	0.005	-
HCM Control Delay (s)	-	-	39.7	9.3	0
HCM Lane LOS	-	-	E	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	1	0	1	2	755	0	1	981	4
Future Vol, veh/h	0	0	0	1	0	1	2	755	0	1	981	4
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	65	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	2	0
Mvmt Flow	0	0	0	1	0	1	2	786	0	1	1022	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1817	1820	1025	1821	1822	789	1026	0	0	789	0	0
Stage 1	1026	1026	-	794	794	-	-	-	-	-	-	-
Stage 2	791	794	-	1027	1028	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	61	78	288	60	78	394	685	-	-	840	-	-
Stage 1	286	315	-	384	403	-	-	-	-	-	-	-
Stage 2	386	403	-	285	314	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	61	77	288	60	77	393	684	-	-	840	-	-
Mov Cap-2 Maneuver	61	77	-	60	77	-	-	-	-	-	-	-
Stage 1	285	315	-	382	401	-	-	-	-	-	-	-
Stage 2	384	401	-	284	314	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	40.3	0	0
HCM LOS	A	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	684	-	-	-	104	840	-	-
HCM Lane V/C Ratio	0.003	-	-	-	0.02	0.001	-	-
HCM Control Delay (s)	10.3	-	-	0	40.3	9.3	-	-
HCM Lane LOS	B	-	-	A	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	11	749	0	8	973
Future Vol, veh/h	0	11	749	0	8	973
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	9	2	0	0	1
Mvmt Flow	0	12	805	0	9	1046

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1869	806	0	0	806	0
Stage 1	806	-	-	-	-	-
Stage 2	1063	-	-	-	-	-
Critical Hdwy	6.4	6.29	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.381	-	-	2.2	-
Pot Cap-1 Maneuver	80	371	-	-	828	-
Stage 1	443	-	-	-	-	-
Stage 2	335	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	79	371	-	-	828	-
Mov Cap-2 Maneuver	79	-	-	-	-	-
Stage 1	443	-	-	-	-	-
Stage 2	331	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	371	828	-
HCM Lane V/C Ratio	-	-	0.032	0.01	-
HCM Control Delay (s)	-	-	15	9.4	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	6.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	13	1	2	6	2
Future Vol, veh/h	3	13	1	2	6	2
Conflicting Peds, #/hr	2	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	33	8	0	0	0	0
Mvmt Flow	4	17	1	3	8	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	24	3	0	0	4	0
Stage 1	3	-	-	-	-	-
Stage 2	21	-	-	-	-	-
Critical Hdwy	6.73	6.28	-	-	4.1	-
Critical Hdwy Stg 1	5.73	-	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-	-
Follow-up Hdwy	3.797	3.372	-	-	2.2	-
Pot Cap-1 Maneuver	918	1064	-	-	1631	-
Stage 1	945	-	-	-	-	-
Stage 2	927	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	912	1064	-	-	1631	-
Mov Cap-2 Maneuver	912	-	-	-	-	-
Stage 1	945	-	-	-	-	-
Stage 2	921	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	5.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1032	1631	-
HCM Lane V/C Ratio	-	-	0.021	0.005	-
HCM Control Delay (s)	-	-	8.6	7.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	5.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2	5	1	0	13	1
Future Vol, veh/h	2	5	1	0	13	1
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	0	0	100	0	15	0
Mvmt Flow	3	6	1	0	16	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	10	0	10	7
Stage 1	-	-	-	-	7	-
Stage 2	-	-	-	-	3	-
Critical Hdwy	-	-	5.1	-	6.55	6.2
Critical Hdwy Stg 1	-	-	-	-	5.55	-
Critical Hdwy Stg 2	-	-	-	-	5.55	-
Follow-up Hdwy	-	-	3.1	-	3.635	3.3
Pot Cap-1 Maneuver	-	-	1150	-	977	1081
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	987	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1150	-	975	1080
Mov Cap-2 Maneuver	-	-	-	-	975	-
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	986	-

Approach	EB	WB	NB
HCM Control Delay, s	0	8.1	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	982	-	-	1150	-
HCM Lane V/C Ratio	0.018	-	-	0.001	-
HCM Control Delay (s)	8.7	-	-	8.1	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↑			↑	
Traffic Vol, veh/h	0	0	6	6	1	25	9	728	2	22	943	5
Future Vol, veh/h	0	0	6	6	1	25	9	728	2	22	943	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	17	0	4	0	3	0	5	1	0
Mvmt Flow	0	0	6	6	1	26	9	766	2	23	993	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1842	1830	995	1832	1831	768	998	0	0	769	0	0
Stage 1	1042	1042	-	787	787	-	-	-	-	-	-	-
Stage 2	800	788	-	1045	1044	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.27	6.5	6.24	4.1	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.653	4	3.336	2.2	-	-	2.245	-	-
Pot Cap-1 Maneuver	58	77	300	54	77	398	701	-	-	832	-	-
Stage 1	280	309	-	363	406	-	-	-	-	-	-	-
Stage 2	382	405	-	259	309	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	52	74	300	51	74	398	701	-	-	832	-	-
Mov Cap-2 Maneuver	52	74	-	51	74	-	-	-	-	-	-	-
Stage 1	276	300	-	358	400	-	-	-	-	-	-	-
Stage 2	351	399	-	247	300	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.3	32.3	0.1	0.2
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	701	-	-	300	165	832	-	-
HCM Lane V/C Ratio	0.014	-	-	0.021	0.204	0.028	-	-
HCM Control Delay (s)	10.2	-	-	17.3	32.3	9.5	-	-
HCM Lane LOS	B	-	-	C	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.7	0.1	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	3	21	23	3	23	28	712	36	7	943	7
Future Vol, veh/h	6	3	21	23	3	23	28	712	36	7	943	7
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	80	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	3	22	24	3	24	29	749	38	7	993	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1853	1857	996	1851	1842	769	1000	0	0	787	0	0
Stage 1	1011	1011	-	827	827	-	-	-	-	-	-	-
Stage 2	842	846	-	1024	1015	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	57	74	297	57	75	401	692	-	-	832	-	-
Stage 1	289	317	-	366	386	-	-	-	-	-	-	-
Stage 2	359	378	-	284	316	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	50	70	297	49	71	401	692	-	-	831	-	-
Mov Cap-2 Maneuver	50	70	-	49	71	-	-	-	-	-	-	-
Stage 1	277	314	-	351	370	-	-	-	-	-	-	-
Stage 2	320	362	-	258	313	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	42.1	96.1	0.4	0.1
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	692	-	-	128	86	831	-	-
HCM Lane V/C Ratio	0.043	-	-	0.247	0.6	0.009	-	-
HCM Control Delay (s)	10.4	-	-	42.1	96.1	9.4	-	-
HCM Lane LOS	B	-	-	E	F	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9	2.7	0	-	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	33	2	5	31	17	10	9	3	6	17	8
Future Vol, veh/h	25	33	2	5	31	17	10	9	3	6	17	8
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	30	40	2	6	37	20	12	11	4	7	20	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	59	0	0	42	0	0	176	172	43	171	163	49
Stage 1	-	-	-	-	-	-	101	101	-	61	61	-
Stage 2	-	-	-	-	-	-	75	71	-	110	102	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1558	-	-	1580	-	-	791	725	1033	797	733	1025
Stage 1	-	-	-	-	-	-	910	815	-	955	848	-
Stage 2	-	-	-	-	-	-	939	840	-	900	815	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1558	-	-	1577	-	-	752	707	1031	768	715	1024
Mov Cap-2 Maneuver	-	-	-	-	-	-	752	707	-	768	715	-
Stage 1	-	-	-	-	-	-	892	799	-	935	844	-
Stage 2	-	-	-	-	-	-	904	836	-	865	799	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.1	0.7	9.9	9.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	760	1558	-	-	1577	-	-	787
HCM Lane V/C Ratio	0.035	0.019	-	-	0.004	-	-	0.047
HCM Control Delay (s)	9.9	7.4	0	-	7.3	0	-	9.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	37	3	10	37	2	7	13	7	8	16	3
Future Vol, veh/h	2	37	3	10	37	2	7	13	7	8	16	3
Conflicting Peds, #/hr	4	0	0	0	0	4	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	0	8	14	0	6	0
Mvmt Flow	2	44	4	12	44	2	8	15	8	10	19	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	105	82	22	101	80	25	24	0	0	25	0	0
Stage 1	41	41	-	37	37	-	-	-	-	-	-	-
Stage 2	64	41	-	64	43	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	880	812	1061	885	814	1057	1604	-	-	1603	-	-
Stage 1	979	865	-	984	868	-	-	-	-	-	-	-
Stage 2	952	865	-	952	863	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	830	802	1060	837	804	1052	1604	-	-	1597	-	-
Mov Cap-2 Maneuver	830	802	-	837	804	-	-	-	-	-	-	-
Stage 1	973	859	-	978	863	-	-	-	-	-	-	-
Stage 2	893	860	-	895	857	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	9.7	1.9	2.2
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1604	-	-	818	818	1597	-	-
HCM Lane V/C Ratio	0.005	-	-	0.061	0.071	0.006	-	-
HCM Control Delay (s)	7.3	0	-	9.7	9.7	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	4	45	3	0	2	40	0	0	4	1	4
Future Vol, veh/h	0	4	45	3	0	2	40	0	0	4	1	4
Peak Hour Factor	0.92	0.83	0.83	0.83	0.92	0.83	0.83	0.83	0.92	0.83	0.83	0.83
Heavy Vehicles, %	2	0	2	0	2	0	0	0	2	0	0	0
Mvmt Flow	0	5	54	4	0	2	48	0	0	5	1	5
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.3	7.2	7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	44%	8%	5%	0%
Vol Thru, %	11%	87%	95%	14%
Vol Right, %	44%	6%	0%	86%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	52	42	7
LT Vol	4	4	2	0
Through Vol	1	45	40	1
RT Vol	4	3	0	6
Lane Flow Rate	11	63	51	8
Geometry Grp	1	1	1	1
Degree of Util (X)	0.012	0.069	0.056	0.008
Departure Headway (Hd)	3.924	3.952	3.99	3.59
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	907	908	899	990
Service Time	1.971	1.967	2.007	1.638
HCM Lane V/C Ratio	0.012	0.069	0.057	0.008
HCM Control Delay	7	7.3	7.2	6.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.2	0.2	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	1	6
Future Vol, veh/h	0	0	1	6
Peak Hour Factor	0.92	0.83	0.83	0.83
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	1	7
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	6.7
HCM LOS	A

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	8	4	739	950	5
Future Vol, veh/h	3	8	4	739	950	5
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	8	4	778	1000	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1790	1004	1006	0	-	0
Stage 1	1004	-	-	-	-	-
Stage 2	786	-	-	-	-	-
Critical Hdwy	7.12	6.22	4.12	-	-	-
Critical Hdwy Stg 1	6.12	-	-	-	-	-
Critical Hdwy Stg 2	6.12	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	63	294	689	-	-	-
Stage 1	291	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	62	294	689	-	-	-
Mov Cap-2 Maneuver	62	-	-	-	-	-
Stage 1	288	-	-	-	-	-
Stage 2	381	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	31.8	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	689	-	146	-	-
HCM Lane V/C Ratio	0.006	-	0.079	-	-
HCM Control Delay (s)	10.3	0	31.8	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

APPENDIX 6.

FUTURE WITH PROJECT OPERATIONS RESULTS

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	7	711	15	1	588
Future Vol, veh/h	14	7	711	15	1	588
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	125	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	6	0	0	4
Mvmt Flow	15	8	773	16	1	639

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1414	773	0	0	773	0
Stage 1	773	-	-	-	-	-
Stage 2	641	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	153	402	-	-	851	-
Stage 1	459	-	-	-	-	-
Stage 2	528	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	153	402	-	-	851	-
Mov Cap-2 Maneuver	153	-	-	-	-	-
Stage 1	459	-	-	-	-	-
Stage 2	527	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.1	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	193	851	-
HCM Lane V/C Ratio	-	-	0.118	0.001	-
HCM Control Delay (s)	-	-	26.1	9.2	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↱		↰	↑	
Traffic Vol, veh/h	4	0	1	0	0	0	0	716	0	0	614	4
Future Vol, veh/h	4	0	1	0	0	0	0	716	0	0	614	4
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	65	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	6	0	0	4	0
Mvmt Flow	4	0	1	0	0	0	0	770	0	0	660	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1434	1434	663	1434	1437	772	666	0	0	771	0	0
Stage 1	663	663	-	771	771	-	-	-	-	-	-	-
Stage 2	771	771	-	663	666	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	113	135	465	113	135	403	933	-	-	853	-	-
Stage 1	454	462	-	396	413	-	-	-	-	-	-	-
Stage 2	396	413	-	454	460	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	113	135	465	113	135	402	933	-	-	852	-	-
Mov Cap-2 Maneuver	113	135	-	113	135	-	-	-	-	-	-	-
Stage 1	454	462	-	396	413	-	-	-	-	-	-	-
Stage 2	396	413	-	453	460	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	33.2	0	0	0
HCM LOS	D	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	933	-	-	133	-	852	-	-
HCM Lane V/C Ratio	-	-	-	0.04	-	-	-	-
HCM Control Delay (s)	0	-	-	33.2	0	0	-	-
HCM Lane LOS	A	-	-	D	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	38	675	4	9	599
Future Vol, veh/h	14	38	675	4	9	599
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	6	0	0	4
Mvmt Flow	15	41	734	4	10	651

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1407	736	0	0	738	0
Stage 1	736	-	-	-	-	-
Stage 2	671	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	155	422	-	-	877	-
Stage 1	477	-	-	-	-	-
Stage 2	512	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	153	422	-	-	877	-
Mov Cap-2 Maneuver	153	-	-	-	-	-
Stage 1	477	-	-	-	-	-
Stage 2	506	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.7	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	286	877	-
HCM Lane V/C Ratio	-	-	0.198	0.011	-
HCM Control Delay (s)	-	-	20.7	9.2	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0	-

Intersection	
Int Delay, s/veh	7.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	22	1	0	5	1
Future Vol, veh/h	1	22	1	0	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	29	1	0	7	1

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	16	1	0	0	1	0
Stage 1	1	-	-	-	-	-
Stage 2	15	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	1008	1090	-	-	1635	-
Stage 1	1028	-	-	-	-	-
Stage 2	1013	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1004	1090	-	-	1635	-
Mov Cap-2 Maneuver	1004	-	-	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	1009	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1086	1635	-
HCM Lane V/C Ratio	-	-	0.028	0.004	-
HCM Control Delay (s)	-	-	8.4	7.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2	3	0	4	18	0
Future Vol, veh/h	2	3	0	4	18	0
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	4	0	6	26	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	7	0	11	6
Stage 1	-	-	-	-	5	-
Stage 2	-	-	-	-	6	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1627	-	1014	1083
Stage 1	-	-	-	-	1023	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1625	-	1014	1082
Mov Cap-2 Maneuver	-	-	-	-	1014	-
Stage 1	-	-	-	-	1023	-
Stage 2	-	-	-	-	1022	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1014	-	-	1625	-
HCM Lane V/C Ratio	0.025	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑			↑	
Traffic Vol, veh/h	3	0	5	2	0	26	4	652	4	10	596	0
Future Vol, veh/h	3	0	5	2	0	26	4	652	4	10	596	0
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	4	0	6	0	0	4	0
Mvmt Flow	3	0	6	2	0	29	4	724	4	11	662	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1435	1423	663	1423	1421	727	663	0	0	729	0	0
Stage 1	685	685	-	736	736	-	-	-	-	-	-	-
Stage 2	750	738	-	687	685	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.24	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.336	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	113	137	465	115	138	421	935	-	-	884	-	-
Stage 1	441	451	-	414	428	-	-	-	-	-	-	-
Stage 2	407	427	-	440	451	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	104	135	465	112	136	421	935	-	-	884	-	-
Mov Cap-2 Maneuver	104	135	-	112	136	-	-	-	-	-	-	-
Stage 1	439	445	-	412	426	-	-	-	-	-	-	-
Stage 2	377	425	-	429	445	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.6	16.2	0.1	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	935	-	-	202	352	884	-	-
HCM Lane V/C Ratio	0.005	-	-	0.044	0.088	0.013	-	-
HCM Control Delay (s)	8.9	-	-	23.6	16.2	9.1	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.3	0	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	0	11	48	0	15	4	640	21	6	592	6
Future Vol, veh/h	10	0	11	48	0	15	4	640	21	6	592	6
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	80	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	12	52	0	16	4	688	23	6	637	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1370	1373	641	1367	1365	699	644	0	0	711	0	0
Stage 1	654	654	-	708	708	-	-	-	-	-	-	-
Stage 2	716	719	-	659	657	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	124	146	475	124	147	440	941	-	-	888	-	-
Stage 1	456	463	-	426	438	-	-	-	-	-	-	-
Stage 2	421	433	-	453	462	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	118	144	475	120	145	440	941	-	-	888	-	-
Mov Cap-2 Maneuver	118	144	-	120	145	-	-	-	-	-	-	-
Stage 1	454	459	-	424	436	-	-	-	-	-	-	-
Stage 2	404	431	-	439	458	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.9	49.9	0.1	0.1
HCM LOS	D	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	941	-	-	195	145	888	-	-
HCM Lane V/C Ratio	0.005	-	-	0.116	0.467	0.007	-	-
HCM Control Delay (s)	8.8	-	-	25.9	49.9	9.1	-	-
HCM Lane LOS	A	-	-	D	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	2.2	0	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	16	0	1	65	0	3	2	0	2	2	3
Future Vol, veh/h	6	16	0	1	65	0	3	2	0	2	2	3
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	0	0	0	0	0	0	33	0	0	0	0	0
Mvmt Flow	8	22	0	1	88	0	4	3	0	3	3	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	89	0	0	22	0	0	132	130	23	132	130	89
Stage 1	-	-	-	-	-	-	38	38	-	92	92	-
Stage 2	-	-	-	-	-	-	94	92	-	40	38	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.43	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.43	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.43	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.797	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1519	-	-	1607	-	-	773	764	1060	845	764	975
Stage 1	-	-	-	-	-	-	904	867	-	920	823	-
Stage 2	-	-	-	-	-	-	842	823	-	980	867	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1519	-	-	1605	-	-	764	759	1059	837	759	974
Mov Cap-2 Maneuver	-	-	-	-	-	-	764	759	-	837	759	-
Stage 1	-	-	-	-	-	-	899	863	-	915	821	-
Stage 2	-	-	-	-	-	-	835	821	-	971	863	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0.1	9.8	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	762	1519	-	-	1605	-	-	864
HCM Lane V/C Ratio	0.009	0.005	-	-	0.001	-	-	0.011
HCM Control Delay (s)	9.8	7.4	0	-	7.2	0	-	9.2
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	14	0	1	65	9	2	17	0	1	4	0
Future Vol, veh/h	0	14	0	1	65	9	2	17	0	1	4	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	0	6	0	0	0	0
Mvmt Flow	0	17	0	1	78	11	2	20	0	1	5	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	78	32	5	41	32	21	5	0	0	20	0	0
Stage 1	7	7	-	25	25	-	-	-	-	-	-	-
Stage 2	71	25	-	16	7	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	916	865	1084	968	865	1062	1630	-	-	1609	-	-
Stage 1	1020	894	-	998	878	-	-	-	-	-	-	-
Stage 2	944	878	-	1009	894	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	842	863	1084	952	863	1061	1630	-	-	1607	-	-
Mov Cap-2 Maneuver	842	863	-	952	863	-	-	-	-	-	-	-
Stage 1	1019	893	-	997	877	-	-	-	-	-	-	-
Stage 2	849	877	-	989	893	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	9.5	0.8	1.4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1630	-	-	863	884	1607	-	-
HCM Lane V/C Ratio	0.001	-	-	0.02	0.102	0.001	-	-
HCM Control Delay (s)	7.2	0	-	9.3	9.5	7.2	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.3	0	-	-

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	0	17	1	0	5	63	1	0	1	1	2
Future Vol, veh/h	0	0	17	1	0	5	63	1	0	1	1	2
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	0	6	0	2	0	0	0	2	0	0	0
Mvmt Flow	0	0	19	1	0	6	70	1	0	1	1	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.2	7.3	6.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	0%	7%	0%
Vol Thru, %	25%	94%	91%	0%
Vol Right, %	50%	6%	1%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	18	69	6
LT Vol	1	0	5	0
Through Vol	1	17	63	0
RT Vol	2	1	1	6
Lane Flow Rate	4	20	77	7
Geometry Grp	1	1	1	1
Degree of Util (X)	0.005	0.022	0.084	0.006
Departure Headway (Hd)	3.823	4.045	3.94	3.47
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	932	887	913	1026
Service Time	1.861	2.061	1.946	1.51
HCM Lane V/C Ratio	0.004	0.023	0.084	0.007
HCM Control Delay	6.9	7.2	7.3	6.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.1	0.3	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	0	6
Future Vol, veh/h	0	0	0	6
Peak Hour Factor	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	0	7
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	6.5
HCM LOS	A

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	6	7	659	598	0
Future Vol, veh/h	3	6	7	659	598	0
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	6	8	709	643	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1368	644	644	0	-	0
Stage 1	644	-	-	-	-	-
Stage 2	724	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	162	473	941	-	-	-
Stage 1	523	-	-	-	-	-
Stage 2	480	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	159	473	941	-	-	-
Mov Cap-2 Maneuver	159	-	-	-	-	-
Stage 1	523	-	-	-	-	-
Stage 2	473	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.1	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	941	-	285	-	-
HCM Lane V/C Ratio	0.008	-	0.034	-	-
HCM Control Delay (s)	8.9	0	18.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	5	739	18	5	939
Future Vol, veh/h	11	5	739	18	5	939
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	125	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	12	5	778	19	5	988

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1778	779	0	0	779	0
Stage 1	779	-	-	-	-	-
Stage 2	999	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	92	399	-	-	847	-
Stage 1	456	-	-	-	-	-
Stage 2	359	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	91	399	-	-	847	-
Mov Cap-2 Maneuver	91	-	-	-	-	-
Stage 1	456	-	-	-	-	-
Stage 2	354	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	39.8	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	120	847	-
HCM Lane V/C Ratio	-	-	0.14	0.006	-
HCM Control Delay (s)	-	-	39.8	9.3	0
HCM Lane LOS	-	-	E	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↰	↱		↰	↑	
Traffic Vol, veh/h	5	0	4	1	0	2	0	751	0	1	935	4
Future Vol, veh/h	5	0	4	1	0	2	0	751	0	1	935	4
Conflicting Peds, #/hr	5	0	0	0	0	5	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	65	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	1	0
Mvmt Flow	5	0	4	1	0	2	0	799	0	1	995	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1804	1802	997	1804	1804	808	999	0	0	803	0	0
Stage 1	999	999	-	803	803	-	-	-	-	-	-	-
Stage 2	805	803	-	1001	1001	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	62	80	299	62	80	384	701	-	-	830	-	-
Stage 1	296	324	-	380	399	-	-	-	-	-	-	-
Stage 2	379	399	-	295	323	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	61	80	299	61	80	381	701	-	-	826	-	-
Mov Cap-2 Maneuver	61	80	-	61	80	-	-	-	-	-	-	-
Stage 1	296	324	-	379	397	-	-	-	-	-	-	-
Stage 2	375	397	-	290	323	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	47.6	31.5	0	0
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	701	-	-	94	139	826	-	-
HCM Lane V/C Ratio	-	-	-	0.102	0.023	0.001	-	-
HCM Control Delay (s)	0	-	-	47.6	31.5	9.4	-	-
HCM Lane LOS	A	-	-	E	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	12	739	13	34	912
Future Vol, veh/h	9	12	739	13	34	912
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	9	13	770	14	35	950

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1800	779	0	0	785	0
Stage 1	779	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	89	399	-	-	843	-
Stage 1	456	-	-	-	-	-
Stage 2	351	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	85	398	-	-	843	-
Mov Cap-2 Maneuver	85	-	-	-	-	-
Stage 1	455	-	-	-	-	-
Stage 2	336	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	32.2	0	0.3
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	154	843	-
HCM Lane V/C Ratio	-	-	0.142	0.042	-
HCM Control Delay (s)	-	-	32.2	9.5	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection	
Int Delay, s/veh	6.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	6	1	6	19	0
Future Vol, veh/h	4	6	1	6	19	0
Conflicting Peds, #/hr	1	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	17	0	0	0	0
Mvmt Flow	5	8	1	8	25	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	62	10	0	0	14	0
Stage 1	10	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.4	6.37	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.453	-	-	2.2	-
Pot Cap-1 Maneuver	949	1029	-	-	1617	-
Stage 1	1018	-	-	-	-	-
Stage 2	976	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	929	1024	-	-	1617	-
Mov Cap-2 Maneuver	929	-	-	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	960	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	7.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	984	1617	-
HCM Lane V/C Ratio	-	-	0.014	0.016	-
HCM Control Delay (s)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	8	16	1	4	7	0
Future Vol, veh/h	8	16	1	4	7	0
Conflicting Peds, #/hr	0	3	3	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	69	69	69	69
Heavy Vehicles, %	0	0	0	0	29	0
Mvmt Flow	12	23	1	6	10	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	38	0	36	26
Stage 1	-	-	-	-	26	-
Stage 2	-	-	-	-	10	-
Critical Hdwy	-	-	4.1	-	7.39	6.2
Critical Hdwy Stg 1	-	-	-	-	6.39	-
Critical Hdwy Stg 2	-	-	-	-	6.39	-
Follow-up Hdwy	-	-	2.2	-	3.761	3.3
Pot Cap-1 Maneuver	-	-	1585	-	906	1056
Stage 1	-	-	-	-	926	-
Stage 2	-	-	-	-	945	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1585	-	902	1053
Mov Cap-2 Maneuver	-	-	-	-	902	-
Stage 1	-	-	-	-	926	-
Stage 2	-	-	-	-	943	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	902	-	-	1585	-
HCM Lane V/C Ratio	0.011	-	-	0.001	-
HCM Control Delay (s)	9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑			↑	
Traffic Vol, veh/h	7	0	7	7	0	17	10	729	7	28	882	5
Future Vol, veh/h	7	0	7	7	0	17	10	729	7	28	882	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	2	14	7	2	0
Mvmt Flow	7	0	7	7	0	18	10	759	7	29	919	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1773	1770	921	1769	1768	765	924	0	0	769	0	0
Stage 1	980	980	-	786	786	-	-	-	-	-	-	-
Stage 2	793	790	-	983	982	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.17	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.263	-	-
Pot Cap-1 Maneuver	65	84	331	66	84	406	748	-	-	823	-	-
Stage 1	303	331	-	388	406	-	-	-	-	-	-	-
Stage 2	385	404	-	302	330	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	60	80	331	62	80	405	748	-	-	823	-	-
Mov Cap-2 Maneuver	60	80	-	62	80	-	-	-	-	-	-	-
Stage 1	299	319	-	382	400	-	-	-	-	-	-	-
Stage 2	363	398	-	285	318	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	46.1	32.6	0.1	0.3
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	748	-	-	102	155	823	-	-
HCM Lane V/C Ratio	0.014	-	-	0.143	0.161	0.035	-	-
HCM Control Delay (s)	9.9	-	-	46.1	32.6	9.5	-	-
HCM Lane LOS	A	-	-	E	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.6	0.1	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	3	32	0	13	5	734	42	17	876	10
Future Vol, veh/h	3	0	3	32	0	13	5	734	42	17	876	10
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	80	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	3	35	0	14	5	807	46	19	963	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1855	1870	969	1848	1853	831	975	0	0	853	0	0
Stage 1	1006	1006	-	841	841	-	-	-	-	-	-	-
Stage 2	849	864	-	1007	1012	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	57	72	308	57	74	370	707	-	-	786	-	-
Stage 1	291	319	-	359	380	-	-	-	-	-	-	-
Stage 2	356	371	-	290	317	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	53	70	308	55	72	370	707	-	-	785	-	-
Mov Cap-2 Maneuver	53	70	-	55	72	-	-	-	-	-	-	-
Stage 1	289	311	-	356	377	-	-	-	-	-	-	-
Stage 2	340	368	-	280	309	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	48.1	124.2	0.1	0.2
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	707	-	-	90	73	785	-	-
HCM Lane V/C Ratio	0.008	-	-	0.073	0.677	0.024	-	-
HCM Control Delay (s)	10.1	-	-	48.1	124.2	9.7	-	-
HCM Lane LOS	B	-	-	E	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	3.1	0.1	-	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	35	2	0	34	4	9	7	6	3	8	12
Future Vol, veh/h	13	35	2	0	34	4	9	7	6	3	8	12
Conflicting Peds, #/hr	2	0	1	1	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	0	3	0	0	0	0	0	0	0	33	0	0
Mvmt Flow	16	44	3	0	43	5	11	9	8	4	10	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	50	0	0	48	0	0	137	129	47	135	129	48
Stage 1	-	-	-	-	-	-	79	79	-	48	48	-
Stage 2	-	-	-	-	-	-	58	50	-	87	81	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.43	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.43	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.797	4	3.3
Pot Cap-1 Maneuver	1570	-	-	1572	-	-	838	765	1028	770	765	1027
Stage 1	-	-	-	-	-	-	935	833	-	892	859	-
Stage 2	-	-	-	-	-	-	959	857	-	849	832	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1570	-	-	1572	-	-	810	755	1027	750	755	1025
Mov Cap-2 Maneuver	-	-	-	-	-	-	810	755	-	750	755	-
Stage 1	-	-	-	-	-	-	925	824	-	881	857	-
Stage 2	-	-	-	-	-	-	934	855	-	825	823	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0	9.4	9.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	839	1570	-	-	1572	-	-	874
HCM Lane V/C Ratio	0.033	0.01	-	-	-	-	-	0.033
HCM Control Delay (s)	9.4	7.3	0	-	0	-	-	9.3
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	39	3	9	33	2	4	6	5	15	12	2
Future Vol, veh/h	0	39	3	9	33	2	4	6	5	15	12	2
Conflicting Peds, #/hr	3	0	0	0	0	3	3	0	2	2	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	5	0	22	0	0	0	0	0	0	8	0
Mvmt Flow	0	45	3	10	38	2	5	7	6	17	14	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	96	77	18	95	75	15	19	0	0	15	0	0
Stage 1	53	53	-	21	21	-	-	-	-	-	-	-
Stage 2	43	24	-	74	54	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.55	6.2	7.32	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.55	-	6.32	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.55	-	6.32	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.045	3.3	3.698	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	891	808	1066	842	819	1070	1611	-	-	1616	-	-
Stage 1	965	845	-	948	882	-	-	-	-	-	-	-
Stage 2	976	869	-	888	854	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	843	793	1063	793	804	1065	1611	-	-	1611	-	-
Mov Cap-2 Maneuver	843	793	-	793	804	-	-	-	-	-	-	-
Stage 1	959	833	-	943	878	-	-	-	-	-	-	-
Stage 2	926	865	-	828	842	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	9.7	1.9	3.8
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1611	-	-	808	811	1611	-	-
HCM Lane V/C Ratio	0.003	-	-	0.06	0.063	0.011	-	-
HCM Control Delay (s)	7.2	0	-	9.7	9.7	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations			↕				↕				↕	
Traffic Vol, veh/h	0	2	53	6	0	1	32	0	0	5	2	3
Future Vol, veh/h	0	2	53	6	0	1	32	0	0	5	2	3
Peak Hour Factor	0.92	0.75	0.75	0.75	0.92	0.75	0.75	0.75	0.92	0.75	0.75	0.75
Heavy Vehicles, %	2	0	4	0	2	0	0	0	2	40	0	0
Mvmt Flow	0	3	71	8	0	1	43	0	0	7	3	4
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.3	7.2	7.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	50%	3%	3%	0%
Vol Thru, %	20%	87%	97%	0%
Vol Right, %	30%	10%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	61	33	4
LT Vol	5	2	1	0
Through Vol	2	53	32	0
RT Vol	3	6	0	4
Lane Flow Rate	13	81	44	5
Geometry Grp	1	1	1	1
Degree of Util (X)	0.017	0.088	0.049	0.005
Departure Headway (Hd)	4.721	3.914	4	3.525
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	755	917	895	1006
Service Time	2.771	1.932	2.023	1.579
HCM Lane V/C Ratio	0.017	0.088	0.049	0.005
HCM Control Delay	7.9	7.3	7.2	6.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.3	0.2	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	0	4
Future Vol, veh/h	0	0	0	4
Peak Hour Factor	0.92	0.75	0.75	0.75
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	0	5
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	6.6
HCM LOS	A

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	2	8	765	905	1
Future Vol, veh/h	1	2	8	765	905	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	2	9	841	995	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1853	995	996	0	-	0
Stage 1	995	-	-	-	-	-
Stage 2	858	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	81	297	695	-	-	-
Stage 1	358	-	-	-	-	-
Stage 2	415	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	79	297	695	-	-	-
Mov Cap-2 Maneuver	79	-	-	-	-	-
Stage 1	358	-	-	-	-	-
Stage 2	405	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.7	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	695	-	155	-	-
HCM Lane V/C Ratio	0.013	-	0.021	-	-
HCM Control Delay (s)	10.2	0	28.7	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	3	764	9	4	983
Future Vol, veh/h	7	3	764	9	4	983
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	125	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	1
Mvmt Flow	7	3	796	9	4	1024

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1829	797	0	0	797	0
Stage 1	797	-	-	-	-	-
Stage 2	1032	-	-	-	-	-
Critical Hdwy	7.1	6.2	-	-	4.1	-
Critical Hdwy Stg 1	6.1	-	-	-	-	-
Critical Hdwy Stg 2	6.1	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	60	390	-	-	834	-
Stage 1	383	-	-	-	-	-
Stage 2	284	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	59	390	-	-	834	-
Mov Cap-2 Maneuver	59	-	-	-	-	-
Stage 1	383	-	-	-	-	-
Stage 2	281	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	57.4	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	79	834	-
HCM Lane V/C Ratio	-	-	0.132	0.005	-
HCM Control Delay (s)	-	-	57.4	9.3	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	1	0	1	2	763	0	1	992	4
Future Vol, veh/h	0	0	0	1	0	1	2	763	0	1	992	4
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	65	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	2	0
Mvmt Flow	0	0	0	1	0	1	2	795	0	1	1033	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1837	1840	1036	1841	1842	798	1038	0	0	798	0	0
Stage 1	1038	1038	-	802	802	-	-	-	-	-	-	-
Stage 2	799	802	-	1039	1040	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	59	76	284	59	76	389	678	-	-	833	-	-
Stage 1	281	311	-	381	399	-	-	-	-	-	-	-
Stage 2	382	399	-	281	310	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	59	75	284	59	75	388	677	-	-	833	-	-
Mov Cap-2 Maneuver	59	75	-	59	75	-	-	-	-	-	-	-
Stage 1	280	311	-	379	397	-	-	-	-	-	-	-
Stage 2	380	397	-	280	310	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	41	0	0
HCM LOS	A	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	677	-	-	-	102	833	-	-
HCM Lane V/C Ratio	0.003	-	-	-	0.02	0.001	-	-
HCM Control Delay (s)	10.3	-	-	0	41	9.3	-	-
HCM Lane LOS	B	-	-	A	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	19	749	8	19	973
Future Vol, veh/h	10	19	749	8	19	973
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	9	2	0	0	1
Mvmt Flow	11	20	805	9	20	1046

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1898	811	0	0	815	0
Stage 1	811	-	-	-	-	-
Stage 2	1087	-	-	-	-	-
Critical Hdwy	6.4	6.29	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.381	-	-	2.2	-
Pot Cap-1 Maneuver	77	369	-	-	821	-
Stage 1	440	-	-	-	-	-
Stage 2	326	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	75	369	-	-	821	-
Mov Cap-2 Maneuver	75	-	-	-	-	-
Stage 1	440	-	-	-	-	-
Stage 2	318	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	33.5	0	0.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	157	821	-
HCM Lane V/C Ratio	-	-	0.199	0.025	-
HCM Control Delay (s)	-	-	33.5	9.5	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.1	-

Intersection	
Int Delay, s/veh	6.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	13	1	2	6	2
Future Vol, veh/h	3	13	1	2	6	2
Conflicting Peds, #/hr	2	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	33	8	0	0	0	0
Mvmt Flow	4	17	1	3	8	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	24	3	0	0	4	0
Stage 1	3	-	-	-	-	-
Stage 2	21	-	-	-	-	-
Critical Hdwy	6.73	6.28	-	-	4.1	-
Critical Hdwy Stg 1	5.73	-	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-	-
Follow-up Hdwy	3.797	3.372	-	-	2.2	-
Pot Cap-1 Maneuver	918	1064	-	-	1631	-
Stage 1	945	-	-	-	-	-
Stage 2	927	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	912	1064	-	-	1631	-
Mov Cap-2 Maneuver	912	-	-	-	-	-
Stage 1	945	-	-	-	-	-
Stage 2	921	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	5.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1032	1631	-
HCM Lane V/C Ratio	-	-	0.021	0.005	-
HCM Control Delay (s)	-	-	8.6	7.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	5.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2	5	1	0	13	1
Future Vol, veh/h	2	5	1	0	13	1
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	0	0	100	0	15	0
Mvmt Flow	3	6	1	0	16	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	10	0	10	7
Stage 1	-	-	-	-	7	-
Stage 2	-	-	-	-	3	-
Critical Hdwy	-	-	5.1	-	6.55	6.2
Critical Hdwy Stg 1	-	-	-	-	5.55	-
Critical Hdwy Stg 2	-	-	-	-	5.55	-
Follow-up Hdwy	-	-	3.1	-	3.635	3.3
Pot Cap-1 Maneuver	-	-	1150	-	977	1081
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	987	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1150	-	975	1080
Mov Cap-2 Maneuver	-	-	-	-	975	-
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	986	-

Approach	EB	WB	NB
HCM Control Delay, s	0	8.1	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	982	-	-	1150	-
HCM Lane V/C Ratio	0.018	-	-	0.001	-
HCM Control Delay (s)	8.7	-	-	8.1	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↑			↑	
Traffic Vol, veh/h	0	0	6	6	1	25	9	736	2	22	953	5
Future Vol, veh/h	0	0	6	6	1	25	9	736	2	22	953	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	17	0	4	0	3	0	5	1	0
Mvmt Flow	0	0	6	6	1	26	9	775	2	23	1003	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1860	1849	1006	1851	1851	777	1008	0	0	778	0	0
Stage 1	1052	1052	-	796	796	-	-	-	-	-	-	-
Stage 2	808	797	-	1055	1055	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.27	6.5	6.24	4.1	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.653	4	3.336	2.2	-	-	2.245	-	-
Pot Cap-1 Maneuver	57	75	295	52	75	394	695	-	-	825	-	-
Stage 1	276	306	-	359	402	-	-	-	-	-	-	-
Stage 2	378	401	-	256	305	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	51	72	295	49	72	394	695	-	-	825	-	-
Mov Cap-2 Maneuver	51	72	-	49	72	-	-	-	-	-	-	-
Stage 1	272	297	-	354	396	-	-	-	-	-	-	-
Stage 2	347	395	-	244	296	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.5	33.4	0.1	0.2
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	695	-	-	295	160	825	-	-
HCM Lane V/C Ratio	0.014	-	-	0.021	0.211	0.028	-	-
HCM Control Delay (s)	10.3	-	-	17.5	33.4	9.5	-	-
HCM Lane LOS	B	-	-	C	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.8	0.1	-	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	3	21	23	3	23	28	720	36	7	953	7
Future Vol, veh/h	6	3	21	23	3	23	28	720	36	7	953	7
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	80	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	3	22	24	3	24	29	758	38	7	1003	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1872	1877	1007	1870	1861	778	1011	0	0	796	0	0
Stage 1	1022	1022	-	836	836	-	-	-	-	-	-	-
Stage 2	850	855	-	1034	1025	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	55	71	292	55	73	396	686	-	-	826	-	-
Stage 1	285	313	-	362	382	-	-	-	-	-	-	-
Stage 2	355	375	-	280	312	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	48	67	292	47	69	396	686	-	-	825	-	-
Mov Cap-2 Maneuver	48	67	-	47	69	-	-	-	-	-	-	-
Stage 1	273	310	-	347	366	-	-	-	-	-	-	-
Stage 2	316	359	-	254	309	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	43.7	102.4	0.4	0.1
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	686	-	-	124	83	825	-	-
HCM Lane V/C Ratio	0.043	-	-	0.255	0.621	0.009	-	-
HCM Control Delay (s)	10.5	-	-	43.7	102.4	9.4	-	-
HCM Lane LOS	B	-	-	E	F	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9	2.9	0	-	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	33	2	5	31	17	10	9	3	6	17	8
Future Vol, veh/h	25	33	2	5	31	17	10	9	3	6	17	8
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	30	40	2	6	37	20	12	11	4	7	20	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	59	0	0	42	0	0	176	172	43	171	163	49
Stage 1	-	-	-	-	-	-	101	101	-	61	61	-
Stage 2	-	-	-	-	-	-	75	71	-	110	102	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1558	-	-	1580	-	-	791	725	1033	797	733	1025
Stage 1	-	-	-	-	-	-	910	815	-	955	848	-
Stage 2	-	-	-	-	-	-	939	840	-	900	815	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1558	-	-	1577	-	-	752	707	1031	768	715	1024
Mov Cap-2 Maneuver	-	-	-	-	-	-	752	707	-	768	715	-
Stage 1	-	-	-	-	-	-	892	799	-	935	844	-
Stage 2	-	-	-	-	-	-	904	836	-	865	799	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.1	0.7	9.9	9.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	760	1558	-	-	1577	-	-	787
HCM Lane V/C Ratio	0.035	0.019	-	-	0.004	-	-	0.047
HCM Control Delay (s)	9.9	7.4	0	-	7.3	0	-	9.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	37	3	10	37	2	7	13	7	8	16	3
Future Vol, veh/h	2	37	3	10	37	2	7	13	7	8	16	3
Conflicting Peds, #/hr	4	0	0	0	0	4	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	0	8	14	0	6	0
Mvmt Flow	2	44	4	12	44	2	8	15	8	10	19	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	105	82	22	101	80	25	24	0	0	25	0	0
Stage 1	41	41	-	37	37	-	-	-	-	-	-	-
Stage 2	64	41	-	64	43	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	880	812	1061	885	814	1057	1604	-	-	1603	-	-
Stage 1	979	865	-	984	868	-	-	-	-	-	-	-
Stage 2	952	865	-	952	863	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	830	802	1060	837	804	1052	1604	-	-	1597	-	-
Mov Cap-2 Maneuver	830	802	-	837	804	-	-	-	-	-	-	-
Stage 1	973	859	-	978	863	-	-	-	-	-	-	-
Stage 2	893	860	-	895	857	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	9.7	1.9	2.2
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1604	-	-	818	818	1597	-	-
HCM Lane V/C Ratio	0.005	-	-	0.061	0.071	0.006	-	-
HCM Control Delay (s)	7.3	0	-	9.7	9.7	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	4	45	3	0	2	40	0	0	4	1	4
Future Vol, veh/h	0	4	45	3	0	2	40	0	0	4	1	4
Peak Hour Factor	0.92	0.83	0.83	0.83	0.92	0.83	0.83	0.83	0.92	0.83	0.83	0.83
Heavy Vehicles, %	2	0	2	0	2	0	0	0	2	0	0	0
Mvmt Flow	0	5	54	4	0	2	48	0	0	5	1	5
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.3	7.2	7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	44%	8%	5%	0%
Vol Thru, %	11%	87%	95%	14%
Vol Right, %	44%	6%	0%	86%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	52	42	7
LT Vol	4	4	2	0
Through Vol	1	45	40	1
RT Vol	4	3	0	6
Lane Flow Rate	11	63	51	8
Geometry Grp	1	1	1	1
Degree of Util (X)	0.012	0.069	0.056	0.008
Departure Headway (Hd)	3.924	3.952	3.99	3.59
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	907	908	899	990
Service Time	1.971	1.967	2.007	1.638
HCM Lane V/C Ratio	0.012	0.069	0.057	0.008
HCM Control Delay	7	7.3	7.2	6.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.2	0.2	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	1	6
Future Vol, veh/h	0	0	1	6
Peak Hour Factor	0.92	0.83	0.83	0.83
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	1	7
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	6.7
HCM LOS	A

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	8	4	747	960	5
Future Vol, veh/h	3	8	4	747	960	5
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	8	4	786	1011	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1809	1014	1017	0	-	0
Stage 1	1014	-	-	-	-	-
Stage 2	795	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	87	290	682	-	-	-
Stage 1	350	-	-	-	-	-
Stage 2	445	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	86	290	682	-	-	-
Mov Cap-2 Maneuver	86	-	-	-	-	-
Stage 1	350	-	-	-	-	-
Stage 2	440	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	26.9	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	682	-	176	-	-
HCM Lane V/C Ratio	0.006	-	0.066	-	-
HCM Control Delay (s)	10.3	0	26.9	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

APPENDIX 7.

CUMULATIVE OPERATIONS RESULTS

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	9	857	18	2	954
Future Vol, veh/h	17	9	857	18	2	954
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	125	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	6	0	0	4
Mvmt Flow	18	10	932	20	2	1037

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1973	932	0	0	932	0
Stage 1	932	-	-	-	-	-
Stage 2	1041	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	69	326	-	-	743	-
Stage 1	386	-	-	-	-	-
Stage 2	343	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	69	326	-	-	743	-
Mov Cap-2 Maneuver	69	-	-	-	-	-
Stage 1	386	-	-	-	-	-
Stage 2	341	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	58.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	95	743	-
HCM Lane V/C Ratio	-	-	0.297	0.003	-
HCM Control Delay (s)	-	-	58.2	9.9	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	1.1	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	2	0	0	0	0	863	0	0	997	5
Future Vol, veh/h	5	0	2	0	0	0	0	863	0	0	997	5
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	65	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	6	0	0	4	0
Mvmt Flow	5	0	2	0	0	0	0	928	0	0	1072	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2005	2005	1076	2005	2007	930	1078	0	0	929	0	0
Stage 1	1076	1076	-	929	929	-	-	-	-	-	-	-
Stage 2	929	929	-	1076	1078	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	45	60	269	45	60	327	655	-	-	744	-	-
Stage 1	268	298	-	324	349	-	-	-	-	-	-	-
Stage 2	324	349	-	268	297	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	45	60	269	45	60	326	655	-	-	743	-	-
Mov Cap-2 Maneuver	45	60	-	45	60	-	-	-	-	-	-	-
Stage 1	268	298	-	324	349	-	-	-	-	-	-	-
Stage 2	324	349	-	266	297	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	74.7	0	0	0
HCM LOS	F	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	655	-	-	59	-	743	-	-
HCM Lane V/C Ratio	-	-	-	0.128	-	-	-	-
HCM Control Delay (s)	0	-	-	74.7	0	0	-	-
HCM Lane LOS	A	-	-	F	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	-	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	27	809	0	6	980
Future Vol, veh/h	0	27	809	0	6	980
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	6	0	0	4
Mvmt Flow	0	29	879	0	7	1065

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1957	879	0	0	879	0
Stage 1	879	-	-	-	-	-
Stage 2	1078	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	71	350	-	-	777	-
Stage 1	409	-	-	-	-	-
Stage 2	330	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	70	350	-	-	777	-
Mov Cap-2 Maneuver	70	-	-	-	-	-
Stage 1	409	-	-	-	-	-
Stage 2	327	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.2	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	350	777	-
HCM Lane V/C Ratio	-	-	0.084	0.008	-
HCM Control Delay (s)	-	-	16.2	9.7	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	7.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	26	2	0	6	2
Future Vol, veh/h	2	26	2	0	6	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	35	3	0	8	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	22	3	0	0	3	0
Stage 1	3	-	-	-	-	-
Stage 2	19	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	1000	1087	-	-	1632	-
Stage 1	1025	-	-	-	-	-
Stage 2	1009	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	995	1087	-	-	1632	-
Mov Cap-2 Maneuver	995	-	-	-	-	-
Stage 1	1025	-	-	-	-	-
Stage 2	1004	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	5.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1080	1632	-
HCM Lane V/C Ratio	-	-	0.035	0.005	-
HCM Control Delay (s)	-	-	8.5	7.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	3	4	0	5	21	0
Future Vol, veh/h	3	4	0	5	21	0
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	4	6	0	7	30	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	10	0	14	8
Stage 1	-	-	-	-	7	-
Stage 2	-	-	-	-	7	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1623	-	1010	1080
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	1021	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1621	-	1010	1079
Mov Cap-2 Maneuver	-	-	-	-	1010	-
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	1021	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1010	-	-	1621	-
HCM Lane V/C Ratio	0.03	-	-	-	-
HCM Control Delay (s)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑			↑	
Traffic Vol, veh/h	4	0	6	3	0	31	5	756	5	12	951	0
Future Vol, veh/h	4	0	6	3	0	31	5	756	5	12	951	0
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	4	0	6	0	0	4	0
Mvmt Flow	4	0	7	3	0	34	6	840	6	13	1057	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1955	1941	1058	1941	1938	843	1058	0	0	846	0	0
Stage 1	1084	1084	-	854	854	-	-	-	-	-	-	-
Stage 2	871	857	-	1087	1084	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.24	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.336	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	49	66	276	50	66	361	666	-	-	800	-	-
Stage 1	265	296	-	356	378	-	-	-	-	-	-	-
Stage 2	349	377	-	264	296	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	43	64	276	48	64	361	666	-	-	800	-	-
Mov Cap-2 Maneuver	43	64	-	48	64	-	-	-	-	-	-	-
Stage 1	262	291	-	353	375	-	-	-	-	-	-	-
Stage 2	313	374	-	253	291	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	52.3	23.8	0.1	0.1
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	666	-	-	87	229	800	-	-
HCM Lane V/C Ratio	0.008	-	-	0.128	0.165	0.017	-	-
HCM Control Delay (s)	10.5	-	-	52.3	23.8	9.6	-	-
HCM Lane LOS	B	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.6	0.1	-	-

Intersection	
Int Delay, s/veh	12.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	0	13	56	0	18	5	752	25	7	943	7
Future Vol, veh/h	12	0	13	56	0	18	5	752	25	7	943	7
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	80	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	14	60	0	19	5	809	27	8	1014	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1877	1881	1019	1874	1872	823	1023	0	0	836	0	0
Stage 1	1035	1035	-	833	833	-	-	-	-	-	-	-
Stage 2	842	846	-	1041	1039	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	55	71	288	~ 55	72	373	679	-	-	798	-	-
Stage 1	280	309	-	363	384	-	-	-	-	-	-	-
Stage 2	359	378	-	278	308	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	51	70	288	~ 52	71	373	678	-	-	798	-	-
Mov Cap-2 Maneuver	51	70	-	~ 52	71	-	-	-	-	-	-	-
Stage 1	278	306	-	360	381	-	-	-	-	-	-	-
Stage 2	338	375	-	262	305	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	62.1	283.9	0.1	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	678	-	-	89	66	798	-	-
HCM Lane V/C Ratio	0.008	-	-	0.302	1.206	0.009	-	-
HCM Control Delay (s)	10.4	-	-	62.1	283.9	9.6	-	-
HCM Lane LOS	B	-	-	F	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.1	6.4	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	19	0	2	76	0	4	3	0	3	3	4
Future Vol, veh/h	7	19	0	2	76	0	4	3	0	3	3	4
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	0	0	0	0	0	0	33	0	0	0	0	0
Mvmt Flow	9	26	0	3	103	0	5	4	0	4	4	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	104	0	0	26	0	0	158	154	27	157	154	104
Stage 1	-	-	-	-	-	-	45	45	-	109	109	-
Stage 2	-	-	-	-	-	-	113	109	-	48	45	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.43	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.43	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.43	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.797	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1500	-	-	1601	-	-	743	741	1054	814	741	956
Stage 1	-	-	-	-	-	-	896	861	-	901	809	-
Stage 2	-	-	-	-	-	-	822	809	-	971	861	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1500	-	-	1599	-	-	731	734	1053	804	734	955
Mov Cap-2 Maneuver	-	-	-	-	-	-	731	734	-	804	734	-
Stage 1	-	-	-	-	-	-	891	856	-	895	807	-
Stage 2	-	-	-	-	-	-	812	807	-	960	856	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0.2	10	9.4
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	732	1500	-	-	1599	-	-	833
HCM Lane V/C Ratio	0.013	0.006	-	-	0.002	-	-	0.016
HCM Control Delay (s)	10	7.4	0	-	7.3	0	-	9.4
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	17	0	2	76	11	3	20	0	2	5	0
Future Vol, veh/h	0	17	0	2	76	11	3	20	0	2	5	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	0	6	0	0	0	0
Mvmt Flow	0	20	0	2	92	13	4	24	0	2	6	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	96	42	6	52	42	25	6	0	0	24	0	0
Stage 1	11	11	-	31	31	-	-	-	-	-	-	-
Stage 2	85	31	-	21	11	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	891	854	1083	952	854	1057	1628	-	-	1604	-	-
Stage 1	1015	890	-	991	873	-	-	-	-	-	-	-
Stage 2	928	873	-	1003	890	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	805	851	1083	932	851	1056	1628	-	-	1602	-	-
Mov Cap-2 Maneuver	805	851	-	932	851	-	-	-	-	-	-	-
Stage 1	1013	889	-	989	871	-	-	-	-	-	-	-
Stage 2	818	871	-	979	889	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	9.7	0.9	2.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1628	-	-	851	874	1602	-	-
HCM Lane V/C Ratio	0.002	-	-	0.024	0.123	0.002	-	-
HCM Control Delay (s)	7.2	0	-	9.3	9.7	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.4	0	-	-

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	0	20	2	0	6	73	2	0	2	2	3
Future Vol, veh/h	0	0	20	2	0	6	73	2	0	2	2	3
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	0	6	0	2	0	0	0	2	0	0	0
Mvmt Flow	0	0	22	2	0	7	81	2	0	2	2	3
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.2	7.4	7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	29%	0%	7%	0%
Vol Thru, %	29%	91%	90%	0%
Vol Right, %	43%	9%	2%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	7	22	81	7
LT Vol	2	0	6	0
Through Vol	2	20	73	0
RT Vol	3	2	2	7
Lane Flow Rate	8	24	90	8
Geometry Grp	1	1	1	1
Degree of Util (X)	0.008	0.027	0.099	0.008
Departure Headway (Hd)	3.904	4.042	3.946	3.504
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	911	887	912	1014
Service Time	1.952	2.062	1.954	1.551
HCM Lane V/C Ratio	0.009	0.027	0.099	0.008
HCM Control Delay	7	7.2	7.4	6.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.1	0.3	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	0	7
Future Vol, veh/h	0	0	0	7
Peak Hour Factor	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	0	8
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	6.6
HCM LOS	A

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	6	1037	21	6	1078
Future Vol, veh/h	13	6	1037	21	6	1078
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	125	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	14	6	1092	22	6	1135

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2240	1093	0	0	1093	0
Stage 1	1093	-	-	-	-	-
Stage 2	1147	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	47	263	-	-	646	-
Stage 1	324	-	-	-	-	-
Stage 2	305	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	46	263	-	-	646	-
Mov Cap-2 Maneuver	46	-	-	-	-	-
Stage 1	324	-	-	-	-	-
Stage 2	297	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	88.6	0	0.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	62	646	-
HCM Lane V/C Ratio	-	-	0.323	0.01	-
HCM Control Delay (s)	-	-	88.6	10.6	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	1.2	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑	↱		↑	
Traffic Vol, veh/h	6	0	5	2	0	3	0	1046	0	2	1084	5
Future Vol, veh/h	6	0	5	2	0	3	0	1046	0	2	1084	5
Conflicting Peds, #/hr	5	0	0	0	0	5	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	65	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	1	0
Mvmt Flow	6	0	5	2	0	3	0	1113	0	2	1153	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2279	2277	1156	2280	2280	1122	1159	0	0	1117	0	0
Stage 1	1160	1160	-	1117	1117	-	-	-	-	-	-	-
Stage 2	1119	1117	-	1163	1163	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	29	41	242	29	40	253	610	-	-	633	-	-
Stage 1	240	272	-	254	285	-	-	-	-	-	-	-
Stage 2	253	285	-	239	271	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	28	41	242	28	40	251	610	-	-	630	-	-
Mov Cap-2 Maneuver	28	41	-	28	40	-	-	-	-	-	-	-
Stage 1	240	271	-	253	284	-	-	-	-	-	-	-
Stage 2	249	284	-	233	270	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	105.3	70.8	0	0
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	610	-	-	47	60	630	-	-
HCM Lane V/C Ratio	-	-	-	0.249	0.089	0.003	-	-
HCM Control Delay (s)	0	-	-	105.3	70.8	10.7	-	-
HCM Lane LOS	A	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.3	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	6	1035	0	21	1059
Future Vol, veh/h	0	6	1035	0	21	1059
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	0	6	1078	0	22	1103

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2227	1080	0	0	1080	0
Stage 1	1080	-	-	-	-	-
Stage 2	1147	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	48	268	-	-	653	-
Stage 1	329	-	-	-	-	-
Stage 2	305	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	46	267	-	-	653	-
Mov Cap-2 Maneuver	46	-	-	-	-	-
Stage 1	328	-	-	-	-	-
Stage 2	295	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.8	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	267	653	-
HCM Lane V/C Ratio	-	-	0.023	0.033	-
HCM Control Delay (s)	-	-	18.8	10.7	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	6.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	7	2	7	22	0
Future Vol, veh/h	5	7	2	7	22	0
Conflicting Peds, #/hr	1	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	17	0	0	0	0
Mvmt Flow	7	9	3	9	29	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	72	12	0	0	17	0
Stage 1	12	-	-	-	-	-
Stage 2	60	-	-	-	-	-
Critical Hdwy	6.4	6.37	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.453	-	-	2.2	-
Pot Cap-1 Maneuver	937	1027	-	-	1613	-
Stage 1	1016	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	915	1022	-	-	1613	-
Mov Cap-2 Maneuver	915	-	-	-	-	-
Stage 1	1011	-	-	-	-	-
Stage 2	950	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	7.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	975	1613	-
HCM Lane V/C Ratio	-	-	0.016	0.018	-
HCM Control Delay (s)	-	-	8.8	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	10	19	2	5	9	0
Future Vol, veh/h	10	19	2	5	9	0
Conflicting Peds, #/hr	0	3	3	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	69	69	69	69
Heavy Vehicles, %	0	0	0	0	29	0
Mvmt Flow	14	28	3	7	13	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	45	0	45	31
Stage 1	-	-	-	-	31	-
Stage 2	-	-	-	-	14	-
Critical Hdwy	-	-	4.1	-	6.69	6.2
Critical Hdwy Stg 1	-	-	-	-	5.69	-
Critical Hdwy Stg 2	-	-	-	-	5.69	-
Follow-up Hdwy	-	-	2.2	-	3.761	3.3
Pot Cap-1 Maneuver	-	-	1576	-	901	1049
Stage 1	-	-	-	-	926	-
Stage 2	-	-	-	-	943	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1576	-	896	1046
Mov Cap-2 Maneuver	-	-	-	-	896	-
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	940	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	896	-	-	1576	-
HCM Lane V/C Ratio	0.015	-	-	0.002	-
HCM Control Delay (s)	9.1	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑			↑	
Traffic Vol, veh/h	9	0	9	9	0	20	12	1001	9	33	990	6
Future Vol, veh/h	9	0	9	9	0	20	12	1001	9	33	990	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	2	14	7	2	0
Mvmt Flow	9	0	9	9	0	21	13	1043	9	34	1031	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2186	2182	1034	2182	2180	1049	1038	0	0	1054	0	0
Stage 1	1103	1103	-	1074	1074	-	-	-	-	-	-	-
Stage 2	1083	1079	-	1108	1106	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.17	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.263	-	-
Pot Cap-1 Maneuver	33	47	285	34	47	279	678	-	-	642	-	-
Stage 1	259	290	-	269	299	-	-	-	-	-	-	-
Stage 2	265	297	-	257	289	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	29	44	285	31	44	278	678	-	-	642	-	-
Mov Cap-2 Maneuver	29	44	-	31	44	-	-	-	-	-	-	-
Stage 1	254	275	-	263	293	-	-	-	-	-	-	-
Stage 2	240	291	-	235	274	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	106.3	75.1	0.1	0.4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	678	-	-	53	80	642	-	-
HCM Lane V/C Ratio	0.018	-	-	0.354	0.378	0.054	-	-
HCM Control Delay (s)	10.4	-	-	106.3	75.1	10.9	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.3	1.5	0.2	-	-

Intersection	
Int Delay, s/veh	13

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	4	0	4	37	0	16	10	1039	49	20	972	12
Future Vol, veh/h	4	0	4	37	0	16	10	1039	49	20	972	12
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	80	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	4	40	0	17	11	1117	53	22	1045	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2271	2289	1053	2264	2269	1144	1059	0	0	1170	0	0
Stage 1	1097	1097	-	1166	1166	-	-	-	-	-	-	-
Stage 2	1174	1192	-	1098	1103	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	29	39	275	~ 29	40	243	658	-	-	597	-	-
Stage 1	258	289	-	236	268	-	-	-	-	-	-	-
Stage 2	234	261	-	258	287	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	26	37	275	~ 27	38	243	657	-	-	597	-	-
Mov Cap-2 Maneuver	26	37	-	~ 27	38	-	-	-	-	-	-	-
Stage 1	253	278	-	232	263	-	-	-	-	-	-	-
Stage 2	214	257	-	245	276	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	95.7	$ 510.6	0.1	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	657	-	-	48	37	597	-	-
HCM Lane V/C Ratio	0.016	-	-	0.179	1.54	0.036	-	-
HCM Control Delay (s)	10.6	-	-	95.7	$ 510.6	11.3	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	6	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	41	3	0	40	5	11	9	7	4	10	14
Future Vol, veh/h	16	41	3	0	40	5	11	9	7	4	10	14
Conflicting Peds, #/hr	2	0	1	1	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	0	3	0	0	0	0	0	0	0	33	0	0
Mvmt Flow	20	52	4	0	51	6	14	11	9	5	13	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	59	0	0	57	0	0	164	154	55	160	153	56
Stage 1	-	-	-	-	-	-	95	95	-	56	56	-
Stage 2	-	-	-	-	-	-	69	59	-	104	97	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.43	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.43	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.797	4	3.3
Pot Cap-1 Maneuver	1558	-	-	1560	-	-	805	741	1018	741	742	1016
Stage 1	-	-	-	-	-	-	917	820	-	883	852	-
Stage 2	-	-	-	-	-	-	946	850	-	831	819	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1558	-	-	1560	-	-	772	729	1017	717	730	1014
Mov Cap-2 Maneuver	-	-	-	-	-	-	772	729	-	717	730	-
Stage 1	-	-	-	-	-	-	904	809	-	870	850	-
Stage 2	-	-	-	-	-	-	916	848	-	802	808	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0	9.7	9.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	807	1558	-	-	1560	-	-	846
HCM Lane V/C Ratio	0.042	0.013	-	-	-	-	-	0.042
HCM Control Delay (s)	9.7	7.3	0	-	0	-	-	9.4
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	46	4	11	39	3	5	7	6	18	14	3
Future Vol, veh/h	0	46	4	11	39	3	5	7	6	18	14	3
Conflicting Peds, #/hr	3	0	0	0	0	3	3	0	2	2	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	5	0	22	0	0	0	0	0	0	8	0
Mvmt Flow	0	53	5	13	45	3	6	8	7	21	16	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	114	92	21	114	90	17	23	0	0	17	0	0
Stage 1	63	63	-	25	25	-	-	-	-	-	-	-
Stage 2	51	29	-	89	65	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.55	6.2	7.32	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.55	-	6.32	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.55	-	6.32	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.045	3.3	3.698	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	868	792	1062	818	804	1068	1605	-	-	1613	-	-
Stage 1	953	837	-	944	878	-	-	-	-	-	-	-
Stage 2	967	865	-	871	845	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	812	775	1059	760	787	1063	1605	-	-	1608	-	-
Mov Cap-2 Maneuver	812	775	-	760	787	-	-	-	-	-	-	-
Stage 1	946	824	-	938	873	-	-	-	-	-	-	-
Stage 2	908	860	-	800	832	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	9.9	2	3.7
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1605	-	-	792	793	1608	-	-
HCM Lane V/C Ratio	0.004	-	-	0.073	0.078	0.013	-	-
HCM Control Delay (s)	7.3	0	-	9.9	9.9	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0	-	-

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	3	62	7	0	2	37	0	0	6	3	4
Future Vol, veh/h	0	3	62	7	0	2	37	0	0	6	3	4
Peak Hour Factor	0.92	0.75	0.75	0.75	0.92	0.75	0.75	0.75	0.92	0.75	0.75	0.75
Heavy Vehicles, %	2	0	4	0	2	0	0	0	2	40	0	0
Mvmt Flow	0	4	83	9	0	3	49	0	0	8	4	5
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.4	7.3	7.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	46%	4%	5%	0%
Vol Thru, %	23%	86%	95%	0%
Vol Right, %	31%	10%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	72	39	5
LT Vol	6	3	2	0
Through Vol	3	62	37	0
RT Vol	4	7	0	5
Lane Flow Rate	17	96	52	7
Geometry Grp	1	1	1	1
Degree of Util (X)	0.023	0.105	0.058	0.007
Departure Headway (Hd)	4.748	3.93	4.023	3.566
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	749	911	888	991
Service Time	2.811	1.958	2.058	1.634
HCM Lane V/C Ratio	0.023	0.105	0.059	0.007
HCM Control Delay	7.9	7.4	7.3	6.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.4	0.2	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	0	5
Future Vol, veh/h	0	0	0	5
Peak Hour Factor	0.92	0.75	0.75	0.75
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	0	7
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	6.7
HCM LOS	A

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	4	1008	11	5	957
Future Vol, veh/h	9	4	1008	11	5	957
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	125	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	1
Mvmt Flow	9	4	1050	11	5	997

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2058	1051	0	0	1051	0
Stage 1	1051	-	-	-	-	-
Stage 2	1007	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	61	278	-	-	670	-
Stage 1	339	-	-	-	-	-
Stage 2	356	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	60	278	-	-	670	-
Mov Cap-2 Maneuver	60	-	-	-	-	-
Stage 1	339	-	-	-	-	-
Stage 2	350	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	59.8	0	0.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	79	670	-
HCM Lane V/C Ratio	-	-	0.171	0.008	-
HCM Control Delay (s)	-	-	59.8	10.4	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	0.6	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	2	0	2	3	1005	0	2	966	5
Future Vol, veh/h	0	0	0	2	0	2	3	1005	0	2	966	5
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	65	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	2	0
Mvmt Flow	0	0	0	2	0	2	3	1047	0	2	1006	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2067	2069	1010	2070	2072	1050	1011	0	0	1050	0	0
Stage 1	1013	1013	-	1056	1056	-	-	-	-	-	-	-
Stage 2	1054	1056	-	1014	1016	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	40	55	294	40	55	278	694	-	-	671	-	-
Stage 1	291	319	-	275	305	-	-	-	-	-	-	-
Stage 2	276	305	-	290	318	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	39	54	294	40	54	277	693	-	-	671	-	-
Mov Cap-2 Maneuver	39	54	-	40	54	-	-	-	-	-	-	-
Stage 1	290	318	-	273	303	-	-	-	-	-	-	-
Stage 2	273	303	-	289	317	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	59.7	0	0
HCM LOS	A	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	693	-	-	-	70	671	-	-
HCM Lane V/C Ratio	0.005	-	-	-	0.06	0.003	-	-
HCM Control Delay (s)	10.2	-	-	0	59.7	10.4	-	-
HCM Lane LOS	B	-	-	A	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	13	987	0	10	958
Future Vol, veh/h	0	13	987	0	10	958
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	9	2	0	0	1
Mvmt Flow	0	14	1061	0	11	1030

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2114	1062	0	0	1062	0
Stage 1	1062	-	-	-	-	-
Stage 2	1052	-	-	-	-	-
Critical Hdwy	6.4	6.29	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.381	-	-	2.2	-
Pot Cap-1 Maneuver	57	263	-	-	664	-
Stage 1	335	-	-	-	-	-
Stage 2	339	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	56	263	-	-	664	-
Mov Cap-2 Maneuver	56	-	-	-	-	-
Stage 1	335	-	-	-	-	-
Stage 2	333	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.5	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	263	664	-
HCM Lane V/C Ratio	-	-	0.053	0.016	-
HCM Control Delay (s)	-	-	19.5	10.5	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	6.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	16	2	3	7	3
Future Vol, veh/h	4	16	2	3	7	3
Conflicting Peds, #/hr	2	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	33	8	0	0	0	0
Mvmt Flow	5	21	3	4	9	4

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	30	5	0	0	7	0
Stage 1	5	-	-	-	-	-
Stage 2	25	-	-	-	-	-
Critical Hdwy	6.73	6.28	-	-	4.1	-
Critical Hdwy Stg 1	5.73	-	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-	-
Follow-up Hdwy	3.797	3.372	-	-	2.2	-
Pot Cap-1 Maneuver	911	1061	-	-	1627	-
Stage 1	943	-	-	-	-	-
Stage 2	923	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	904	1061	-	-	1627	-
Mov Cap-2 Maneuver	904	-	-	-	-	-
Stage 1	943	-	-	-	-	-
Stage 2	916	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	5.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1025	1627	-
HCM Lane V/C Ratio	-	-	0.026	0.006	-
HCM Control Delay (s)	-	-	8.6	7.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	3	6	2	0	16	2
Future Vol, veh/h	3	6	2	0	16	2
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	0	0	100	0	15	0
Mvmt Flow	4	8	3	0	20	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	12	0	14	9
Stage 1	-	-	-	-	9	-
Stage 2	-	-	-	-	5	-
Critical Hdwy	-	-	5.1	-	7.25	6.2
Critical Hdwy Stg 1	-	-	-	-	6.25	-
Critical Hdwy Stg 2	-	-	-	-	6.25	-
Follow-up Hdwy	-	-	3.1	-	3.635	3.3
Pot Cap-1 Maneuver	-	-	1148	-	970	1079
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	984	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1148	-	967	1078
Mov Cap-2 Maneuver	-	-	-	-	967	-
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	981	-

Approach	EB	WB	NB
HCM Control Delay, s	0	8.1	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	978	-	-	1148	-
HCM Lane V/C Ratio	0.023	-	-	0.002	-
HCM Control Delay (s)	8.8	-	-	8.1	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑			↑	
Traffic Vol, veh/h	0	0	7	7	2	29	11	713	3	26	928	6
Future Vol, veh/h	0	0	7	7	2	29	11	713	3	26	928	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	17	0	4	0	3	0	5	1	0
Mvmt Flow	0	0	7	7	2	31	12	751	3	27	977	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1827	1813	980	1814	1814	753	983	0	0	755	0	0
Stage 1	1035	1035	-	776	776	-	-	-	-	-	-	-
Stage 2	792	778	-	1038	1038	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.27	6.5	6.24	4.1	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.653	4	3.336	2.2	-	-	2.245	-	-
Pot Cap-1 Maneuver	60	79	306	55	79	406	711	-	-	842	-	-
Stage 1	282	312	-	369	410	-	-	-	-	-	-	-
Stage 2	385	410	-	261	311	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	52	75	306	52	75	406	711	-	-	842	-	-
Mov Cap-2 Maneuver	52	75	-	52	75	-	-	-	-	-	-	-
Stage 1	277	302	-	362	403	-	-	-	-	-	-	-
Stage 2	348	403	-	247	301	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.1	34.1	0.2	0.3
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	711	-	-	306	163	842	-	-
HCM Lane V/C Ratio	0.016	-	-	0.024	0.245	0.033	-	-
HCM Control Delay (s)	10.1	-	-	17.1	34.1	9.4	-	-
HCM Lane LOS	B	-	-	C	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.9	0.1	-	-

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	4	25	27	4	27	33	697	42	9	928	9
Future Vol, veh/h	7	4	25	27	4	27	33	697	42	9	928	9
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	80	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	4	27	29	4	29	35	749	45	10	998	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1882	1888	1004	1881	1871	772	1009	0	0	794	0	0
Stage 1	1024	1024	-	842	842	-	-	-	-	-	-	-
Stage 2	858	864	-	1039	1029	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	54	70	294	54	72	400	687	-	-	827	-	-
Stage 1	284	313	-	359	380	-	-	-	-	-	-	-
Stage 2	352	371	-	279	311	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	45	66	294	44	67	400	686	-	-	827	-	-
Mov Cap-2 Maneuver	45	66	-	44	67	-	-	-	-	-	-	-
Stage 1	269	309	-	341	361	-	-	-	-	-	-	-
Stage 2	306	352	-	247	307	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	48.7	142.6	0.5	0.1
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	686	-	-	120	78	827	-	-
HCM Lane V/C Ratio	0.052	-	-	0.323	0.8	0.012	-	-
HCM Control Delay (s)	10.5	-	-	48.7	142.6	9.4	-	-
HCM Lane LOS	B	-	-	E	F	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.3	4	0	-	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	29	39	3	6	36	20	12	11	4	7	20	10
Future Vol, veh/h	29	39	3	6	36	20	12	11	4	7	20	10
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	35	47	4	7	43	24	14	13	5	8	24	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	68	0	0	51	0	0	207	202	51	201	191	56
Stage 1	-	-	-	-	-	-	119	119	-	71	71	-
Stage 2	-	-	-	-	-	-	88	83	-	130	120	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1546	-	-	1568	-	-	755	698	1023	762	708	1016
Stage 1	-	-	-	-	-	-	890	801	-	944	840	-
Stage 2	-	-	-	-	-	-	925	830	-	878	800	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1546	-	-	1565	-	-	711	678	1021	729	688	1015
Mov Cap-2 Maneuver	-	-	-	-	-	-	711	678	-	729	688	-
Stage 1	-	-	-	-	-	-	870	783	-	921	835	-
Stage 2	-	-	-	-	-	-	883	825	-	838	782	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3	0.7	10.2	10
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	729	1546	-	-	1565	-	-	763
HCM Lane V/C Ratio	0.045	0.023	-	-	0.005	-	-	0.058
HCM Control Delay (s)	10.2	7.4	0	-	7.3	0	-	10
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	43	4	12	43	3	9	16	9	10	19	4
Future Vol, veh/h	3	43	4	12	43	3	9	16	9	10	19	4
Conflicting Peds, #/hr	4	0	0	0	0	4	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	0	8	14	0	6	0
Mvmt Flow	4	51	5	14	51	4	11	19	11	12	23	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	127	102	26	124	99	29	28	0	0	31	0	0
Stage 1	50	50	-	47	47	-	-	-	-	-	-	-
Stage 2	77	52	-	77	52	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	851	792	1056	855	795	1052	1599	-	-	1595	-	-
Stage 1	968	857	-	972	860	-	-	-	-	-	-	-
Stage 2	937	856	-	937	856	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	793	779	1055	799	782	1047	1599	-	-	1589	-	-
Mov Cap-2 Maneuver	793	779	-	799	782	-	-	-	-	-	-	-
Stage 1	960	849	-	964	853	-	-	-	-	-	-	-
Stage 2	868	849	-	870	848	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	10	1.9	2.2
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1599	-	-	797	796	1589	-	-
HCM Lane V/C Ratio	0.007	-	-	0.075	0.087	0.007	-	-
HCM Control Delay (s)	7.3	0	-	9.9	10	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0	-	-

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	5	52	4	0	3	47	0	0	5	2	5
Future Vol, veh/h	0	5	52	4	0	3	47	0	0	5	2	5
Peak Hour Factor	0.92	0.83	0.83	0.83	0.92	0.83	0.83	0.83	0.92	0.83	0.83	0.83
Heavy Vehicles, %	2	0	2	0	2	0	0	0	2	0	0	0
Mvmt Flow	0	6	63	5	0	4	57	0	0	6	2	6
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.3	7.3	7.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	42%	8%	6%	0%
Vol Thru, %	17%	85%	94%	22%
Vol Right, %	42%	7%	0%	78%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	12	61	50	9
LT Vol	5	5	3	0
Through Vol	2	52	47	2
RT Vol	5	4	0	7
Lane Flow Rate	14	73	60	11
Geometry Grp	1	1	1	1
Degree of Util (X)	0.016	0.081	0.067	0.011
Departure Headway (Hd)	3.973	3.968	4.012	3.675
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	894	904	893	965
Service Time	2.029	1.986	2.033	1.733
HCM Lane V/C Ratio	0.016	0.081	0.067	0.011
HCM Control Delay	7.1	7.3	7.3	6.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.3	0.2	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	2	7
Future Vol, veh/h	0	0	2	7
Peak Hour Factor	0.92	0.83	0.83	0.83
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	2	8
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	6.8
HCM LOS	A

APPENDIX 8.

CUMULATIVE WITH PROJECT OPERATIONS RESULTS

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	9	872	18	2	958
Future Vol, veh/h	17	9	872	18	2	958
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	125	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	6	0	0	4
Mvmt Flow	18	10	948	20	2	1041

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1994	948	0	0	948	0
Stage 1	948	-	-	-	-	-
Stage 2	1046	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	67	319	-	-	732	-
Stage 1	380	-	-	-	-	-
Stage 2	341	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	67	319	-	-	732	-
Mov Cap-2 Maneuver	67	-	-	-	-	-
Stage 1	380	-	-	-	-	-
Stage 2	339	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	60.6	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	92	732	-
HCM Lane V/C Ratio	-	-	0.307	0.003	-
HCM Control Delay (s)	-	-	60.6	9.9	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↱		↰	↑	
Traffic Vol, veh/h	5	0	2	0	0	0	0	878	0	0	1001	5
Future Vol, veh/h	5	0	2	0	0	0	0	878	0	0	1001	5
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	65	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	6	0	0	4	0
Mvmt Flow	5	0	2	0	0	0	0	944	0	0	1076	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2025	2025	1080	2025	2028	946	1083	0	0	945	0	0
Stage 1	1080	1080	-	945	945	-	-	-	-	-	-	-
Stage 2	945	945	-	1080	1083	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	43	58	268	43	58	320	652	-	-	734	-	-
Stage 1	267	297	-	317	343	-	-	-	-	-	-	-
Stage 2	317	343	-	267	296	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	43	58	268	43	58	319	652	-	-	733	-	-
Mov Cap-2 Maneuver	43	58	-	43	58	-	-	-	-	-	-	-
Stage 1	267	297	-	317	343	-	-	-	-	-	-	-
Stage 2	317	343	-	265	296	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	77.5	0	0	0
HCM LOS	F	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	652	-	-	57	-	733	-	-
HCM Lane V/C Ratio	-	-	-	0.132	-	-	-	-
HCM Control Delay (s)	0	-	-	77.5	0	0	-	-
HCM Lane LOS	A	-	-	F	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	-	0	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	42	809	4	10	980
Future Vol, veh/h	14	42	809	4	10	980
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	6	0	0	4
Mvmt Flow	15	46	879	4	11	1065

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1969	882	0	0	884	0
Stage 1	882	-	-	-	-	-
Stage 2	1087	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	70	348	-	-	774	-
Stage 1	408	-	-	-	-	-
Stage 2	326	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	69	348	-	-	774	-
Mov Cap-2 Maneuver	69	-	-	-	-	-
Stage 1	408	-	-	-	-	-
Stage 2	321	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	36.7	0	0.1
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	173	774	-
HCM Lane V/C Ratio	-	-	0.352	0.014	-
HCM Control Delay (s)	-	-	36.7	9.7	-
HCM Lane LOS	-	-	E	A	-
HCM 95th %tile Q(veh)	-	-	1.5	0	-

Intersection	
Int Delay, s/veh	7.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	26	2	0	6	2
Future Vol, veh/h	2	26	2	0	6	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	3	35	3	0	8	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	22	3	0	0	3	0
Stage 1	3	-	-	-	-	-
Stage 2	19	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	1000	1087	-	-	1632	-
Stage 1	1025	-	-	-	-	-
Stage 2	1009	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	995	1087	-	-	1632	-
Mov Cap-2 Maneuver	995	-	-	-	-	-
Stage 1	1025	-	-	-	-	-
Stage 2	1004	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	5.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1080	1632	-
HCM Lane V/C Ratio	-	-	0.035	0.005	-
HCM Control Delay (s)	-	-	8.5	7.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	3	4	0	5	21	0
Future Vol, veh/h	3	4	0	5	21	0
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	4	6	0	7	30	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	10	0	14	8
Stage 1	-	-	-	-	7	-
Stage 2	-	-	-	-	7	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1623	-	1010	1080
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	1021	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1621	-	1010	1079
Mov Cap-2 Maneuver	-	-	-	-	1010	-
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	1021	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1010	-	-	1621	-
HCM Lane V/C Ratio	0.03	-	-	-	-
HCM Control Delay (s)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑			↑	
Traffic Vol, veh/h	4	0	6	3	0	31	5	760	5	12	965	0
Future Vol, veh/h	4	0	6	3	0	31	5	760	5	12	965	0
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	4	0	6	0	0	4	0
Mvmt Flow	4	0	7	3	0	34	6	844	6	13	1072	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1976	1961	1073	1960	1958	847	1073	0	0	850	0	0
Stage 1	1100	1100	-	858	858	-	-	-	-	-	-	-
Stage 2	876	861	-	1102	1100	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.24	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.336	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	47	64	270	48	64	359	657	-	-	797	-	-
Stage 1	260	290	-	354	376	-	-	-	-	-	-	-
Stage 2	346	375	-	259	290	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	42	62	270	46	62	359	657	-	-	797	-	-
Mov Cap-2 Maneuver	42	62	-	46	62	-	-	-	-	-	-	-
Stage 1	257	285	-	351	373	-	-	-	-	-	-	-
Stage 2	310	372	-	248	285	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	53.6	24.3	0.1	0.1
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	657	-	-	85	224	797	-	-
HCM Lane V/C Ratio	0.008	-	-	0.131	0.169	0.017	-	-
HCM Control Delay (s)	10.5	-	-	53.6	24.3	9.6	-	-
HCM Lane LOS	B	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.6	0.1	-	-

Intersection	
Int Delay, s/veh	14.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	0	13	56	0	18	9	756	25	7	957	7
Future Vol, veh/h	12	0	13	56	0	18	9	756	25	7	957	7
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	80	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	14	60	0	19	10	813	27	8	1029	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1906	1910	1034	1903	1901	827	1038	0	0	840	0	0
Stage 1	1050	1050	-	847	847	-	-	-	-	-	-	-
Stage 2	856	860	-	1056	1054	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	52	68	282	~ 52	69	371	670	-	-	795	-	-
Stage 1	275	304	-	357	378	-	-	-	-	-	-	-
Stage 2	352	373	-	272	303	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	48	66	282	~ 48	67	371	669	-	-	795	-	-
Mov Cap-2 Maneuver	48	66	-	~ 48	67	-	-	-	-	-	-	-
Stage 1	271	301	-	352	372	-	-	-	-	-	-	-
Stage 2	329	367	-	256	300	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	66.8	$ 330.8	0.1	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	669	-	-	84	61	795	-	-
HCM Lane V/C Ratio	0.014	-	-	0.32	1.304	0.009	-	-
HCM Control Delay (s)	10.5	-	-	66.8	$ 330.8	9.6	-	-
HCM Lane LOS	B	-	-	F	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.2	6.7	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	19	0	2	76	0	4	3	0	3	3	4
Future Vol, veh/h	7	19	0	2	76	0	4	3	0	3	3	4
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	0	0	0	0	0	0	33	0	0	0	0	0
Mvmt Flow	9	26	0	3	103	0	5	4	0	4	4	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	104	0	0	26	0	0	158	154	27	157	154	104
Stage 1	-	-	-	-	-	-	45	45	-	109	109	-
Stage 2	-	-	-	-	-	-	113	109	-	48	45	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.43	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.43	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.43	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.797	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1500	-	-	1601	-	-	743	741	1054	814	741	956
Stage 1	-	-	-	-	-	-	896	861	-	901	809	-
Stage 2	-	-	-	-	-	-	822	809	-	971	861	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1500	-	-	1599	-	-	731	734	1053	804	734	955
Mov Cap-2 Maneuver	-	-	-	-	-	-	731	734	-	804	734	-
Stage 1	-	-	-	-	-	-	891	856	-	895	807	-
Stage 2	-	-	-	-	-	-	812	807	-	960	856	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0.2	10	9.4
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	732	1500	-	-	1599	-	-	833
HCM Lane V/C Ratio	0.013	0.006	-	-	0.002	-	-	0.016
HCM Control Delay (s)	10	7.4	0	-	7.3	0	-	9.4
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	17	0	2	76	11	3	20	0	2	5	0
Future Vol, veh/h	0	17	0	2	76	11	3	20	0	2	5	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	0	6	0	0	0	0
Mvmt Flow	0	20	0	2	92	13	4	24	0	2	6	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	96	42	6	52	42	25	6	0	0	24	0	0
Stage 1	11	11	-	31	31	-	-	-	-	-	-	-
Stage 2	85	31	-	21	11	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	891	854	1083	952	854	1057	1628	-	-	1604	-	-
Stage 1	1015	890	-	991	873	-	-	-	-	-	-	-
Stage 2	928	873	-	1003	890	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	805	851	1083	932	851	1056	1628	-	-	1602	-	-
Mov Cap-2 Maneuver	805	851	-	932	851	-	-	-	-	-	-	-
Stage 1	1013	889	-	989	871	-	-	-	-	-	-	-
Stage 2	818	871	-	979	889	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	9.7	0.9	2.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1628	-	-	851	874	1602	-	-
HCM Lane V/C Ratio	0.002	-	-	0.024	0.123	0.002	-	-
HCM Control Delay (s)	7.2	0	-	9.3	9.7	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.4	0	-	-

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	0	20	2	0	6	73	2	0	2	2	3
Future Vol, veh/h	0	0	20	2	0	6	73	2	0	2	2	3
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	0	6	0	2	0	0	0	2	0	0	0
Mvmt Flow	0	0	22	2	0	7	81	2	0	2	2	3
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.2	7.4	7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	29%	0%	7%	0%
Vol Thru, %	29%	91%	90%	0%
Vol Right, %	43%	9%	2%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	7	22	81	7
LT Vol	2	0	6	0
Through Vol	2	20	73	0
RT Vol	3	2	2	7
Lane Flow Rate	8	24	90	8
Geometry Grp	1	1	1	1
Degree of Util (X)	0.008	0.027	0.099	0.008
Departure Headway (Hd)	3.904	4.042	3.946	3.504
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	911	887	912	1014
Service Time	1.952	2.062	1.954	1.551
HCM Lane V/C Ratio	0.009	0.027	0.099	0.008
HCM Control Delay	7	7.2	7.4	6.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.1	0.3	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	0	7
Future Vol, veh/h	0	0	0	7
Peak Hour Factor	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	0	8
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	6.6
HCM LOS	A

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	6	1044	21	6	1094
Future Vol, veh/h	13	6	1044	21	6	1094
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	125	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	14	6	1099	22	6	1152

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2264	1100	0	0	1100	0
Stage 1	1100	-	-	-	-	-
Stage 2	1164	-	-	-	-	-
Critical Hdwy	7.1	6.2	-	-	4.1	-
Critical Hdwy Stg 1	6.1	-	-	-	-	-
Critical Hdwy Stg 2	6.1	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	29	260	-	-	642	-
Stage 1	260	-	-	-	-	-
Stage 2	239	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	28	260	-	-	642	-
Mov Cap-2 Maneuver	28	-	-	-	-	-
Stage 1	260	-	-	-	-	-
Stage 2	233	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	170.2	0	0.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	39	642	-
HCM Lane V/C Ratio	-	-	0.513	0.01	-
HCM Control Delay (s)	-	-	170.2	10.7	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	1.8	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	0	5	2	0	3	0	1053	0	2	1100	5
Future Vol, veh/h	6	0	5	2	0	3	0	1053	0	2	1100	5
Conflicting Peds, #/hr	5	0	0	0	0	5	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	65	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	1	0
Mvmt Flow	6	0	5	2	0	3	0	1120	0	2	1170	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2304	2301	1173	2304	2304	1129	1176	0	0	1124	0	0
Stage 1	1177	1177	-	1124	1124	-	-	-	-	-	-	-
Stage 2	1127	1124	-	1180	1180	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	27	39	236	27	39	251	601	-	-	629	-	-
Stage 1	235	267	-	252	283	-	-	-	-	-	-	-
Stage 2	251	283	-	234	266	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	26	39	236	26	39	249	601	-	-	626	-	-
Mov Cap-2 Maneuver	26	39	-	26	39	-	-	-	-	-	-	-
Stage 1	235	266	-	251	282	-	-	-	-	-	-	-
Stage 2	247	282	-	228	265	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	114.2	75.9	0	0
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	601	-	-	44	56	626	-	-
HCM Lane V/C Ratio	-	-	-	0.266	0.095	0.003	-	-
HCM Control Delay (s)	0	-	-	114.2	75.9	10.8	-	-
HCM Lane LOS	A	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.9	0.3	0	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	13	1035	13	37	1059
Future Vol, veh/h	9	13	1035	13	37	1059
Conflicting Peds, #/hr	0	0	0	2	2	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	9	14	1078	14	39	1103

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2267	1087	0	0	1094	0
Stage 1	1087	-	-	-	-	-
Stage 2	1180	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	45	265	-	-	645	-
Stage 1	326	-	-	-	-	-
Stage 2	295	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	42	264	-	-	645	-
Mov Cap-2 Maneuver	42	-	-	-	-	-
Stage 1	325	-	-	-	-	-
Stage 2	277	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	64.2	0	0.4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	83	645	-
HCM Lane V/C Ratio	-	-	0.276	0.06	-
HCM Control Delay (s)	-	-	64.2	10.9	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	1	0.2	-

Intersection	
Int Delay, s/veh	6.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	7	2	7	22	0
Future Vol, veh/h	5	7	2	7	22	0
Conflicting Peds, #/hr	1	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	17	0	0	0	0
Mvmt Flow	7	9	3	9	29	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	72	12	0	0	17	0
Stage 1	12	-	-	-	-	-
Stage 2	60	-	-	-	-	-
Critical Hdwy	6.4	6.37	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.453	-	-	2.2	-
Pot Cap-1 Maneuver	937	1027	-	-	1613	-
Stage 1	1016	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	915	1022	-	-	1613	-
Mov Cap-2 Maneuver	915	-	-	-	-	-
Stage 1	1011	-	-	-	-	-
Stage 2	950	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	7.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	975	1613	-
HCM Lane V/C Ratio	-	-	0.016	0.018	-
HCM Control Delay (s)	-	-	8.8	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	10	19	2	5	9	0
Future Vol, veh/h	10	19	2	5	9	0
Conflicting Peds, #/hr	0	3	3	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	69	69	69	69
Heavy Vehicles, %	0	0	0	0	29	0
Mvmt Flow	14	28	3	7	13	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	45	0	45	31
Stage 1	-	-	-	-	31	-
Stage 2	-	-	-	-	14	-
Critical Hdwy	-	-	4.1	-	6.69	6.2
Critical Hdwy Stg 1	-	-	-	-	5.69	-
Critical Hdwy Stg 2	-	-	-	-	5.69	-
Follow-up Hdwy	-	-	2.2	-	3.761	3.3
Pot Cap-1 Maneuver	-	-	1576	-	901	1049
Stage 1	-	-	-	-	926	-
Stage 2	-	-	-	-	943	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1576	-	896	1046
Mov Cap-2 Maneuver	-	-	-	-	896	-
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	940	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	896	-	-	1576	-
HCM Lane V/C Ratio	0.015	-	-	0.002	-
HCM Control Delay (s)	9.1	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑			↑	
Traffic Vol, veh/h	9	0	9	9	0	20	12	1014	9	33	999	6
Future Vol, veh/h	9	0	9	9	0	20	12	1014	9	33	999	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	2	14	7	2	0
Mvmt Flow	9	0	9	9	0	21	13	1056	9	34	1041	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2209	2206	1044	2205	2204	1063	1047	0	0	1068	0	0
Stage 1	1113	1113	-	1088	1088	-	-	-	-	-	-	-
Stage 2	1096	1093	-	1117	1116	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.17	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.263	-	-
Pot Cap-1 Maneuver	32	45	281	32	45	274	672	-	-	634	-	-
Stage 1	255	286	-	264	294	-	-	-	-	-	-	-
Stage 2	261	293	-	254	285	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	28	42	281	29	42	273	672	-	-	634	-	-
Mov Cap-2 Maneuver	28	42	-	29	42	-	-	-	-	-	-	-
Stage 1	250	271	-	258	288	-	-	-	-	-	-	-
Stage 2	236	287	-	232	270	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	112	80.7	0.1	0.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	672	-	-	51	76	634	-	-
HCM Lane V/C Ratio	0.019	-	-	0.368	0.397	0.054	-	-
HCM Control Delay (s)	10.5	-	-	112	80.7	11	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.3	1.6	0.2	-	-

Intersection	
Int Delay, s/veh	13.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	4	37	0	16	10	1052	49	20	981	12
Future Vol, veh/h	4	0	4	37	0	16	10	1052	49	20	981	12
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	80	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	4	40	0	17	11	1131	53	22	1055	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2295	2313	1063	2288	2293	1158	1069	0	0	1184	0	0
Stage 1	1107	1107	-	1180	1180	-	-	-	-	-	-	-
Stage 2	1188	1206	-	1108	1113	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	27	38	271	~ 28	39	239	652	-	-	590	-	-
Stage 1	255	286	-	232	264	-	-	-	-	-	-	-
Stage 2	230	257	-	255	284	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	24	36	271	~ 26	37	239	651	-	-	590	-	-
Mov Cap-2 Maneuver	24	36	-	~ 26	37	-	-	-	-	-	-	-
Stage 1	250	275	-	228	260	-	-	-	-	-	-	-
Stage 2	210	253	-	242	273	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	105.7	$ 533.6	0.1	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	651	-	-	44	36	590	-	-
HCM Lane V/C Ratio	0.017	-	-	0.196	1.583	0.036	-	-
HCM Control Delay (s)	10.6	-	-	105.7	$ 533.6	11.3	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	6.1	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	41	3	0	40	5	11	9	7	4	10	14
Future Vol, veh/h	16	41	3	0	40	5	11	9	7	4	10	14
Conflicting Peds, #/hr	2	0	1	1	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	0	3	0	0	0	0	0	0	0	33	0	0
Mvmt Flow	20	52	4	0	51	6	14	11	9	5	13	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	59	0	0	57	0	0	164	154	55	160	153	56
Stage 1	-	-	-	-	-	-	95	95	-	56	56	-
Stage 2	-	-	-	-	-	-	69	59	-	104	97	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.43	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.43	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.797	4	3.3
Pot Cap-1 Maneuver	1558	-	-	1560	-	-	805	741	1018	741	742	1016
Stage 1	-	-	-	-	-	-	917	820	-	883	852	-
Stage 2	-	-	-	-	-	-	946	850	-	831	819	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1558	-	-	1560	-	-	772	729	1017	717	730	1014
Mov Cap-2 Maneuver	-	-	-	-	-	-	772	729	-	717	730	-
Stage 1	-	-	-	-	-	-	904	809	-	870	850	-
Stage 2	-	-	-	-	-	-	916	848	-	802	808	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0	9.7	9.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	807	1558	-	-	1560	-	-	846
HCM Lane V/C Ratio	0.042	0.013	-	-	-	-	-	0.042
HCM Control Delay (s)	9.7	7.3	0	-	0	-	-	9.4
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	46	4	11	39	3	5	7	6	18	14	3
Future Vol, veh/h	0	46	4	11	39	3	5	7	6	18	14	3
Conflicting Peds, #/hr	3	0	0	0	0	3	3	0	2	2	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	5	0	22	0	0	0	0	0	0	8	0
Mvmt Flow	0	53	5	13	45	3	6	8	7	21	16	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	114	92	21	114	90	17	23	0	0	17	0	0
Stage 1	63	63	-	25	25	-	-	-	-	-	-	-
Stage 2	51	29	-	89	65	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.55	6.2	7.32	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.55	-	6.32	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.55	-	6.32	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.045	3.3	3.698	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	868	792	1062	818	804	1068	1605	-	-	1613	-	-
Stage 1	953	837	-	944	878	-	-	-	-	-	-	-
Stage 2	967	865	-	871	845	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	812	775	1059	760	787	1063	1605	-	-	1608	-	-
Mov Cap-2 Maneuver	812	775	-	760	787	-	-	-	-	-	-	-
Stage 1	946	824	-	938	873	-	-	-	-	-	-	-
Stage 2	908	860	-	800	832	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	9.9	2	3.7
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1605	-	-	792	793	1608	-	-
HCM Lane V/C Ratio	0.004	-	-	0.073	0.078	0.013	-	-
HCM Control Delay (s)	7.3	0	-	9.9	9.9	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0	-	-

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	3	62	7	0	2	37	0	0	6	3	4
Future Vol, veh/h	0	3	62	7	0	2	37	0	0	6	3	4
Peak Hour Factor	0.92	0.75	0.75	0.75	0.92	0.75	0.75	0.75	0.92	0.75	0.75	0.75
Heavy Vehicles, %	2	0	4	0	2	0	0	0	2	40	0	0
Mvmt Flow	0	4	83	9	0	3	49	0	0	8	4	5
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.4	7.3	7.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	46%	4%	5%	0%
Vol Thru, %	23%	86%	95%	0%
Vol Right, %	31%	10%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	72	39	5
LT Vol	6	3	2	0
Through Vol	3	62	37	0
RT Vol	4	7	0	5
Lane Flow Rate	17	96	52	7
Geometry Grp	1	1	1	1
Degree of Util (X)	0.023	0.105	0.058	0.007
Departure Headway (Hd)	4.748	3.93	4.023	3.566
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	749	911	888	991
Service Time	2.811	1.958	2.058	1.634
HCM Lane V/C Ratio	0.023	0.105	0.059	0.007
HCM Control Delay	7.9	7.4	7.3	6.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.4	0.2	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	0	5
Future Vol, veh/h	0	0	0	5
Peak Hour Factor	0.92	0.75	0.75	0.75
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	0	7
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	6.7
HCM LOS	A

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	4	1016	11	5	968
Future Vol, veh/h	9	4	1016	11	5	968
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	125	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	1
Mvmt Flow	9	4	1058	11	5	1008

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2078	1059	0	0	1059	0
Stage 1	1059	-	-	-	-	-
Stage 2	1019	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	60	275	-	-	665	-
Stage 1	336	-	-	-	-	-
Stage 2	351	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	59	275	-	-	665	-
Mov Cap-2 Maneuver	59	-	-	-	-	-
Stage 1	336	-	-	-	-	-
Stage 2	345	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	60.6	0	0.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	78	665	-
HCM Lane V/C Ratio	-	-	0.174	0.008	-
HCM Control Delay (s)	-	-	60.6	10.5	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	0.6	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	2	0	2	3	1013	0	2	977	5
Future Vol, veh/h	0	0	0	2	0	2	3	1013	0	2	977	5
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	65	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	2	0
Mvmt Flow	0	0	0	2	0	2	3	1055	0	2	1018	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2087	2088	1021	2089	2091	1058	1023	0	0	1058	0	0
Stage 1	1024	1024	-	1064	1064	-	-	-	-	-	-	-
Stage 2	1063	1064	-	1025	1027	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	39	53	289	39	53	276	686	-	-	666	-	-
Stage 1	286	315	-	272	302	-	-	-	-	-	-	-
Stage 2	272	302	-	286	314	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	38	52	289	39	52	275	685	-	-	666	-	-
Mov Cap-2 Maneuver	38	52	-	39	52	-	-	-	-	-	-	-
Stage 1	285	314	-	270	300	-	-	-	-	-	-	-
Stage 2	269	300	-	285	313	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	61.4	0	0
HCM LOS	A	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	685	-	-	-	68	666	-	-
HCM Lane V/C Ratio	0.005	-	-	-	0.061	0.003	-	-
HCM Control Delay (s)	10.3	-	-	0	61.4	10.4	-	-
HCM Lane LOS	B	-	-	A	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	21	987	8	21	958
Future Vol, veh/h	10	21	987	8	21	958
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	9	2	0	0	1
Mvmt Flow	11	23	1061	9	23	1030

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2142	1067	0	0	1071	0
Stage 1	1067	-	-	-	-	-
Stage 2	1075	-	-	-	-	-
Critical Hdwy	6.4	6.29	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.381	-	-	2.2	-
Pot Cap-1 Maneuver	54	261	-	-	658	-
Stage 1	334	-	-	-	-	-
Stage 2	331	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	52	261	-	-	658	-
Mov Cap-2 Maneuver	52	-	-	-	-	-
Stage 1	334	-	-	-	-	-
Stage 2	319	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	49.1	0	0.2
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	114	658	-
HCM Lane V/C Ratio	-	-	0.292	0.034	-
HCM Control Delay (s)	-	-	49.1	10.7	-
HCM Lane LOS	-	-	E	B	-
HCM 95th %tile Q(veh)	-	-	1.1	0.1	-

Intersection	
Int Delay, s/veh	6.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	16	2	3	7	3
Future Vol, veh/h	4	16	2	3	7	3
Conflicting Peds, #/hr	2	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	33	8	0	0	0	0
Mvmt Flow	5	21	3	4	9	4

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	30	5	0	0	7	0
Stage 1	5	-	-	-	-	-
Stage 2	25	-	-	-	-	-
Critical Hdwy	6.73	6.28	-	-	4.1	-
Critical Hdwy Stg 1	5.73	-	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-	-
Follow-up Hdwy	3.797	3.372	-	-	2.2	-
Pot Cap-1 Maneuver	911	1061	-	-	1627	-
Stage 1	943	-	-	-	-	-
Stage 2	923	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	904	1061	-	-	1627	-
Mov Cap-2 Maneuver	904	-	-	-	-	-
Stage 1	943	-	-	-	-	-
Stage 2	916	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	5.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1025	1627	-
HCM Lane V/C Ratio	-	-	0.026	0.006	-
HCM Control Delay (s)	-	-	8.6	7.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	3	6	2	0	16	2
Future Vol, veh/h	3	6	2	0	16	2
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	0	0	100	0	15	0
Mvmt Flow	4	8	3	0	20	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	12	0	14	9
Stage 1	-	-	-	-	9	-
Stage 2	-	-	-	-	5	-
Critical Hdwy	-	-	5.1	-	6.55	6.2
Critical Hdwy Stg 1	-	-	-	-	5.55	-
Critical Hdwy Stg 2	-	-	-	-	5.55	-
Follow-up Hdwy	-	-	3.1	-	3.635	3.3
Pot Cap-1 Maneuver	-	-	1148	-	972	1079
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	985	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1148	-	968	1078
Mov Cap-2 Maneuver	-	-	-	-	968	-
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	982	-

Approach	EB	WB	NB
HCM Control Delay, s	0	8.1	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	979	-	-	1148	-
HCM Lane V/C Ratio	0.023	-	-	0.002	-
HCM Control Delay (s)	8.8	-	-	8.1	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↑			↑	
Traffic Vol, veh/h	0	0	7	7	2	29	11	721	3	26	938	6
Future Vol, veh/h	0	0	7	7	2	29	11	721	3	26	938	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	17	0	4	0	3	0	5	1	0
Mvmt Flow	0	0	7	7	2	31	12	759	3	27	987	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1845	1831	991	1834	1833	762	994	0	0	763	0	0
Stage 1	1045	1045	-	785	785	-	-	-	-	-	-	-
Stage 2	800	786	-	1049	1048	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.27	6.5	6.24	4.1	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.27	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.653	4	3.336	2.2	-	-	2.245	-	-
Pot Cap-1 Maneuver	58	77	301	53	77	402	704	-	-	836	-	-
Stage 1	279	308	-	364	407	-	-	-	-	-	-	-
Stage 2	382	406	-	258	307	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	50	73	301	50	73	402	704	-	-	836	-	-
Mov Cap-2 Maneuver	50	73	-	50	73	-	-	-	-	-	-	-
Stage 1	274	298	-	357	400	-	-	-	-	-	-	-
Stage 2	345	399	-	244	297	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.3	35.1	0.2	0.3
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	704	-	-	301	159	836	-	-
HCM Lane V/C Ratio	0.016	-	-	0.024	0.252	0.033	-	-
HCM Control Delay (s)	10.2	-	-	17.3	35.1	9.5	-	-
HCM Lane LOS	B	-	-	C	E	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.9	0.1	-	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	4	25	27	4	0	33	705	42	9	938	9
Future Vol, veh/h	7	4	25	27	4	0	33	705	42	9	938	9
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	80	-	-	125	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	4	27	29	4	0	35	758	45	10	1009	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1888	1908	1015	1901	1891	781	1020	0	0	803	0	0
Stage 1	1035	1035	-	851	851	-	-	-	-	-	-	-
Stage 2	853	873	-	1050	1040	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	54	68	289	52	70	395	680	-	-	821	-	-
Stage 1	280	309	-	355	376	-	-	-	-	-	-	-
Stage 2	354	368	-	275	307	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	49	64	289	43	66	395	679	-	-	821	-	-
Mov Cap-2 Maneuver	49	64	-	43	66	-	-	-	-	-	-	-
Stage 1	265	305	-	337	356	-	-	-	-	-	-	-
Stage 2	332	349	-	243	303	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	47.2	200.1	0.4	0.1
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	679	-	-	123	45	821	-	-
HCM Lane V/C Ratio	0.052	-	-	0.315	0.741	0.012	-	-
HCM Control Delay (s)	10.6	-	-	47.2	200.1	9.4	-	-
HCM Lane LOS	B	-	-	E	F	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.2	2.9	0	-	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	29	39	3	6	36	20	12	11	4	7	20	10
Future Vol, veh/h	29	39	3	6	36	20	12	11	4	7	20	10
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	35	47	4	7	43	24	14	13	5	8	24	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	68	0	0	51	0	0	207	202	51	201	191	56
Stage 1	-	-	-	-	-	-	119	119	-	71	71	-
Stage 2	-	-	-	-	-	-	88	83	-	130	120	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1546	-	-	1568	-	-	755	698	1023	762	708	1016
Stage 1	-	-	-	-	-	-	890	801	-	944	840	-
Stage 2	-	-	-	-	-	-	925	830	-	878	800	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1546	-	-	1565	-	-	711	678	1021	729	688	1015
Mov Cap-2 Maneuver	-	-	-	-	-	-	711	678	-	729	688	-
Stage 1	-	-	-	-	-	-	870	783	-	921	835	-
Stage 2	-	-	-	-	-	-	883	825	-	838	782	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3	0.7	10.2	10
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	729	1546	-	-	1565	-	-	763
HCM Lane V/C Ratio	0.045	0.023	-	-	0.005	-	-	0.058
HCM Control Delay (s)	10.2	7.4	0	-	7.3	0	-	10
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	43	4	12	43	3	9	16	9	10	19	4
Future Vol, veh/h	3	43	4	12	43	3	9	16	9	10	19	4
Conflicting Peds, #/hr	4	0	0	0	0	4	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	0	8	14	0	6	0
Mvmt Flow	4	51	5	14	51	4	11	19	11	12	23	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	127	102	26	124	99	29	28	0	0	31	0	0
Stage 1	50	50	-	47	47	-	-	-	-	-	-	-
Stage 2	77	52	-	77	52	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	851	792	1056	855	795	1052	1599	-	-	1595	-	-
Stage 1	968	857	-	972	860	-	-	-	-	-	-	-
Stage 2	937	856	-	937	856	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	793	779	1055	799	782	1047	1599	-	-	1589	-	-
Mov Cap-2 Maneuver	793	779	-	799	782	-	-	-	-	-	-	-
Stage 1	960	849	-	964	853	-	-	-	-	-	-	-
Stage 2	868	849	-	870	848	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	10	1.9	2.2
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1599	-	-	797	796	1589	-	-
HCM Lane V/C Ratio	0.007	-	-	0.075	0.087	0.007	-	-
HCM Control Delay (s)	7.3	0	-	9.9	10	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0	-	-

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations			↕				↕				↕	
Traffic Vol, veh/h	0	5	52	4	0	3	47	0	0	5	2	5
Future Vol, veh/h	0	5	52	4	0	3	47	0	0	5	2	5
Peak Hour Factor	0.92	0.83	0.83	0.83	0.92	0.83	0.83	0.83	0.92	0.83	0.83	0.83
Heavy Vehicles, %	2	0	2	0	2	0	0	0	2	0	0	0
Mvmt Flow	0	6	63	5	0	4	57	0	0	6	2	6
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.3	7.3	7.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	42%	8%	6%	0%
Vol Thru, %	17%	85%	94%	22%
Vol Right, %	42%	7%	0%	78%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	12	61	50	9
LT Vol	5	5	3	0
Through Vol	2	52	47	2
RT Vol	5	4	0	7
Lane Flow Rate	14	73	60	11
Geometry Grp	1	1	1	1
Degree of Util (X)	0.016	0.081	0.067	0.011
Departure Headway (Hd)	3.973	3.968	4.012	3.675
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	894	904	893	965
Service Time	2.029	1.986	2.033	1.733
HCM Lane V/C Ratio	0.016	0.081	0.067	0.011
HCM Control Delay	7.1	7.3	7.3	6.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.3	0.2	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	2	7
Future Vol, veh/h	0	0	2	7
Peak Hour Factor	0.92	0.83	0.83	0.83
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	0	2	8
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	6.8
HCM LOS	A

APPENDIX 9.

TDM PLAN

C/CAG TDM Checklist

ccagtdm.org

Residential (Multi-Family) Land Use: Small Project

100-499 ADT; ~20-49 Units

About this Form

Any new development project anticipated to generate at least 100 average daily trips is subject to the C/CAG TDM Policy and must complete a TDM Checklist and implement associated measures to mitigate traffic impacts. Read more at ccagtdm.org

Questions?
support@ccagtdm.org

A Applicant Information

Project Address: Sierra and Carlos Streets, Moss Beach, CA	Contact First and Last Name: Serena Ip
Parcel Number: 037-022-070	Application Date: D D 0 6 2 0 2 2
Project Jurisdiction: County of San Mateo	Contact Phone Address: 650-339-0581
	Contact Email Address: sip@midpen-housing.org

B Required Measures

You must select all measures

Click on each measure's title for more information

	Measure	Percentage	Yes
1	**M2 - Orientation, Education, Promotional Programs and/or Materials** Offer new residents an orientation or education program or materials.	1%	☑
2	**M3 - TDM Coordinator/Contact Person** Provide TDM coordinator/liaison for tenants. May be contracted through 3rd party provider, such as Commute.org.	0.5%	☑
3	**M6 - Transit or Ridesharing Passes/Subsidies** Offer tenants passes or subsidies for monthly public transit or ridesharing costs incurred, equivalent to 30% of value or $50 - whichever is lower.	10%	☑
4	**M8 - Secure Bicycle Storage** Comply with CalGREEN minimum bicycle parking requirements.	1%	☑
5	**M9 - Design Streets to Encourage Bike/Ped Access** Design adjacent streets or roadways to facilitate multimodal travel.	1%	☑
6	**Total from Required Measures** Sum percentages from each selected measure from rows 1-5	13.5%	

Form Continues on Page 2 →

C Additional Recommended

Select enough to meet the 25% trip reduction target

Click on each measure's title for more information

	Measure	Percentage	Yes
7	**M4 - Actively Participate in Commute.org or TMA Equivalent: Certified participation in Commute.org/or TMA** Obtain certification from Commute.org or establish or join a Transportation Management Association (TMA) or equivalent.	4%	☐
8	**M5 - Carpool or Vanpool Program** Establish carpool/vanpool program for tenants and register program with Commute.org.	2%	☐
9	**M10 - Delivery Amenities** Offer delivery amenities, including dedicated receipt and storage areas, to reduce need for multiple trips to conduct similar business.	1%	☐
10	**M11 - Family-supportive Amenities** On-site secure storage of personal car seats, strollers, cargo bicycles, or other large bicycles. Property owners can also provide shared building equipment, such as shopping carts or cargo bicycles for check out by residents.	3%	☑
11	**M14 - Paid Parking at Market Rate** Offer hourly/daily parking rates proportional to monthly rate or equivalent to cost of transit fare.	25%	☐
12	**M15 - Reduced Parking** Provide off-street parking at least 10% below locally-required minimums, or else below the locally-permitted parking maximums. Consideration may be required of potential spillover parking into surrounding areas.	10%	☐
13	**M17 - Developer TDM Fee/TDM Fund** Voluntary impact fee payment on a per unit or square footage basis, to fund the implementation of TDM programs.	4%	☐
14	**M18 - Car Share On-Site** Provide on-site car share or vehicle fleets.	1%	☐
15	**M19 - Land Dedication or Capital Improvements for Transit** Contribute space on, or adjacent to, the project site for transit improvements. Select one or more Bus Pullout Space 1% ☐ Bus Shelter 1% ☐ Visual/Electrical Improvements (i.e., Lighting, Signage) 1% ☐ Other (i.e., Micromobility Parking Zone, TNC Loading Zone) 1% ☐	→ Total percentages selected: ___%	☐
16	**M21 - Bike/Scooter Share On-Site** Allocate space for bike/scooter share parking.	1%	☐
17	**M22 - Active Transportation Subsidies** Offer biking/walking incentives to tenants, such as gift card/product raffles.	2%	☑
18	**M23 - Gap Closure** Construct or enhance quality of biking and walking facilities to/from site to existing trails, bikeways, and/or adjacent streets.	7%	☑
19	**M24 - Bike Repair Station** Offer on-site bike repair space/tools in visible, secure area.	0.5%	☑
20	**M26 - Pedestrian Oriented Uses & Amenities on Ground Floor** Provide on-site, visible amenities to tenants and guests, such as cafes, gyms, childcare, retail.	3%	☐
21	**Total from Additional Measures** Sum percentages from each selected measure from rows 7 - 20	12.5%	

D Project Totals

Percentage from Required Measures (Section B Row 6): 13.5%

\+ Percentage from Additional Measures (Section C Row 21): 12.5%

Total Percentage from all Selected Measures (Sum of required and additional measures): 26%

Trip Reduction Target: 25%

Total Percentage from all selected measures must be greater than or equal to Trip Reduction Target

E Submit Checklist

See ccagtdm.org/submission for how to submit this form.

Questions?

Email Us
support@ccagtdm.org

Visit Our Website
ccagtdm.org

APPENDIX 10.

SIGNAL WARRANTS

Traffic Signal Warrants Worksheet

MUTCD Warrant 3: Peak Hour

Scenario: **2040 Conditions – Weekday PM Peak Hour**

Intersection: **Highway 1 & 16th Street**

PART A or PART B SATISFIED YES ☐ NO ☒

PART A SATISFIED YES ☐ NO ☒

(All parts 1, 2, and 3 below must be satisfied)

7. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND — YES ☐ NO ☒

8. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND — YES ☐ NO ☒

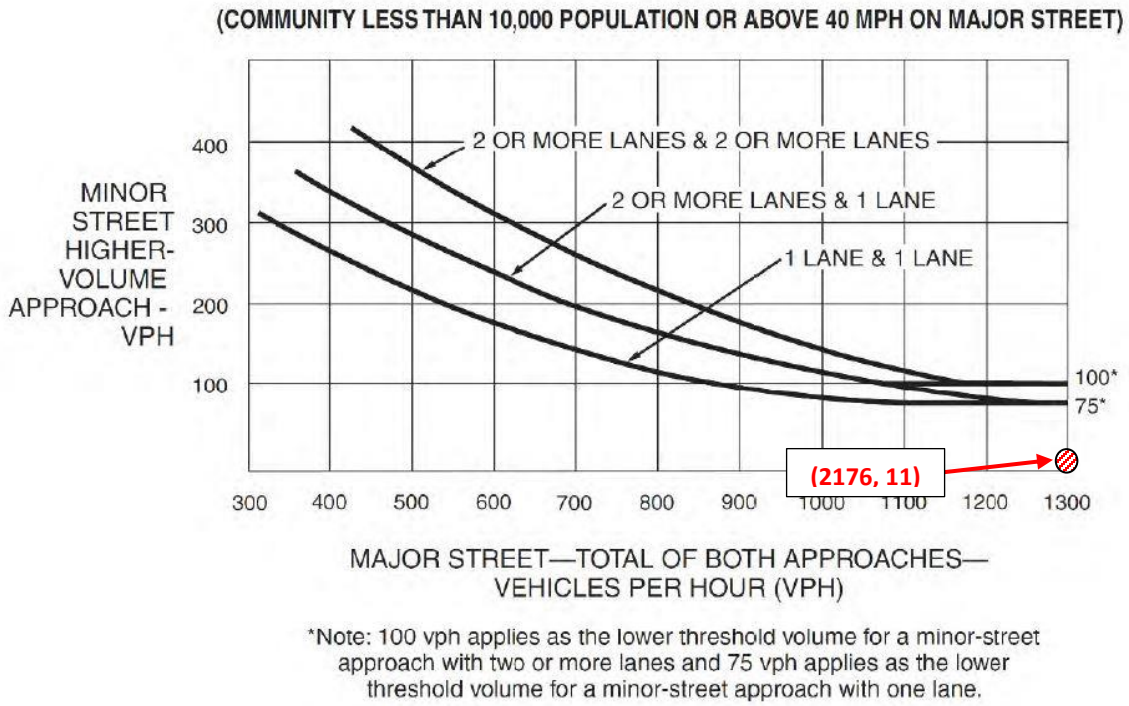
9. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. — (2,176 vph ; 4 approach) YES ☒ NO ☐

PART B SATISFIED YES ☐ NO ☒

APPROACH LANES	Lanes	VPH
Both Approaches – Major Street	1	2,160
Highest Approaches – Minor Street	1	11

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above the applicable curves in MUTCD Figure 4C-4.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet

MUTCD Warrant 3: Peak Hour

Scenario: **2040 Conditions – Saturday Peak Hour**

Intersection: **Highway 1 & Vallemar Street/Etheldore Street**

PART A or PART B SATISFIED YES ☐ NO ☒

PART A SATISFIED YES ☐ NO ☒

(All parts 1, 2, and 3 below must be satisfied)

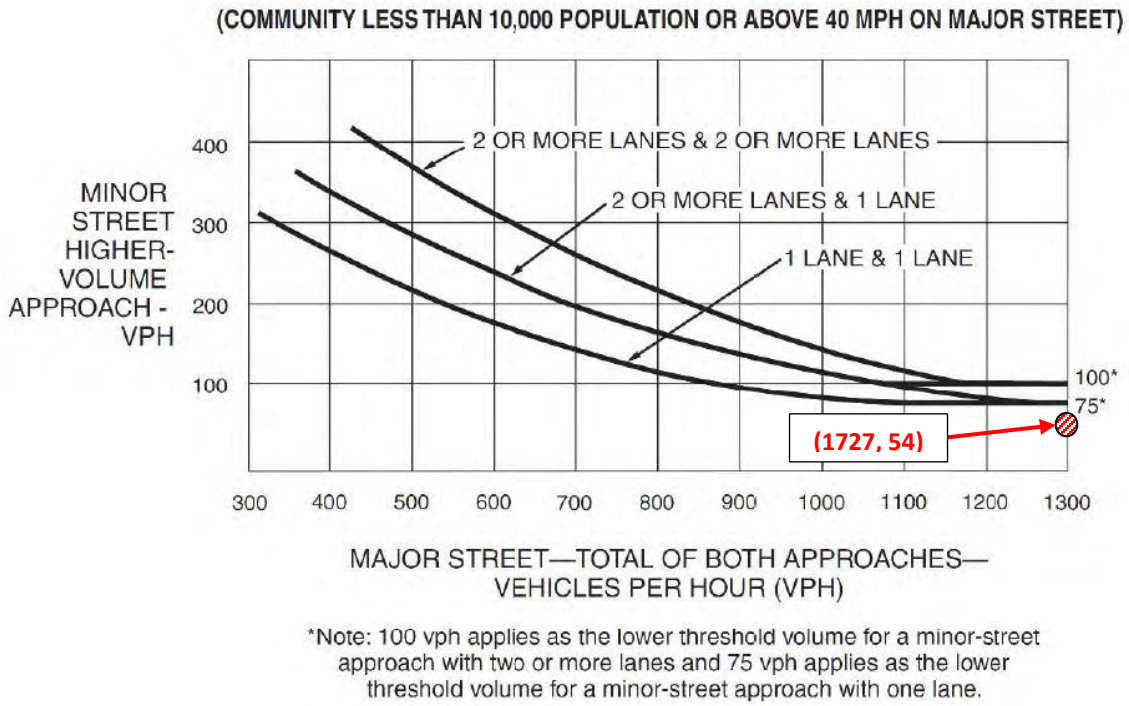
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND — YES ☐ NO ☒
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND — YES ☐ NO ☒
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. — (1,788 vph ; 4 approach) YES ☒ NO ☐

PART B SATISFIED YES ☐ NO ☒

APPROACH LANES	Lanes	VPH
Both Approaches – Major Street	1	1,727
Highest Approaches – Minor Street	1	54

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above the applicable curves in MUTCD Figure 4C-4.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

APPENDIX R

Traffic Impact Analysis Peer Review and

Vehicle Miles Traveled Analysis

Memorandum

Date: May 2, 2023

To: Bharat Singh, Michael Schaller, Steve Monowitz, San Mateo County

From: Mike Hawkins, Nina Price, Fehr & Peers

Subject: Final TIA Peer Review and VMT Analysis

SF22-1162

This memorandum provides a peer review of the *Cypress Point Transportation Impact Analysis and Mitigation Plan* ("TIA"), Kittelson & Associates, July 2022, updated March 14, 2023. The Cypress Point Project ("Project") is in Moss Beach in unincorporated San Mateo County. The proposed Project includes 71 affordable housing units on an 11.02-acre parcel that is currently vacant. Access to the site would be provided by a driveway on Carlos Street, near the intersection with Sierra Street. The peer review is based on guidance from the County of San Mateo Traffic Impact Study Requirements ("TIS Requirements") and County input on local plans and policies.

Introduction

The purpose of this memorandum is to document Fehr & Peers' review of the TIA, which was requested by the County due to traffic and safety concerns associated with the project-related traffic impacts and mitigation measures and the TIA's consistency with local plans, including Connect the Coastside (CTC). Additionally, this memorandum includes analysis of the project VMT.

Fehr & Peers completed a draft peer review of the TIA on February 2, 2023 which was reviewed by the following stakeholders of the project:

1. San Mateo County Planning Department
2. Midpen – Project Developers
3. SWCA – Project Environmental Consultants
4. Kittelson & Associates – Project Transportation Consultants

Kittelson & Associates subsequently updated the TIA based on the comments from the draft TIA Peer Review and the outcomes of discussions with the stakeholders. **Attachment A** documents the comments that were addressed in the most recent update of the TIA, or otherwise determined

unnecessary to incorporate from the draft TIA. Comments on the TIA contained in this memorandum have not yet been incorporated or discussed.

Previous Peer Review

A previous peer review of the TIA was conducted by Pang Engineers in 2019. Upon consultation with County staff, the Project developers, and the Project transportation consultants, it was determined that the comments did not warrant additional analysis nor did they need to be incorporated into the final TIA. The key suggestions from the previous peer review are summarized below for informational purposes only:

- Include traffic counts for a typical school day and summer day, use worst case for LOS calculations.
- Redo all LOS calculations with new counts, proper trip generation estimates, and accurate trip distribution.
- Further parking analysis to find 85th percentile values compared with County Code Requirements (current TIA reflects average and maximum values)
- Providing more parking than required conflicts with the interest to reduce traffic impacts.

Detailed TIA Assessment

The following sections provide a more detailed assessment of the items which may still be considered for incorporation into the TIA. A discussion of transportation related plans and policies is included in **Appendix A**. Additional comments for the Transportation Consultant are attached in **Appendix B** for consideration. A comparison of traffic counts collected in 2017 and 2022 are provided in **Appendix C**, and the raw traffic counts prepared by Quality Counts is provided in **Appendix D**.

Site Access and Circulation

There are plans for bicycle and pedestrian facilities on Highway 1 as described in **Appendix A**. Improvements to safety and connectivity for bicyclists and pedestrians will likely result in a higher volume of bicycle and pedestrian trips. There are several opportunities at the Project site to create higher visibility crossings to provide better visibility for pedestrians and bicyclists and encourage bicycling and walking as modes of transportation.

Fehr & Peers reviewed the Project site and developed a list of considerations to improve vehicle, bicycle, and pedestrian access and circulation. These considerations may be incorporated into a site plan review section of the TIA or may be used by the development team to refine their site design. A list of considerations is provided below:

- Driveway Location – The site driveway is aligned well with Carlos Street to provide a clear line of sight for vehicles approaching from both directions on Carlos Street; however, the

adjacent property wall restricts drivers exiting the site driveway from seeing cars approaching from the left. Vehicles would need to scoot closer into the intersection to see oncoming vehicles. Suggest adding pavement markings and signage to alert drivers on Carlos Street of the intersection.

- Site Circulation - Provide signage and pavement markings ahead of pedestrian crossings around site to alert drivers to yield to pedestrians. Recommend speed humps to maintain low vehicle speeds on site. Sidewalk around site looks quite narrow. Suggest widening sidewalks on site to accommodate both bicycles and pedestrians separate from the roadway with vehicles.
- Transit – Design the Project site to connect with future facilities on Highway 1 for improved pedestrian safety and connectivity, especially on Highway 1 at Carlos Street and 16th Street for access to SamTrans Route 117 southbound stop, and from the site to Highway 1 at 14th Street for access to SamTrans Route 117 northbound stop.
- Pedestrians/Bicyclists – Strengthen pedestrian connection between site and pedestrian and transit facilities. Connect sidewalks internal to site to bus stops on Highway 1 at 16th Street and at 14th Street. Provide signage on site to make drivers aware of bicyclists and pedestrians, especially at the pedestrian crossings throughout the parking areas. Add a discussion of the adequacy of proposed facilities to achieve the Complete Street Policy[1]. Add a discussion of added bike trips/primary travel paths from new residential uses to nearby schools and shops as well as surrounding major bike routes for commuters. Add a discussion of any intersections where major bicycle activity levels are anticipated as a result of the project and needed off-site bicycle improvements to support these activity levels. Add a discussion of pedestrian travel paths from new residential uses to surrounding destinations.
- Emergency Vehicle Access – Show truck turning templates for emergency vehicle circulation on site. Add text identifying the nearest fire station, route, and anticipated travel time to the project site.

Signal Warrant Analysis

Traffic signal warrant analysis was conducted for Study Intersection #2: Highway 1 & 16th Street and Study Intersection #6: Highway 1 & Vallemar Street/Etheldore Street. The TIA found impacts to traffic operations in the Cumulative with Project conditions at both intersections. The warrant analysis was conducted to test whether the traffic volumes warrant a traffic signal, that could potentially reduce the delay at the intersections in their existing traffic control. The TIA studied the appropriate time periods and concluded the warrant is not met for either intersection.

[1] County of San Mateo. 2013. *County of San Mateo General Plan Policies Chapter 12: Transportation Policies.* Available: https://www.smcgov.org/planning/general-plan-policies. For Complete Streets goals and objectives, see pages 12.2P, 12.5P, and 12.9P. Accessed December 5, 2022.

Fehr & Peers reviewed the traffic signal warrants worksheets in Appendix 10 of the TIA and reached the same conclusions that the traffic signal warrants are not met.

Parking

The requirements for vehicle parking presented in the TIA accurately reflect the zoning requirements for San Mateo County. Based on the County zoning regulations, the 71-unit development would require 127 vehicle parking spaces. The site plan provides 142 parking spaces, which exceeds the requirement by 15 spaces.

For bicycle parking spaces, the Project is providing eight short-term (outdoor) and 36 long-term (inside and secure) spaces. San Mateo County Zoning Regulations does not specify bicycle parking requirements for this region[2].

The TIA presented parking demand from the ITE 4th Edition Parking Demand Manual.

Table 5 presents parking demand estimated using two different parking generation methodologies contained within *ITE Parking Generation, 5th Edition*: Multi-Family Low-Rise Apartment, and Affordable Housing. The demand is quantified based on the number of dwelling units in the development.

Table 1. Parking Demand Comparison

ITE Edition	Units	Weekday		
		Fitted Curve Equation	Average Rate	Max Rate
TIA Parking Demand – ITE 4th Edition[1]	Dwelling Unit	63	87	138
ITE 5th Edition – Multi-Family Low Rise[2]	Dwelling Unit	79	86	108
ITE 5th Edition – Affordable Housing[3]	Dwelling Unit	58	70	94

Notes:
1. ITE Parking Demand, 4th Edition (Land Use #221 – Low/Mid-Rise) Adjacent Street Traffic Peak Hour
2. ITE Parking Demand, 5th Edition (Land Use #220 – Multi-Family Low-Rise) Adjacent Street Traffic Peak Hour
3. ITE Parking Demand, 5th Edition (Land Use #223 – Affordable Housing) Adjacent Street Traffic Peak Hour

Source: Fehr & Peers, 2022.

The parking demands estimated in the latest edition of the ITE manual are lower than those presented in the TIA. However, the parking supply exceeds both calculations for maximum

[2] County of San Mateo. 2022. *San Mateo County Zoning Regulations*. Available: https://www.smcgov.org/media/101461/download?inline=. Accessed December 5, 2022.

demand, which supports the TIA's statement that the site plan can support the parking demand for the development.

Fehr & Peers recommends the TIA include a comparison between the 4th Edition Parking Demand estimates with the estimates from latest edition of ITE (ITE 5th edition).

Transportation Demand Management (TDM)

The purpose of the Transportation Demand Management (TDM) program is to provide options to future residents to allow use of non-auto modes, strategies to encourage carpooling, biking, walking, and transit use, and site design features to promote the same. The proposed TDM Plan includes measures that are related to non-drive alone mode education, transit or ridesharing subsidies, bicycle amenities, and infrastructure improvements to support active transportation. The program is used as a mitigation for traffic operations impacts and sight distance and safety impacts.

The TDM program meets the requirements set forth by City/County Association of Governments of San Mateo County (C/CAG) for the project to include a series of measures that achieve a minimum trip reduction target of 25 percent based on the Project's type, size, and location. The Project's TDM Program achieves a total trip reduction of 26 percent of all the selected measures, and therefore meets C/CAG requirements.

It is recommended the TDM Measures are part of the project description to confirm the Project sponsor has agreed to these measures and that they will be implemented. At this time, this has not been confirmed. Per C/CAG, the Project sponsor may consider TDM Measure 4 for participation in Commute.org or Transportation Management Association (TMA) Equivalent. Three *Peninsula Traffic Congestion Relief Alliance (Commute.org)* shuttles provide weekday service through San Mateo County. Although no shuttles operate service near the Project site, Commute.org has a Bicycle to Work Rewards Program that rewards San Mateo County residents, workers, and students up to $100 for logging bicycle commutes that begin or end in the County. Additionally, commuters who live and work in San Mateo County are eligible for the Guaranteed Ride Home program, in which Commute.org will cover the cost of a ride home, up to $60 per trip with a maximum of four trips per calendar year, in case of illness or bicycle theft/breakage. These resources and rewards would help to encourage bicycling for commuting purposes.

Project VMT

The VMT analysis in the TIA is consistent with local guidance and the Governor's Office of Planning and Research (OPR) on CEQA VMT analysis. The TIA has documented the Project would represent a significant impact if the Project would result in more than 11.56 daily home-based Vehicle Miles Traveled (VMT) per capita by resident, which represents a 15 percent reduction from the baseline San Mateo County average of 13.60 home-based trip VMT per resident.

Fehr & Peers used the C/CAG VMT Estimation Tool to determine the residential VMT for the Project Transportation Analysis Zone (TAZ) is 23.6. Using the 2020 baseline year, the Bay Area Regional Average home-based VMT per resident is 14.6, and a 15 percent reduction from the baseline County average would result in a threshold of 12.41 home-based VMT per resident.

Considering the context of the development in Moss Beach, it is also relevant to compare the Project VMT to Coastal TAZs in San Mateo County (from Pacifica to Half Moon Bay). Fehr & Peers used the C/CAG VMT estimation tool to aggregate Coastal TAZ VMT and found that the average VMT for Coastal TAZs, weighted by population, is 19.0 and a 15 percent reduction from the Coastal TAZ average would be 16.15.

The following content is provided to quantify VMT reductions for informational purposes only. This analysis has limitations because the VMT reductions are based on a TAZ with high-income, single-family households, where research has shown these characteristics of a TAZ equate to more frequent vehicle travel and trip lengths much longer than affordable housing that is targeted at a local workforce. This project is consistent with statewide and regional goals[3] and research has shown affordable housing projects to overall reduce VMT.

Per the CAPCOA Handbook,[4] 100 percent affordable housing may have a 28.6 percent reduction in VMT per resident compared with market-rate housing. Below market rate housing provides greater opportunity for lower income families to live closer to job centers and achieve a jobs/housing match near transit. It is also an important strategy to address the limited availability of affordable housing that might force residents to live far away from jobs or school, requiring longer commutes.

An agreement between the County Department of Housing and Moss Beach Associates, L.P. is for the development to set aside 52 of the 70 proposed units as Local Preference Units (about 74 percent of the units), where eligible households are those that include at least one member who lives or works in the City of Pacifica, the City of Half Moon Bay, and/or the unincorporated County region between the City of Pacifica and the City of Half Moon Bay (Greater Moss Beach Region). This requirement may result in shorter commute trips per resident, and thus reduce VMT. However, this type of TDM measure is not quantified in the CAPCOA Handbook and an adjustment factor has not been developed. Fehr & Peers estimated a reduction in VMT for Local Preference Units, and this reduction is shown in **Table 4**. **Table 4** also provides a list of potential

[3] Refer to MTC Plan Bay Area 2050 and California Air Resources Board 2022 Scoping Plan Appendix D: Local Actions. Available: https://www.planbayarea.org/finalplan2050 and https://ww2.arb.ca.gov/sites/default/files/2022-11/2022-sp-appendix-d-local-actions.pdf, respectively. Accessed January 3, 2023.

[4] California Air Pollution Control Officers Associate. 2021. *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity*. Available: https://www.caleemod.com/handbook/full_handbook.html. See pages 80-83. Accessed December 5, 2022.

VMT reductions associated with the Project's TDM Program, using the Caltrans TDM+ Tool[5]. The Project's TDM Program will encourage non-drive alone trips and result in reduced VMT, although implementation of the Program would not bring the Project's home-based VMT per resident below the threshold.

Table 2. VMT Reductions

Measure	Source	VMT Reduction		
		Subsector	Change in VMT	Description
Scale: Project/Site[2]				
Affordable and Below Market Rate Housing	Project Description	Land Use	-28.6%	All the units are affordable housing, and therefore the maximum percent reduction is applied.
Increased Density	Project Description	Land Use	N.A.	The Project is less dense than the average U.S. residential density and therefore no reduction is applied.
Transit Subsidy or Discounted Transit Program	TDM Program	Trip Reduction Programs	-0.73%	The TDM Checklist includes M6 – Transit or Ridesharing Passes/Subsidies, which offers tenants passes or subsidized for monthly public transit or ridesharing costs incurred, equivalent to 30% of value or $50, whichever is lower. The current monthly cost for a SamTrans Express Pass is $130.[1]
End-of-Trip Bicycle Facilities	TDM Program	Trip Reduction Programs	-0.55%	The TDM Checklist includes M8 – Secure Bicycle Storage. The Sponsor will comply with CalGREEN minimum bicycle parking requirements.
Scale: Plan/Community[2]				
Gap Closure and Sidewalk Improvements	TDM Program	Neighborhood Design	-2.73%	The TDM Checklist includes M23 – Gap Closure. As part of this measure, the Sponsor will add sidewalks and high visibility crosswalks as part of mitigation measure T-1 for Impact T-7. Using a study area of approximately 1,000 ft radius of Project site, the existing sidewalk length is about 0.1 miles and with the measure, the sidewalk length will be about 0.2 miles.
Non-CAPCOA Measures				

[5] Caltrans. 2023. *SB 743 Implementation Resources*. Available: https://dot.ca.gov/programs/sustainability/sb-743/sb743-resources. Accessed January 3, 2023. TDM+ is a quick response, excel-based tool developed by Fehr & Peers to assist in calculating VMT reductions from the strategies presented in the 2021 CAPCOA Report Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity. Its interface is designed to allow the user to update the inputs for each measure based on the specific attributes of a project or plan, as well as to pre-populate certain default values based on the project location. This version of TDM+ is currently in beta-testing.

Local Preference Units[4]	Project Description	N.A.	-(0-10.6)%	If 100% of residents in the local preference units live on the coast, apply a 0% reduction. If 100% of residents in the local preference units work on the coast, apply a 10.6% reduction.
Total Reductions: 29.5%-37.0%[3]				

Notes:

1. https://www.samtrans.com/fares/fare-types
2. The CAPCOA Handbook recommends that GHG reductions of transportation measures from different scales of application should not be combined. For this reason, the reduction in VMT is calculated for the Project/Site scale that includes a higher share of VMT reductions compared to the Plan/Community scale.
3. Total VMT reduction is calculated using this equation: $Reduction = 1 - [(1 - A) * (1 - B) * (1 - C)]$ where A, B, and C represent the percent reduction in VMT for a specific TDM Measure. The Project results in a VMT reduction of 29.5%.
4. Local Preference Units are not noted in the CAPCOA Handbook as a quantified measure. If it were, we would expect it to be at the Project/Site scale and within the Land Use subsector. Applying this measure with a maximum reduction of 10% would result in a VMT reduction of 37.0%.

Source: Fehr & Peers, 2022.

The Gap Closure and Sidewalk Improvements measure is expected to reduce the community's VMT. Although these improvements would likely reduce Project-level VMT, when calculating Project-level VMT reductions, the CAPCOA Handbook does not recommend applying community benefits with project benefits as these benefits are at two different scales.

Applying the measures in Table 4 would result in a VMT reduction of 29.5-37.0 percent, which would reduce the Project's residential VMT per resident of 23.6 to 14.87-16.64, which is not below the VMT threshold for the Bay Area Regional Average (12.41) or the County Average (11.56). However, it does fall below the average for the Coastal TAZs (19.0) and would be close to 15 percent below the Coastal TAZ average (16.15). VMT reductions from the TDM would not meet thresholds. Ultimately, the CEQA impact determination will be based on the County's VMT Guidance. From the Interim VMT Guidance[6], VMT thresholds for unincorporated areas of San Mateo County will be determined on a case-by-case basis.

Conclusion

This memorandum summarizes our remaining comments on the revised TIA (March 2023). For a summary of comments which have since been addressed, see **Attachment A**.

[6] San Mateo County. Department of Public Works. "Change to Vehicle Miles Traveled as Metric to Determine Transportation Impacts under CEQA Analysis." (2020).

Attachment A: Addressed Comments from Draft TIA Peer Review

Table 1. Incorporated Peer Review Comments

F&P Comment	Kittelson TIA Incorporation
CEQA environmental impacts related to transportation shall be evaluated using the County's VMT threshold rather than the LOS standard. Update the Conclusions and Mitigations section of the TIA to clearly identify items that are CEQA impacts and corresponding mitigation measures, and items provided for informational purposes only. Include VMT as a measure in the CEQA Significance Criteria.	**Data Analysis and Approach Section:** Analysis split into CEQA Transportation Analysis (analysis section titled "Conclusions and Mitigation Measures") and Local Transportation Analysis (analysis section titled "Local Circulation and Traffic Operations"). Disclaimer added that the local LOS analysis is provided for informational purposes only. **Analysis Section:** LOS tables for future and cumulative scenarios moved to the Local Circulation and Traffic Operations Section **Conclusions and Mitigation Measures:** All LOS related impacts moved to Local Circulation and Traffic Operations Section. Changes in LOS are no longer categorized as formal impacts, instead described by intersection. Additionally, mitigation measures previously associated with LOS impacts are now categorized as "Improvement Measures" in Local Circulation and Traffic Operations Section
The TIS Requirements are for the technical analysis to use standards and methodologies provided by the latest editions of ITE, HCM, and California Department of Transportation. The TIA was completed in 2022 and the latest edition of ITE is the 11th edition. Recommend updating trip generation using the ITE 11th edition rates for land use code 220.	**Note:** The County TIS Requirements are not codified and should therefore be regarded as guidance only. **Analysis – Project Vehicle Trip Generation Section:** TIA maintains the ITE 9th Edition Trip Generation Calculations but includes new subsection "*Trip Generation Sources*" starting on page 24. This section includes the 11th Edition Trip Generation Table from F&P Peer Review for comparison and discusses justification for prevailing use of 9th Edition.
The TIS Requirements related to trip generation state, "tabulate the estimated number of daily trips and AM and PM peak-hour trips generated by the proposed project entering and exiting the site". Add daily trip generation in the report to meet this requirement.	**Note:** The County TIS Requirements are not codified and should therefore be regarded as guidance only. **Analysis – Project Vehicle Trip Generation Section:** Daily trip generation is now incorporated in Table 2 on page 24.

The TIS Requirements state "trip generation factors and source are to be included in the report". Provide the seasonal adjustment rate and a discussion of analysis method to meet this requirement.	**Note:** The County TIS Requirements are not codified and should therefore be regarded as guidance only. **Analysis – Existing Conditions Traffic Volumes Section:** New subsection "Seasonal Adjustment Methodology" which describes the adjustment rate and methods (page 20).
Fehr & Peers collected traffic counts in October 2022 at the 10 locations identified in the TIA and compared the volumes to those collected in April 2017 for the traffic operations analysis. The TIA should include this comparison to acknowledge potential changes in volumes since the original counts were conducted.	**Analysis – Existing Conditions Traffic Volumes Section:** New subsection "Comparison with 2022 Volumes" describes the variation in volumes across the two data collection periods. The comparison ultimately determines that adjusted 2017 counts are appropriate (page 20).
Electric vehicle (EV) parking requirements are determined by the California Green Building Code[1], which was updated in 2022. The code requires 10 percent of spaces (15 total) be EV Capable, 25% be equipped with low power charging receptacles (36 total), and 5% be equipped with Level 2 EVSE (8 total). The quantity of EV spaces the Project is providing does not meet the CalGreen requirements, therefore Fehr & Peers recommends increasing the number of EV parking spacing to meet CalGreen requirements.	**Site Access, Circulation, and Parking – Parking Assessment Section:** New subsection "Electric Vehicle Parking" includes California Green Building Code parking requirements (page 31)

[1] UpCodes. 2022. *California Green Building Standards Code 2022*. Available: https://up.codes/viewer/california/ca-green-code-2022/chapter/4/residential-mandatory-measures#4.106.4. Accessed December 5, 2022.

Table 2. Incorporated and Unincorporated Comments Regarding Impacts and Mitigations

Impact (Mitigation)	F&P Comment	Incorporated	Not Incorporated
T-1 *(T-1, T-2)* T-2 *(T-1)* T-3 *(T-1)*	Per SB 743, Level of Service is no longer a criteria under CEQA. Provide LOS for informational purposes and for consistency with local planning requirements only. Add additional discussion of plans underway as part of the Moss Beach State Route 1 Congestion & Safety Improvements Project.	**Note:** Now listed as "Intersection 7", "Intersection 1", and "Intersection 3" in "Local Circulation and Traffic Operations" Section **Conclusions and Mitigation Measures:** All LOS related impacts moved to Local Circulation and Traffic Operations Section. Changes in LOS are no longer categorized as formal impacts, instead described by intersection. Additionally, mitigation measures previously associated with LOS impacts are now categorized as "Improvement Measures"	**Conclusions and Mitigation Measures:** The "Improvement Measures" do not include discussion of the Moss Beach State Route 1 Congestion & Safety Project.
T-4 *(T-1)*	Per SB 743, Level of Service is no longer a criteria under CEQA. Provide LOS for informational purposes and for consistency with local planning requirements only. There are no plans being considered at this time for change in intersection control, geometry, or allowable turn movements.	**Note:** Now listed as "Intersection 6" in "Local Circulation and Traffic Operations" Section **Conclusions and Mitigation Measures:** All LOS related impacts moved to Local Circulation and Traffic Operations Section. Changes in LOS are no longer categorized as formal impacts, instead described by intersection. Additionally, mitigation measures previously associated with LOS impacts are now categorized as "Improvement Measures"	
T-5 *(T-1)*	Add additional discussion of plans underway as part of the Moss Beach State Route 1 Congestion & Safety Improvements Project. The TIS Requirements related to mitigation measures state, "The TIS must identify those mitigation measures which will be implemented by others. Those mitigation measures that are assumed to be implemented by others will be made a condition of approval for the project to be in place prior to issuance of building permits". The recommended improvement does not reach a conclusion on the mitigation or party(s) responsible for the mitigation. Need to identify solution and approach to implementation.	**Note:** Now listed as Impact T-1 **Note:** The County TIS Requirements are not codified and should therefore be regarded as guidance only. **Conclusions and Mitigation Measures:** Mitigation Measure T-1 is now "Provide Additional TDM Measures" which lists supplemental infrastructure improvements to improve bicycle, pedestrian, and transit connectivity. The project sponsor is specified to be responsible for implementation. *Additional Mitigation Measures* include discussion about the Moss Beach State Route 1 Congestion & Safety Project, specifying Caltrans jurisdiction and that it is out of the exclusive control of the county. This sufficiently addresses the responsible party(s) for the mitigation.	

T-6 *(T-1)*	To reduce the impact to less than significant, the Project sponsor would need to coordinate with the City, Caltrans, and SamTrans on facilities to improve pedestrian safety. The sponsor may contribute a fair-share towards the following items to increase safety of pedestrians crossing State Route 1: • Construct sidewalk on Carlos Street from Project driveway to Highway 1. • Construct sidewalk on east side of Highway from Carlos Street to 14th Street for pedestrian path to SamTrans Route 117 northbound bus stop. • Construct crosswalk on Highway 1 to connect to the SamTrans southbound Route 117 stop at 16th Street • Provide bus stop amenities at SamTrans Route 117 northbound and southbound stops near Project site. We don't recommend the use of TDM as a mitigation measure for this impact. The TDM Plan should serve to encourage non-drive alone trips which would likely lead to an increase in pedestrians crossing State Route 1. Add additional discussion of plans underway as part of the Moss Beach State Route 1 Congestion & Safety Improvements Project.	**Note:** Now listed as Impact T-2 **Conclusions and Mitigation Measures:** Impact description now includes disclaimer about the potential for TDM to offset reduced trips overall with more people crossing SR 1 to access transit. TDM implementation is no longer used as a mitigation measure. Mitigation Measure T-1 is now "Provide Additional TDM Measures" which lists supplemental infrastructure improvements to improve bicycle, pedestrian, and transit connectivity. The project sponsor is specified to be responsible for implementation. *Other Mitigation Measures* include discussion about the Moss Beach State Route 1 Congestion & Safety Project, specifying Caltrans jurisdiction and that it is out of the exclusive control of the county. This sufficiently addresses the responsible party(s) for the mitigation. Additional suggested infrastructure measures to reduce the impact to less than significant were not incorporated. The impact remains.	
T-7 *(T-1)*	Need the Project sponsor to commit to the list of improvements identified under Mitigation Measure T-1 to reduce this impact. Consider contributions towards sidewalk or other pathway on east side of Highway 1 to bus stop at 14th St, crosswalk on Highway 1 to bus stop at 16th Street, Class II bike lanes on SR 1, and transit stop improvements for the two bus stops identified. Coordinate with Caltrans, County, SamTrans, San Mateo County Transit District, and the Moss Beach State Route 1 Congestion & Safety Improvements Project team for aligning near term improvements with long term plans.	**Note:** Now listed as Impact T-3 **Conclusions and Mitigation Measures:** Mitigation Measure T-1 is now "Provide Additional TDM Measures" which lists supplemental infrastructure improvements to improve bicycle, pedestrian, and transit connectivity. The project sponsor is specified to be responsible for implementation. Additional suggested infrastructure measures to reduce the impact to less than significant were not incorporated. The impact remains.	

Table 3. Peer Review Comments Determined Unneceassry for TIA

F&P Comment	Kittelson TIA Incorporation
As identified in the TIA, a CEQA Significance Criteria is if the proposed project resulted in inadequate emergency access. The TIA does not include a measure of effectiveness related to emergency access. In addition to providing a measure(s) of effectiveness, add a discussion of the impact criteria in the Conclusions and Mitigations section. Refer to CEQA Guideline's Appendix G checklist. Items to add as measures of effectiveness include if the Project were to impair implementation of or physically interfere with adopted emergency response/evacuation plan, result in inadequate emergency access, and if project is in hazard areas, should analyze the project's effect on evacuation travel times. This may include residents, workers, students, and visitors (and possibly horses). Additionally, consider providing discussion of emergency routes for residents.	Per County direction, discussion regarding measure of effectiveness and impact criteria for emergency access will be included in the Environmental Impact Report. This item does not need to be addressed in the TIA.
In addition to traffic operations assessment using LCP Policies as part of the non CEQA assessment, identify and compare traffic operations to County thresholds as identified in the TIS Requirements.	**Note:** The County TIS Requirements are not codified and should therefore be regarded as guidance only. Per County direction, the LCP is sufficient for evaluating operations and therefore did not wish to include the TIS Requirements.
TIS Requirements state "A table and a map showing the status, project/zone change/conditional use permit/parcel map/tract number, and the location of each project must be provided" for projects within a 2.5-mile radius that would be in place by the project's build out year. Recommend providing the table and map to meet this requirement.	**Note:** The County TIS Requirements are not codified and should therefore be regarded as guidance only. This figure will be included in the Environmental Impact Report and does not need to be addressed in the TIA.
The TIS Requirements related to trip distribution state "Diagrams showing the percentages and volumes of the project and nearby project's AM and PM peak-hour trips logically distributed on the roadway system must be provided". The report provides the percentage trip distribution along Highway 1 for the project in a table (Table 4 in TIA) rather than in a diagram, and these percentages are not provided for nearby projects or local streets. Update report to meet this requirement.	**Note:** The County TIS Requirements are not codified and should therefore be regarded as guidance only. Per County Direction, the diagrams would not provide additional value if included with existing intersection geometry diagrams, therefore they will not be included in the TIA.

The TIS Requirements related to the project description state "A complete description (including a map) of the existing land uses in the study area as well as their current zoning and use must be included." A map is not included in the TIA with the existing land uses and zoning. Update report to meet this requirement.	**Note:** The County TIS Requirements are not codified and should therefore be regarded as guidance only. This map will be included in the Environmental Impact Report and does not need to be addressed in the TIA.
The TIS Requirements state "Graphics should be included to illustrate the study area and vicinity, study intersections including photographs and lane diagrams for cross-reference, existing, background and future traffic volumes." The TIA does not include photographs of the study intersections. Update report to meet this requirement.	**Note:** The County TIS Requirements are not codified and should therefore be regarded as guidance only. Per County Direction, these photos would not add value to the existing intersection diagrams and therefore do not need to be included in the TIA.
Add a construction traffic and parking assessment to the TIA. This assessment is often included in a TIA for CEQA purposes, particularly for projects that may be developed in phases where detailed construction information is not available for review. It is anticipated that a potential impact would be identified and a mitigation requiring submittal of a construction traffic management plan for each construction phase would be added.	Construction traffic and parking assessment will be included in the Environmental Impact Report. This item does not need to be addressed in the TIA.
Include a section that discusses the relevant plans and documents relating to the Project. Several county-wide and location specific planning documents specify goals and policies for the Cypress Point development and its surrounding area. Fehr & Peers reviewed these plans to evaluate the TIA's consistency with their outlined recommendations, included in **Appendix A.**	Discussion regarding relevant plans and documents as they pertain to the Project will be included in the Environmental Impact Report. This item does not need to be addressed in the TIA.

Appendix A: Relevant Plans & Policies

Relevant Plans and Policies

Local Coastal Program

The Local Coastal Program (LCP) primarily defaults to Connect the Coastside for transportation-related policies and project recommendations, as stated by Policy 2.53. The LCP requires that Midcoast developments evaluate impacts to Level of Service for coastal access and emergency vehicles and develop a Transportation Demand Management plan.

The plan also identifies the California Coastal trail, a continuous inter-connected public trail system along the coastline as a means of encouraging active transportation and fostering appreciation of the natural environment. The Coastal Trail is anticipated to cross Highway 1 at 16th Street, and further plans are identified in Connect the Coastside for creating a safe and continuous crossing.

Connect the Coastside

Connect the Coastside serves as the San Mateo County Midcoast Comprehensive Transportation Management Plan, as part of the Local Coastal Program policy[1]. The most recent iteration of Connect the Coastside was finalized in July 2022.

The plan recommends nine projects which impact the street network surrounding the Project location, presented in **Table A-1.**

Table A-1. Connect the Coastside Project Recommendations

Project Name	Project No.	Description
Highway 1 Side Street Stop Signs	R2	Install stop signs and pavement markings at all side streets of SR-1 where missing
16th St/Highway 1 Intersection Control	R5	Intersection control, with preliminary recommendation of single-lane roundabout
California Ave/Highway 1 Intersection Control	R6	Intersection control, with preliminary recommendation of single-lane roundabout
Carlos Street Realignment to 16th Street	R9	Realign north terminus of Carlos Street at Highway 1 to connect to 16th Street
Carlos Street Traffic Calming	R10	Striping, signage, and completion of missing sidewalk, with conversion to one-way southbound with parking reoriented facing south on Carlos Street to accommodate the Parallel Trail and calm traffic in central Moss Beach

[1] https://www.smcgov.org/planning/local-coastal-program#

New and Improved Crossings of Highways 1 and 92	Pe1	Improve existing and add new pedestrian crossings on Highways 1 and 92 including marked crossings with flashing beacons, overcrossing of Highway 1/south of Carlos St, and improve Highway 1/Coronado
Highway 1 Multimodal Parallel Trail	Pe2	Connected walking and bicycling facilities along the east side of Highway 1 through connected Class I Path, sidewalks, and Class III Bike Route, with marked crossings of intersecting streets with the path
Highway 1 Bikeway	B1	Bikeway designation on Highway 1 of Class II Bike Lanes
Transit Stop Improvements	T1	Ensure all bus stops have ADA accessible pad, with additional amenities, at higher use stations including benches, shelters, and lighting

Moss Beach State Route 1 Congestion & Safety Improvements Project

San Mateo County has plans underway for improvements along State Route 1 (Cabrillo Highway) to improve congestion and safety for the corridor[2]. The project is currently in the initiation stage, determining the feasibility of suggested improvements at the intersections of 16th Street, California Avenue, and Cypress Avenue with SR 1, in addition to the corridor through Moss Beach.

These locations are identified as part of the Connect the Coastside report. The project team is determining feasibility for a traffic signal and roundabout at these locations which would be anticipated for build out in cumulative conditions.

The County is working with Caltrans and the project is anticipated to be completed by 2030, although funding has not yet been identified. Although the project will not be completed for several years, it has the potential to address several transportation impacts that are identified by the TIA. The Project should consider interim mitigation measures in anticipation of the future implementation of corridor improvements.

SamTrans Bus Stop Improvement Plan

SamTrans is in the beginning stages of the development of the SamTrans Bus Stop Improvement Plan[3]. The project seeks to improve the accessibility and comfort of bus stops throughout their service district. However, the bus stops in closest proximity to the development, located at SR 1 and 16th Street, may not receive improvements due to space and access constraints. The Project should consider safety, accessibility, and comfort improvements to stops near the Project site.

Active Transportation Plan

The San Mateo County Active Transportation Plan[4] identifies a vision of a connected network for bicyclists and pedestrians, with improved safety and complete streets. The plan presents a backbone network of

[2] https://www.smcgov.org/planning/moss-beach-sr-1

[3] https://www.samtrans.com/Projects/bus-stop-improvement-plan

[4] https://ccag.ca.gov/wp-content/uploads/2021/06/San-Mateo-County-Comprehensive-Bicycle-and-Pedestrian-Plan-Update-Final-Plan.pdf

bicycle facilities to connect the region, including a bicycle and pedestrian trail that runs north along State Route 1 adjacent to the Project location. There are currently no bicycle facilities in the area, and there are plans included in Connect the Coastside and the additional project recommendations with the Active Transportation Plan that seek to create a robust network of bicycle facilities along the corridors near Cypress Point. The plan identifies the following projects in Moss Beach:

- California Ave from Tierra Alta to lake Street, Class III
- Etheldore Street, Class III
- Vallemar Street, Class III
- Carlos St/Vermont Ave, Class III
- Highway 1 (16th Street to Etheldore), Class I

Appendix B: Additional Comments on the TIA Document

Fehr & Peers completed a detailed review of the TIA document and have provided additional items for consideration in **Table B-1**.

Table B-1. Additional Comments on the TIA Document

Item No.	Page No.	Comment
1	i	On the Contents page, the header has "List of Figures". Update the header in the initial section from page 5-10 for what is listed on the page. For example page 9 says "Appendices" and the page is the executive summary.
2	iii	Appendix 2 is listed as "Seasonal Turning Movement Counts Adjustment". The appendix includes an email with approval to use seasonal adjustments, but does not provide information about this adjustment. Consider providing this for disclosure of how traffic varies, and to document the analysis methodology.
3	1	Consider adding the approximate distance of the project driveway from Sierra Street.
4	1	Considering noting the second driveway location that is to be used as an emergency vehicle route.
5	1	The project impacts are identified on the executive summary. Consider including a description of all of the scenarios studied ahead of the project impacts section for more context. It would also be good to document what the "identified intersection operations standards" are, which are likely the LCP standards.
6	Figure 1	The map scale is not displaying properly. Please update.
7	Figure 1	Recommend showing the project site driveways on the map.
8	Figure 2	Label the streets in the tentative site plan. Confirm this is the most up to date site plan.
9	11	The most recent version of the Highway Capacity Manual (HCM) was released in January 2022. Recommend comparing operation methodologies from 2010 HCM to 2022 to ensure using most up to date guidance.
10	12	Update the policy number to Policy 2.43 in reference to LCP Desired Level of Service
11	13	Consider providing linear interpolation data for the growth between 2017 and 2040.
12	13	Reference #4 is provided in a different format to previous references. Recommend adding additional information to this source.
13	General	Check that references and footnotes are formatted consistently throughout the document
14	Figure 3	Consider adding project area boundary to the figure for more context.
15	17	Note that recently SamTrans renamed routes so routes with 2 digits represent school routes and routes with 3 digits are for general bus service. Route 17 has been renamed to Route 117. No action needed.

16	18	There are additional schools that Routes 117 and 18 serve. In addition to the two listed: Manual F. Cunha Intermediate School and Half Moon Bay High School, near the project site El Granada Elementary School, Wilkinson Elementary School, and Farallone View Elementary School can be served by these routes. Consider listing these in the section as well.
17	Figure 4	Recommend showing the project site driveways on the map.
18	20	Could specify that Appendix 3 detailed calculation worksheets are the Synchro reports.
19	Figure 5	Int #7 is missing an WBR movement
20	24	Reference #8 has a typo in the first clause. Suggest updating. I think it might be "The manual lists land use ITE XXX (XX) an average rate..."
21	33	Provide information on which version of the Caltrans Highway Design Manual was used.
22	Figures 6, 7, 9-12	Suggest changing the order of intersections so it runs 6 through 10 down the right side of the figure. Global comment for the figures displaying intersection movement information.
23	Figure 7	Is it assumed that there are not any project trips off SR 1? Please make it clear whether Project trip distribution was done just for trips on SR 1 or for all project trips.
24	41	Remove word "Page" from the page number for consistency with previous sections. This continues through section 4.

Appendix C: Traffic Counts Comparison

The following tables present a comparison of traffic counts collected in 2017 and 2022. Traffic counts are provided by intersection movement for each time period.

1. Highway 1 and 14th Street

Total Counts

	AM Peak	PM Peak	Sat Peak
2022	1005	1342	1429
2017	1207	1480	1599
% Change	-17%	-9%	-11%

Peak Hour Turning Movements

	NBLeft	NBThru	NBRight	SBLeft	SBThru	SBRight	EBLeft	EBThru	EBRight	WBLeft	WBThru	WBRight
2022 AM	0	534	7	2	441	0	0	0	0	17	0	4
2017 AM	0	637	15	1	532	0	1	0	0	14	0	7
% Change	--	-16%	-53%	100%	-17%	--	-100%	--	--	21%	--	-43%
2022 PM	0	633	25	2	669	0	0	0	0	10	0	3
2017 PM	0	630	18	5	809	1	0	0	1	11	0	5
% Change	--	0%	39%	-60%	-17%	-100%	--	--	-100%	-9%	--	-40%
2022 Weekend	0	556	12	2	845	0	0	0	0	9	0	5
2017 Weekend	2	698	8	4	871	2	1	0	1	9	0	3
% Change	-100%	-20%	50%	-50%	-3%	-100%	-100%	--	-100%	0%	--	67%

2. Highway 1 and 16th Street

Total Counts

	AM Peak	PM Peak	Sat Peak
2022	1004	1341	1428
2017	1207	1463	1594
% Change	-17%	-8%	-10%

Peak Hour Turning Movements

	NBLeft	NBThru	NBRight	SBLeft	SBThru	SBRight	EBLeft	EBThru	EBRight	WBLeft	WBThru	WBRight
2022 AM	0	545	0	0	458	1	0	0	0	0	0	0
2017 AM	0	642	0	0	556	4	4	0	1	0	0	0
% Change	--	-15%	--	--	-18%	-75%	-100%	--	-100%	--	--	--
2022 PM	3	650	1	2	677	2	1	1	2	2	0	0
2017 PM	0	641	0	1	805	4	5	0	4	1	0	2
% Change	--	1%	--	100%	-16%	-50%	-80%	--	-50%	100%	--	-100%
2022 Weekend	3	562	1	0	850	2	2	0	4	0	0	0
2017 Weekend	3	702	0	1	880	4	0	0	2	1	0	1
% Change	0%	-20%	--	-100%	-3%	-50%	--	--	100%	-100%	--	-100%

3. Highway 1 and Carlos Street

Total Counts

	AM Peak	PM Peak	Sat Peak
2022	1002	1340	1428
2017	1191	1457	1579
% Change	-16%	-8%	-10%

Peak Hour Turning Movements

	NBLeft	NBThru	NBRight	SBLeft	SBThru	SBRight	EBLeft	EBThru	EBRight	WBLeft	WBThru	WBRight
2022 AM	0	522	1	7	450	0	0	0	0	0	0	22
2017 AM	0	617	0	5	546	0	0	0	0	0	0	23
% Change	--	-15%	--	40%	-18%	--	--	--	--	--	--	-4%
2022 PM	0	643	0	8	673	0	0	0	0	4	0	12
2017 PM	0	636	0	18	798	0	0	0	0	0	0	5
% Change	--	1%	--	-56%	-16%	--	--	--	--	--	--	140%
2022 Weekend	0	560	3	8	848	0	0	0	0	1	0	8
2017 Weekend	0	604	0	6	958	0	0	0	0	0	0	11
% Change	--	-7%	--	33%	-11%	--	--	--	--	--	--	-27%

4. Carlos Street and Sierra Street

Total Counts

	AM Peak	PM Peak	Sat Peak
2022	44	35	28
2017	30	36	25
% Change	47%	-3%	12%

Peak Hour Turning Movements

	NBLeft	NBThru	NBRight	SBLeft	SBThru	SBRight	EBLeft	EBThru	EBRight	WBLeft	WBThru	WBRight
2022 AM	0	1	6	8	1	0	0	0	0	7	0	21
2017 AM	0	1	0	5	1	0	0	0	0	1	0	22
% Change	--	0%	--	60%	0%	--	--	--	--	600%	--	-5%
2022 PM	0	1	7	9	0	0	0	0	0	4	0	14
2017 PM	0	1	6	19	0	0	0	0	0	4	0	6
% Change	--	0%	17%	-53%	--	--	--	--	--	0%	--	133%
2022 Weekend	0	3	4	10	1	0	0	0	0	2	0	8
2017 Weekend	0	2	2	4	2	0	0	0	0	2	0	13
% Change	--	50%	100%	150%	-50%	--	--	--	--	0%	--	-38%

5. Stetson Street and Sierra Street

Total Counts

	AM Peak	PM Peak	Sat Peak
2022	42	36	25
2017	28	36	21
% Change	50%	0%	19%

Peak Hour Turning Movements

	NBLeft	NBThru	NBRight	SBLeft	SBThru	SBRight	EBLeft	EBThru	EBRight	WBLeft	WBThru	WBRight
2022 AM	21	0	0	0	0	0	0	7	6	0	8	0
2017 AM	18	0	0	0	0	0	1	2	3	0	4	0
% Change	17%	--	--	--	--	--	-100%	250%	100%	--	100%	--
2022 PM	11	0	3	0	0	0	0	6	9	0	7	0
2017 PM	7	0	0	0	0	0	0	8	16	1	4	0
% Change	57%	--	--	--	--	--	--	-25%	-44%	-100%	75%	--
2022 Weekend	8	0	0	0	0	0	0	7	7	1	2	0
2017 Weekend	13	0	1	0	0	0	0	2	4	1	0	0
% Change	-38%	--	-100%	--	--	--	--	250%	75%	0%	--	--

6. Highway 1 and Vallemar Street/Etheldore Street

Total Counts

	AM Peak	PM Peak	Sat Peak
2022	995	1347	1438
2017	1176	1465	1604
% Change	-15%	-8%	-10%

Peak Hour Turning Movements

	NBLeft	NBThru	NBRight	SBLeft	SBThru	SBRight	EBLeft	EBThru	EBRight	WBLeft	WBThru	WBRight
2022 AM	8	478	9	11	432	3	4	0	10	4	0	36
2017 AM	4	592	4	10	530	0	3	0	5	2	0	26
% Change	100%	-19%	125%	10%	-18%	--	33%	--	100%	100%	--	38%
2022 PM	3	613	9	20	655	5	3	1	12	6	0	20
2017 PM	10	615	7	28	762	5	7	0	7	7	0	17
% Change	-70%	0%	29%	-29%	-14%	0%	-57%	--	71%	-14%	--	18%
2022 Weekend	6	538	6	18	824	9	5	1	6	6	1	18
2017 Weekend	9	678	2	19	854	5	0	0	7	5	2	23
% Change	-33%	-21%	200%	-5%	-4%	80%	--	--	-14%	20%	-50%	-22%

7. Highway 1 and California Avenue

Total Counts

	AM Peak	PM Peak	Sat Peak
2022	1048	1430	1490
2017	1366	1501	1787
% Change	-23%	-5%	-17%

8. Carlos Street and California Avenue

Total Counts

	AM Peak	PM Peak	Sat Peak
2022	93	150	121
2017	99	133	154
% Change	-6%	13%	-21%

Peak Hour Turning Movements

	NBLeft	NBThru	NBRight	SBLeft	SBThru	SBRight	EBLeft	EBThru	EBRight	WBLeft	WBThru	WBRight
2022 AM	1	1	1	0	1	1	5	25	0	0	58	0
2017 AM	3	2	0	2	2	3	5	17	0	1	64	0
% Change	-67%	-50%	--	-100%	-50%	-67%	0%	47%	--	-100%	-9%	--
2022 PM	4	8	10	1	6	9	15	43	13	4	37	0
2017 PM	6	7	4	2	8	8	21	35	4	2	32	4
% Change	-33%	14%	150%	-50%	-25%	13%	-29%	23%	225%	100%	16%	-100%
2022 Weekend	1	7	4	0	9	16	11	27	6	3	37	0
2017 Weekend	9	9	2	6	15	11	23	33	2	2	25	17
% Change	-89%	-22%	100%	-100%	-40%	45%	-52%	-18%	200%	50%	48%	-100%

9. Etheldore Street and California Avenue

Total Counts

	AM Peak	PM Peak	Sat Peak
2022	135	150	137
2017	113	128	145
% Change	19%	17%	-6%

Peak Hour Turning Movements

	NBLeft	NBThru	NBRight	SBLeft	SBThru	SBRight	EBLeft	EBThru	EBRight	WBLeft	WBThru	WBRight
2022 AM	1	1	1	0	1	1	5	25	0	0	58	0
2017 AM	2	17	0	1	4	0	0	14	0	1	65	9
% Change	-50%	-94%	--	-100%	-75%	--	--	79%	--	-100%	-11%	-100%
2022 PM	8	8	7	11	13	1	0	41	4	14	37	6
2017 PM	4	5	7	15	10	2	0	41	3	9	30	2
% Change	100%	60%	0%	-27%	30%	-50%	--	0%	33%	56%	23%	200%
2022 Weekend	7	18	8	5	14	1	0	30	5	3	43	3
2017 Weekend	7	13	7	8	16	3	2	37	3	10	37	2
% Change	0%	38%	14%	-38%	-13%	-67%	-100%	-19%	67%	-70%	16%	50%

10. Stetson Street and California Avenue

Total Counts

	AM Peak	PM Peak	Sat Peak
2022	109	123	100
2017	97	108	107
% Change	12%	14%	-7%

Peak Hour Turning Movements

	NBLeft	NBThru	NBRight	SBLeft	SBThru	SBRight	EBLeft	EBThru	EBRight	WBLeft	WBThru	WBRight
2022 AM	0	4	2	0	0	6	7	25	1	2	62	0
2017 AM	1	1	2	0	0	6	0	17	1	5	63	1
% Change	-100%	300%	0%	--	--	0%	--	47%	0%	-60%	-2%	-100%
2022 PM	4	3	1	0	0	8	5	54	1	2	45	0
2017 PM	5	2	3	0	0	4	2	53	6	1	32	0
% Change	-20%	50%	-67%	--	--	100%	150%	2%	-83%	100%	41%	--
2022 Weekend	1	0	3	0	1	4	3	36	2	1	49	0
2017 Weekend	4	1	3	0	1	5	4	44	3	2	40	0
% Change	-75%	-100%	0%	--	0%	-20%	-25%	-18%	-33%	-50%	23%	--

Appendix D: Traffic Counts

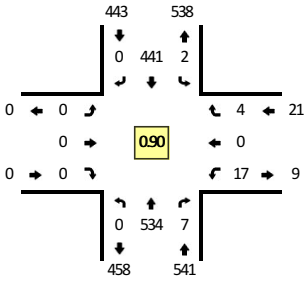
Type of peak hour being reported: Intersection Peak

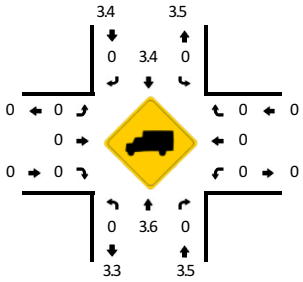
Method for determining peak hour: Total Entering Volume

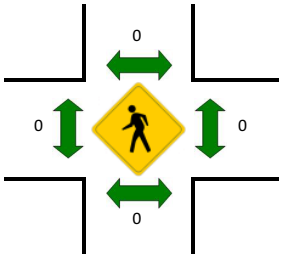
LOCATION: Hwy 1 -- 14th St
CITY/STATE: Montara, CA

QC JOB #: 15986631
DATE: Thu, Oct 27 2022

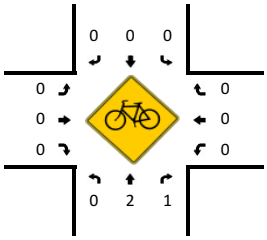
Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

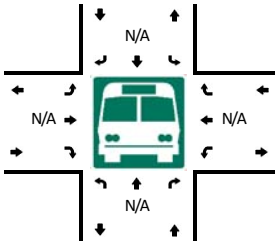




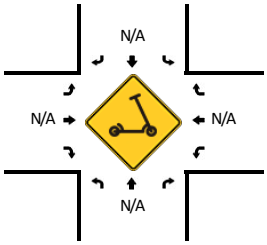












5-Min Count Period Beginning At	Hwy 1 (Northbound)				Hwy 1 (Southbound)				14th St (Eastbound)				14th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	17	0	0	0	26	0	0	0	0	0	0	0	0	1	0	44	
7:05 AM	0	26	0	0	0	31	0	0	0	0	0	0	0	0	0	0	57	
7:10 AM	0	33	0	0	0	24	0	0	0	0	0	0	0	0	2	0	59	
7:15 AM	0	21	0	0	0	30	0	0	0	0	0	0	1	0	0	0	52	
7:20 AM	0	36	1	0	0	27	0	0	0	0	0	0	3	0	0	0	67	
7:25 AM	0	44	0	0	0	36	0	0	0	0	0	0	1	0	1	0	82	
7:30 AM	0	38	0	0	0	40	0	0	0	0	0	0	4	0	0	0	82	
7:35 AM	0	46	0	0	0	52	0	0	0	0	0	0	3	0	2	0	103	
7:40 AM	0	50	0	0	0	41	0	0	0	0	0	0	2	0	0	0	93	
7:45 AM	0	44	0	0	0	33	0	0	0	0	0	0	2	0	0	0	79	
7:50 AM	0	52	0	0	0	24	0	0	0	0	0	0	2	0	0	0	78	
7:55 AM	0	48	1	0	0	35	0	0	0	0	0	0	2	0	0	0	86	882
8:00 AM	0	61	2	0	1	43	0	0	0	0	0	0	1	0	0	0	108	946
8:05 AM	0	54	0	0	1	28	0	0	0	0	0	0	0	0	0	0	83	972
8:10 AM	0	30	1	0	0	35	0	0	0	0	0	0	0	0	0	0	66	979
8:15 AM	0	35	2	0	0	38	0	0	0	0	0	0	0	0	1	0	76	1003
8:20 AM	0	32	1	0	0	36	0	0	0	0	0	0	0	0	0	0	69	1005
8:25 AM	0	46	0	0	0	19	0	0	0	0	0	0	2	0	1	0	68	991
8:30 AM	0	38	0	0	0	34	0	0	0	0	0	0	0	0	2	0	74	983
8:35 AM	0	43	0	0	0	41	0	0	0	0	0	0	0	0	0	0	84	964
8:40 AM	0	34	1	0	1	43	0	0	0	0	0	0	1	0	0	0	80	951
8:45 AM	0	51	2	0	0	54	0	0	0	0	0	0	0	0	0	0	107	979
8:50 AM	0	36	2	0	0	41	0	0	0	0	0	0	3	0	1	0	83	984
8:55 AM	0	37	1	0	0	41	0	0	0	0	0	0	1	0	0	0	80	978

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	536	0	0	0	532	0	0	0	0	0	0	36	0	8	0	1112
Heavy Trucks	0	24	0		0	12	0		0	0	0		0	0	0		36
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 11/8/2022 3:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

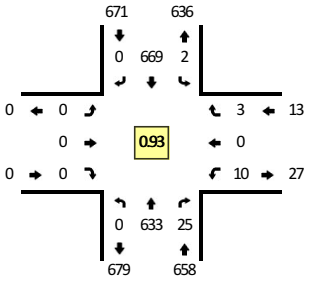
Type of peak hour being reported: Intersection Peak

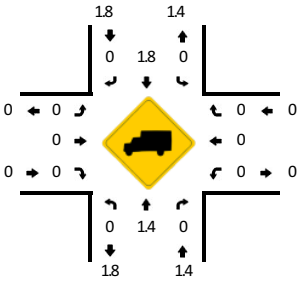
Method for determining peak hour: Total Entering Volume

LOCATION: Hwy 1 -- 14th St
CITY/STATE: Montara, CA

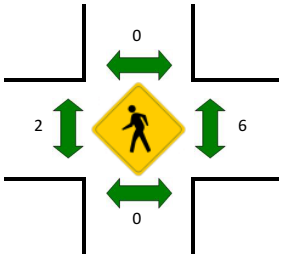
QC JOB #: 15986632
DATE: Thu, Oct 27 2022

Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

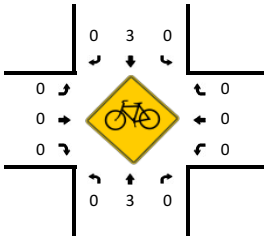


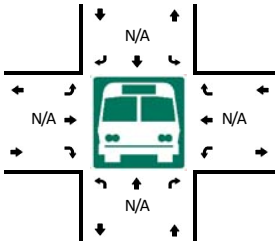


Quality Counts
DATA THAT DRIVES COMMUNITIES

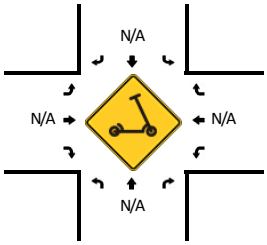












5-Min Count Period Beginning At	Hwy 1 (Northbound)				Hwy 1 (Southbound)				14th St (Eastbound)				14th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	51	1	0	0	57	0	0	0	0	0	0	1	0	0	0	110	
4:05 PM	0	52	3	0	1	52	0	0	0	0	0	0	1	0	0	0	109	
4:10 PM	0	61	2	0	1	48	0	0	0	0	0	0	1	0	1	0	114	
4:15 PM	0	37	1	0	0	56	0	0	0	0	0	0	1	0	0	0	95	
4:20 PM	0	65	2	0	0	45	0	0	0	0	0	0	2	0	0	0	114	
4:25 PM	0	44	2	0	0	54	0	0	0	0	0	0	0	0	0	0	100	
4:30 PM	0	63	2	0	0	59	0	0	0	0	0	0	0	0	0	0	124	
4:35 PM	0	52	1	0	0	72	0	0	0	0	0	0	0	0	0	0	125	
4:40 PM	0	52	3	0	0	53	0	0	0	0	0	0	1	0	1	0	110	
4:45 PM	0	44	3	0	0	47	0	0	0	0	0	0	0	0	0	0	94	
4:50 PM	0	58	1	0	0	73	0	0	0	0	0	0	1	0	0	0	133	
4:55 PM	0	54	4	0	0	53	0	0	0	0	0	0	2	0	1	0	114	1342
5:00 PM	0	31	2	0	0	45	0	0	0	0	0	0	0	0	0	0	78	1310
5:05 PM	0	46	1	0	1	63	0	0	0	0	0	0	0	0	0	0	111	1312
5:10 PM	0	51	3	0	0	55	0	0	0	0	0	0	1	0	1	0	111	1309
5:15 PM	0	50	2	0	0	52	0	0	0	0	0	0	0	0	0	0	104	1318
5:20 PM	0	50	1	0	0	54	0	0	0	0	0	0	0	0	0	0	105	1309
5:25 PM	0	53	2	0	0	50	0	0	0	0	0	0	1	0	1	0	107	1316
5:30 PM	0	51	1	0	0	51	0	0	0	0	0	0	1	0	0	0	104	1296
5:35 PM	0	46	0	0	0	66	0	0	0	0	0	0	0	0	1	0	113	1284
5:40 PM	0	49	0	0	0	54	0	0	0	0	0	0	0	0	0	0	103	1277
5:45 PM	0	38	4	0	0	51	0	0	0	0	0	0	1	0	0	0	94	1277
5:50 PM	0	53	5	0	0	41	0	0	0	0	0	0	1	0	2	0	102	1246
5:55 PM	0	46	4	0	0	48	0	0	0	0	0	0	1	0	0	0	99	1231

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	668	24	0	0	736	0	0	0	0	0	0	4	0	4	0	1436
Heavy Trucks	0	4	0		0	16	0		0	0	0		0	0	0		20
Buses																	
Pedestrians		0				0				8				16			24
Bicycles	0	12	0		0	4	0		0	0	0		0	0	0		16
Scooters																	

Comments:

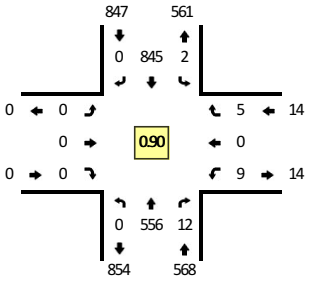
Report generated on 11/8/2022 3:07 PM

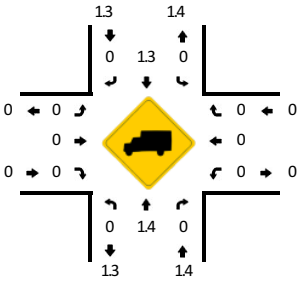
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

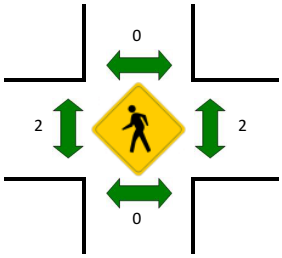
LOCATION: Hwy 1 -- 14th St | **QC JOB #:** 15986633
CITY/STATE: Montara, CA | **DATE:** Sat, Oct 29 2022

Peak-Hour: 11:50 AM -- 12:50 PM
Peak 15-Min: 12:35 PM -- 12:50 PM

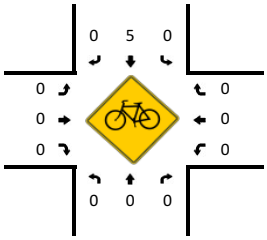


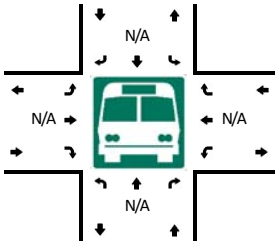


Quality Counts
DATA THAT DRIVES COMMUNITIES

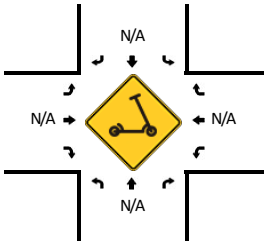












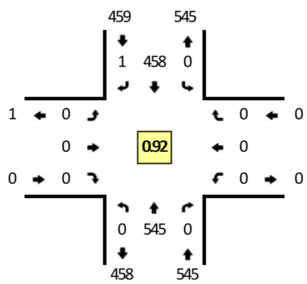
5-Min Count Period Beginning At	Hwy 1 (Northbound)				Hwy 1 (Southbound)				14th St (Eastbound)				14th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	52	0	0	0	58	0	0	0	0	0	0	0	0	0	0	110	
11:05 AM	0	54	2	0	0	52	0	0	0	0	0	0	0	0	0	0	108	
11:10 AM	0	40	2	0	0	63	0	0	0	0	0	0	1	0	0	0	106	
11:15 AM	0	48	2	0	0	47	0	0	0	0	0	0	0	0	0	0	97	
11:20 AM	0	50	0	0	0	36	0	0	0	0	0	0	0	0	0	0	86	
11:25 AM	0	49	1	0	0	66	0	0	0	0	0	0	0	0	1	0	117	
11:30 AM	0	60	0	0	0	60	0	0	0	0	0	0	0	0	0	0	120	
11:35 AM	0	39	0	0	0	66	0	0	0	0	0	0	1	0	1	0	107	
11:40 AM	0	47	1	0	0	78	0	0	0	0	0	0	1	0	0	0	127	
11:45 AM	0	29	1	0	0	69	0	0	0	0	0	0	1	0	0	0	100	
11:50 AM	0	44	1	0	0	78	0	0	0	0	0	0	1	0	0	0	124	
11:55 AM	0	48	1	0	0	63	0	0	0	0	0	0	0	0	1	0	113	1315
12:00 PM	0	41	0	0	0	63	0	0	0	0	0	0	0	0	1	0	105	1310
12:05 PM	0	43	2	0	0	71	0	0	0	0	0	0	1	0	0	0	117	1319
12:10 PM	0	49	1	0	1	56	0	0	0	0	0	0	2	0	0	0	109	1322
12:15 PM	0	52	1	0	0	69	0	0	0	0	0	0	0	0	0	0	122	1347
12:20 PM	0	35	1	0	1	68	0	0	0	0	0	0	0	0	0	0	105	1366
12:25 PM	0	41	1	0	0	81	0	0	0	0	0	0	0	0	1	0	124	1373
12:30 PM	0	40	0	0	0	71	0	0	0	0	0	0	2	0	0	0	113	1366
12:35 PM	0	57	1	0	0	74	0	0	0	0	0	0	1	0	1	0	134	1393
12:40 PM	0	55	2	0	0	78	0	0	0	0	0	0	2	0	1	0	138	1404
12:45 PM	0	51	1	0	0	73	0	0	0	0	0	0	0	0	0	0	125	1429
12:50 PM	0	40	2	0	0	66	0	0	0	0	0	0	0	0	0	0	108	1413
12:55 PM	0	51	0	0	0	73	0	0	0	0	0	0	0	0	0	0	124	1424

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	652	16	0	0	900	0	0	0	0	0	0	12	0	8	0	1588
Heavy Trucks	0	12	0		0	16	0		0	0	0		0	0	0		28
Buses																	
Pedestrians		0				0				0				8			8
Bicycles	0	0	0		0	8	0		0	0	0		0	0	0		8
Scooters																	

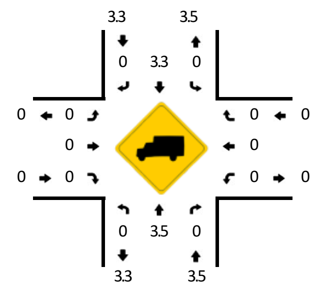
Comments:

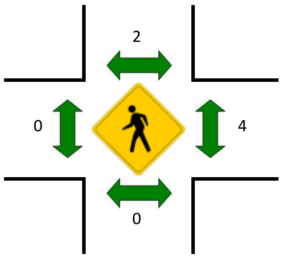
Report generated on 11/8/2022 3:07 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

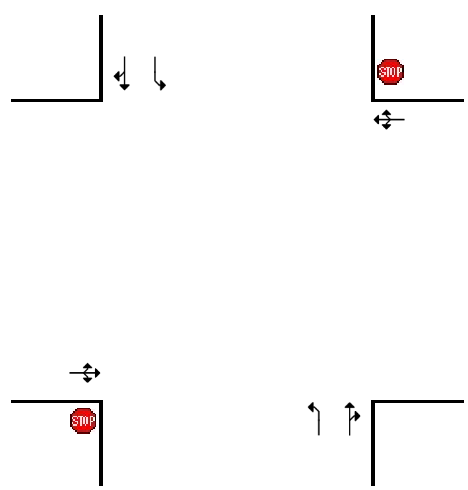
LOCATION: Hwy 1 -- 16th St
CITY/STATE: Moss Beach, CA
QC JOB #: 15986634
DATE: Thu, Oct 27 2022

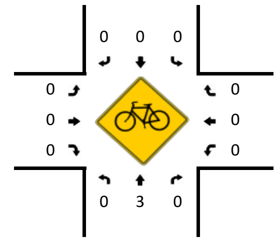


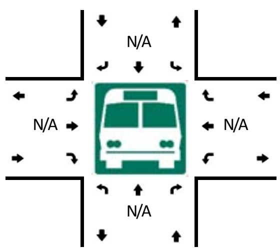
Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 7:35 AM -- 7:50 AM

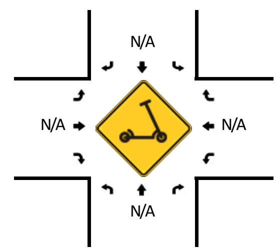












5-Min Count Period Beginning At	Hwy 1 (Northbound)				Hwy 1 (Southbound)				16th St (Eastbound)				16th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	20	0	0	0	27	0	0	0	0	0	0	0	0	0	0	47	
7:05 AM	0	25	0	0	0	33	0	0	0	0	0	0	0	0	0	0	58	
7:10 AM	0	34	0	0	0	21	0	0	0	0	0	0	0	0	0	0	55	
7:15 AM	0	25	0	0	0	34	0	0	0	0	0	0	0	0	0	0	59	
7:20 AM	0	36	0	0	0	30	0	0	0	0	0	0	0	0	0	0	66	
7:25 AM	0	43	0	0	0	41	0	0	0	0	0	0	0	0	0	0	84	
7:30 AM	0	37	0	0	0	44	0	0	0	0	0	0	0	0	0	0	81	
7:35 AM	0	53	0	0	0	53	0	0	0	0	0	0	0	0	0	0	106	
7:40 AM	0	43	0	0	0	42	0	0	0	0	0	0	0	0	0	0	85	
7:45 AM	0	48	0	0	0	35	0	0	0	0	0	0	0	0	0	0	83	
7:50 AM	0	57	0	0	0	32	0	0	0	0	0	0	0	0	0	0	89	
7:55 AM	0	44	0	0	0	32	1	0	0	0	0	0	0	0	0	0	77	890
8:00 AM	0	63	0	0	0	42	0	0	0	0	0	0	0	0	0	0	105	948
8:05 AM	0	52	0	0	0	29	0	0	0	0	0	0	0	0	0	0	81	971
8:10 AM	0	36	0	0	0	36	0	0	0	0	0	0	0	0	0	0	72	988
8:15 AM	0	33	0	0	0	39	0	0	0	0	0	0	0	0	0	0	72	1001
8:20 AM	0	36	0	0	0	33	0	0	0	0	0	0	0	0	0	0	69	1004
8:25 AM	0	45	0	0	0	23	0	0	0	0	0	0	0	0	0	0	68	988
8:30 AM	0	42	0	0	0	32	0	0	0	0	0	0	0	0	0	0	74	981
8:35 AM	0	37	0	0	0	42	0	0	0	0	0	0	0	0	0	0	79	954
8:40 AM	0	36	0	0	0	43	0	0	0	0	0	0	0	0	0	0	79	948
8:45 AM	0	54	0	0	0	55	0	0	0	0	0	0	0	0	0	0	109	974
8:50 AM	0	40	0	0	0	45	0	0	1	0	0	0	2	0	0	0	88	973
8:55 AM	0	34	0	0	0	42	0	0	0	0	0	0	0	0	0	0	76	972

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	576	0	0	0	520	0	0	0	0	0	0	0	0	0	0	1096
Heavy Trucks	0	28	0		0	16	0		0	0	0		0	0	0		44
Buses																	
Pedestrians		0				4				0				4			8
Bicycles	0	4	0		0	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

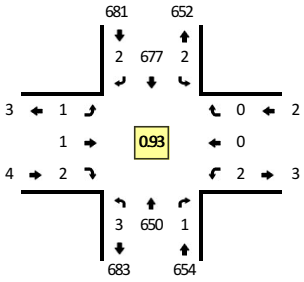
Type of peak hour being reported: Intersection Peak

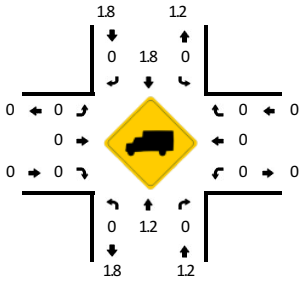
Method for determining peak hour: Total Entering Volume

LOCATION: Hwy 1 -- 16th St
CITY/STATE: Moss Beach, CA

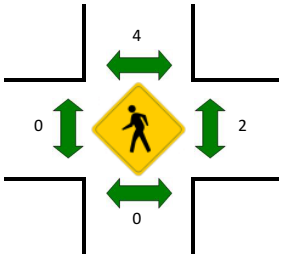
QC JOB #: 15986635
DATE: Thu, Oct 27 2022

Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

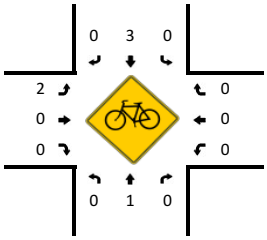


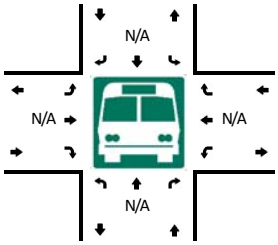


Quality Counts
DATA THAT DRIVES COMMUNITIES

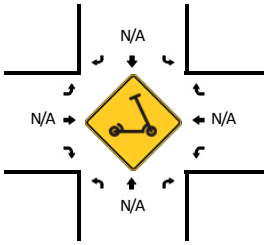












5-Min Count Period Beginning At	Hwy 1 (Northbound)				Hwy 1 (Southbound)				16th St (Eastbound)				16th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	47	1	1	0	57	0	0	0	0	0	0	0	0	0	0	106	
4:05 PM	1	55	0	0	1	53	0	1	1	0	1	0	1	0	0	0	114	
4:10 PM	0	57	0	0	0	51	1	0	0	0	0	0	0	0	0	0	109	
4:15 PM	0	40	0	0	0	53	0	0	0	0	0	0	0	0	0	0	93	
4:20 PM	0	67	0	0	0	47	0	0	0	0	0	0	0	0	0	0	114	
4:25 PM	0	49	0	0	0	57	0	0	0	0	0	0	0	0	0	0	106	
4:30 PM	0	62	0	0	0	60	0	0	0	0	0	0	1	0	0	0	123	
4:35 PM	0	52	0	0	0	70	0	0	0	0	1	0	0	0	0	0	123	
4:40 PM	0	58	0	0	0	55	0	0	0	0	0	0	0	0	0	0	113	
4:45 PM	0	46	0	0	0	46	1	0	0	0	0	0	0	0	0	0	93	
4:50 PM	0	66	0	0	0	76	0	0	0	0	0	0	0	0	0	0	142	
4:55 PM	0	51	0	1	0	52	0	0	0	1	0	0	0	0	0	0	105	1341
5:00 PM	0	36	0	0	0	45	0	0	0	0	0	0	0	0	1	0	82	1317
5:05 PM	0	46	1	0	0	63	0	0	0	0	0	0	0	0	0	0	110	1313
5:10 PM	0	54	0	0	0	58	0	0	0	0	0	0	0	0	0	0	112	1316
5:15 PM	0	53	0	0	0	51	0	0	0	0	0	0	0	0	0	0	104	1327
5:20 PM	0	48	0	0	0	53	2	0	1	0	0	0	0	0	2	0	106	1319
5:25 PM	0	50	0	0	1	50	0	0	0	0	1	0	0	0	0	0	102	1315
5:30 PM	0	54	0	0	0	52	0	0	0	0	0	0	0	0	0	0	106	1298
5:35 PM	0	47	0	0	0	68	0	0	0	0	0	0	0	0	0	0	115	1290
5:40 PM	0	49	0	0	0	53	0	0	0	0	0	0	0	0	0	0	102	1279
5:45 PM	0	39	0	0	0	50	0	0	0	0	1	0	0	0	0	0	90	1276
5:50 PM	0	60	0	0	0	43	0	0	0	0	0	0	0	0	1	0	104	1238
5:55 PM	0	48	0	0	0	50	0	0	0	0	0	0	0	0	0	0	98	1231

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	688	0	0	0	740	0	0	0	0	4	0	4	0	0	0	1436
Heavy Trucks	0	4	0		0	16	0		0	0	0		0	0	0		20
Buses																	
Pedestrians		0				0				0				4			4
Bicycles	0	4	0		0	4	0		8	0	0		0	0	0		16
Scooters																	

Comments:

Report generated on 11/8/2022 3:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

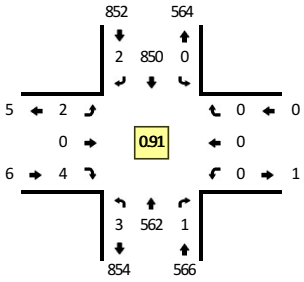
Type of peak hour being reported: Intersection Peak

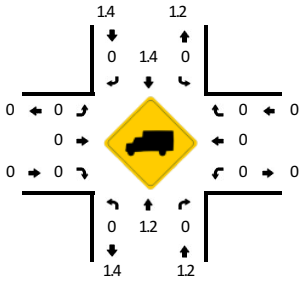
Method for determining peak hour: Total Entering Volume

LOCATION: Hwy 1 -- 16th St
CITY/STATE: Moss Beach, CA

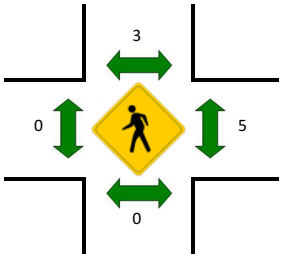
QC JOB #: 15986636
DATE: Sat, Oct 29 2022

Peak-Hour: 12:00 PM -- 1:00 PM
Peak 15-Min: 12:35 PM -- 12:50 PM

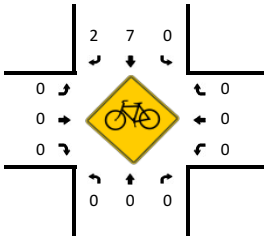


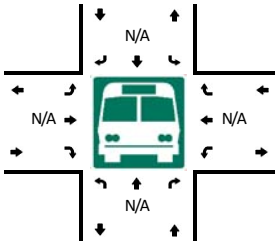


Quality Counts
DATA THAT DRIVES COMMUNITIES

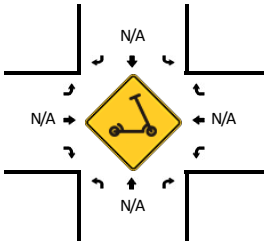












5-Min Count Period Beginning At	Hwy 1 (Northbound)				Hwy 1 (Southbound)				16th St (Eastbound)				16th St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	1	49	0	0	0	58	0	0	0	0	0	0	0	0	0	0	108	
11:05 AM	0	57	0	0	0	52	0	0	0	0	0	0	0	0	0	0	109	
11:10 AM	1	44	0	0	0	63	0	0	1	0	0	0	0	0	0	0	109	
11:15 AM	1	45	1	0	0	48	0	0	0	0	0	0	0	0	0	0	95	
11:20 AM	0	53	0	0	0	36	0	0	0	0	0	0	0	0	1	0	90	
11:25 AM	0	50	0	0	0	66	0	0	0	0	0	0	0	0	0	0	116	
11:30 AM	0	60	0	0	0	58	0	0	0	0	0	0	0	0	0	0	118	
11:35 AM	0	40	0	0	0	71	0	0	0	0	0	0	0	0	0	0	111	
11:40 AM	0	45	1	0	0	76	0	0	0	0	0	0	0	0	0	0	122	
11:45 AM	0	33	0	0	0	71	0	0	0	0	0	0	0	0	0	0	104	
11:50 AM	0	41	0	0	1	76	0	0	0	0	0	0	0	0	0	0	118	
11:55 AM	0	52	0	0	0	64	0	0	0	0	0	0	0	0	1	0	117	1317
12:00 PM	0	39	1	0	0	62	0	0	0	0	0	0	0	0	0	0	102	1311
12:05 PM	0	45	0	0	0	72	0	0	0	0	0	0	0	0	0	0	117	1319
12:10 PM	0	51	0	0	0	60	0	0	0	0	0	0	0	0	0	0	111	1321
12:15 PM	1	49	0	0	0	69	0	0	0	0	0	0	0	0	0	0	119	1345
12:20 PM	0	37	0	0	0	68	0	0	0	0	0	0	0	0	0	0	105	1360
12:25 PM	0	42	0	0	0	78	1	0	0	0	1	0	0	0	0	0	122	1366
12:30 PM	0	46	0	0	0	73	0	0	1	0	0	0	0	0	0	0	120	1368
12:35 PM	2	53	0	0	0	76	0	0	1	0	0	0	0	0	0	0	132	1389
12:40 PM	0	53	0	0	0	79	0	0	0	0	2	0	0	0	0	0	134	1401
12:45 PM	0	52	0	0	0	73	0	0	0	0	0	0	0	0	0	0	125	1422
12:50 PM	0	49	0	0	0	67	0	0	0	0	0	0	0	0	0	0	116	1420
12:55 PM	0	46	0	0	0	73	1	0	0	0	1	0	0	0	0	0	121	1424

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	632	0	0	0	912	0	0	4	0	8	0	0	0	0	0	1564
Heavy Trucks	0	12	0		0	16	0		0	0	0		0	0	0		28
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	12	8		0	0	0		0	0	0		20
Scooters																	

Comments:

Report generated on 11/8/2022 3:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

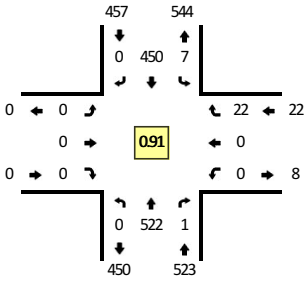
Type of peak hour being reported: Intersection Peak

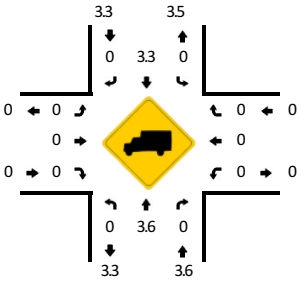
Method for determining peak hour: Total Entering Volume

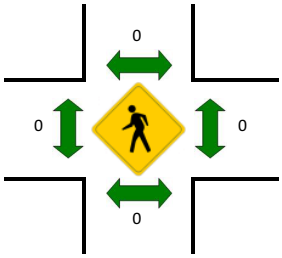
LOCATION: Hwy 1 -- Carlos St
CITY/STATE: Moss Beach, CA

QC JOB #: 15986637
DATE: Thu, Oct 27 2022

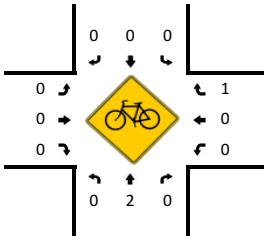
Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 7:35 AM -- 7:50 AM

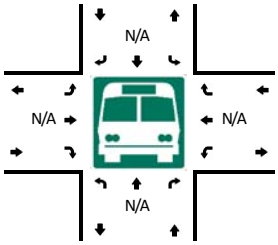




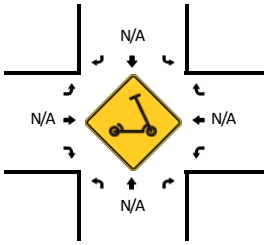












5-Min Count Period Beginning At	Hwy 1 (Northbound)				Hwy 1 (Southbound)				Carlos St (Eastbound)				Carlos St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	19	0	0	0	26	0	0	0	0	0	0	0	0	0	0	45	
7:05 AM	0	24	0	0	0	33	0	0	0	0	0	0	0	0	0	0	57	
7:10 AM	0	33	0	0	0	22	0	0	0	0	0	0	0	0	1	0	56	
7:15 AM	0	25	0	0	0	33	0	0	0	0	0	0	0	0	0	0	58	
7:20 AM	0	37	0	0	0	28	0	0	0	0	0	0	0	0	0	0	65	
7:25 AM	0	42	0	0	1	40	0	0	0	0	0	0	0	0	1	0	84	
7:30 AM	0	37	0	0	0	43	0	0	0	0	0	0	0	0	1	0	81	
7:35 AM	0	51	0	0	1	54	0	0	0	0	0	0	0	0	2	0	108	
7:40 AM	0	41	0	0	0	42	0	0	0	0	0	0	0	0	2	0	85	
7:45 AM	0	45	0	0	0	35	0	0	0	0	0	0	0	0	3	0	83	
7:50 AM	0	54	0	0	0	29	0	0	0	0	0	0	0	0	2	0	85	
7:55 AM	0	42	0	0	1	33	0	0	0	0	0	0	0	0	2	0	78	885
8:00 AM	0	60	0	0	0	42	0	0	0	0	0	0	0	0	2	0	104	944
8:05 AM	0	48	0	0	2	27	0	0	0	0	0	0	0	0	4	0	81	968
8:10 AM	0	34	1	0	1	33	0	0	0	0	0	0	0	0	1	0	70	982
8:15 AM	0	32	0	0	1	39	0	0	0	0	0	0	0	0	2	0	74	998
8:20 AM	0	36	0	0	0	33	0	0	0	0	0	0	0	0	0	0	69	1002
8:25 AM	0	43	0	0	1	21	0	0	0	0	0	0	0	0	2	0	67	985
8:30 AM	0	41	0	0	0	33	0	0	0	0	0	0	0	0	1	0	75	979
8:35 AM	0	34	0	0	0	42	0	0	0	0	0	0	0	0	3	0	79	950
8:40 AM	0	36	0	0	1	43	0	0	0	0	0	0	0	0	0	0	80	945
8:45 AM	0	53	0	0	1	53	0	0	0	0	0	0	0	0	1	0	108	970
8:50 AM	0	41	1	0	1	46	0	0	0	0	0	0	0	0	0	0	89	974
8:55 AM	0	33	2	0	0	41	0	0	0	0	0	0	0	0	1	0	77	973

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	548	0	0	4	524	0	0	0	0	0	0	0	0	28	0	1104
Heavy Trucks	0	28	0		0	16	0		0	0	0		0	0	0		44
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	4		4
Scooters																	

Comments:

Report generated on 11/8/2022 3:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

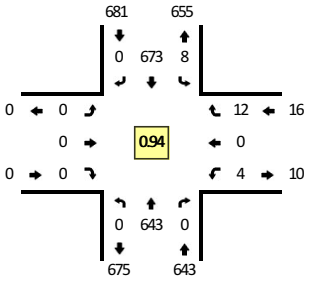
Type of peak hour being reported: Intersection Peak

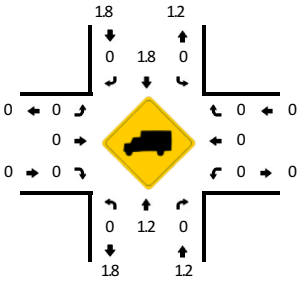
Method for determining peak hour: Total Entering Volume

LOCATION: Hwy 1 -- Carlos St
CITY/STATE: Moss Beach, CA

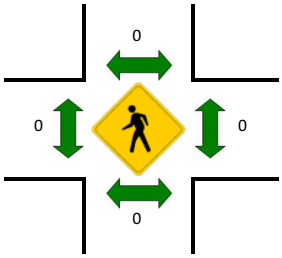
QC JOB #: 15986638
DATE: Thu, Oct 27 2022

Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

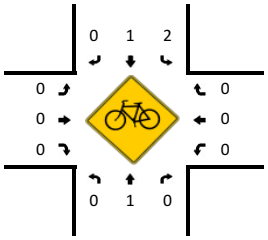


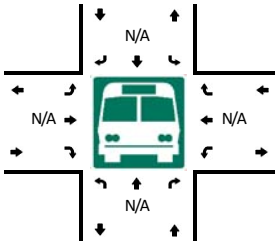


Quality Counts
DATA THAT DRIVES COMMUNITIES

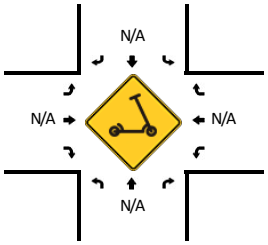












5-Min Count Period Beginning At	Hwy 1 (Northbound)				Hwy 1 (Southbound)				Carlos St (Eastbound)				Carlos St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	49	0	0	1	55	0	0	0	0	0	0	0	0	0	2	107	
4:05 PM	0	55	0	0	0	54	0	0	0	0	0	0	1	0	1	0	111	
4:10 PM	0	57	0	0	1	52	0	0	0	0	0	0	0	0	1	0	111	
4:15 PM	0	40	0	0	0	54	0	0	0	0	0	0	0	0	0	0	94	
4:20 PM	0	66	0	0	0	47	0	0	0	0	0	0	0	0	1	0	114	
4:25 PM	0	49	0	0	0	56	0	0	0	0	0	0	0	0	0	0	105	
4:30 PM	0	61	0	0	2	57	0	0	0	0	0	0	1	0	1	0	122	
4:35 PM	0	49	0	0	1	70	0	0	0	0	0	0	0	0	3	0	123	
4:40 PM	0	57	0	0	0	55	0	0	0	0	0	0	0	0	1	0	113	
4:45 PM	0	44	0	0	1	45	0	0	0	0	0	0	0	0	2	0	92	
4:50 PM	0	65	0	0	2	73	0	0	0	0	0	0	0	0	0	0	140	
4:55 PM	0	51	0	0	0	55	0	0	0	0	0	0	0	0	2	0	108	1340
5:00 PM	0	35	0	0	0	45	0	0	0	0	0	0	0	0	1	0	81	1314
5:05 PM	0	46	0	0	1	62	0	0	0	0	0	0	0	0	1	0	110	1313
5:10 PM	0	53	0	0	2	55	0	0	0	0	0	0	0	0	1	0	111	1313
5:15 PM	0	53	0	0	1	49	0	0	0	0	0	0	0	0	1	0	104	1323
5:20 PM	0	48	0	0	1	53	0	0	0	0	0	0	0	0	0	0	102	1311
5:25 PM	0	50	0	0	0	50	0	0	0	0	0	0	0	0	0	0	100	1306
5:30 PM	0	54	0	0	1	51	0	0	0	0	0	0	0	0	0	0	106	1290
5:35 PM	0	47	0	0	3	65	0	0	0	0	0	0	0	0	0	0	115	1282
5:40 PM	0	48	0	0	0	53	0	0	0	0	0	0	0	0	1	0	102	1271
5:45 PM	0	38	0	0	0	52	0	0	0	0	0	0	0	0	1	0	91	1270
5:50 PM	0	60	0	0	1	41	0	0	0	0	0	0	0	0	0	0	102	1232
5:55 PM	0	48	0	0	2	47	0	0	0	0	0	0	0	0	0	0	97	1221

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	668	0	0	12	728	0	0	0	0	0	0	4	0	20	0	1432
Heavy Trucks	0	4	0		0	16	0		0	0	0		0	0	0		20
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	4	0		0	4	0		0	0	0		0	0	0		8
Scooters																	

Comments:

Report generated on 11/8/2022 3:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

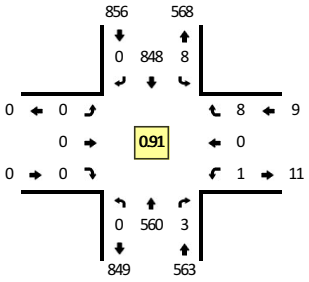
Type of peak hour being reported: Intersection Peak

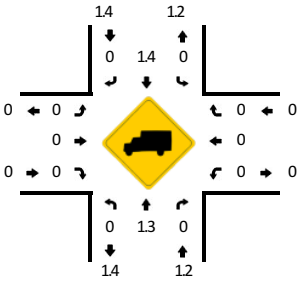
Method for determining peak hour: Total Entering Volume

LOCATION: Hwy 1 -- Carlos St
CITY/STATE: Moss Beach, CA

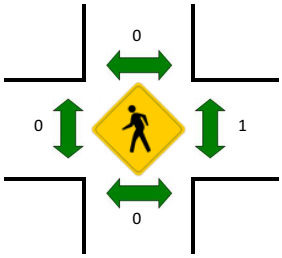
QC JOB #: 15986639
DATE: Sat, Oct 29 2022

Peak-Hour: 12:00 PM -- 1:00 PM
Peak 15-Min: 12:35 PM -- 12:50 PM

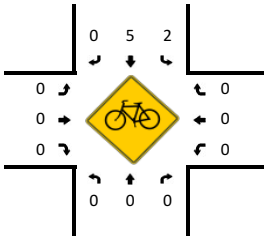


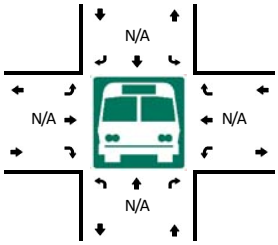


Quality Counts
DATA THAT DRIVES COMMUNITIES

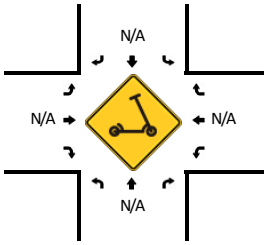












5-Min Count Period Beginning At	Hwy 1 (Northbound)				Hwy 1 (Southbound)				Carlos St (Eastbound)				Carlos St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	49	0	0	0	58	0	0	0	0	0	0	0	0	1	0	108	
11:05 AM	0	57	0	0	0	52	0	0	0	0	0	0	0	0	1	0	110	
11:10 AM	0	42	0	0	0	64	0	0	0	0	0	0	0	0	2	0	108	
11:15 AM	0	47	0	0	0	47	0	0	0	0	0	0	0	0	0	0	94	
11:20 AM	0	52	0	0	0	37	0	0	0	0	0	0	0	0	1	0	90	
11:25 AM	0	49	0	0	0	65	0	0	0	0	0	0	0	0	1	0	115	
11:30 AM	0	60	0	0	1	59	0	0	0	0	0	0	0	0	0	0	120	
11:35 AM	0	39	0	0	0	70	0	0	0	0	0	0	0	0	0	0	109	
11:40 AM	0	45	0	0	1	77	0	0	0	0	0	0	0	0	1	0	124	
11:45 AM	0	33	0	0	0	71	0	0	0	0	0	0	0	0	0	0	104	
11:50 AM	0	41	0	0	1	76	0	0	0	0	0	0	0	0	0	0	118	
11:55 AM	0	52	0	0	0	63	0	0	0	0	0	0	0	0	0	0	115	1315
12:00 PM	0	40	0	0	0	63	0	0	0	0	0	0	1	0	1	0	105	1312
12:05 PM	0	44	0	0	0	72	0	0	0	0	0	0	0	0	1	0	117	1319
12:10 PM	0	51	0	0	1	57	0	0	0	0	0	0	0	0	0	0	109	1320
12:15 PM	0	49	0	0	0	70	0	0	0	0	0	0	0	0	1	0	120	1346
12:20 PM	0	37	0	0	1	68	0	0	0	0	0	0	0	0	0	0	106	1362
12:25 PM	0	42	1	0	2	78	0	0	0	0	0	0	0	0	0	0	123	1370
12:30 PM	0	45	0	0	2	71	0	0	0	0	0	0	0	0	1	0	119	1369
12:35 PM	0	56	0	0	0	75	0	0	0	0	0	0	0	0	0	0	131	1391
12:40 PM	0	53	1	0	1	80	0	0	0	0	0	0	0	0	0	0	135	1402
12:45 PM	0	50	0	0	0	75	0	0	0	0	0	0	0	0	2	0	127	1425
12:50 PM	0	47	1	0	1	66	0	0	0	0	0	0	0	0	2	0	117	1424
12:55 PM	0	46	0	0	0	73	0	0	0	0	0	0	0	0	0	0	119	1428

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	636	4	0	4	920	0	0	0	0	0	0	0	0	8	0	1572
Heavy Trucks	0	12	0		0	16	0		0	0	0		0	0	0		28
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		4	8	0		0	0	0		0	0	0		12
Scooters																	

Comments:

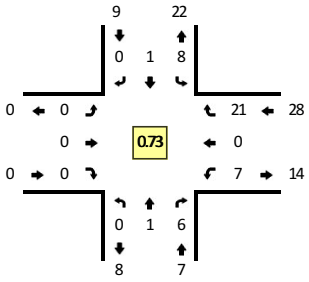
Report generated on 11/8/2022 3:07 PM

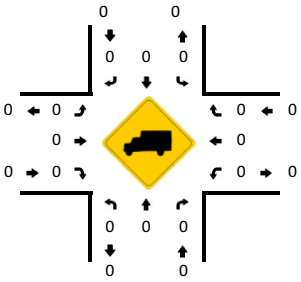
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

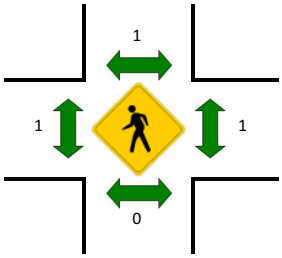
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: Carlos St -- Sierra St | **QC JOB #:** 15986640
CITY/STATE: Moss Beach, CA | **DATE:** Thu, Oct 27 2022

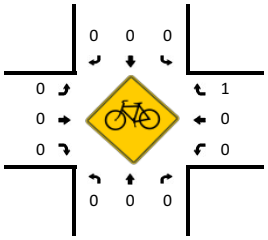
Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 7:55 AM -- 8:10 AM

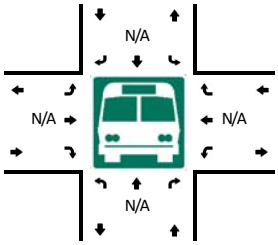




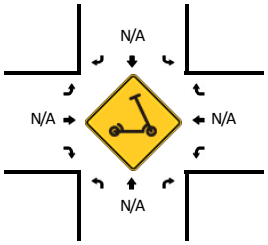












5-Min Count Period Beginning At	Carlos St (Northbound)				Carlos St (Southbound)				Sierra St (Eastbound)				Sierra St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
7:25 AM	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	3	
7:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	3	
7:35 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	4	
7:40 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3	0	5	
7:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	
7:55 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	0	4	25
8:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	1	0	2	0	5	30
8:05 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0	6	35
8:10 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	3	38
8:15 AM	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1	0	4	42
8:20 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	3	44
8:25 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	3	44
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	43
8:35 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	4	43
8:40 AM	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	3	44
8:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	41
8:50 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	3	42
8:55 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	39

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	12	0	12	0	0	0	0	0	0	0	4	0	32	0	60
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

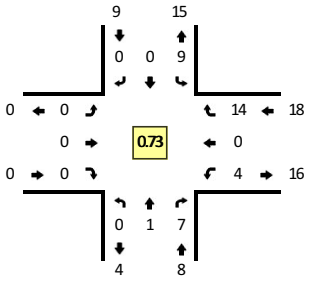
Comments:

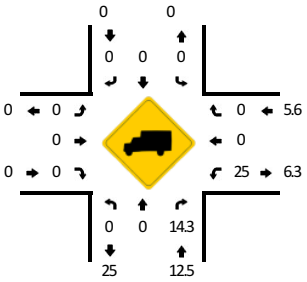
Report generated on 11/8/2022 3:07 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

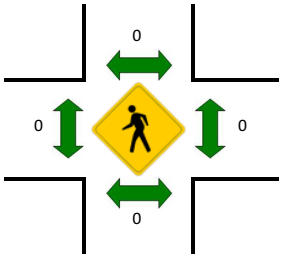
LOCATION: Carlos St -- Sierra St | **QC JOB #:** 15986641
CITY/STATE: Moss Beach, CA | **DATE:** Thu, Oct 27 2022

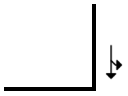
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

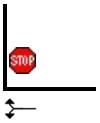


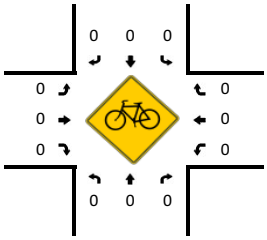


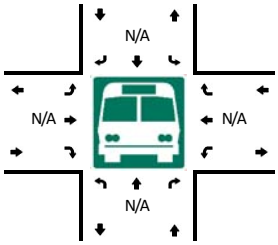
Quality Counts
DATA THAT DRIVES COMMUNITIES



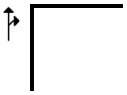


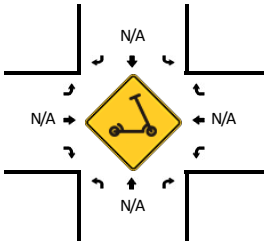












5-Min Count Period Beginning At	Carlos St (Northbound)				Carlos St (Southbound)				Sierra St (Eastbound)				Sierra St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	3	
4:05 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	3	
4:10 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
4:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2	
4:20 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	3	0	5	
4:35 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	4	
4:40 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	3	
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	3	
4:50 PM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	1	0	5	
4:55 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	33
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	31
5:05 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	0	4	32
5:10 PM	0	1	0	0	2	0	0	0	0	0	0	0	0	0	1	0	4	35
5:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	35
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33
5:25 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	35
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	31
5:35 PM	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	3	30
5:40 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	3	30
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	28
5:50 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	25
5:55 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	25

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	4	0	12	0	0	0	0	0	0	0	8	0	24	0	48
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

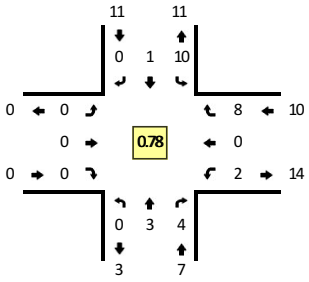
Comments:

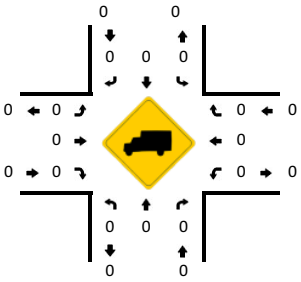
Report generated on 11/8/2022 3:07 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

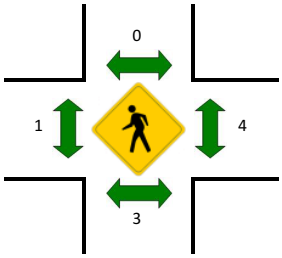
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

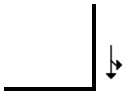
LOCATION: Carlos St -- Sierra St | **QC JOB #:** 15986642
CITY/STATE: Moss Beach, CA | **DATE:** Sat, Oct 29 2022

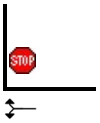
Peak-Hour: 12:00 PM -- 1:00 PM
Peak 15-Min: 12:20 PM -- 12:35 PM

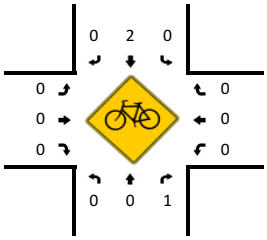


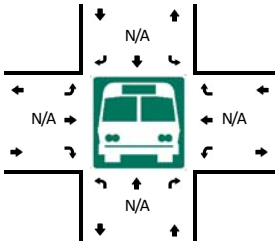


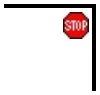


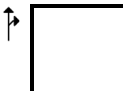


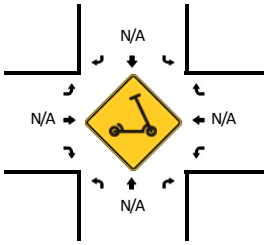












5-Min Count Period Beginning At	Carlos St (Northbound)				Carlos St (Southbound)				Sierra St (Eastbound)				Sierra St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
11:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
11:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	3	
11:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
11:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
11:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:40 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	3	
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:50 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2	
11:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
12:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	3	16
12:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	17
12:10 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	17
12:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	18
12:20 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	16
12:25 PM	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	3	18
12:30 PM	0	1	0	0	3	0	0	0	0	0	0	0	0	0	1	0	5	22
12:35 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	23
12:40 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	22
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	24
12:50 PM	0	1	0	0	1	1	0	0	0	0	0	0	1	0	1	0	5	27
12:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	28

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	4	4	0	24	0	0	0	0	0	0	0	0	0	4	0	36
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		12				0				0				12			24
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 11/8/2022 3:07 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

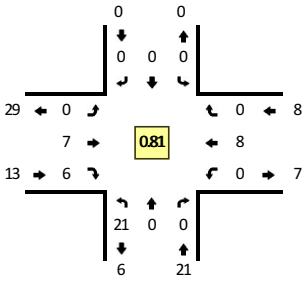
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

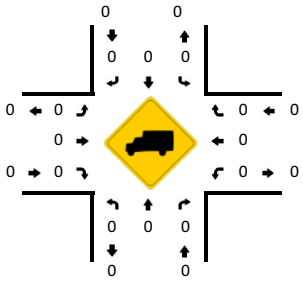
LOCATION: Stetson St -- Sierra St
CITY/STATE: Moss Beach, CA

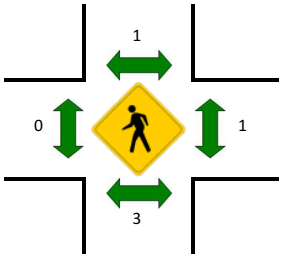
QC JOB #: 15986643
DATE: Thu, Oct 27 2022

Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

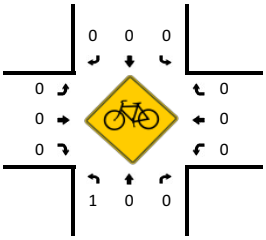


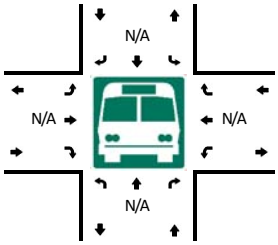
Quality Counts
DATA THAT DRIVES COMMUNITIES



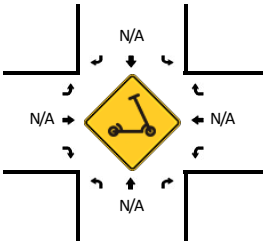












5-Min Count Period Beginning At	Stetson St (Northbound)				Stetson St (Southbound)				Sierra St (Eastbound)				Sierra St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
7:25 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	3	
7:30 AM	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	3	
7:35 AM	3	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4	
7:40 AM	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	3	
7:45 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	4	
7:50 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	
7:55 AM	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	3	25
8:00 AM	2	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	5	30
8:05 AM	3	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4	33
8:10 AM	1	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	4	37
8:15 AM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	39
8:20 AM	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3	41
8:25 AM	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4	42
8:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	40
8:35 AM	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	4	40
8:40 AM	2	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	4	41
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	38
8:50 AM	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	3	38
8:55 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	36

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	0	0	0	0	0	0	0	0	12	8	0	0	8	0	0	52
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 11/8/2022 3:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

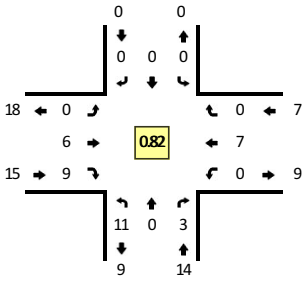
Type of peak hour being reported: Intersection Peak

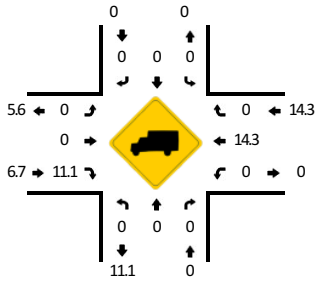
Method for determining peak hour: Total Entering Volume

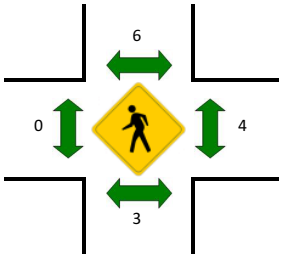
LOCATION: Stetson St -- Sierra St
CITY/STATE: Moss Beach, CA

QC JOB #: 15986644
DATE: Thu, Oct 27 2022

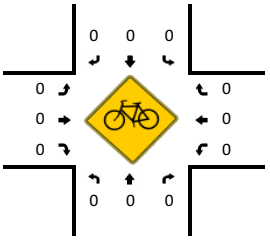
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:40 PM -- 4:55 PM

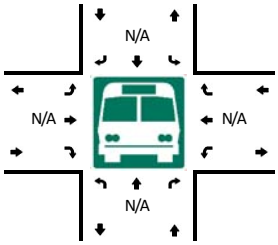




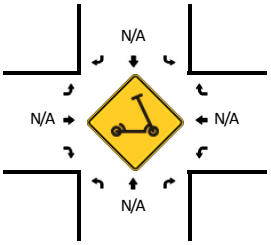












5-Min Count Period Beginning At	Stetson St (Northbound)				Stetson St (Southbound)				Sierra St (Eastbound)				Sierra St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
4:05 PM	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	3	
4:10 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	
4:20 PM	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
4:30 PM	2	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	4	
4:35 PM	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	4	
4:40 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	
4:45 PM	1	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	4	
4:50 PM	0	0	0	0	0	0	0	0	0	2	2	0	0	1	0	0	5	
4:55 PM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	31
5:00 PM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	32
5:05 PM	1	0	1	0	0	0	0	0	0	1	1	0	0	1	0	0	5	34
5:10 PM	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	3	36
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	35
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33
5:25 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	34
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	31
5:35 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	30
5:40 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	3	31
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	28
5:50 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	25
5:55 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	25

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	0	4	0	0	0	0	0	0	8	12	0	0	12	0	0	44
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		8				8				0				0			16
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 11/8/2022 3:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

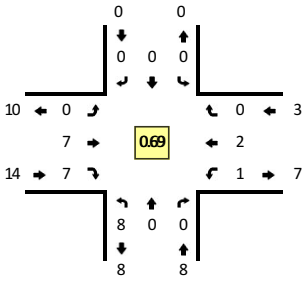
Type of peak hour being reported: Intersection Peak

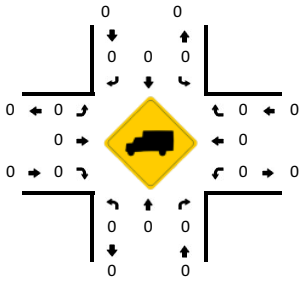
Method for determining peak hour: Total Entering Volume

LOCATION: Stetson St -- Sierra St
CITY/STATE: Moss Beach, CA

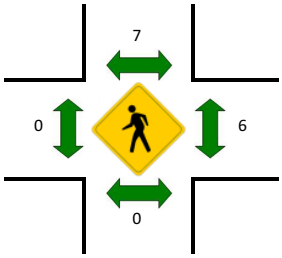
QC JOB #: 15986645
DATE: Sat, Oct 29 2022

Peak-Hour: 12:00 PM -- 1:00 PM
Peak 15-Min: 12:25 PM -- 12:40 PM

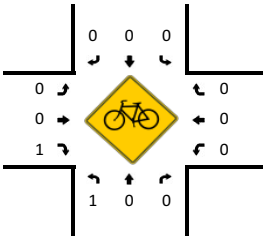


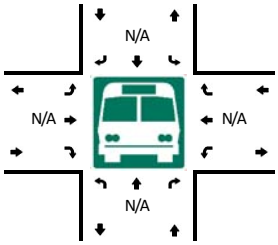


Quality Counts
DATA THAT DRIVES COMMUNITIES

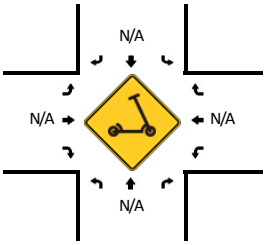












5-Min Count Period Beginning At	Stetson St (Northbound)				Stetson St (Southbound)				Sierra St (Eastbound)				Sierra St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:05 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
11:10 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:20 AM	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	4	
11:25 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
11:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
11:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:40 AM	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	3	
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:50 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
11:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
12:00 PM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	15
12:05 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	16
12:10 PM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	16
12:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	17
12:20 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	14
12:25 PM	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3	16
12:30 PM	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	4	19
12:35 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2	21
12:40 PM	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3	21
12:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	22
12:50 PM	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	3	24
12:55 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	25

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	0	0	0	0	0	0	0	12	16	0	4	0	0	0	36
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				4				0				4			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 11/8/2022 3:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Hwy 1 -- Etheldore St/Vallemar St

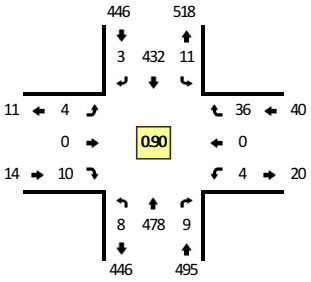
CITY/STATE: Moss Beach, CA

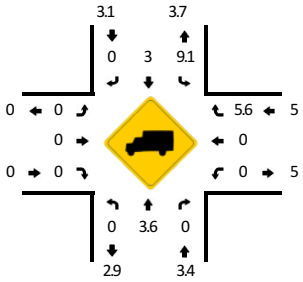
QC JOB #: 15986646

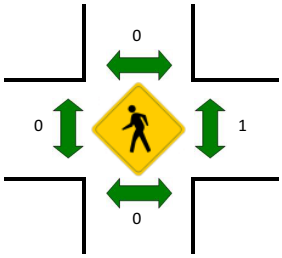
DATE: Thu, Oct 27 2022

Peak-Hour: 7:25 AM -- 8:25 AM

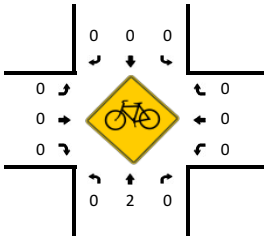
Peak 15-Min: 7:30 AM -- 7:45 AM

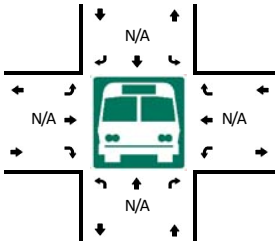




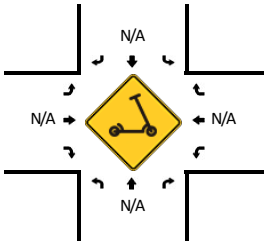












5-Min Count Period Beginning At	Hwy 1 (Northbound)				Hwy 1 (Southbound)				Etheldore St/Vallemar St (Eastbound)				Etheldore St/Vallemar St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	21	1	0	0	29	0	0	0	0	0	0	1	0	1	0	53	
7:05 AM	1	25	0	0	0	30	0	0	0	0	0	0	0	0	1	0	57	
7:10 AM	0	26	0	0	1	24	0	0	0	0	0	0	0	0	1	0	52	
7:15 AM	0	28	0	0	1	27	0	0	0	0	0	0	1	0	1	0	58	
7:20 AM	2	38	0	0	0	32	0	0	0	0	1	0	0	0	1	0	74	
7:25 AM	2	37	0	0	1	32	1	0	0	0	0	0	0	0	2	0	75	
7:30 AM	0	33	1	0	1	43	0	0	1	0	0	0	1	0	2	0	82	
7:35 AM	0	46	0	0	0	55	0	0	0	0	2	0	0	0	6	0	109	
7:40 AM	1	38	1	0	0	43	0	0	0	0	0	0	0	0	2	0	85	
7:45 AM	0	40	0	0	2	30	0	0	3	0	0	0	2	0	3	0	80	
7:50 AM	2	50	0	0	0	31	0	0	0	0	2	0	0	0	4	0	89	
7:55 AM	0	43	1	0	1	30	2	0	0	0	0	0	0	0	1	0	78	892
8:00 AM	0	53	3	0	2	44	0	0	0	0	1	0	0	0	6	0	109	948
8:05 AM	0	44	0	0	0	22	0	0	0	0	0	0	0	0	6	0	72	963
8:10 AM	1	31	0	0	0	35	0	0	0	0	2	0	1	0	1	0	71	982
8:15 AM	1	30	0	0	3	32	0	0	0	0	2	0	0	0	1	0	69	993
8:20 AM	1	33	3	0	1	35	0	0	0	0	1	0	0	0	2	0	76	995
8:25 AM	0	45	0	0	0	24	0	0	0	0	0	0	0	0	3	0	72	992
8:30 AM	0	36	0	0	0	31	2	0	0	0	1	0	1	0	1	0	72	982
8:35 AM	0	31	1	0	3	37	0	0	0	0	1	0	2	0	1	0	76	949
8:40 AM	0	41	0	0	0	38	0	0	0	0	0	0	1	0	0	0	80	944
8:45 AM	0	44	0	0	1	54	0	0	0	0	0	0	2	0	5	0	106	970
8:50 AM	1	45	1	0	1	42	0	0	0	0	0	0	0	0	0	0	90	971
8:55 AM	2	32	0	0	1	47	0	0	0	0	0	0	1	0	0	0	83	976

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	468	8	0	4	564	0	0	4	0	8	0	4	0	40	0	1104
Heavy Trucks	0	20	0		0	8	0		0	0	0		0	0	8		36
Buses																	
Pedestrians		0				0				0				4			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 11/8/2022 3:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

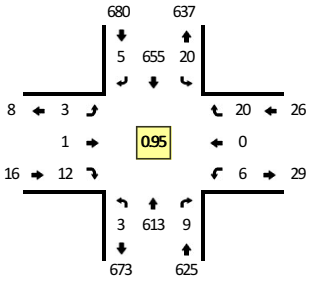
Type of peak hour being reported: Intersection Peak

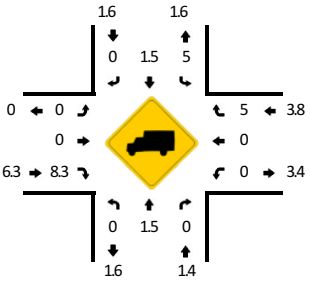
Method for determining peak hour: Total Entering Volume

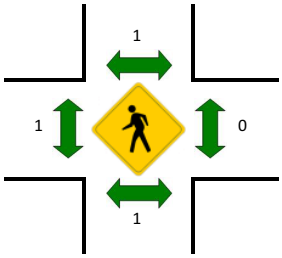
LOCATION: Hwy 1 -- Etheldore St/Vallemar St
CITY/STATE: Moss Beach, CA

QC JOB #: 15986647
DATE: Thu, Oct 27 2022

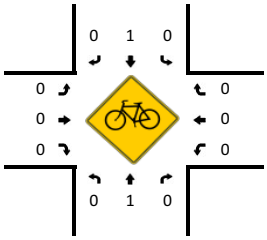
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

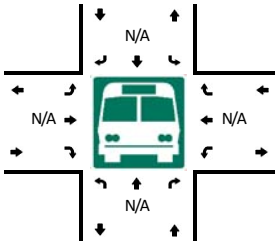




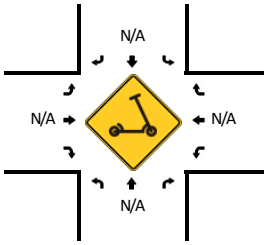












5-Min Count Period Beginning At	Hwy 1 (Northbound)				Hwy 1 (Southbound)				Etheldore St/Vallemar St (Eastbound)				Etheldore St/Vallemar St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	46	1	0	2	53	1	1	0	0	1	0	0	0	1	0	106	
4:05 PM	1	52	2	0	0	55	0	0	1	0	1	0	1	0	4	0	117	
4:10 PM	0	50	2	0	0	51	0	0	1	1	2	0	0	0	1	0	108	
4:15 PM	0	45	1	0	1	53	0	0	0	0	2	0	2	0	0	0	104	
4:20 PM	1	58	1	0	3	49	1	0	0	0	0	0	0	0	2	0	115	
4:25 PM	0	52	0	0	2	48	0	0	0	0	0	0	0	0	0	0	102	
4:30 PM	0	57	0	0	1	55	1	0	1	0	0	0	1	0	0	0	116	
4:35 PM	0	48	1	0	4	65	1	0	0	0	1	0	0	0	2	0	122	
4:40 PM	0	50	1	0	3	45	0	0	0	0	1	0	1	0	2	0	103	
4:45 PM	1	46	0	0	2	48	0	0	0	0	3	0	0	0	5	0	105	
4:50 PM	0	65	0	0	1	72	0	0	0	0	0	0	1	0	0	0	139	
4:55 PM	0	44	0	0	0	61	1	0	0	0	1	0	0	0	3	0	110	1347
5:00 PM	0	36	0	0	1	39	1	0	0	0	0	0	1	0	1	0	79	1320
5:05 PM	1	46	0	0	5	59	0	0	0	0	0	0	0	0	1	0	112	1315
5:10 PM	0	50	1	0	2	49	1	0	0	0	1	0	2	0	1	0	107	1314
5:15 PM	1	52	0	0	3	51	0	1	0	0	0	0	0	0	3	0	111	1321
5:20 PM	0	44	0	0	1	46	1	0	0	0	0	0	0	0	1	0	93	1299
5:25 PM	1	50	1	0	4	49	1	0	0	0	0	0	1	0	1	0	108	1305
5:30 PM	0	51	0	0	5	48	0	0	0	0	0	0	0	0	2	0	106	1295
5:35 PM	0	44	1	0	3	57	0	0	0	0	0	0	0	0	2	0	107	1280
5:40 PM	0	49	1	0	0	55	0	0	1	0	0	0	1	0	2	0	109	1286
5:45 PM	0	33	1	0	4	47	0	0	0	0	0	0	1	0	2	0	88	1269
5:50 PM	0	61	0	0	2	44	2	0	0	0	1	0	0	0	1	0	111	1241
5:55 PM	1	43	1	0	2	41	0	0	0	0	0	0	0	0	2	0	90	1221

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	620	0	0	12	724	4	0	0	0	16	0	4	0	32	0	1416
Heavy Trucks	0	12	0		4	8	0		0	0	4		0	0	4		32
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 11/8/2022 3:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Hwy 1 -- Etheldore St/Vallemar St

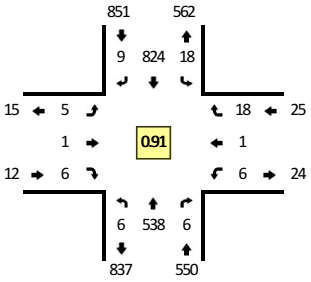
CITY/STATE: Moss Beach, CA

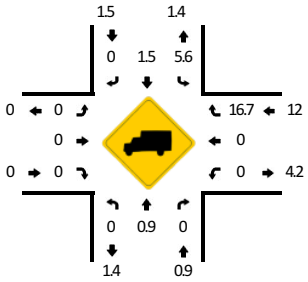
QC JOB #: 15986648

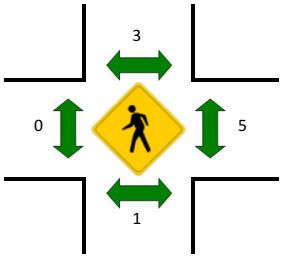
DATE: Sat, Oct 29 2022

Peak-Hour: 11:50 AM -- 12:50 PM

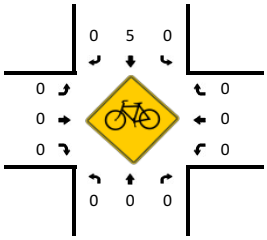
Peak 15-Min: 12:35 PM -- 12:50 PM

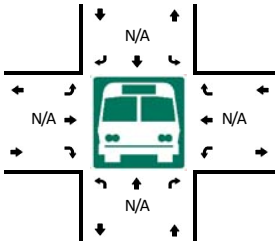




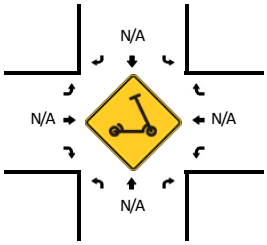












5-Min Count Period Beginning At	Hwy 1 (Northbound)				Hwy 1 (Southbound)				Etheldore St/Vallemar St (Eastbound)				Etheldore St/Vallemar St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	2	50	0	0	1	49	0	0	0	0	0	0	0	0	1	0	103	
11:05 AM	0	55	0	0	2	52	0	0	1	1	1	0	0	0	0	0	112	
11:10 AM	0	38	0	0	0	61	0	0	0	0	0	0	0	0	3	0	102	
11:15 AM	0	51	1	0	1	54	0	0	1	0	0	0	0	0	1	0	109	
11:20 AM	0	41	0	1	0	33	0	0	0	0	1	0	1	0	1	0	78	
11:25 AM	0	55	0	0	2	58	0	0	0	0	1	0	0	0	4	0	120	
11:30 AM	0	51	1	0	3	59	0	0	2	0	1	0	0	0	3	0	120	
11:35 AM	1	41	0	0	1	66	1	0	0	0	1	0	0	0	2	0	113	
11:40 AM	0	38	0	0	1	74	1	0	0	0	0	0	0	0	3	0	117	
11:45 AM	0	30	1	0	5	66	0	0	0	0	0	0	0	0	1	0	103	
11:50 AM	1	43	0	0	0	73	1	0	0	0	1	0	2	0	3	0	124	
11:55 AM	0	45	0	0	2	64	0	0	1	1	0	0	0	0	1	0	114	1315
12:00 PM	2	43	1	0	2	64	0	0	0	0	1	0	0	0	1	0	114	1326
12:05 PM	0	39	0	0	0	62	0	0	0	0	2	0	2	1	1	0	107	1321
12:10 PM	0	49	0	0	1	68	1	0	1	0	0	0	0	0	1	0	121	1340
12:15 PM	1	49	1	0	1	61	0	0	0	0	0	0	0	0	2	0	115	1346
12:20 PM	0	35	0	0	1	64	1	0	0	0	1	0	0	0	2	0	104	1372
12:25 PM	1	40	1	0	3	74	1	0	0	0	0	0	0	0	1	0	121	1373
12:30 PM	0	44	3	1	2	69	0	1	3	0	1	0	0	0	0	0	124	1377
12:35 PM	0	55	0	0	2	74	1	0	0	0	0	0	0	0	3	0	135	1399
12:40 PM	0	52	0	0	1	71	1	0	0	0	0	0	1	0	0	0	126	1408
12:45 PM	0	44	0	0	2	80	3	0	0	0	0	0	1	0	3	0	133	1438
12:50 PM	0	45	0	0	0	66	0	0	1	0	0	0	2	0	1	0	115	1429
12:55 PM	0	47	0	0	1	65	1	0	0	0	0	0	0	0	0	0	114	1429

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	604	0	0	20	900	20	0	0	0	0	0	8	0	24	0	1576
Heavy Trucks	0	4	0		4	16	0		0	0	0		0	0	4		28
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	8	0		0	0	0		0	0	0		8
Scooters																	

Comments:

Report generated on 11/8/2022 3:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

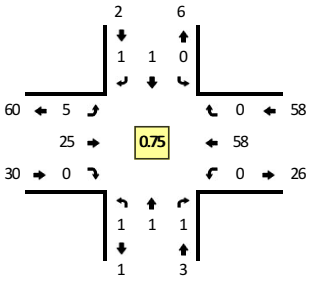
Type of peak hour being reported: Intersection Peak

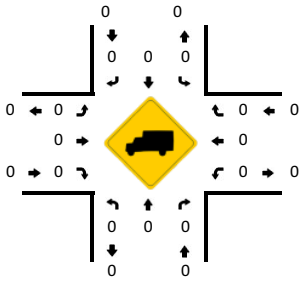
Method for determining peak hour: Total Entering Volume

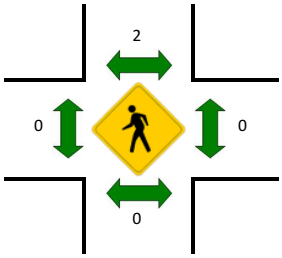
LOCATION: Carlos St -- California Ave
CITY/STATE: Moss Beach, CA

QC JOB #: 15986652
DATE: Thu, Oct 27 2022

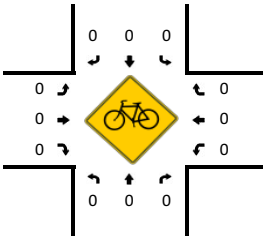
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

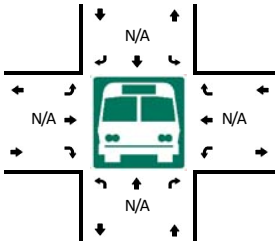




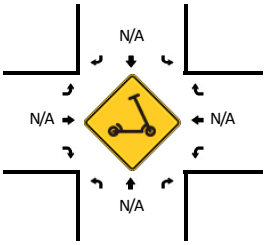












5-Min Count Period Beginning At	Carlos St (Northbound)				Carlos St (Southbound)				California Ave (Eastbound)				California Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	2	1	0	0	3	0	0	6	
7:05 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	5	0	0	6	
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	
7:20 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	7	0	0	8	
7:25 AM	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	5	
7:30 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	7	0	0	12	
7:35 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	9	0	0	10	
7:40 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	7	0	0	9	
7:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	6	0	0	7	
7:50 AM	0	1	0	0	0	0	1	0	1	5	0	0	0	4	0	0	12	
7:55 AM	0	0	1	0	0	0	0	0	0	1	0	0	0	2	0	0	4	83
8:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	6	0	0	7	84
8:05 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0	0	5	83
8:10 AM	0	0	0	0	0	0	0	0	2	2	0	0	0	4	0	0	8	89
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	92
8:20 AM	0	0	0	0	0	1	0	0	0	3	0	0	0	2	0	0	6	90
8:25 AM	1	0	0	0	0	0	0	0	1	2	0	0	0	4	0	0	8	93
8:30 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	4	85
8:35 AM	0	0	0	0	0	0	0	0	3	3	0	0	0	2	0	0	8	83
8:40 AM	0	0	0	0	1	0	0	0	0	3	0	0	0	5	0	0	9	83
8:45 AM	0	1	0	0	0	0	0	0	0	5	0	0	0	2	0	0	8	84
8:50 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	73
8:55 AM	0	1	0	0	1	0	0	0	2	6	0	0	0	4	0	0	14	83

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	4	28	0	0	0	92	0	0	124
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 11/8/2022 3:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

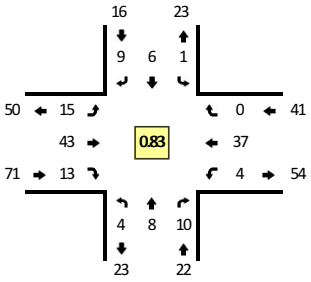
Type of peak hour being reported: Intersection Peak

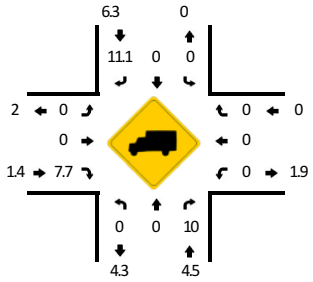
Method for determining peak hour: Total Entering Volume

LOCATION: Carlos St -- California Ave
CITY/STATE: Moss Beach, CA

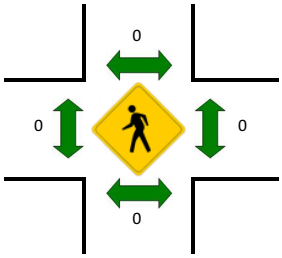
QC JOB #: 15986653
DATE: Thu, Oct 27 2022

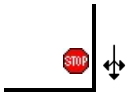
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

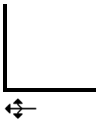


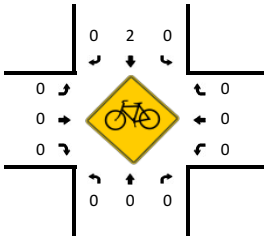


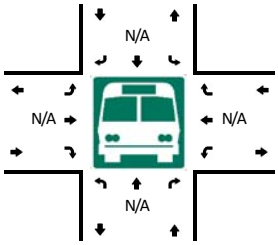
Quality Counts
DATA THAT DRIVES COMMUNITIES

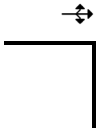


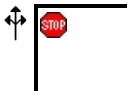


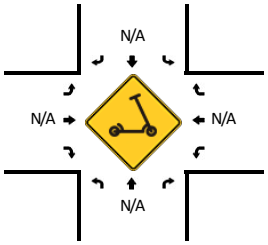












5-Min Count Period Beginning At	Carlos St (Northbound)				Carlos St (Southbound)				California Ave (Eastbound)				California Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	1	0	0	0	0	3	0	1	3	3	0	0	4	0	0	15	
4:05 PM	1	0	2	0	0	0	0	0	0	5	0	0	0	0	0	0	8	
4:10 PM	2	0	0	0	0	1	1	0	0	6	1	0	0	1	0	0	12	
4:15 PM	0	0	0	0	0	0	0	0	2	3	2	0	0	3	0	0	10	
4:20 PM	0	1	1	0	0	1	0	0	2	2	1	0	1	4	0	0	13	
4:25 PM	0	1	1	0	0	0	2	0	3	4	1	0	0	1	0	0	13	
4:30 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	6	0	0	9	
4:35 PM	0	0	2	0	0	2	1	0	2	4	1	0	1	4	0	0	17	
4:40 PM	0	0	2	0	1	1	2	0	2	3	1	0	1	6	0	0	19	
4:45 PM	1	2	0	0	0	0	0	0	0	2	3	0	0	0	0	0	8	
4:50 PM	0	2	1	0	0	0	0	0	2	6	0	0	1	5	0	0	17	
4:55 PM	0	1	1	0	0	1	0	0	1	2	0	0	0	3	0	0	9	150
5:00 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	2	0	0	4	139
5:05 PM	0	0	0	0	0	0	0	0	3	2	1	0	0	2	0	0	8	139
5:10 PM	0	1	0	0	0	2	1	0	1	1	0	0	1	3	0	0	10	137
5:15 PM	0	0	0	0	0	0	1	0	0	0	2	0	0	2	0	0	5	132
5:20 PM	0	0	0	0	0	0	0	0	2	2	1	0	0	4	0	0	9	128
5:25 PM	1	1	2	0	0	0	0	0	1	4	1	0	0	0	0	0	10	125
5:30 PM	0	1	1	0	0	0	1	0	1	3	1	0	1	3	0	0	12	128
5:35 PM	0	0	0	0	1	1	1	0	0	2	0	0	0	0	0	0	5	116
5:40 PM	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	4	101
5:45 PM	0	1	0	0	0	0	1	0	0	1	1	0	0	3	0	0	7	100
5:50 PM	1	1	0	0	0	1	0	0	2	6	1	0	0	1	0	0	13	96
5:55 PM	1	0	0	0	0	0	1	0	2	1	1	0	0	1	0	0	7	94

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	16	0	4	12	12	0	16	40	8	0	8	64	0	0	180
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 11/8/2022 3:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

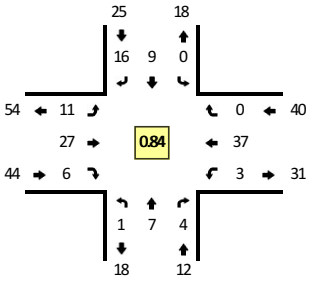
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

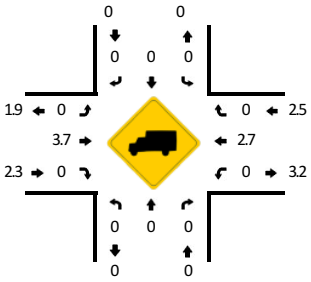
LOCATION: Carlos St -- California Ave
CITY/STATE: Moss Beach, CA

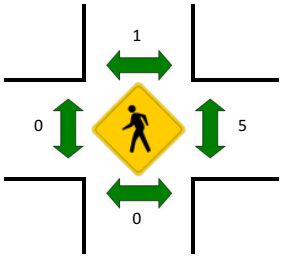
QC JOB #: 15986654
DATE: Sat, Oct 29 2022

Peak-Hour: 11:00 AM -- 12:00 PM
Peak 15-Min: 11:20 AM -- 11:35 AM

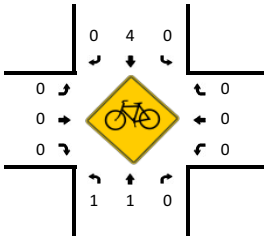


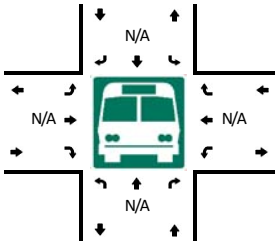




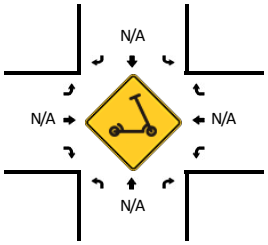












5-Min Count Period Beginning At	Carlos St (Northbound)				Carlos St (Southbound)				California Ave (Eastbound)				California Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	2	1	0	0	0	3	0	1	3	0	0	0	3	0	0	13	
11:05 AM	0	1	0	0	0	0	4	0	0	1	1	0	0	4	0	0	11	
11:10 AM	1	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	7	
11:15 AM	0	1	0	0	0	1	1	0	1	1	0	0	0	3	0	0	8	
11:20 AM	0	0	0	0	0	1	3	0	2	4	0	0	0	4	0	0	14	
11:25 AM	0	0	0	0	0	2	0	0	1	4	1	0	0	3	0	0	11	
11:30 AM	0	2	0	0	0	1	0	0	1	4	1	0	0	2	0	0	11	
11:35 AM	0	0	0	0	0	0	2	0	2	2	0	0	0	5	0	0	11	
11:40 AM	0	1	1	0	0	0	1	0	1	0	0	0	0	2	0	0	6	
11:45 AM	0	0	0	0	0	1	2	0	0	2	0	0	2	2	0	0	9	
11:50 AM	0	0	1	0	0	1	0	0	1	1	0	0	0	2	0	0	6	
11:55 AM	0	0	1	0	0	2	0	0	1	2	3	0	1	4	0	0	14	121
12:00 PM	0	0	0	0	0	2	0	0	0	2	0	0	0	8	0	0	12	120
12:05 PM	0	0	1	0	0	0	0	0	2	1	0	0	0	3	0	0	7	116
12:10 PM	0	1	0	0	0	0	0	0	0	3	0	0	0	5	0	0	9	118
12:15 PM	0	0	0	0	1	0	0	0	2	5	0	0	0	2	0	0	10	120
12:20 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	4	0	0	6	112
12:25 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	4	0	0	6	107
12:30 PM	1	0	1	0	0	1	0	0	0	1	0	0	0	8	0	0	12	108
12:35 PM	1	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	4	101
12:40 PM	1	0	0	0	0	0	0	0	0	5	1	0	0	2	0	0	9	104
12:45 PM	2	1	0	0	0	0	0	0	0	0	0	0	0	4	0	0	7	102
12:50 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	4	0	0	5	101
12:55 PM	0	0	2	0	0	1	0	0	1	7	0	0	0	2	0	0	13	100

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	8	0	0	0	16	12	0	16	48	8	0	0	36	0	0	144
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	4	0		4
Buses																	
Pedestrians		0				0				0				4			4
Bicycles	0	4	0		0	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 11/8/2022 3:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

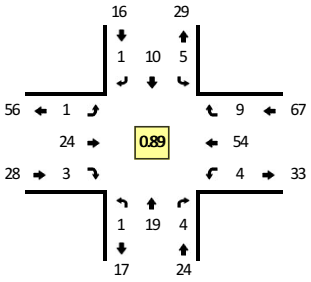
Type of peak hour being reported: Intersection Peak

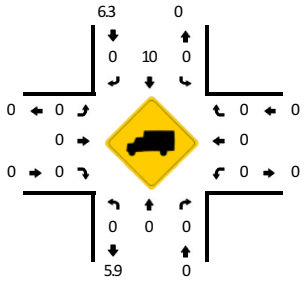
Method for determining peak hour: Total Entering Volume

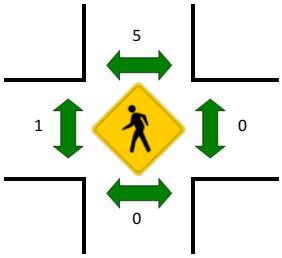
LOCATION: Etheldore St -- California Ave
CITY/STATE: Moss Beach, CA

QC JOB #: 15986655
DATE: Thu, Oct 27 2022

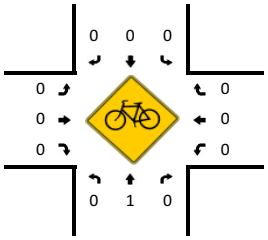
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

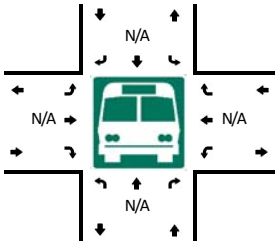




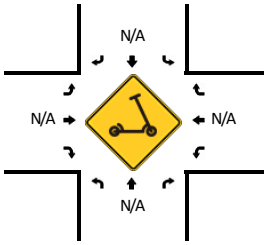












5-Min Count Period Beginning At	Etheldore St (Northbound)				Etheldore St (Southbound)				California Ave (Eastbound)				California Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	1	0	0	1	0	0	0	0	2	0	0	0	4	0	0	8	
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	
7:10 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	2	0	0	4	
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3	
7:20 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	7	0	0	8	
7:25 AM	0	2	0	0	0	2	0	0	0	2	0	0	0	2	1	0	9	
7:30 AM	0	2	0	0	0	1	0	0	0	3	0	0	0	7	0	0	13	
7:35 AM	0	2	0	0	0	0	0	0	0	2	2	0	2	8	1	0	17	
7:40 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	7	0	0	8	
7:45 AM	0	3	0	0	0	2	0	0	0	1	0	0	0	5	0	0	11	
7:50 AM	0	2	1	0	0	1	0	0	0	5	0	0	1	4	0	0	14	
7:55 AM	0	0	0	0	1	1	0	0	1	0	0	0	0	2	2	0	7	107
8:00 AM	0	3	1	0	1	1	0	0	0	2	0	0	0	6	2	0	16	115
8:05 AM	0	4	0	0	0	0	1	0	0	3	0	0	0	1	1	0	10	120
8:10 AM	0	1	1	0	0	1	0	0	0	3	0	0	0	4	0	0	10	126
8:15 AM	0	0	0	0	3	1	0	0	0	0	0	0	0	5	0	0	9	132
8:20 AM	0	0	0	0	0	2	0	0	0	3	0	0	0	2	1	0	8	132
8:25 AM	1	2	1	0	0	0	0	0	0	1	1	0	1	3	2	0	12	135
8:30 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3	125
8:35 AM	0	0	0	0	0	2	0	0	0	3	0	0	0	2	0	0	7	115
8:40 AM	1	0	0	0	1	0	0	0	0	2	1	0	0	4	0	0	9	116
8:45 AM	0	4	0	0	0	1	0	0	0	5	0	0	0	2	1	0	13	118
8:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	105
8:55 AM	0	0	1	0	0	0	0	0	0	4	1	0	0	4	0	0	10	108

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	16	0	0	0	4	0	0	0	24	8	0	8	88	4	0	152
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				4				4				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 11/8/2022 3:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

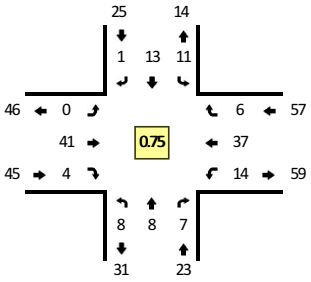
Type of peak hour being reported: Intersection Peak

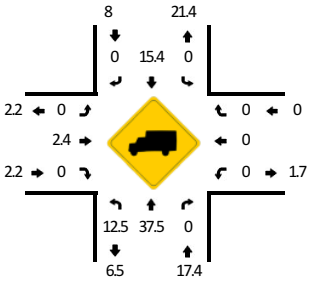
Method for determining peak hour: Total Entering Volume

LOCATION: Etheldore St -- California Ave
CITY/STATE: Moss Beach, CA

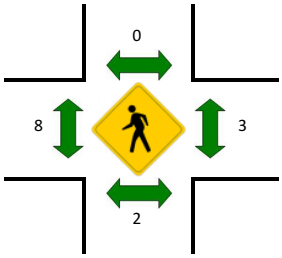
QC JOB #: 15986656
DATE: Thu, Oct 27 2022

Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

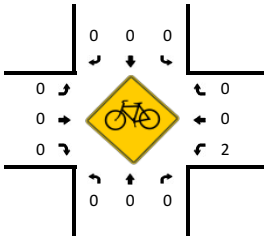


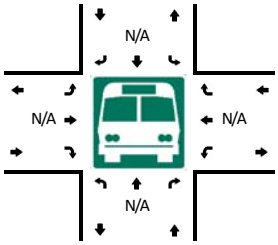


Quality Counts
DATA THAT DRIVES COMMUNITIES

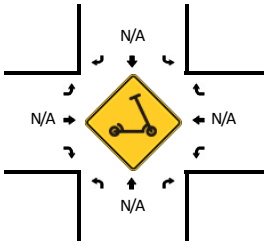












5-Min Count Period Beginning At	Etheldore St (Northbound)				Etheldore St (Southbound)				California Ave (Eastbound)				California Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	0	1	0	2	1	0	0	0	3	0	0	0	2	1	0	11	
4:05 PM	1	2	1	0	1	1	0	0	0	4	1	0	2	0	1	0	14	
4:10 PM	0	1	0	0	0	1	0	0	0	5	0	0	1	1	0	0	9	
4:15 PM	0	2	0	0	1	2	0	0	0	3	0	0	1	4	0	0	13	
4:20 PM	0	0	0	0	1	0	0	0	0	2	1	0	1	4	0	0	9	
4:25 PM	0	0	0	0	3	1	0	0	0	4	0	0	2	1	0	0	11	
4:30 PM	2	0	3	0	0	1	0	0	0	3	0	0	3	6	0	0	18	
4:35 PM	2	0	1	0	1	0	0	0	0	3	0	0	1	6	1	0	15	
4:40 PM	0	1	0	0	1	3	1	0	0	5	0	0	0	5	1	0	17	
4:45 PM	0	1	0	0	0	2	0	0	0	2	0	0	2	2	1	0	10	
4:50 PM	1	0	1	0	1	1	0	0	0	4	2	0	0	4	0	0	14	
4:55 PM	1	1	0	0	0	0	0	0	0	3	0	0	1	2	1	0	9	150
5:00 PM	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0	0	4	143
5:05 PM	0	1	0	0	1	3	0	0	0	1	0	0	0	2	0	0	8	137
5:10 PM	0	1	0	0	0	1	0	0	0	2	0	0	1	4	0	0	9	137
5:15 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	2	1	0	6	130
5:20 PM	0	0	1	0	1	0	0	0	0	2	0	0	1	4	0	0	9	130
5:25 PM	0	1	1	0	2	1	0	0	0	6	0	0	0	0	0	0	11	130
5:30 PM	0	1	1	0	0	2	0	0	0	4	0	0	1	5	0	0	14	126
5:35 PM	0	2	1	0	1	1	0	0	0	2	1	0	1	0	0	0	9	120
5:40 PM	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	4	107
5:45 PM	0	0	1	0	1	1	0	0	0	0	0	0	0	3	0	0	6	103
5:50 PM	0	1	0	0	1	1	0	0	0	7	0	0	0	0	0	0	10	99
5:55 PM	0	0	1	0	1	0	0	0	0	1	0	0	0	1	0	0	4	94

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	4	16	0	8	16	4	0	0	44	0	0	16	68	8	0	200
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				8				0			8
Bicycles	0	0	0		0	0	0		0	0	0		4	0	0		4
Scooters																	

Comments:

Report generated on 11/8/2022 3:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

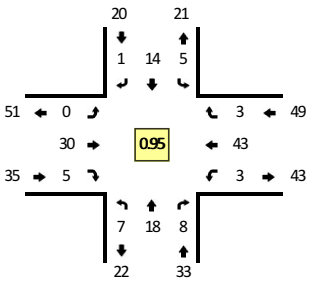
Type of peak hour being reported: Intersection Peak

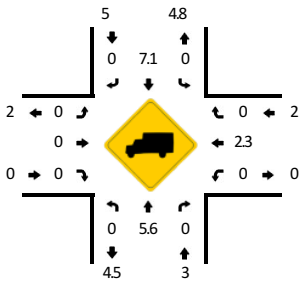
Method for determining peak hour: Total Entering Volume

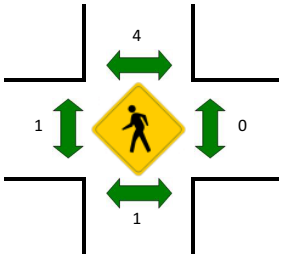
LOCATION: Etheldore St -- California Ave
CITY/STATE: Moss Beach, CA

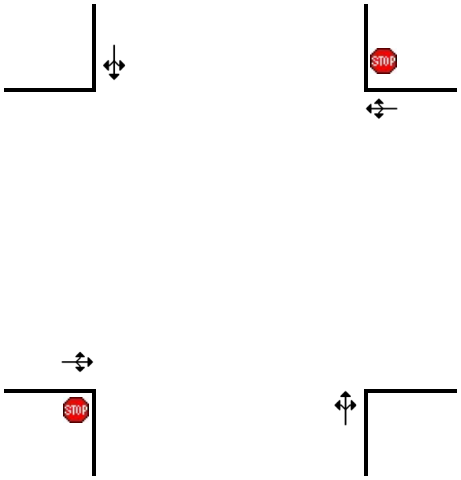
QC JOB #: 15986657
DATE: Sat, Oct 29 2022

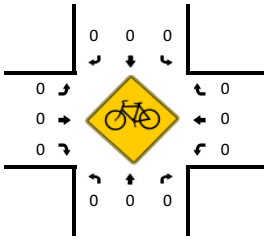
Peak-Hour: 11:20 AM -- 12:20 PM
Peak 15-Min: 11:20 AM -- 11:35 AM

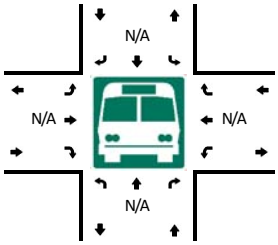


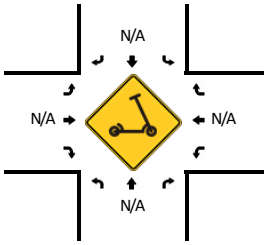












5-Min Count Period Beginning At	Etheldore St (Northbound)				Etheldore St (Southbound)				California Ave (Eastbound)				California Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	2	2	0	0	0	1	0	0	0	3	0	0	0	3	0	0	11	
11:05 AM	0	0	1	0	2	1	0	0	0	1	0	0	0	4	0	0	9	
11:10 AM	0	1	2	0	0	0	1	0	0	3	0	0	0	3	0	0	10	
11:15 AM	2	2	1	0	0	1	0	0	0	1	0	0	0	3	0	0	10	
11:20 AM	1	2	0	0	0	1	0	0	0	4	0	0	0	4	0	0	12	
11:25 AM	0	2	4	0	0	2	0	0	0	3	0	0	0	3	0	0	14	
11:30 AM	0	2	0	0	0	2	0	0	0	4	0	0	0	2	0	0	10	
11:35 AM	0	1	1	0	0	0	0	0	0	2	1	0	0	5	0	0	10	
11:40 AM	3	1	0	0	1	0	0	0	0	0	1	0	0	2	1	0	9	
11:45 AM	0	1	1	0	0	4	0	0	0	2	0	0	0	6	0	0	14	
11:50 AM	0	3	1	0	0	1	0	0	0	1	1	0	1	2	0	0	10	
11:55 AM	1	1	0	0	1	0	1	0	0	3	0	0	1	4	0	0	12	131
12:00 PM	1	2	1	0	1	0	0	0	0	2	0	0	0	6	1	0	14	134
12:05 PM	0	0	0	0	1	1	0	0	0	1	1	0	0	3	0	0	7	132
12:10 PM	1	0	0	0	0	1	0	0	0	3	0	0	1	4	1	0	11	133
12:15 PM	0	3	0	0	1	2	0	0	0	5	1	0	0	2	0	0	14	137
12:20 PM	1	1	1	0	0	1	0	0	0	1	0	0	0	4	0	0	9	134
12:25 PM	2	1	1	0	1	2	0	0	0	1	0	0	1	3	0	0	12	132
12:30 PM	1	2	1	0	1	0	0	0	0	2	0	0	1	7	0	0	15	137
12:35 PM	0	0	0	0	1	0	0	0	0	1	0	0	1	1	1	0	5	132
12:40 PM	0	1	0	0	2	0	0	0	1	4	0	0	0	2	0	0	10	133
12:45 PM	0	3	1	0	1	1	1	0	0	0	0	0	2	3	1	0	13	132
12:50 PM	0	1	1	0	0	2	1	0	0	0	0	0	0	3	0	0	8	130
12:55 PM	0	0	0	0	0	0	0	0	1	7	0	0	1	2	0	0	11	129

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	24	16	0	0	20	0	0	0	44	0	0	0	36	0	0	144
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	4	0		4
Buses																	
Pedestrians		0				8				4				0			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 11/8/2022 3:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

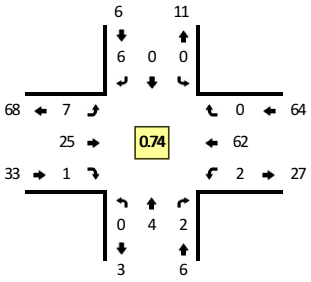
Type of peak hour being reported: Intersection Peak

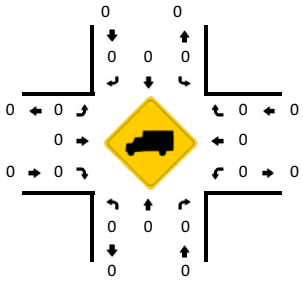
Method for determining peak hour: Total Entering Volume

LOCATION: Stetson St -- California Ave
CITY/STATE: Moss Beach, CA

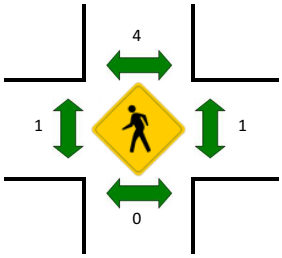
QC JOB #: 15986658
DATE: Thu, Oct 27 2022

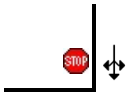
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

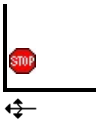


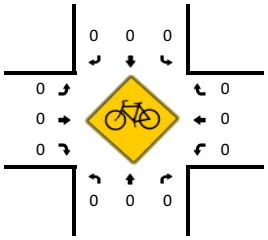


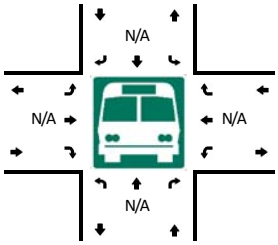
Quality Counts
DATA THAT DRIVES COMMUNITIES

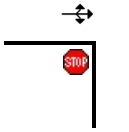


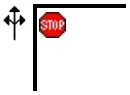


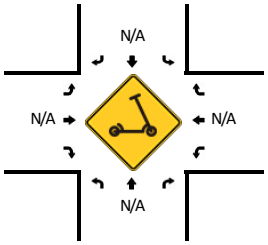












5-Min Count Period Beginning At	Stetson St (Northbound)				Stetson St (Southbound)				California Ave (Eastbound)				California Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	1	2	0	0	0	4	0	0	7	
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	
7:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	2	
7:20 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	7	
7:25 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	3	0	0	5	
7:30 AM	0	0	0	0	0	0	1	0	1	2	0	0	1	6	0	0	11	
7:35 AM	0	0	2	0	0	0	0	0	0	2	0	0	1	12	0	0	17	
7:40 AM	0	1	0	0	0	0	2	0	0	1	0	0	0	5	0	0	9	
7:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	6	0	0	7	
7:50 AM	0	0	0	0	0	0	0	0	2	4	0	0	0	4	0	0	10	
7:55 AM	0	1	0	0	0	0	0	0	0	1	0	0	0	4	0	0	6	88
8:00 AM	0	0	0	0	0	0	0	0	3	1	0	0	0	9	0	0	13	94
8:05 AM	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0	0	4	93
8:10 AM	0	1	0	0	0	0	1	0	0	2	1	0	0	3	0	0	8	99
8:15 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	5	0	0	9	106
8:20 AM	0	1	0	0	0	0	1	0	1	2	0	0	0	3	0	0	8	107
8:25 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	5	0	0	7	109
8:30 AM	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3	101
8:35 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0	0	5	89
8:40 AM	0	0	0	0	0	0	1	0	1	2	0	0	0	3	0	0	7	87
8:45 AM	0	0	1	0	0	0	0	0	0	5	0	0	0	3	0	0	9	89
8:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	80
8:55 AM	0	0	1	0	0	0	0	0	2	3	0	0	0	3	0	0	9	83

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	4	8	0	0	0	12	0	4	20	0	0	8	92	0	0	148
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 11/8/2022 3:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

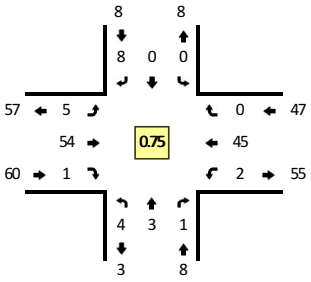
Type of peak hour being reported: Intersection Peak

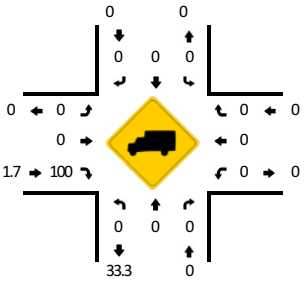
Method for determining peak hour: Total Entering Volume

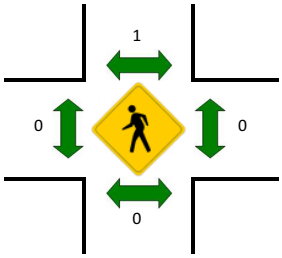
LOCATION: Stetson St -- California Ave
CITY/STATE: Moss Beach, CA

QC JOB #: 15986659
DATE: Thu, Oct 27 2022

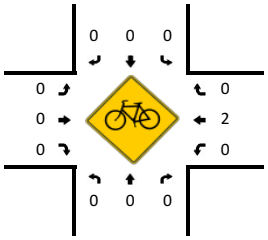
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

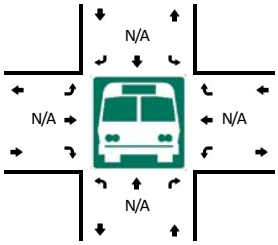




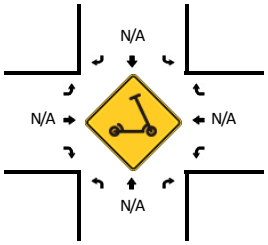












5-Min Count Period Beginning At	Stetson St (Northbound)				Stetson St (Southbound)				California Ave (Eastbound)				California Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	6	0	0	0	3	0	0	9	
4:05 PM	0	0	0	0	0	0	1	0	1	5	0	0	0	3	0	0	10	
4:10 PM	1	0	0	0	0	0	0	0	1	2	0	0	0	1	0	0	5	
4:15 PM	0	1	1	0	0	0	1	0	0	6	0	0	0	3	0	0	12	
4:20 PM	3	1	0	0	0	0	0	0	0	2	1	0	0	3	0	0	10	
4:25 PM	0	1	0	0	0	0	0	0	0	7	0	0	0	3	0	0	11	
4:30 PM	0	0	0	0	0	0	2	0	1	5	0	0	1	7	0	0	16	
4:35 PM	0	0	0	0	0	0	1	0	2	4	0	0	0	6	0	0	13	
4:40 PM	0	0	0	0	0	0	0	0	0	6	0	0	0	6	0	0	12	
4:45 PM	0	0	0	0	0	0	1	0	0	2	0	0	0	4	0	0	7	
4:50 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	4	0	0	9	
4:55 PM	0	0	0	0	0	0	2	0	0	4	0	0	1	2	0	0	9	123
5:00 PM	0	1	1	0	0	0	0	0	0	1	0	0	0	3	0	0	6	120
5:05 PM	0	0	1	0	0	0	0	0	1	2	0	0	0	1	0	0	5	115
5:10 PM	0	1	0	0	0	0	0	0	0	2	0	0	1	5	0	0	9	119
5:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	3	0	0	4	111
5:20 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	4	0	0	7	108
5:25 PM	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	10	107
5:30 PM	0	0	0	0	0	1	1	0	0	5	0	0	0	5	0	0	12	103
5:35 PM	0	0	0	0	0	0	0	0	1	3	0	0	0	1	0	0	5	95
5:40 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	85
5:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	0	5	83
5:50 PM	0	0	0	0	0	0	0	0	1	5	1	0	0	0	0	0	7	81
5:55 PM	0	0	1	0	0	0	0	0	1	2	1	0	0	1	0	0	6	78

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	12	0	12	60	0	0	4	76	0	0	164
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4
Scooters																	

Comments:

Report generated on 11/8/2022 3:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

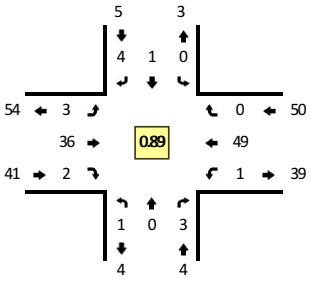
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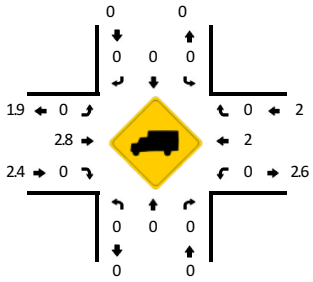
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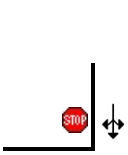
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CITY/STATE: Moss Beach, CA

QC JOB #: 15986660
DATE: Sat, Oct 29 2022

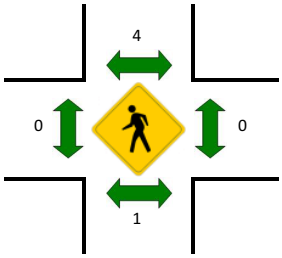
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Peak 15-Min: 11:55 AM -- 12:10 PM

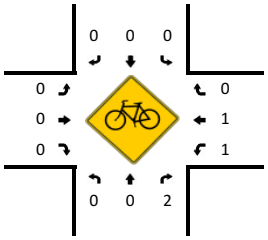


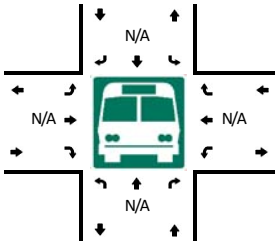


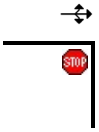


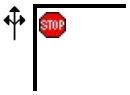


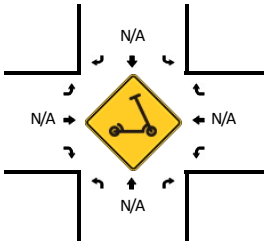












5-Min Count Period Beginning At	Stetson St (Northbound)				Stetson St (Southbound)				California Ave (Eastbound)				California Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0	0	5	
11:05 AM	0	0	0	0	0	0	1	0	1	2	1	0	0	3	0	0	8	
11:10 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	3	0	0	8	
11:15 AM	0	0	0	0	0	0	1	0	0	1	1	0	1	3	0	0	7	
11:20 AM	0	0	2	0	0	0	0	0	0	3	1	0	0	3	0	0	9	
11:25 AM	0	0	0	0	0	0	0	0	0	7	0	0	0	3	0	0	10	
11:30 AM	0	0	1	0	0	0	0	0	0	4	0	0	0	2	0	0	7	
11:35 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	5	0	0	8	
11:40 AM	0	0	0	0	0	0	1	0	0	1	0	0	1	2	0	0	5	
11:45 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	7	0	0	10	
11:50 AM	0	0	0	0	0	0	1	0	0	2	0	0	0	1	0	0	4	
11:55 AM	0	0	1	0	0	0	2	0	0	4	0	0	1	3	0	0	11	92
12:00 PM	0	0	0	0	0	0	0	0	1	3	0	0	0	8	0	0	12	99
12:05 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	3	0	0	5	96
12:10 PM	1	0	0	0	0	0	0	0	0	3	0	0	0	5	0	0	9	97
12:15 PM	0	0	1	0	0	0	0	0	0	6	0	0	0	2	0	0	9	99
12:20 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	4	0	0	6	96
12:25 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	6	92
12:30 PM	0	0	0	0	0	1	1	0	0	4	0	0	0	7	0	0	13	98
12:35 PM	0	0	1	0	0	0	0	0	0	2	0	0	0	3	0	0	6	96
12:40 PM	0	0	0	0	0	0	0	0	2	3	1	0	0	3	0	0	9	100
12:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	5	0	0	6	96
12:50 PM	0	0	1	0	0	0	0	0	0	1	0	0	0	2	0	0	4	96
12:55 PM	0	0	0	0	0	0	1	0	1	5	1	0	0	2	0	0	10	95

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	4	0	0	0	8	0	4	32	4	0	4	56	0	0	112
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 11/8/2022 3:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

APPENDIX S

Energy Technical Report

CYPRESS POINT PROJECT

Energy Technical Report



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April 3, 2019

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ENERGY APPENDIX

INTRODUCTION

This Energy Technical Report addresses potential energy impacts associated with the proposed residential project located northeast of the intersection of Carlos Street and Sierra Street in Moss Beach, CA. The project proposes to develop 71 affordable housing units (on a 10.875-acre parcel), consisting of 18 two-story buildings with 3 to 4 units each and a one-story community building. The applicant anticipates approximately 213 people to occupy the units upon build out. All units, apart from the manager's unit, will be rented to households that earn less than 80 percent of the Area Median Income. Impacts could result from construction energy use and/or operational energy use.

This Energy Technical Report describes existing primary energy sources in the State, and identifies relevant federal, State, and local regulations pertaining to energy conservation. The types of energy sources that would be consumed by the project are identified and estimates are provided for the amounts of each energy source that would be consumed by the project. These factors and the energy-conserving features of the project are discussed as a basis for determining whether the project would have any adverse effects on energy resources, including the need to develop additional capacity.

Because energy consumption is directly tied to the emissions of anthropogenic greenhouse gases (GHGs), California's focus on legislation and regulations to reduce GHGs will lead to improved energy efficiency and reduced energy consumption across the transportation, building heating and cooling, and power generation sectors of the economy. Over the last decade, regulators focused primarily on developing program-specific targets to advance California's energy system (such as separate targets for renewable energy, energy efficiency, demand response, storage, and other attributes), but the State has begun shifting to a more comprehensive approach aimed at improving the performance of the system and achieving the State's greenhouse gas reduction goals.

This Energy Technical Report addresses the project's energy consumption, usage and conservation as per Public Resources Code Section 21100(b)(3), Appendix F, and Appendix G of the CEQA Guidelines. Specifically, CEQA provides that an environmental impact report shall include a detailed statement identifying the environmental impacts of proposed projects, and setting forth mitigation measures proposed to minimize any significant effects on the environment, including, but not limited to, measures to reduce the wasteful, inefficient, and unnecessary consumption of energy (Public Resources Code Section 21100(b)(3)). Appendix F of the CEQA Guidelines states that "the California Environmental Quality Act requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy (see Public Resources Code section 21100(b)(3))." Appendix F includes a list of energy impact possibilities and potential conservation measures "designed to assist in the preparation of an EIR." Appendix G contains the following questions regarding energy: (a) would the project have a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources? and (b) would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Recent case law has clarified the requirements to satisfy Public Resources Code section 21100(b)(3) and Appendix F, holding that an EIR must quantify energy use during construction and operations, including energy associated with transportation associated with the project, and also consider the availability of measures to reduce reliance on fossil fuels. (*California Clean Energy* Committee *v. City of Woodland* (2014) 225 Cal.App.4th 173.) Mere reliance on compliance with the California Building Code and other green building requirements is not sufficient to meet an agency's burden under Appendix F and Public Resources Code section 21100(b)(3); an agency must also consider whether a building should be constructed at all, how large it should be, where it should be located, and investigate renewable energy options that might be available or appropriate for the project.

This Energy Technical Report provides an analysis of potential energy consumption impacts that would result from the implementation of the project and identifies mitigation measures, if necessary.

SETTING

ENERGY RESOURCES

The composition of California's in-State generation capacity (in megawatts, or MW) has increasingly shifted toward renewable resources in recent years. Between 2001 and 2016, the generation capacity of electricity from renewable sources (including rooftop solar) has more than tripled, rising from 6,800 MW in 2001 to 26,300 MW in 2016[1]. The addition of renewable energy sources (solar, wind, geothermal, small hydro, and biomass) in California's electric grid has increased generation from renewables from 28,000 Gigawatt hours (Year 2000) to over 80,000 Gigawatt hours (Year 2017).[2]

The following discussion describes the different energy resources that would be consumed by the project.

ELECTRICITY AND RENEWABLE ENERGY

Electricity is a consumptive utility. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for onsite distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. Conveyance of electricity through transmission lines is typically responsive to market demands.

California's electricity generation capacity is composed of multiple fuel sources, including coal, hydroelectric, natural gas, nuclear, oil, petroleum coke, waste heat, biomass, geothermal, solar photovoltaic, solar thermal, and wind. In 2017, the State had an installed generation capacity from these multiple sources of 206,328 gigawatt hours (GWh).[3] The composition of California's in-State generation capacity has shifted since the 2002 passage of Senate Bill 1078, which required that 20 percent of electric production come from renewable resources by 2017. With the passage of SB X1-2 in 2011, this was increased to 33 percent renewables by 2020; it was raised again to 50 percent renewables by December 31, 2030 by SB 350 (2015).

[1] California Energy Commission, *2016 Integrated Energy Policy Report Update*, February 28, 2017.
[2] California Energy Commission, *2018 Integrated Energy Policy Report Update Vol. 1*, CEC-100-2018-001-V1.
[3] California Energy Commission, California Energy Alamac, Electricity Generation Capacity & Energy, In-State Electric Generation by Fuel Type (GWh), Accessed March 8, 2019, https://www.energy.ca.gov/almanac/electricity_data/electric_generation_capacity.html.

Since adoption of the first Renewables Portfolio Standard (RPS) pursuant to SB 1078, the State has significantly increased its portfolio of renewable resources. While natural gas-fired capacity is still the primary source of electricity generation, in the last few years, significant amounts of renewable resources have been brought on-line. Installed capacity of renewable energy in California increased from 6,800 megawatts (MW) in 2001 to almost 21,300 MW in 2016, more than tripling the output of this sector over this time period. When behind-the-meter capacity (such as rooftop solar) and facilities smaller than 1 MW are factored in, installed capacity reached 26,300 MW by the end of 2016.[4]

The most significant increase in renewable sources is from utility-scale solar photovoltaic (PV) panels. Installed operating capacity, including both new facilities and capacity expansions, rose from roughly 40 MW in 2010 to 5,700 MW in 2015. Solar thermal technology was the second largest category of growth, increasing from roughly 400 MW in 2012 to nearly 1,300 MW in 2015. Installed wind capacity increased at a slightly slower pace from around 1,500 MW in 2001 to 4,000 MW in 2011, then jumped to roughly 6,100 MW by 2016. Completion of projects that have environmental permits and are in preconstruction or construction phases is expected to add another 10,000 MW of new renewable capacity.[5] With total in-State electricity generation of 198,227 GWh in 2016, 55,300 GWh of them from renewables, along with increases in capacity currently being implemented, these numbers demonstrate that California is well on its way to meeting the requirement for 33 percent renewables by 2020.

Pacific Gas and Electric Company (PG&E) is the local public utility and energy supplier for the project area. PG&E is an American investor-owned utility (IOU) headquartered in San Francisco. PG&E provides natural gas and electricity to most of the northern two-thirds of California, which represents 5.2 million households. PG&E is overseen by the California Public Utilities Commission. PG&E is one of the four regulated, investor-owned utilities (IOU)s in California; the other three are PacificCorp's Pacific Power, Southern California Edison and Sempra Energy's San Diego Gas & Electric. PG&E delivered 82,226 GWh of electricity in 2017.[6]

PG&E filed for Chapter 11 on January 29, 2019, but they do not expect any impact to natural gas or electric service for customers as a result of the Chapter 11 process.[7]

[4] California Energy Commission, *2016 Integrated Energy Policy Report Update*, February 28, 2017.
[5] Ibid.
[6] PG&E, 2017 Joint Annual Report to Shareholders
[7] PG&E, www.pge.com, viewed March 5, 2019.

NATURAL GAS

Natural gas represents approximately one-third of the energy consumed in California each year. Its use falls mainly into four sectors—residential, commercial, industrial, and electric power generation—but it is also used as an alternative to petroleum for fuel in cars, trucks, and buses. Nearly 45 percent of the natural gas burned in California is used for electricity generation, while residential, industrial, and commercial sectors account for 21 percent, 25 percent, and 9 percent of the consumption, respectively. California relies on out-of-state imports for nearly 90 percent of all-natural gas consumed in the State. Statewide consumption of natural gas in totaled 2,115 Trillion Btu in 2017.[8]

The project would receive natural gas from PG&E. PG&E has approximately 42,500 miles of natural gas distribution pipelines, 6,700 miles of backbone and local gas transmission pipelines, and various gas storage facilities.[9] In 2017, PG&E delivered approximately 216 Trillion Btu to its 4.47 million customers.[10]

PETROLEUM

California's production of gasoline in December 2017 ranged from approximately 6.5 to 8.1 million barrels per week, and the State had an inventory of gasoline and blend stocks of about 10.5 million barrels per week. Over the preceding five years, production ranged from about 5.3 to 8.1 million barrels per week, while inventories ranged from about 9.3 to 14.5 million barrels per week.[11]

The Petroleum Industry Information Reporting Act (PIIRA) requires all retail transportation fueling stations in California to file a Retail Fuel Outlet Annual Report (CEC-A15). These stations report retail sales of gasoline, diesel, and other transportation fuels. The California Energy Commission (CEC) compiles these reports into Statewide data, which it compares to California Board of Equalization data, which tracks all gasoline and diesel sales in California for taxation purposes. Based on the results of this data tracking, the CEC reports that retail sales of gasoline throughout the State in 2016 totaled 13.787 billion gallons; in 2017 sales totaled 13.936 billion gallons.[12] Sales data reported does not include commercial fleets, government entities, or rental facilities/equipment yards.

[8] United States Energy Information Administration, California State Profile and Energy Estimates, Data, Table F18: Natural Gas Consumption Estimates, 2017, https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_use_ng.html&sid=US&sid=CA

[9] PG&E, Climate Change Vulnerability Assessment, http://www.pgecurrents.com/wp-content/uploads/2016/02/PGE_climate_resilience.pdf.

[10] PG&E, 2017 Joint Annual Report to Shareholders, http://www.pgecorp.com/investors/financial_reports/annual_report_proxy_statement/ar_pdf/2017/2017_Annual_Report.pdf

[11] California Energy Commission, Energy Assessments Division, Supply Analysis Office, *Petroleum Watch January 2018*, Figure 8: Gasoline Production and Inventories, January 30, 2018, Accessed March 11,2019 at: https://www.energy.ca.gov/almanac/petroleum_data/petroleum_watch/2018_Petroleum_Watch/

[12] California Energy Commission, California Retail Fuel Outlet Annual Reporting (CEC-A15) Results, Accessed March 11, 2019 at: http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html.

The State's diesel fuel production in December 2017 was approximately 2.6 million barrels per week, with an inventory of about 3.6 million barrels per week. Over the preceding five years, production ranged from roughly 1.6 to 3.3 million barrels per week, while inventories ranged from about 2.7 to 4.7 million barrels per week.[13] Statewide retail diesel sales in 2016 and 2017 totaled 1.743 billion gallons and 1.717 billion gallons, respectively.[14]

RELEVANT PLANS, POLICIES AND ORDINANCES SETTING

Federal and State agencies regulate energy consumption through various policies, standards, and programs. At the federal level, energy standards apply to numerous products (e.g., the U.S. Environmental Protection Agency's [EPA's] EnergyStar™ program) and transportation (e.g., fuel efficiency standards). At the state level, Title 24 of the California Code of Regulations sets forth energy standards for buildings. Further, the State provides rebates/tax credits for installation of renewable energy systems and offers the Flex Your Power program that promotes conservation in multiple areas. At the local level, individual cities and counties can establish policies in their general plans and climate action plans (CAPs) related to the energy efficiency of new development and land use planning and to the use of renewable energy sources. Applicable federal, state, and local regulations are discussed in further detail below.

FEDERAL

FEDERAL ENERGY POLICY AND CONSERVATION ACT

In 1975, Congress enacted the Federal Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration is responsible for establishing additional vehicle standards. In 2010, fuel economy standards were set at 27.5 miles per gallon for new passenger cars and 23.5 miles per gallon for new light trucks. Fuel economy is determined based on each manufacturer's average fuel economy for the fleet of vehicles available for sale in the United States.

ENERGY INDEPENDENCE AND SECURITY ACT OF 2007

On December 19, 2007, the Energy Independence and Security Act of 2007 (EISA) was signed into law. In addition to setting increased Corporate Average Fuel Economy (CAFE) standards for motor vehicles, the act includes other provisions related to energy efficiency:

- Renewable fuel standard (RFS) (Section 202)
- Appliance and lighting efficiency standards (Sections 301–325)
- Building energy efficiency (Sections 411–441)

[13] California Energy Commission, Energy Assessments Division, Supply Analysis Office, *Petroleum Watch January 2018*, Figure 9: Diesel Production and Inventories, January 30, 2018, Accessed March 11,2019 at: https://www.energy.ca.gov/almanac/petroleum_data/petroleum_watch/2018_Petroleum_Watch/

[14] California Energy Commission, California Retail Fuel Outlet Annual Reporting (CEC-A15) Results, Accessed March 11, 2019 at: http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html.

This federal legislation requires increasing use of renewable fuels over time to replace petroleum (Section 202, RFS). The EPA is responsible for developing and implementing regulations to ensure that transportation fuel sold in the United States contains a minimum volume of renewable fuel. The RFS program regulations were developed in collaboration with refiners, renewable fuel producers, and many other stakeholders. The RFS program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States. As required under the act, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under EISA, the RFS program was expanded in several key ways that laid the foundation for achieving significant reductions of greenhouse gas (GHG) emissions through the use of renewable fuels, for reducing imported petroleum, and for encouraging the development and expansion of our nation's renewable fuels sector. The updated program is referred to as RFS2 and includes the following:

- EISA expanded the RFS program to include diesel, in addition to gasoline.
- EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.
- EISA established new categories of renewable fuel and set separate volume requirements for each one.
- EISA required the EPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces (EPA 2015).

EPA AND NHTSA JOINT RULE FOR VEHICLE STANDARDS

On April 1, 2010, the EPA and the National Highway Traffic Safety Administration (NHTSA) announced a joint final rule to establish a national program consisting of new standards for light-duty vehicles for model years 2012 through 2016. The joint rule is intended to reduce GHG emissions and improve fuel economy. The EPA promulgated the first-ever national GHG emissions standards under the Clean Air Act, and NHTSA promulgated CAFE standards under the Energy Policy and Conservation Act. This final rule follows the EPA and Department of Transportation's joint proposal on September 15, 2009 and is the result of the President Obama's May 2009 announcement of a national program to reduce GHGs and improve fuel economy. The final rule became effective on July 6, 2010 (EPA and NHTSA 2010).

The EPA GHG standards require new passenger cars, light-duty trucks, and medium-duty passenger vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide (CO2) per mile in model year 2016, equivalent to 35.5 mpg if the automotive industry were to meet this CO2 level through fuel economy improvements alone. The CAFE standards for passenger cars and light trucks will be phased in between 2012 and 2016, with the final standards equivalent to 37.8 mpg for passenger cars and 28.8 mpg for light trucks, resulting in an estimated combined average of 34.1 mpg. The rules will simultaneously reduce GHG emissions, improve energy security, increase fuel savings, and provide clarity and predictability for manufacturers (EPA and NHTSA 2010).

In August 2012, the EPA and NHTSA approved a second round of GHG and CAFE standards for model years 2017 and beyond (EPA and NHTSA 2012). These standards will reduce motor vehicle GHG emissions to 163 grams of CO2 per mile, which is equivalent to 54.5 mpg if this level were achieved solely through improvements in fuel efficiency, for cars and light-duty trucks by model year 2025. A portion of these improvements, however, will likely be made through improvements in air conditioning leakage and through use of alternative refrigerants, which would not contribute to fuel economy. The first phase of the CAFE standards (for model years 2017 to 2021) are projected to require, on an average industry fleet-wide basis, a range from 40.3 to 41.0 mpg in model year 2021.

The second phase of the CAFE program (for model years 2022 to 2025) is projected to require, on an average industry fleet-wide basis, a range from 48.7 to 49.7 mpg in model year 2025. The second phase of standards has not been finalized due to the statutory requirement that NHTSA set average fuel economy standards not more than five model years at a time. The regulations also include targeted incentives to encourage early adoption and introduction into the marketplace of advanced technologies to dramatically improve vehicle performance, including the following:

- Incentives for electric vehicles, plug-in hybrid electric vehicles, and fuel cell vehicles
- Incentives for hybrid technologies for large pickups and for other technologies that achieve high fuel economy levels on large pickups
- Incentives for natural gas vehicles
- Credits for technologies with potential to achieve real-world GHG reductions and fuel economy improvements that are not captured by the standards' test procedures

STATE

TITLE 24 OF THE CALIFORNIA CODE OF REGULATIONS

Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. Energy consumption by new buildings in California is regulated by the State Building Energy Efficiency Standards, included in Title 24. The efficiency standards apply to new construction of both residential and non-residential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building permit process. Local government agencies may adopt and enforce energy standards for new buildings, provided these standards meet or exceed those provided in Title 24 guidelines. The standards are updated periodically to allow consideration and possible incorporation of new energy-efficiency technologies and methods. The premise for the standards is that energy efficient buildings require less electricity, natural gas, and other fuels. The Title 24, Part 6, standards are updated every three years. The most recent amendments to Title 24, Part 6, referred to as the 2016 standards, became effective on January 1, 2017 and would apply to the project. The previous amendments were referred to as the 2013 standards. Homes built to the 2016 standards use approximately 28% less energy for lighting, heating, cooling, ventilation and water heating than those built to the 2013 standards.[15] The 2016 standards focus on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The standards include efficiency improvements to the residential standards for attics, walls, water heating, and lighting. They also include efficiency improvements to the non-residential standards, to bring them into alignment with the American Society of Heating and Air-Conditioning Engineers (ASHRAE) 90.1 2013 national standards.

Title 24 also includes Part 11, known as California's Green Building Standards (CALGreen). The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low rise residential, and State-owned buildings, as well as schools and hospitals. The 2016 CalGreen standards became effective on January 1, 2017. Some mandatory standards related to the project include:

- Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials for recycling;
- 20% mandatory reduction in indoor water use;
- 50% of construction and demolition waste must be diverted from landfills;
- Mandatory inspections of energy systems to ensure optimal working efficiency; and
- Low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards.
- Separate water meters for buildings in excess of 50,000 square feet or buildings projected to consume more than 1,000 gallons per day.

[15] California Energy Commission. 2016 Building Energy Efficiency Standards, Frequently Asked Questions. https://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf

- Reduce the generation of wastewater by installation of water-conserving fixtures or using non-potable water systems.

SENATE BILL 32

Building on Assembly Bill (AB) 32, the landmark legislation intended to reduce California's emissions of greenhouse gases (GHGs), Governor Jerry Brown signed Senate Bill (SB) 32 into law on September 8, 2016. AB 32, enacted in 2006 by then-Governor Arnold Schwarzenegger, required the State to reduce emissions of GHGs to 1990 levels by 2020. California is well on its way to meet this target, and the goals has been raised by SB 32, which requires the State to reduce emissions of GHGs to 40 percent below 1990 levels by 2030. Although Governor Brown had previously established this goal by Executive Order B-30-15, SB 32 codifies the target. This must be done while California's population is projected to grow from about 38 million in 2017 to more than 44 million by 2030.

CLEAN ENERGY & POLLUTION REDUCTION ACT

Senate Bill 350, signed into law on October 7, 2015, enacted the Clean Energy & Pollution Reduction Act, which increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard (RPS) eligible resources, including solar, wind, biomass, geothermal, and others. In addition, SB 350 requires the State to double Statewide energy efficiency savings in electricity and natural gas end uses by 2030. To help ensure these goals are met and greenhouse gas emission reductions are realized, large utilities will be required to develop and submit Integrated Resource Plans (IRPs) that must detail how each utility will meet their customers resource needs, reduce greenhouse gas emissions, and ramp up the deployment of clean energy resources.

SENATE BILL 1389

Senate Bill 1389 (SB 1389, Bowen and Sher, Chapter 568, Statutes of 2002) requires the California Energy Commission (CEC) to "conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The commission shall use these assessments and forecasts to develop and evaluate energy policies and programs that conserve resources, protect the environment, ensure energy reliability, enhance the State's economy, and protect public health and safety." In compliance with SB 1389, the CEC—in collaboration with federal, State, and local agencies and a wide variety of stakeholders—prepares a biannual Integrated Energy Policy Report (IEPR) that assesses current energy trends and prescribes policies to further the goals established by SB 1389. The most recent IEPR was adopted in February 2017 and an update was published in 2018.

LOCAL

SAN MATEO COUNTY GENERAL PLAN CHAPTER 17 ENERGY AND CLIMATE CHANGE ELEMENT

The Energy and Climate Change Element demonstrates San Mateo County's commitment to achieve energy efficiency and mitigate its impact on climate change by reducing GHG emissions consistent with State legislation. This element is an optional element of the General Plan and is not mandated by the State of California. Authorized by Section 65303 of the Government Code, the inclusion of this element in the General Plan demonstrates the County's commitment to the long-term sustainability and resilience of the unincorporated county. San Mateo County is working to sustain the long-term health of the natural and built environments, achieve effective and meaningful reductions in GHGs, and increase resiliency to the impacts of climate change in the unincorporated county.

SAN MATEO COUNTY CLIMATE ACTIONS PLANS

San Mateo County has two Climate Action Plans currently in place – a Government Operations Climate Action Plan and a Community Climate Action Plan (also known as the Energy Efficiency Climate Action Plan [EECAP]). The County Office of Sustainability is responsible for the update and implementation of both programs.

The EECAP provides a path for achieving local energy efficiency and reductions in GHGs by 2020. The EECAP will function as an implementation tool of the General Plan, working as a shorter-term plan that will be updated on a more regular basis. The EECAP also provides technical analysis to demonstrate the impact of the County's policies and programs on GHG emissions. Maintaining the EECAP separately from the General Plan provides flexibility to the County to assess and revisit the effectiveness of EECAP measures and actions toward achieving this element's overall goals and policies. As a stand-alone plan, the EECAP also has the flexibility to integrate near-term opportunities, new technologies, and research. Together, the General Plan and EECAP function as part of the County's toolkit to achieve resilience to climate change and long-term GHG reductions.

The relevant plan for this project would be the EECAP. The EECAP includes a GHG inventory of all the emissions that result from the unincorporated areas and a list of various proposed measures to reduce these emissions. The Office of Sustainability is currently working with the Planning and Building Department to update the existing Community Climate Action Plan.[16]

The reduction measures included in the EECAP build upon existing efforts and provide a diverse mix of regulatory and incentive-based programs for both new and existing development. The reduction measures also aim to reduce GHG emissions from each source to avoid reliance on any one strategy or sector to achieve the target. In total, GHG reduction measures in the EECAP will reduce GHG emissions in the unincorporated county in 2020 by 67,000 metric tons of CO2 equivalents.[17]

[16] County of San Mateo, Office of Sustainability, Climate Action Plans, https://www.smcsustainability.org/climate-change/climate-action-plans/.
[17] County of San Mateo, Energy Efficiency Climate Action Plan, June 2013.

SAN MATEO COUNTY GREEN BUILDING ORDINANCE

San Mateo County's Green Building Ordinance has been in effect since 2008 and applies to all new construction projects as well as to projects involving a remodel of 50% or greater of the value of the building. All new residential projects must receive at least 50 points on the appropriate GreenPoint Rated Checklist or LEED certification. Expedited building permit processing is available as an incentive to projects achieving higher points or certifications. In the commercial and industrial sector, new buildings or remodels of at least 3,000 square feet in area are required to achieve LEED certification. As with residential projects, expedited permit processing and inspections are available to projects that achieve a higher level of certification; in this case, buildings must achieve LEED Silver or above. [18]

[18] Ibid.

STANDARDS OF SIGNIFICANCE

The standards of significance for the analysis of potential energy impacts are based on the new Energy section in Appendix G of the 2019 CEQA Guidelines.

Would the project:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Neither the CEQA Guidelines nor Public Resources Code Section 21100(b)(3) provide a specific threshold for impacts associated with energy consumption. However, Appendix F of the CEQA Guidelines (14 CCR 15000 et seq.) provides guidance for evaluating whether a development project may result in significant impacts with regard to energy. Based on Appendix F of the CEQA Guidelines and the new Appendix G questions, the standards of significance for this analysis will evaluate whether the project would:

1. Result in wasteful, inefficient, or unnecessary consumption of energy during construction.
2. Result in wasteful, inefficient, or unnecessary consumption of energy during operation.
3. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.
4. Require the construction of new or expanded energy production facilities or infrastructure, the construction of which could cause significant environmental impacts.

In evaluating the standards, the analysis will consider the scale of the project's energy use (size of the project) and project's commitment to feasible opportunities to conserve energy or use alternative fuels or renewable energy.

IMPACTS AND MITIGATION MEASURES

The project would consume energy in three primary forms:

- Liquid fuels (gasoline and diesel) to power construction equipment, haul trucks and worker vehicles during project construction and to power vehicles during operation of the project;
- Electricity to power construction equipment/power tools and to provide lighting of the project site and to power inside and outside electrical uses for the homes and community building; and
- Natural gas to provide heat and hot water in the homes and community building.

The project is not responsible for developing these energy supplies. The project is not involved in the extraction and refining of petroleum or natural gas and does not build or operate power plants. It is reasonably assumed that the companies and public utilities involved in these activities have previously undergone the appropriate environmental review pursuant to CEQA. Therefore, the analysis presented in this report is focused solely on the consumption of existing energy supplies by the project, and whether that consumption could be considered wasteful, inefficient, or unnecessary.

IMPACT ANALYSIS

IMPACT ENERGY-1

Project construction would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. (Less than Significant)

CONSTRUCTION ENERGY USAGE

Project construction would require site preparation, site grading and excavation, trenching, interior architectural finishing, paving and landscaping. Construction would be typical for the region and building type, and the project site does not include unusual building challenges that would require unusually high energy usage. The importation of a maximum of 7,000 cubic yards of fill material would be required, which would result in a maximum of 692 haul truck trips, as indicated in the California Emissions Estimator Model (CalEEMod) modelling estimates in the Air Quality Technical Report.[19]

[19] Illingworth & Rodkin, Inc., *Cypress Point Affordable Housing Project Air Quality & Greenhouse Gas Emissions Assessment*, June 29, 2018.

Fuel consumption during construction was calculated by CalEEMod, a Statewide land use emissions computer model developed for the California Air Pollution Officers Association (CAPCOA) in collaboration with the California Air Districts. The model inputs assumed project construction would occur eight hours per day, five days per week, for a period of 15 months[20]. It assumed a daily construction crew of approximately 40 workers, resulting in approximately 80 daily one-way trips during building construction, with fewer workers during other construction phases. CalEEMod calculated the emissions and related fuel use for each construction phase, including site preparation, grading, building construction, paving, and architectural coating.[21]

Based on CalEEMod results for project construction and standard fuel consumption conversion factors, construction would require approximately 7,564 gallons of gasoline and 45,508 gallons of diesel fuel. This includes all off-road construction equipment, hauling, vendor, and worker trips over a 320-working day construction period. For the finishing phase of construction, some electricity may be used (e.g., for power tools and work lighting). While this electricity usage cannot be quantified at this time, it is anticipated to be relatively minor compared to normal building operations. When not in use, electric equipment would be powered off so as to avoid unnecessary energy consumption. Natural gas would not be used during construction.

If it is conservatively assumed that all of the fuel used during construction would be consumed in one year, gasoline consumption would represent approximately 0.00005 percent of Statewide gasoline consumption in 2016. The diesel consumption would represent 0.00125 percent of Statewide consumption in 2016. This increase in consumption would be temporary, of relatively short duration, and would cease once project construction is completed. This minor increase in fuel consumption would not require development of new petroleum supplies or construction of new production or distribution facilities. As required by Mitigation Measure AQ-1 of the Air Quality Technical Report, the construction contractor would be required to minimize equipment idling time and maintain equipment in proper operating condition, which would ensure that fuel powering the equipment would not be used in an inefficient or wasteful manner.[22]

MidPen Housing Corporation (the project sponsor) has also committed to the following construction actions[23] that would reduce the energy consumption from project construction:

- Preserve a portion of the site as undeveloped land.
- Make best efforts to use of at least 10 percent local building materials.
- Recycle or reuse at least 50 percent of construction waste or demolition materials.

[20] While the project description assumes a construction period of 18 months, a construction period of 15 months is assumed here to be consistent with the air quality analysis. This is a conservative assumption and would not substantially change the results.
[21] Ibid.
[22] Illingworth & Rodkin, Inc., *Cypress Point Affordable Housing Project Air Quality & Greenhouse Gas Emissions Assessment*, June 29, 2018.
[23] Stevens Consulting, Cypress Point Project Introduction and Project Description (County Review Draft), accessed March 6, 2019 at https://planning.smcgov.org/sites/planning.smcgov.org/files/5-Intro-and-Project-Description.pdf

Therefore, for the reasons stated above, the consumption of fuel and other energy during project construction would have a ***less-than-significant impact*** on energy resources.

MITIGATION MEASURES ENERGY-1

None required.

IMPACT ENERGY-2

Project operations would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. (Less than Significant)

Once the project is operational, transportation fuels (predominantly gasoline) would continue to be consumed through vehicle trips by residents, visitors, maintenance workers, delivery truck drivers, etc. Similar to the construction analysis, operational fuel consumption was calculated by CalEEMod (see Energy Appendix at the end of this report). CalEEMod calculates energy consumption and associated emissions for transportation, areas sources, electricity consumption, natural gas combustion, electricity usage associated with water usage and wastewater discharge, and transport and disposal of solid waste. Key assumptions used in the analysis included the default trip lengths and trip types specified by CalEEMod for San Mateo County. Based on the Transportation Impact Analysis performed for the project, a daily weekday trip generation rate of 6.65 weekday trips per dwelling unit (or 472 daily weekday trips) was assumed.[24]

CalEEMod does not break down fuel usage into gasoline and diesel components; since the majority of residential vehicles are gasoline-fueled, it was assumed that all of the fuel consumption would be gasoline, resulting in estimated annual fuel consumption of approximately 46,548 gallons of gasoline. This would represent approximately 0.0003 percent of Statewide gasoline consumption in 2016.

The CalEEMod was also used to estimate the consumption of electricity and natural gas associated with space and water heating and landscape maintenance (i.e., electricity to control irrigation equipment) expected to occur during operation of the project. The project land use type and size and other project-specific information were input to the CalEEMod. The CalEEMod results indicated that the project's estimated electricity consumption would be approximately 322,439 kWh of electricity and approximately 1.44 billion BTUs of natural gas per year. This would represent approximately 0.00039 percent of PG&E's electricity sales in 2017 and approximately 0.000670 percent of PG&E's natural gas sales in 2017. The project's annual electricity usage would represent approximately 0.00013 percent of Statewide electricity sales in 2017. The project's natural gas usage would represent approximately 0.000068 percent of Statewide natural gas sales in 2017.

[24] Kittleson & Associates, Inc. Cypress Point Traffic Impact Analysis. April 2019.

While implementation of the project would result in consumption of non-renewable energy resources, such consumption is an inherent characteristic of typical development projects. The energy demands of the project would be reduced by energy conservation features that are required in the project type (new multi-family construction using the current Title 24 Building Code), the location (coastal zone with minimal annual air conditioning and heating needs) and energy conservation features that are included in MidPen additional environmental commitments.

As listed in the Project Description[25], MidPen has agreed to a list of environmental commitments to minimize the environmental effects. From that list, the commitments outlined below would reduce the consumption of non-renewable energy resources.

OPERATIONAL ENERGY SAVING FEATURES

In order to achieve energy efficiency beyond Title 24 building standards, MidPen has agreed that the project shall be developed in accordance with the minimum requirements of one of the following programs: Leadership in Energy & Environmental Design; Green Communities; Passive Housing; Living Building Challenge; National Green Building Standard, or the GreenPoint Rated program. The following are features that may be included[26]:

- Natural cross-ventilation of every unit with windows in 3 sides of most units (2-3 BR), and 2 sides of 1 BR units;
- Cool roofs with low reflectance for reduced heat-island effect;
- High-efficacy lighting fixtures throughout; “Night-sky” compliant site lighting;
- Drought-tolerant landscaping with native species and minimized and efficient irrigation;
- Passive on-site storm water management;
- PV ready roofs;
- No air conditioning;
- Shared laundry facilities;
- Secure bike parking facilities to encourage less vehicle use;
- Install toilets using less than 1.6 gallons per flush;
- Install showerheads providing maximum flows of 2.5 gallons per minute or less;
- Install self-closing faucets in non-residential lavatories; and
- Install high-efficiency washing machines with a water factor of 5 or less.

The energy savings from the operational energy savings features above cannot be estimated at this time because the actual program and features that would be included have not been selected. However, it is clear that adopting the minimum requirements of one of the programs would improve the project energy efficiency beyond Title 24 building standards.

[25] Stevens Consulting. Cypress Point Project Introduction and Project Description (County Review Draft). Accessed March 7, 2019 at https://planning.smcgov.org/sites/planning.smcgov.org/files/5-Intro-and-Project-Description.pdf
[26] Ibid.

ADDITIONAL OPERATIONAL ENERGY CONSERVATION FEATURES

As identified in the Project Description, the intention of the project sponsors and San Mateo County is to improve the jobs/housing balance and jobs/housing fit by providing preference for those who live or work on the San Mateo Coast[27]. Although not quantified, the project would provide opportunities for reduced commutes for existing coastal workers and residents.

The Transportation Impact Analysis[28] recommended three mitigation measures that could conserve energy by improving opportunities for short walking trips and mass transit, as opposed to single occupancy vehicles.

1. Mitigation Measure TRAF-1B – Develop a Transportation Demand Management (TDM) plan for review and approval by San Mateo County which may include:
   - Local live-work preference for residents
   - One or more dedicated car share parking space(s)
   - Free or discounted SamTrans transit passes
   - Provide public transit information and education for residents – maps and schedules for residents, brochures about environmental and health benefits
   - Provide a pedestrian trunk (grocery cart) to eliminate driving to local market
   - Provide both short and long-term secure bicycle parking
   - Support for active transportation through provision of bicycle and pedestrian-supportive infrastructure, streets, etc. within the Project
   - Additional measures that may become available as technology evolves
2. Mitigation Measure TRAF-5A – Construct a sidewalk that connects the Project entrance on Carlos Street to the sidewalk located on the north side of Sierra Street. This includes land both on and adjacent to the Project property.
3. Mitigation Measure TRAF-5B – The project sponsor should distribute informational literature to tenants upon move-in detailing available transit service and bus stop locations. The informational literature should discourage the use of the southbound bus stop at Carlos Street and State Route 1 because of the inadequate corner sight distance provided at the intersection. Residents should be redirected to use the bus stop at Etheldore Street and California Street instead which is approximately a ten-minute walk from the project entrance.

It should be noted that transportation energy consumption could be higher without the project because of the transportation energy use associated with coastal workers commuting from more distant locations.

Given all of the foregoing considerations, the project would not consume energy resources in a wasteful or inefficient manner and would therefore have a **less-than-significant impact** on the consumption of energy resources.

[27] Stevens Consulting. Cypress Point Project Introduction and Project Description (County Review Draft). Accessed March 7, 2019 at https://planning.smcgov.org/sites/planning.smcgov.org/files/5-Intro-and-Project-Description.pdf

[28] Kittleson & Associates, Inc. Cypress Point Traffic Impact Analysis. April 2019.

MITIGATION MEASURES ENERGY-2

None required.

IMPACT ENERGY-3

The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. (Less than Significant)

The Relevant Plans, Policies and Ordinances Setting of this Report describes the regulatory framework for energy usage and conservation at the federal, State, and local level. For building projects, Title 24 (California Code of Regulations) is of particular importance, as it sets standards for energy performance.

As indicated in IMPACT ENERGY-2, MidPen has agreed to a list of environmental commitments to minimize the project's environmental effects, including a commitment that the project would be developed in accordance with a green building program, to be selected in the future, which would include a variety of energy efficient features that are beyond the requirements of Title 24. As such, the project would exceed applicable State standards and would be more energy efficient than what is currently required by the State.

The project has been reviewed relative to the San Mateo County General Plan Energy and Climate Change and the San Mateo County EECAP. This analysis finds that the project would not conflict with or obstruct either of these plans. Furthermore, based on the size of the project, the Air Quality Technical Report indicated that the project is below the Bay Area Air Quality Management District (BAAQMD) operational GHG emissions screening level and all GHG emissions impacts would be less than significant.[29] The project would provide energy efficiency beyond Title 24 requirements and would support the intent of the General Plan and EECAP, which is to reduce GHG emissions in San Mateo County. Therefore, the project would not conflict with or obstruct a state or local plan and any project effect would be a **less-than-significant impact**.

MITIGATION MEASURES ENERGY-3

None required.

IMPACT ENERGY-4

The project would not require the construction of new or expanded energy production facilities or infrastructure, the construction of which could cause significant environmental impacts. (No Impact)

Based on the minimal energy use identified in Impacts ENERGY-1 and ENERGY-2, no expanded energy production facilities would be anticipated, therefore, the project would have **no impact** from the construction of energy production facilities.

[29] Illingworth & Rodkin, Inc., *Cypress Point Affordable Housing Project Air Quality & Greenhouse Gas Emissions Assessment*, June 29, 2018.

MITIGATION MEASURES ENERGY-4

None required.

CUMULATIVE IMPACTS

While the project would incrementally contribute, in addition to other cumulative projects, to the regional demand for energy (electricity, natural gas, gasoline, and diesel fuel), the project's energy impacts would not be individually considerable. As indicated in IMPACT ENERGY-2, the project's annual electricity usage would represent approximately 0.00039 percent of PG&E's electricity sales in 2017 and the project's natural gas usage would represent approximately 0.000670 percent of PG&E's natural gas sales in 2017. Electricity and natural gas are provided to end users on demand, and delivery amount is a function of use. During peak usage, more of the utility can be made available to users in order to avoid any potential outages. While the management of energy resources is a Statewide challenge, and cumulative demand for such resources could be considered cumulatively significant, the project's energy consumption is small and it includes many features that would minimize energy consumption. Therefore, the project's contribution to energy demand would not be cumulatively considerable and the project's cumulative impact to energy resources would be a **less-than-significant impact**.

Further, the Plan Bay Area 2040 Draft Environmental Impact Report (Metropolitan Transportation Commission/Association of Bay Area Governments 2017) contains an analysis of the impact of growth and transportation improvements in the 9-county Bay Area, including San Mateo County. This analysis is cumulative by its nature, and concludes that implementation of the plan "would not result in wasteful, inefficient, or unnecessary consumption of energy, during project construction or operation." Therefore, the cumulative impact related to energy from all Bay Area growth would be less than significant, and the Cypress Point project would not change that determination.